

Designing to meet physical, psychological and social well-being needs in prison

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Abstract

Since English prison reform in the 18th century, with USA reform following in the 19th century, prison designers have used design to modify antisocial behaviour and encourage desistance. Three out of the four prison models subsequently identified by Moldan (2012) embody this approach while avoiding damaging inmates' physical and mental health — the Rehabilitation, Safety and Hybrid models. The fourth model —the Repressive— does not, and is not considered here.

Evidence shows that to help ensure rehabilitation and desistance, the promotion of inmates' health and well-being within prisons is vital (Liebling, 2011). Many prison services are now trying to address this connection while dealing with challenging social and cultural realities, but only a handful of them have shown significant changes in their prison designs and subsequently built projects.

This thesis has aimed to explore and understand the differences in the approach to health and well-being related to prison design, in countries within the Rehabilitation, the Safety and the Hybrid prison models. This was done by identifying the underlying mechanisms that produce these outcomes, and what needs to be modified, as underpinned by Critical Realism ontology and drawing on PERMA theory of well-being. Prison staff and designers from four countries and the three Prison models, as well as key international advisors, were interviewed using semi-structured interviews which were coded and triangulated using other qualitative methods. Organised Hypocrisy theory was then used as an additional lens to understand and further explain the underlying reasons for their differences and similarities. Finally, this thesis has identified what is necessary within prison authorities and services, as well as broader society, for a rehabilitative prison approach to promoting staff and inmates' health and well-being in all three models. The synthesis of all the findings has led to the development of an outline framework for promoting health and well-being in prison design with recommendations based on six key dimensions: Design priorities, Design principles, Financial optimisation, Decision-making, Operational transparency, and Education.

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List of Acronyms and abbreviations:

- **ACA:** American Correctional Association
- ACPH: Air Changes per Hour rate
- AIDS: Acquired Immune Deficiency Syndrome
- AJA: American Jail Association
- **AS:** Administrative Segregation
- BC: Before Christ
- **BOP:** Federal Bureau of Prisons
- CDP: Prison Detention Centre in Spanish
- **CPT:** Committee of Prevention of Torture
- **CR:** Critical Realism
- **DS:** Direct Supervision
- **GD:** Governmental Designers
- **GDP:** Gross Domestic Product
- **HIPP:** Health In Prison Program
- HIV: Human Immunodeficiency Virus
- HLS: High-level Staff
- HMPPS: Her Majesty's Prison and Parole Service
- **HPP:** Health Promoting Prison
- HRSD: Hamilton Rating Scale for Depression
- **HVAC:** Heating, Ventilation, and Air Conditioning
- ICPR: Institute for Criminal Policy Research
- ICPS: International Centre of Prison Studies
- ICRC: International Committee of the Red Cross
- **ID:** Independent Designers
- LCA: Latent Content Analysis

- **LED:** Light-Emitting Diode
- MCA: Manifest Content Analysis
- MQPL: Measurement of the Quality of Prison Life
- NASA: National Aeronautics and Space Administration
- NIC: National Institute of Corrections
- **PERMA:** The five components of Seligman's theory of well-being: Positive emotions, Engagement, positive Relationships, Meaning, Accomplishment.
- PHA: Prison Health Advisors
- **PPA:** Prison Policy Advisors
- **PPP:** Public-Private Partnership
- **QDAS:** Qualitative data analysis software
- RCC: Residential Care Centre
- **RISE :** (Rikosseuraamuslaitos) Finnish Criminal Sanctions Agency
- RQ: Research Question
- SAD: Seasonal Affective Disorders
- SBS: Sick Building Syndrome
- **SDG:** Sustainable Development Goals
- **SWB:** Subjective well-being
- **TB:** Tuberculosis
- **UK:** United Kingdom
- **UN:** United Nations
- **UNODC:** United Nations Office on Drugs and Crime
- UNOPS: United Nations Office for Projects Services

WHO: World Health Organisatio

Chapter 1: Introduction

All fine architectural values are human values, else not valuable. - Frank Lloyd Wright

1.1.- Context and justification for research

The purpose of architecture has been defined as improving human life (John Lautner, 1911–1994), and as a combination of shelter and pleasure, by providing well-being and making people feel good (Zaha Hadid, 1950-2016). It has also been argued that the State, on behalf of the society, has the right to punish offenders (Banks, 2016) and hold them captive within architecture. However, the State also has the duty to treat prisoners with respect due to their inherent dignity and value as human beings, and the duty to protect prisoners' physical and mental health and the prevention and treatment of disease on the basis of clinical grounds only (United Nations, 2016). Therefore, prisons should be designed for promoting the health and well-being of their users as a matter of principle.

1.1.1.- Health and well-being in prison

In prisons, inmates' well-being is influenced by the condition of their physical and mental health, which is under stress daily. Marshall, Simpson and Stevens (2000) suggested that many common prison conditions such as overcrowding, loss of privacy, social isolation, low stimulation, restrictive and repetitive routine and the prisoner social hierarchy could precipitate or exacerbate mental health problems, such as violent behaviour, depression, anxiety, drug misuse, self- harm and suicide. Several studies have also found a strong association between people's health, or rather the presence of illness, and lower well-being (Diener and Seligman, 2004; De Viggiani, 2007; Cashin, Potter and Butler, 2008; Drago, Galbiati and Vertova, 2009).

However, reaching acceptable levels of well-being in prisons requires significantly higher efforts than in other settings, taking into consideration that not only has the prevalence of mental disorders among prison inmates been continuously reported as significantly higher than the normal population (Butler et al., 2006; Fotiadou et al., 2006; Fazel, Doll and Långström, 2008; Mundt et al., 2013; Karthaus et al., 2017; Karthaus, Block and Hu, 2019), but also that mental disorders almost always cause poor well-being (Diener and Seligman, 2004). In this regard, the quality of design of the buildings has been strongly linked to mental health. Indeed, people living in better quality environments have fewer

psychological issues, such as decreased anxiety and depression (Halpern, 1995; Evans et al., 2000). Conversely, improvements in the quality of the built environment result in substantial improvements in mental health (Halpern, 1995).

Since the vast majority of inmates will return to the community sooner rather than later¹, inmates should not suffer from worse physical and mental health conditions upon their release than when they were imprisoned.

The above key studies demonstrate the need for the provision of a better and healthy physical environment in prison housing (cells) and living areas. However, most of the studies on health and well-being in prisons deal with the prisoners themselves (De Viggiani, 2007; Cashin, Potter and Butler, 2008; Drago, Galbiati and Vertova, 2009). Relatively few, if any, have dealt with health and well-being from the perspective of the prison staff and their advisors (Karthaus et al., 2017; Karthaus, Block and Hu, 2019; Moran, Turner and Jewkes, 2018). Very few studies have covered actual factors of the carceral environment that affect well-being (Moran and Turner, 2018; Turner and Moran, 2019). And even fewer studies have approached health and well-being in prison design from a cross-continental perspective (Jewkes, 2018).

1.1.2.- The relation between health and well-being

The concept of well-being has been symbiotically linked to the concept of health. The World Health Organisation (WHO) defined health as "...a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948, p. 1). Although this definition has been criticised by saying that it "would leave most of us unhealthy most of the time" (Richard Smith, 2008), it has never been modified (Huber *et al.*, 2011). On the contrary, health and well-being became a fundamental human right in the International Covenant on Economic, Social and Cultural Rights (1966) which states that it is '...the right of everyone to the enjoyment of the highest attainable standard of physical and mental health'. However, the implementation of health and well-being as a human right within prisons has been challenging despite efforts made during the last

¹ The average prison sentence in the USA is 19 month (U.S. Department of Justice, 2019)

three decades to globally promote their actualisation as national policies, as discussed next.

1.1.3.- The challenge of health and well-being in prisons

Health and well-being as carefully defined values have steadily influenced public policies over the last thirty years, including the prison setting. The first WHO international conference on Health Promotion held in Ottawa in November 1986, launched the 'Ottawa Charter for Health Promotion' (WHO, 1986). It is considered a seminal document and a template for health promotion worldwide (Thompson, Watson and Tilford, 2018)

It incorporates three basic health promotion strategies:

- To advocate for health
- To enable people to take control of those things which determine their health, and
- To call for professionals, social groups, and health personnel to mediate between differing interests in society for the pursuit of health.

The Ottowa Charter established that health promotion is not just the responsibility of the health sector, but it "goes beyond healthy life-styles to well-being" more generally in society (WHO, 1986, p. 1). However, twenty-six years later, the concept of well-being was still blurry. In 2012 a group of experts convened by the WHO recognised that health influences overall well-being, yet well-being also affects future health. The meeting proposed the following definition of well-being:

"Well-being exists in two dimensions, subjective and objective. It comprises an individual's experience of their life as well as a comparison of life circumstances with social norms and values" (WHO - Expert group, 2012).

The promotion and improvement of health in the field of prison design must, therefore, also consider the well-being of the users of prisons. However, defining the research gap in health and well-being studies on prison requires an understanding of how prison cultures and systems are categorised. Different countries have different approaches to imprisonment and different views about how inmates should be treated to turn offenders into law-abiding citizens. Therefore, in order to compare and contrast different realities as

a mean of defining a research gap, it is necessary to consider a framework of prison classification.

1.1.4.- The research gap

The classification of prisons has been traditionally based on architectural form. Johnston (2000) proposed a classification of nineteenth-century prisons in three main groups: the simple non-radial plan; the circular and polygonal plan; and the radial plan; and included later as examples of new architectural propositions the high-rise prison.

In the USA, Atlas and Dunham (1990) proposed a different classification of prison architecture based on philosophical and managerial approaches and separates them into three distinct generations. The first generation corresponds to intentionally harsh prisons, where health and well-being are not foregrounded in design. The second-generation corresponds to a Podular design, with triangular communal living units or pods (Balfour, 2018) to maximise visibility and control. The interaction between prisoners and guards is minimal (Wortley, 2002). Even though the second-generation prisons appear to be healthier than the previous ones (Singh, Sharma and Choudhary, 2017), there are still psychological issues associated with the environment (Haney, 2002). The third generation is designed as campuses and bring the guards into the Inmates living area of the second generation, changing the understanding of the role of the guard into prisons (Wener, 2012) and generating a more supportive environment (Wortley, 2002). This last classification aims to improve rehabilitation outcomes (Burnett, 2008) where health, as the absence of illness, and to some extent, well-being, are part of the design considerations.

However, none of the above options considers the underlying forces that can define the penal philosophy of a whole country. In this regard, Moldan (2012) classified prisons into four main groups, considering observable empirical events, but also the actualisation of hidden causal forces that promote those observable events. These events and forces are:

- a) The created ambience, including the observable quality of architectural conditions, fixtures and furniture and the level of importance placed on minimising the harmful effect of imprisonment.
- b) The interest of prison administrators in the health and well-being of prison users, both prisoners and personnel.
- c) The level of priority placed on the physical security measures and barriers to avoid escape and control violence, which its effects are observable but not their causes, and
- d) The observance of human rights.

In this respect, Moldan (2012) argues that every prison can be classified into one of the following types:

- **The Rehabilitation model**: based on an in-depth understanding of human nature, and respect for dignity, while fulfilling human need such as socialisation, comfort, or understanding as key elements of rehabilitation of people in prison.
- The Safety model: consists of the isolation of prisoners from society and their supervision, while continuously searching for new ways to put a stop to the escapes, the contraband and the violence between inmates or inmates and guards.
- The Repressive model: refers to prisons characterised by physical and psychological abuse of inmates, and secrecy of what happens inside their walls. Clear examples of this model are political prisons in countries under the rule of a regime that uses violence and terror to repress the people.
- **The Hybrid model**: combines the rehabilitation and safety models with an influence from the repressive prison model.

It is further possible to argue that how health and well-being are considered within each national prison system will depend on which prison model best matches each country's penal thought. In other words, the physical carceral conditions and the psychological effect produced in inmates will depend on the level of respect of each country for the human nature of the inmates and their rights, the focus of the prison administration (security, rehabilitation or punishment), as well as how each country justifies — in terms of their social perspectives —the use of punishment.

The Rehabilitation model is typical for more liberal regimes, such as those in Central and Northern Europe countries, where prison services show a profound interest in positively changing the lives of those who are in prison (Metzner, 2012; Fikfak et al., 2015). Architecture and regimes in this model aim to reduce violence through designing and building, as much as possible, normal environments and promoting respectful and meaningful relationships.

Countries like the USA, United Kingdom or France are associated with the safety model where inmates' health is simply understood as the absence of illness. The strict rules of the prison regimes and discipline mean the prisons are clean, tidy and usually well maintained. This is not particularly the result of concerns for the prisoners' well-being but rather the process of inculcating these habits in prisoners and maintaining strict control over them. The main objectives of the Safety prison model are, thus, security and cost. The efficiency of the system is measured in terms of their capacity to prevent escape, reduce violence among inmates, and prevent violence against staff, all together with the lower economic sources possible (Wener, 2012).

The Hybrid model can be seen in Eastern Europe countries (Moldan, 2012) as well as in all Latin America. In their attempt to provide rehabilitation, there is an intention to provide health and well-being to inmates. However, the strong heritage of repression and the influence of the socio-cultural perspective on punishment seems to prevent the actualisation of these principles.

The Repressive model, finally, is characteristic of many countries dominated by totalitarian political or military regimes, which uses terror as a form of government and expose inmates to harmful conditions as part of the regime. Human rights are consistently and deliberately violated, and the carceral environment is used as part of the punishment experience. Therefore, although this thesis has a global scope, the Repressive prison

model will not be considered as a case study here due to the incongruence between the thesis aim of improving health and well-being of prisoners through prison design, and the intrinsic nature of this model.

Studies have shown that the success of rehabilitation efforts requires that the entire prison system— including the prison facilities—be designed to promote positive changes in offenders, by improving their health and well-being and therefore maximising their opportunities for personal development (McNeill and Schinkel, 2016). However, within the remaining three prison models —Rehabilitation, Safety and Hybrid— both rehabilitative efforts and security measures coexist in different proportions, and how much importance is placed on inmates' personal development must be understood within the penal, social and historical context. Therefore, it is possible to argue that among these prison models there may also be differences in the way in which both designers and prison authorities address the health and well-being of inmates in the prison design process.

Designing prisons that promote the health and well-being of their stakeholders² demands the understanding of the design factors that can produce both negative effects (Morris and Worrall, 2010; Bierie, 2012b, 2012a; Brummel, 2012) and positive effects (Dilani, 2001; Velarde, Fry and Tveit, 2007) on humans' physical and mental health. Additionally, it requires awareness of the contextual differences between prison models.

Evidence from healthcare and psychology studies have shown that the physical environment plays a vital role in improving staff and patient health outcomes (Ulrich, 1991; Lawson and Phiri, 2013). However, there is little evidence on the physical and psychological effects produced by the carceral environment on inmates (Moran, Jewkes and Turner, 2016; ICRC, 2018) resulting in the copying of inadequate designs as a regular practice for many governments, without thoughtful consideration of cultural and local needs (ICRC, 2013).

² Prison stakeholders consider prison inmates, prison personnel, staff from other services or organisations that work permanently or sporadically inside prison, and relatives and visitors of the inmates.

The few studies carried out on the effect of the carceral conditions on inmates have been heavily based on the safety model (Hancock and Jewkes, 2011; Jewkes, Crewe and Bennett, 2016; Karthaus et al., 2017; Jewkes and Moran, 2017). The work of Moran, Turner and Jewkes (2016), in addition to the work of Karthaus et al. (2017), and more recently Moran and Turner (2018), Turner and Moran (2019) and Karthaus' work in the UK on healthy prison design (2019) attempts to address the effect of the carceral conditions on inmates in the UK. Only recently is there a focus on trying to understand the relationship between carceral environment and low rates of recidivism in the Rehabilitation prison model (Mathiesen, 2011; Moran, Jewkes and Turner, 2016; Smith and Ugelvik, 2017; Jewkes, 2018).

However, prison design in the hybrid model has had little, if any, academic attention. Existing research, such as Karthaus et al (2017) or Gleeds Head Office (2016), addresses health and well-being in prison design as the aim to be followed, but only within individual countries and without a strong theoretical focus in many cases. Moreover, although some studies such as Moran, Turner and Jewkes, (2016), aim to understand the underlying forces in the decision-making process of prison design, their focus is limited to the safety model and more specifically the British context, and without any discussion about the health and well-being factors that should actually be present in the design. There are also some studies, such as Jewkes (2018), Moran and Jewkes (2015), and Grant and Jewkes (2015), that aim to transfer design practices by comparing international approaches in prison design.

Additionally, and more significantly, there are still no studies which compare the views of key decisionmakers —both designers and prison authorities—on health and well-being concerning design across all three of Moldan's prison models and across continents. Moreover, all the above studies focus largely on a handful of developed countries, neglecting the significantly different realities of developing countries.

This gap in the discourse on prison design leads to the following key research questions:

RQ1:Which design factors should be considered in the promotion of optimal health and well-being in prison design, and why?

- RQ2:Which factors of design are considered important by decision-makers in the promotion of health and well-being in prison services of the Rehabilitation, the Safety and the Hybrid model, and why?
- RQ3:What are the key elements necessary to add or modify in the dynamic of each of the mentioned prison models as part of a wider framework to improve and/or prevent the decrease in the consideration of health and well-being in the design of the prison?

To answer RQ1, this research will review the existent evidence related to health and wellbeing in design, to establish the research baseline for this thesis. The analysis of the experiences and difficulties as perceived by prison designers and other key decisionmakers will be addressed by RQ2, to understand more deeply how they consider health and well-being in their prison's projects. Finally, by addressing RQ3, this research intends to provide a more in-depth understanding concerning policymaking for prison design, to help in the evolution of prison systems.

1.2.- Aims and objectives:

This study aims to explore and understand how and why concepts of well-being and healthy environments are or are not addressed by designers and prison services in nonrepressive prison models to develop a new framework for promoting health and wellbeing through design.

To achieve these aims, the following objectives are required:

Obj. 1: To identify the architectural factors which can create healthy environments and promote well-being in prison design.

Obj. 2: To understand how and why these factors are or are not considered by key decision-makers in the Hybrid, the Safety, and the Rehabilitation prison models.

Obj. 3: To understand when, how and why these factors are displaced in the Hybrid, the Safety, and the Rehabilitation model in the design process.

Obj. 4 To develop a new framework for promoting health and well-being in relation to prison design.

By addressing the above objectives, this research will fill a vital gap by investigating the commonalities and differences in the approaches towards health and well-being in prison design between designers and prison authorities, from countries of the three prison models, recognising their model's differences in perspectives and priorities. This will include a developing country in the Global South. PERMA theory (Seligman, 2011) will be used as a lens to address health and well-being priorities. In doing that, this research will attempt to theoretically reveal the different powers involved in the interplay of forces during the process of prison design in each model, and identify what considerations have to be taken into account to reposition critical prison design factors to improve health and well-being in prison projects internationally. Critical Realism (Bhaskar, 1975) will be used as the focal theoretical lens in this instance, together with Organised Hypocrisy theory (Brunsson, 2007).

1.3.- Research design

The research design for this thesis adopts a case study approach based on Critical Realist philosophy in relation to PERMA and Organised Hypocrisy theories, as shown in Figure 1-1 below and mentioned previously. The research presents a qualitative, multiple case study based on four cases: United Nations/partner institutions prison policies and prison health advisors (International Advisors); the Chilean prison service (Hybrid model); The State of Kentucky prison service in the USA (Safety model); and Norway and Finland prison services (Rehabilitation model).



Figure 1-1: Research design diagram

To answer the objectives of this study as set out in Figure 1-2 below, a literature review first provides the contextual ground by exploring the history of prison design in each of the countries introduced later as cases (objective 2). Additionally, a review of the literature identifies the current discourse and research on concepts of health, and well-being in prison and how architectural and environmental factors can affect prison inmates and staff in prison design (objective 1).



Relationship between research questions, objectives, thesis chapters and methods

Participants included designers, the high-level staff of prison services, and international advisors from the United Nations who were interviewed. This was done to understand their perspective about which architectural factors should be considered in prison design to promote inmates' health and well-being (objective 1); how and why key decision-makers actually consider those factors (objectives 2 and 3); and what can be done to evolve toward a prison design that promotes the health and well-being of their users

(objective 4). During the same period from 2016-17, eight associated prisons³ were also visited by the author and included in the study to cross-validate interview data with personal observations and photographic evidence (objective 2 and 3). A Manifest Content Analysis is used to identify the perceived variables related to health and well-being, using Pareto Analysis to identify the interviewees' priorities (objective 2 and 3). A Latent Content Analysis (LCA) then identifies underlying themes and patterns which explain the reasons for the above priorities (objective 2 and 3). Finally, the analysis and discussion of the findings in all the four cases and eight visited prisons in addition to a cross-case comparison provide the necessary insight and inputs to develop a new framework to design prisons that promote health and well-being (objective 4).

1.4.- Structure of the study

This study has thirteen Chapters, which cover four stages of the thesis development (See Figure 1-3). Chapter 1 introduces the study by presenting the context and justification for research, as well as research questions, aim, objectives, and a brief explanation of the methodology. Chapter 2 builds the theoretical basis for the whole research by explaining the theoretical and ontological perspective of the research. The literature review in Chapter 3, presents a historical account of the development of prison design and punishment perspective in each of the countries included in the study. Chapter 4 investigates the need for considering health and well-being in prison design, including international efforts and academic research in this area. Chapter 5 presents a review of scientific studies of factors that can affect well-being in architecture in general and in prison design in particular. Chapter 6 explains the methodology of the research. Having defined the cases, Chapter 7 presents the results from the selected cases. Chapters 8 to 11 address the analysis and discussion of the cases, starting with International Advisors (Chapter 8), Hybrid prison model (Chapter 11). Chapter 12 summarises the findings and

³ The prisons visited were: Halden prison in Norway; Vantaa, Helsinki and Vanaja prisons in Finland; Kentucky Luther Luckett Correctional Complex and Louisiana State Penitentiary in the USA; and CP Bio-Bio, and CDP Santiago Sur in Chile. A description of each prison is found in Appendix 11.

provides a cross-comparison of all the cases for a deeper understanding of the forces underlying prison design for health and well-being. This chapter finishes with the proposition of a new framework for designing prisons to promote health and well-being and provides a list of recommendations for policymakers. The conclusions of this study are presented in Chapter 13.



Figure 1-3 Thesis outline

Chapter 2: Theoretical standpoint

2.1.- Introduction

This thesis will explore how health and well-being is approached in the context of punishment in different social, cultural, and geographic realities. Therefore, it is necessary first to clarify what is understood by well-being, which approach to well-being will be used to interrogate the data, what are the different approaches and justifications for punishment, and how reality is understood and observed by the researcher. In this regard, this chapter establishes the theoretical and ontological perspectives of this research. It starts with a brief exploration of the historical development of the Hedonic and Eudemonic approaches to well-being. The relationship between ancient perspectives and modern theories of well-being is investigated to develop a more appropriate platform for interrogating the data for the study. Additionally, the understanding of the different approaches to punishment and its relationship with health and well-being in prison are essential for both the historical contextualisation of prison design and the understanding of the importance placed by different actors in the process. Therefore, this chapter reviews the most commonly accepted approaches to punishment in the history, their compatibility with the promotion of health and well-being of inmates and set the ethical considerations of this research. Finally, different ontological approaches are examined to select the research perspective used in this study.

2.2.- The historical roots of well-being

2.2.1.- Hedonic perspective

Aristippus⁴ (435–356 BC) said that the goal of life is to experience the maximum amount of pleasure, minimising pain, or what people dislike (Tatarkiewicz, 1976). Many philosophers associated with imprisonment have followed his ideas such as Hobbes, DeSade and Bentham (Ryan and Deci, 2001). The focus of hedonism has evolved from physical pleasure to a more broader approach, that includes the preferences and pleasures of the mind (Kubovy, 1999). For Hedonic psychologists, the terms well-being and hedonism are substantially equivalent (Kahneman, Diener and Schwarz, 1999). Wellbeing, in this account, consists of "subjective happiness and concerns the experience of

⁴ Aristippus was a Greek hedonic philosopher and pupil of Socrates in the 4th century B.C.

pleasure versus displeasure broadly construed to include all judgments about the good/bad elements of life" (Ryan and Deci, 2001, p. 144). The classical Behavioral theories of reward and punishment (e.g. Shizgal 1999), and theories focused on cognitive expectations (e.g. Peterson 1999), typically associated with theories of imprisonment, have been rooted in Hedonic psychology, focused on pleasure versus pain. The most widely used conceptualisation of Hedonia is Subjective well-being (SWB) proposed by Diener, (1984). SWB accounts contain a balance of three components: life satisfaction, positive, and negative affects. SWB incorporates both hedonic experiences (momentary emotions and mood) and cognitive evaluations of how well life is going more generally (Jayawickreme, Forgeard and Seligman, 2012). Therefore SWB is an umbrella term combining how we think, and feel about our lives (Diener, 1999). In this regard, Lyubomirsky, Sheldon and Schkade (2005) had a significant impact on the understanding of well-being. In their work 'Pursuing Happiness', they propose that happiness (or SWB) is affected by three factors— genetic, the life circumstances, and intentional activities⁵.

Because most of the time, inmates in prison cannot choose or modify the environment in where they have to live, prison architecture and its environmental design can be placed within the life circumstances. This open a promising window for influencing the improvement of inmates well-being by fulfilling their basic human needs. However, as the authors state, "... at best, satisfying basic needs can move people only up to their set point, not beyond" (Lyubomirsky, Sheldon and Schkade, 2005, p118). Although the notion of SWB is currently the dominant conception of happiness among psychologists(Disabato et al., 2016), there are critiques about its subjective reductionism, stating that well-being cannot be reduced to only immediately gratifying experiences (Keyes and Annas, 2009).

2.2.2.- Eudemonic perspective

For Aristotle, as a Eudemonic Greek Philosopher (384-322 BC.), true happiness is found

⁵ The work of Lyubomirsky, Sheldon and Schkade (2005) suggest that the genetic set point is different for each person, and account for approximately 50% of the well-being variation. Additionally, the life relevant circumstances — which may include the national, geographical, and cultural region in which a person resides, as well as demographic factors such as age, gender, and ethnicity — account for approximately 10%. Finally, intentional activities —which is a very broad category that includes the wide variety of things that people do and think in their daily lives— explain approximately 40% of the total well-being variation.
in the expression of virtue and in doing what is worth doing. For him, the Hedonic happiness was a vulgar idea that would convert humans into slaves of desires, establishing a differentiation between the Hedonic goal of happiness per se, which lead to subjective feelings and momentary pleasure, and Eudaimonia, which is rooted in human nature and whose realization is conducive to human growth (Ryan and Deci, 2001). From the Eudemonic perspective, a good life is living to one's fullest potential by virtue or excellence. Well-being is not simply as the attaining of pleasure, but as "the striving for perfection that represents the realisation of one's true potential" (Ryff 1995, p. 100). In this regard, meaning in life appears as an essential factor. Meaning and happiness are two different concepts which emphasise the difference between the Eudemonic and the hedonic perspectives (McGregor and Little, 1998). Pursuing meaningful goals is a robust pathway to more positive emotion and more life satisfaction (Seligman, 2002). Moreover, in times of adversity such as imprisonment, meaningmaking is a powerful resource that has been associated with decreased psychological harm (Tedeschi, Park and Calhoun, 1998). Perhaps the major difference between the eudemonic perspective of well-being and the hedonic view is that while the latter focuses on feeling good, eudemonic theories target both the process of living well and the value of positive states other than positive emotion and evaluations (Jayawickreme, Forgeard and Seligman, 2012). The Eudemonic perspective of well-being seeks an understanding of how humans can reach the stage of 'true potential' and live a meaningful life, developing a new branch in the field of psychology associated with finding what the conditions and variables are that results in a 'good life'. This branch is known as Positive Psychology.

2.2.2.1.- Positive psychology

Positive Psychology is the newest of the four waves of psychology following the disease, behaviourism, and humanistic psychology models (Srinivasan, 2015) and is primarily concerned with the study of the conditions and processes that contribute to the flourishing or optimal functioning of people, groups, and institutions (Gable and Haidt, 2005, p. 104). The empirical study of meaning is a characteristic of Positive Psychology as the scientific study of human strengths and happiness (Ryff, 1989). According to Seligman, Positive Psychology is based on three main principles, namely the study of:

• positive emotion

- positive traits such as strengths, virtues and abilities
- positive institutions

For Seligman (2002a), these three principles are interlinked when positive institutions support the manifestation of virtues that, in turn, support the possibility of generating positive emotions such as confidence, hope and trust (Seligman, 2002a, p. xiii). The primary purpose of Positive Psychology is to catalyse a positive perspective, which also looks for building the best qualities in life (Seligman, 2002b). Therefore, the main questions are: What is the nature of the effective functioning of a human being?; Who has successfully evolved and learned skills? ; How can psychologists explain the fact that, despite all the difficulties, the majority of people manage to live lives of dignity and purpose? (Sheldon and King, 2001).

Critics have highlighted Positive Psychology's shortcomings. For instance, ostensibly positive qualities (e.g., optimism) can sometimes be detrimental to well-being, whereas apparently negative processes (like anxiety) may at times be conducive to it (Lomas and Ivtzan, 2016). Schneider, (2011) argues that Positive Psychology's strong dependence on positivity is correlated with inaccuracy regarding reality (positive illusion) and a correlation between highly positive people and suppressed psychological growth, inability to self reflect, and radical intolerance, linking them with the most extreme forms of behaviour in the history of our world, such as the Nazi party movement or the Stalinist era.

Those critiques, however, have been refuted in the light of the "existing overwhelming evidence derived from the active, robust research agenda on positive emotions and cognitions (e.g., optimism) and their relationship to health and psychological wellness" (Carmelo Vázquez, 2013, p. 91). The aim is to build up what we know about human resilience, strength, and growth in integrating and complementing the existing, more negative knowledge base (Gable and Haidt, 2005). Many of these critiques are also no longer applicable as positive psychology has become more mature in recent years (Steffen, Vossler and Joseph, 2015).

Moreover, positive psychologists argue that although psychology has made great strides in understanding what goes wrong, these advances have come at the cost of understanding what the strengths and virtues that allow people to live a good life are (Gable and Haidt, 2005, p. 105). Unlike SWB and other hedonic theories that only focus on feeling good or on a positive subjective evaluation as the target outcomes, eudemonic theories target both the value of positive states (other than positive emotion and positive evaluations) and the process of living well. The current primary theories here are Self-Determination Theory (Ryan and Deci, 2000), Psychological Well-being Theory (Ryff, 1989), and Seligman's Well-being Theory (Seligman, 2011).

Self-Determination Theory is focused on *Input resource variables* of well-being, such as income or the personality trait of extraversion. Psychological Well-being Theory is focused on internal states influencing well-being (*Processes variables* such as good mood and the expectation of success). However, Seligman's Well-being Theory (Seligman, 2011), is a pluralist theory combining *Inputs and Process* with *Outcomes* variables (the intrinsically valuable behaviours that reflect the attainment of well-being). This makes it the most appropriate lens for researching well-being with prison design. The explanation of his theory, its strength and criticism will be covered next

2.2.2.2.- Seligman's theory of well-being

In his theory of well-being, Seligman argues that well-being is a construct which includes the factors of Positive emotions, Engagement, Relationships, Meaning, and Accomplishment (PERMA) (Seligman, 2011). Each of these components is explained in more detail below.

Positive emotions: Happiness and life satisfaction, as subjective measures are relevant to the well-being theory, but cannot sustain well-being by themselves. (Seligman, 2011). Positive emotions can include feelings of belonging, feeling safe, feeling satisfied with their work and/or learning, pride, curiosity, excitement and enjoyment (McInerney, Noble and Boniwell, 2017), and be related to events from the past (e.g. feelings of satisfaction, and serenity); the present (e.g. calm, excitement and pleasure); or the future (e.g. optimism, faith and hope)(Scorsolini-Comin et al., 2009).

Engagement: This is the psychological state in which individuals are absorbed by and focused on what they are doing (Jayawickreme, Forgeard and Seligman, 2012). Its evaluation is subjective(Seligman, 2011). Engagement has been referred to as 'flow' (Csikszentmihalyi, 1996) as a state of positive absorption where the individual is completely absorbed in what s/he is doing. Work is one of the most important sources of 'flow' (Csikszentmihalyi, 1996). This is important concerning prison design, where

inmates either do or do not, have a chance to do meaningful work.

Relationship: Seligman highlights the need for people to establish healthy relationships with others to achieve well-being and sources of support in anxiety moments or sharing moments of ecstasy and joy. Kruttschnitt et al. (2013), found that "women prisoners who report having good friends in prison are 41% more likely to feel control over their daily lives." (Kruttschnitt et al., 2013, p. 33). Other findings suggest that those who engage emotionally with others tend to develop more adaptive strategies to face situations considered difficult (Seligman, 2011). Prison design determines whether or not these type of positive relationships can flourish in terms of the physical conditions that promote social interaction.

Meaning: relates to the search for purpose in life. A meaningful life consists of belonging and serving something one believes is greater than the self (Seligman, 2004). It is defined and measured independently from positive emotion or engagement (Scorsolini-Comin et al., 2009). Studies have shown that people who belong to a group or community and pursue shared goals are happier than people who do not (Naragon and Watson, 2009). Prison design that promotes social contact or acquisition of labour skills can help here.

Accomplishment: This component describes what people effectively do to achieve wellbeing through living a productive and meaningful life (Scorsolini-Comin et al., 2009). Setting tangible goals, and keeping them in sight will help to achieve well- being through hope and anticipation. Prisoners, however, are usually infantilised by being denied undertaking almost any action without authorisation or supervision (Jewkes, 2018). Introducing inmate accomplishment as a prison design aim would bring them a higher degree of autonomy and control over their environment and decisions.

PERMA can be criticised using the same arguments that Positive Psychology faces but assessing subjective well-being across multiple domains, including anxiety and depression, offers the potential to more systematically understand and promote well-being (Kern et al., 2015). Moreover, human goodness and excellence are just as authentic as distress and disorder, and life entails more than the undoing of the problem (Seligman 2011).

2.2.3.- PERMA theory and design

PERMA helps address the first research question (Which design factors should be considered in the promotion of optimal health and well-being in prison design, and why?) being strongly linked to the study of well-being and human processes and practices in design. Researchers have tried variously to translate the PERMA components into a more understandable language for designers. Desmet and Pohlmeyer (2013) developed a framework which contains the components: designing for pleasure, designing for personal significance, and designing for virtue (Desmet and Pohlmeyer, 2013). Their misleadingly titled article 'Design for Subjective Well-Being', has a Eudemonic perspective and their proposed framework aligns three design components with the equivalent PERMA components: designing for pleasure (positive emotions and engagement); designing for virtue (Meaning) and designing for personal significance (Relationships and Accomplishment). Similarly, Stevens, Petermans and Vanrie (2014) in their study on interior design for elderly persons in residential care centres (RCCs), renamed the five PERMA components through what they called a translation into more concrete terms (See Figure 2 1). They also formulated seven design goals to increase elderly persons' well-being in RCCs.

PERMA	modified PERMA		SPATIAL DESIGN MISSIONS
positive emotion	mindfulness & enjoyment	Step 2: Empirical data design practice	mind arousing reminiscing
engagement	involving action		challenging
relationships	satisfying social needs		social skills empathy
meaning	control belief		self-reliancy
accomplishment	self-actualization		empowerment

Figure 2-1: Modified PERMA translated into spatial design missions in the spatial setting of RCCs.

Pohlmeyer and Petermans, (2014) apply the Positive Design Framework, previously proposed by Desmet and Pohlmeyer (2013) to interior architecture. Based on

Lyubomirsky, Sheldon and Schkade (2005)⁶, they consider interior architecture as a feature of our circumstances and a space for our intentional activities that can be stimulated through design. Therefore, they propose a change from viewing the built environment as a static entity to designing spaces that facilitate desirable activities and stimulating experiences that provide pleasure and meaning to its inhabitants (Pohlmeyer and Petermans, 2014).

Despite no current evidence concerning the overall use of PERMA theory in prison design, the promotion of health and well-being by design have been associated with one or more PERMA components. One UK project developed qualitative and quantitative design inputs from PERMA resulting in health and well-being objective and subjective outcomes that are linked with economic values of healthy homes and healthy neighbourhoods (U.K. Green Building Council, 2016). In Belgium, the PERMA model has been used to produce architectural recommendations to augment SWB for elderly persons in RCCs (Stevens, Petermans and Vanrie, 2014). This aligns with the age characteristics of a small but important part of the prison population and also has a degree of institutionalisation involved, comparable with prison regimes in certain respects such as restricted areas, assisted activities and surveillance.

PERMA components will be applied during the literature review to explore how the wellbeing of inmates have been treated through the historical development of prisons. However, this firstly requires a contextual understanding of the different approaches to punishment, which is the purpose of the next section.

⁶ Lyubomirsky, Sheldon and Schkade (2005) state that happiness is less a matter of one's circumstances than of the activities that a person engages in.

2.3.- Punishment approaches and the principles of this research

2.3.1.- The Justifications for Punishment

The justification of punishment is still an ongoing debate (United Nations, 2005). Imprisonment is a conscious choice about the appropriate response to offending behaviour, regarding both the social and the offenders' benefits of this response (Moran, 2015). To address the thesis question: "Which factors of design are actually considered important by decision-makers in the promotion of health and well-being in prison services of the Rehabilitation, the Safety and the Hybrid model, and why?", both historically and today, it is essential to understand the six most conventional approaches to justifying punishment: Deterrence, Incapacitation, Retribution, Rehabilitation, Communication, and Restorative Justice.

2.3.1.1.- Deterrence

Deterrence proposes that punishing criminals will prevent future criminal behaviour because the punishment for the crime outweighs the benefit of committing the offence. (Salinas, 2009). Deterrence is characteristic of Repressive, Safety and Hybrid prison models. The theory is based on a hedonic philosophy where the action of committing an offence becomes an unattractive option when the cost of the conduct exceeds its expected benefits (Miethe and Lu, 2005).

Deterrence is also derived from a utilitarian philosophy, which is based on achieving the highest good for the most significant number of people (Hudson, 2003). The deterrent value of punishment is directly associated with the different levels of pain produced⁷. The aim is simply to reduce crime rates, and prison sentences need to be adequately long to deter other potential criminal acts. Deterrent prisons are designed on the principle of carceral conditions being worse than the conditions available outside and to be unpleasant, deliberately employing design elements to discourage misconduct (Nadel and Mears, 2018). In other words, purposely damaging prisoners' well-being as a means to reach the objective. The aim of the building, alongside the institution of imprisonment,

⁷ The highest potential for deterring misconduct is reached when the consequences are severe, precise and swift in their application and an 'appropriate' punishment (or one with the highest utility) is one that is beneficial to the general welfare of all those affected by the criminal act (Bean, 1981, p. 4).

is to induce fear to incentivise others to comply with the demands of the law (Ohlin, 2009).

2.3.1.2.- Incapacitation

Incapacitation is a primarily utilitarian punishment. It focuses on eliminating the individual's opportunity for crime by constraining the physical capacity of a person to commit criminal acts. Incapacitation aims to protect the public from the chance of future offending (H. Morris 1994, p.238). Incapacitation is highly related to the Repressive, Safety and Hybrid prison models. Imprisonment, as an incapacitation sanction, involves the physical removal of persons from their communities, preventing them from misconduct in the original setting⁸.

There are two broad approaches to incapacitation: collective and selective. Collective incapacitation involves the application of long sentences for severe offenders without any attempt to measure individual risk. The theory holds that society is safer because these individuals cannot commit further offences during the period of the sentence as they are kept in prison. There have been many criticisms of the harmful effect of the incapacitation approach. Although predicting future risk for low-level routine offending, such as burglary, is relatively straightforward (Morris and Rothman, 1995), incarceration based on probable future conduct is an aggression towards the mental and social well-being of the incapacitated subject. It is likely to result in injustice and unjustified detentions and to be inefficient in directing resources towards people who do not present the level of risk assumed (Ibid). Moreover, incapacitation *per se* does not create any drive to rehabilitate offenders whatsoever (Burnett, 2008, p. 132).

2.3.1.3.- Retribution

Retribution, incapacitation and Deterrence are the currently dominant theories of punishment. Retributive principles of punishment have been increasingly present in the philosophical and criminal Western justice literature since the 1970s following disenchantment with consequential models because of their perceived failures (Ward and

⁸ The most extremes examples of incapacitation sanctions used by societies and regimes may include the English system of transportation of convicts to other colonies used in the seventeenth and eighteenth centuries, or the political exile like the used by South American military dictatorships in the second half of the twentieth century (Miethe and Lu, 2005, p. 18)

Salmon, 2009). The primary aim of this punishment is to inflict burdens on criminals that are equivalent in harm to those inflicted on their victims. According to retribution principles, punishment is a reaction in equal magnitude but opposite direction, to the crime committed. Punishment acts on the past, in opposition to the consequential claims that its beneficial consequences justify punishment⁹. This approach is somewhat contradictory with health and well-being approaches, defending the idea that punishment is justified just because it is deserved.

For Reiman, although the death penalty may constitute a just punishment according to the rule of lex talionis¹⁰, it should nevertheless be abolished as part of "the civilising mission of modern states" (Reiman, 1985). The clearest example of retributive principles can be found in Repressive prison models. However, they also play an essential role in both Safety and Hybrid prison models.

Despite the above points, the proportionality of sanctions remains a dominant justification for punishment in most Western cultures (Miethe and Lu, 2005, p. 17). The second overarching goal of prisons after citizens' safety, is retribution (Foucault, 1975) and the idea of retribution seems to be always present. Morris (2002, p.162), highlights that the purpose of Norfolk Island prison was to be "a place of real suffering, painful to the memory, terrible to the imagination", while Moore (1988, p.188) argues that "we are justified in punishing because and only because offenders deserve it". An overview of the currently dominant theories of punishment is shown in Figure 2-2 below.

⁹ "Offenders are punished because of the nature of the wrongful act and not for any other reasons. Therefore, the fact that punishment does not reduce crime is not of major concern to retributive theorists; it is fitting and just to punish in order to balance the moral ledger" (Ward and Salmon, 2009, pp. 242–3)

¹⁰ Retribution has long existed, with the lex talionis of Biblical times calling for "an eye for an eye, a tooth for a tooth, and a life for a life" (Hudson, 1996, p. 38)



Figure 2-2:Current dominant theories of punishment. Source: personal collection extracted from Banks, (2016), McSheffrey, (2016) and Ward and Salmon, (2009)

2.3.1.4.- Rehabilitation

Rehabilitation attempts to reform and control offending behaviour (Latessa, Listwan and Koetzle, 2014). Unlike deterrence, rehabilitation theory argues that the State should recognise its part in causing crime, because of social conditions like poverty and inequality, and should recognise its role toward crime prevention by providing rehabilitative programs to assist the offender in not committing a further crime (Hudson, 1996, p. 66).

Although rehabilitation principles are present in Hybrid and Safety prison models, their actualisation is only partly due to stronger and more influential forces. Rehabilitation aims to restore the convicted offender to a constructive place in society by combining psychosociological treatment, education, and working training (Miethe and Lu, 2005, p. 23). Inmates' health is accounted for by healthcare professionals. In the 19th century, the

'rehabilitative ideal' that criminal justice interventions could change law-breaking tendencies was based on offenders reform through work within a safety prison model, primarily in terms of forced inmate labour (Wener, 2012), but this was always subordinated to the purposely-visible and robust security measures, such as deterrence.

Rehabilitation had its peak in the 1960s, in the USA, declining in the 1970s and 1980s when many types of research suggested that 'nothing works' (Latessa, Listwan and Koetzle, 2014). The loss of confidence in the re-socialisation of inmates resulted in a backward step in the penal system towards incapacitate, retribution and deterrence ideologies. An overview of the three rehabilitation theories is shown in Figure 2-3 below:



Figure 2-3:Rehabilitation Theories. Source: Personal collection extracted from Banks (2016), McSheffrey, (2016), Hudson, (1996), and Ward and Salmon, (2009)

Rehabilitation theories revived from the late 1980s following new evidence of effective interventions. However, this new perspective is more focused on offending behaviour rather than the offender¹¹.

Current practices focus on a wide range of strategies, including rehabilitative programs, such as substance abuse treatment, vocational training, and education, increasing social bonds through visitation, and efforts to deinstitutionalise the prison environment (Nadel and Mears, 2018, p. 4). Carlen (1994) and Matthews (1989) argue that the offenders'

¹¹ "The objective is now to prevent reoffending to increase community security, rather than to rehabilitate an individual as an end in itself" (Burnett, 2008, p. 243)

choices are often limited because of social conditions like poverty and inequality, which might lead people to crime. Rehabilitation theorists, therefore, see crime as the symptom of a social disease, and the aim of rehabilitation is curing that disease through treatment (Bean, 1981, p. 54).

Because the state assumes the right to punish, there is also a state obligation to ensure that the harm inflicted is no less but no more than what was intended when the sentence was pronounced¹². Criminal behaviour modification through rehabilitative practices seems to be a logical step towards a flourishing society. By contrast, a purely punitive approach to sentencing does little to decrease crime and serves only to increase the prison population (Carlen, 1994, p. 329).

2.3.1.5.- Restorative theories

More recently, new Restorative theories have also been developed. Among them, the most important is Communication theory and Restorative justice.

2.3.1.5.1.- Communication theory of punishment:

This theory, developed by Antony Duff (1999), has been gaining attention in the Safety prison model. It claims that punishment communicates a message to the criminal as an appropriate response to the crime committed and should appeal to a person's rational understanding. The person to whom the communication is directed must be an active participant in the process and must receive and respond to the communication (Duff, g1999).

According to Duff, the concept of punishment as communicative is communitarian, in the sense that it appeals to a linguistic and moral community whose members, which share language, values and form of life, can claim and have the moral standing to criticise each others' conduct. In this view, it is essential to pay attention to the rights of all stakeholders in the criminal justice system including offenders because of their equal moral status; thus, communicative theories of punishment have a relationship focus (Ward and

¹² "The intent of the prison sentence is a deprivation of liberty and not the loss of family ties or employability" (Gallo and Ruggiero 1991, cited in Banks, 2016, p.117).

Salmon, 2009). There are three aims integral to the punishment: secular repentance, reform, and reconciliation through the imposition of sanctions (Duff, 1999). Offenders are viewed as 'one of us', or members of the community, and therefore are bound and protected by the community's public values: autonomy, freedom, privacy and pluralism (Ward and Salmon, 2009). The claim is that all human beings have equal moral standing, and while individuals who have committed public wrongs should be held to account, they ought to be approached as beings of value and dignity.

The healthcare of people in prison, as well as the promotion of the improvement of their well-being, is seen as self-evident in treating them with respect during the process of administering punishment (Ward and Salmon, 2009, p. 6). Hard treatment, such as imprisonment, draws offenders' attention to the seriousness of the wrongs they committed and appropriately expresses social disapproval (Duff, 1999). Therefore, a reasonably understood punishment has the effect of restoring the offender to the community in the same way that penance restores a penitent to the communion of the church (Walker, 1991, p. 79). Offenders are viewed as valued members of the community rather than as merely individuals who are held responsible. Therefore the aim is to repair or restore offenders' relationships with victims (if possible), and the broader community (Ward and Salmon, 2009). Punishment is not intended to mark offenders as intrinsically deviant or irredeemable but instead indicates their status as fellow community members (Ward and Salmon, 2009).

2.3.1.5.2.- Restorative justice

This theory is strongly linked to rehabilitation prison models, although it can be found to a certain degree in some countries from the safety model. It states the need to support both victims and offenders (Bazemore and Schiff, 2001, p. 117). The focus is placed on the offender's obligation to repair the harm that was done to victims and the community, and also on the need to repair broken relationships between offender-community, victimcommunity, and victim-offender (Banks, 2016).

The victim and the offender are brought together to develop a mutually beneficial program that not only helps the victim in the recovery process but also provides the offender with an initiative to take personal responsibility for their actions. This reduces the risk of reoffending and condemnation is focused on the deviant act, rather than the offender, and its impact on the victim and the community. (Emberson, 2016). Van Ness and Strong (1997) suggested that restorative justice is underpinned by three core principles:

1. Justice requires promoting the healing of victims, offenders, and communities injured by a crime.

2. Victims, offenders, and communities should be permitted to actively involve themselves in the justice process as soon as possible and substantially.

3. Roles and responsibilities of the government should be rethought and, in its promotion of justice, the government should be responsible for preserving a just order and the community should be responsible for establishing peace (Van Ness and Strong, 1997, pp. 45–46).

Critics of restorative justice have argued that criminalisation and punishment draw a line that shows what is acceptable and what is not, whereas restorative justice processes tend to suggest that that line can be moved depending on each case (Hudson 1996: 151). It has also been said that there is an absence of a theory to explain how the operation of restorative justice is supposed to bring about a change in the offender (Bazemore and Dooley, 2001).

Additionally, Garland (1990) argues that restorative justice avoids the rituals of criminal law that recognise that the functions of punishment are to relieve the emotions and feelings of victims and communities (in Hudson, 1996, p. 150). However, these critiques do not recognise the systemic operation of the process, which involve all the actors to restore the equilibrium.

A summary of the main aspects of the restorative theories bringing in Figure 2-4 below.



Figure 2-4: Restorative theories. Source: personal collection extracted from Banks (2016), McSheffrey, (2016) and Ward and Salmon, (2009)

2.3.2.- Ethical considerations in prison design

Ward and Salmon, argue that the deliberate infliction of suffering requires explicit ethical justification; otherwise, the various actors of the criminal justice system are ethically culpable. Practitioners and staff, therefore, have an ethical obligation to seek to end the infliction of any unjustified harms on offenders (Ward and Salmon, 2009). Prison designers also have the ethical obligation to react against unjustified infliction of physical or psychological pain on inmates and work within the framework of international covenants such as the Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, monitoring the minimum standards of treatment of human beings (Moran, Jewkes and Turner, 2016).

As Ward and Salmon state: "... if it turns out that some correctional policies and practices rest on unsustainable theories of punishment, it is incumbent on practitioners to ensure that they avoid engaging in professional actions determined by such policies." (Ward and Salmon, 2009, p. 241). In this thesis, the unjustified infliction of pain is understood as any action or omission that can negatively affect the physical and/or psychological health and well-being of people in prison.

Prison, used as a tool to inflict punishment, operates within a criminal context which is specific to each country (Moldan, 2012). However, the boundaries between punishment and rehabilitation can be blurred (Ward and Salmon, 2009). Some elements of programs fall within the definition of punishment or may be understood as punishment because they are part of the prison regime rules¹³. Others can respond to rehabilitation efforts¹⁴.

Therefore, designers have to understand the difference, the ethical justification of each program element, and the physical and psychological effects on the person who is suffering from the incarceration. "Failure to be aware of the ultimate aim of intervention could result in vindictively oriented therapy, a lack of an apposite ethical response to offenders, or to a confused mixture of both rehabilitation and punishment" (Ward and Salmon, 2009, p. 241). Recognising different approaches on punishment, this thesis proposes that for the existence of prisons to be justified as a legitimate tool for the

¹³ e.g., restriction of movements; type and quantity of furnishing inside the cell; or daily timetable to follow.

¹⁴ e.g. specific layouts, sensorial design considerations, or the overall program.

restitution of the equilibrium in society, their design and operation must be based on three principles:

First: prisons should promote each of the five components of PERMA well-being theory (positive emotions, engagement or flow, positive relationships, meaning or purpose, and accomplishment) so that prison design has a useful purpose for society and the person imprisoned.

Second: prisons should promote rehabilitation, taking care of the physical and mental health of people in prison.

Third: to use the previous two principles as a matter of public policy.

These principles will inform the literature review, the collection and analysis of data and the discussion of the findings. Nevertheless, the data and the findings can be understood in a variety of possible ways, depending on the philosophical approach to reality. For this reason, the following section will discuss the ontological perspective adopted in this research.

2.4.- Research philosophy

2.4.1.- The research paradigm

A Paradigm is a set of socially accepted roles or assumptions conducting research (Gliner and Morgan, 2000). However, a paradigm is just one view of reality, not reality itself (Gorard, 2010). A paradigm is a tool and not a set of directives, and the researcher uses the tool to obtain an understanding of the circumstances that surround events and therefore enrich the analysis (Corbin and Strauss, 2008).

A paradigm can also be understood as a bipolar belief spectrum (Figure 2-5) (Holden and Lynch, 2004). Both poles - objective and subjective - are opposite lenses through which the observer sees reality.



Figure 2-5: A Scheme for analysing assumptions about the nature of social science. Source: adapted from Burrell and Morgan (1979)

Moreover, there are many ways to understand what reality is and how it can be observed, which are situated in between these two poles (Table 2-1).

	Ontology	Epistemology	Methodology
Positivism	Realist	Dualist/ Objectivist	Experimental/ manipulative
Post-positivism	Critical Realist	Modified objectivism	Modified experimental/ manipulative
Critical Theory	Critical realist	Subjectivist	Dialogic, transformative
Constructivism	Relativist	Subjectivist	Hermeneutic, dialectic
Pragmatism	Multiple subjective and objective realities.	Knowledge is both constructed and based on the reality of the world we live in.	Dialectical eclecticism and pluralism of methods and perspectives
Interpretivism	Objective and subjective as intrinsically linked	Subjectivist	Relative focus on meanings, context
Humanistic	The subjective science of the spirit	No objective knowledge is possible	Focus on values, meanings and purposes

Table 2-1:Paradigms of inquiry	(Adapted from (Guba,	1990; Della	Porta and	Keating,	2008; Mc		
Manus et al., 2017))							

Critical Theory, as one paradigm, is based on historical realism, which essentially holds that what is seen as real has been shaped by social, political, cultural, economic and gender values. While these realities cannot be considered true, they are essentially 'true' under current conditions (Brookfield, 2014). For Habermas (1972), Critical theory aims to understand reality through the study of three areas: Technical, related to the control of the physical environment; Practical, related to the understanding of the meaning of situation; and Emancipation, concerned with the provision for growth and advancement, which generates critical knowledge and is concerned with exposing conditions of constraints and domination (Habermas, 1972). These are discussed next to the subsequent development of Critical Realism (CR) as an ontology and theory that sits between Post-positivism and Critical Theory, as shown in Table 2-1.

2.4.2.- Critical Realism as the ontological perspective of this research

Critical Realism (CR) is a Philosophy of Science developed by British philosopher Roy Bhaskar (Bhaskar, 1975, 1979, 2008; Archer *et al.*, 1998) and expanded on by many other authors. CR holds that there is an objective world which exists independently of people's perceptions, language or imagination. However, it acknowledges that how part of that objective world is perceived and experienced is influenced by subjective interpretations. (O'Mahoney et al., 2014). The CR world divides into three ontological domains: the 'Empirical' or the observable characterised by human sensory, experiences and perceptions (O'Mahoney *et al.*, 2014), the 'Actual', where the interaction of causal structures which cause observable events in the 'empirical' takes place (Owens, 2011) and the most profound ontological domain, the 'Real', where the "underlying potential but unactualised causal structures of objects" are located (Ibid p.7). The observable and perceivable domain of the 'empirical' is thus encased in the 'actual', which in turn is encased in the 'real' (O'Mahoney et al., 2014).

The existence of observable and/or perceivable social events and patterns in CR does not provide a complete explanation of the causal mechanisms that produce the empirical regularities. Those causes placed within the 'actual' domain, are situated in a broader context, meaning that they cannot be reached by only focusing on the immediate context of the observed regularities. Events are not only the result of the Actualisation of the causal powers but also the consequence of unexercised powers of countervailing forces, and so it is necessary to understand why those causes occur, by focusing on the 'real' domain, to find out what the countervailing forces are and why their powers were not actualised (Elder-Vass, 2010). CR thus provides a useful lens for understanding Prisons and prison design. Prisons and prison design are shaped by concepts of power and control of movement (Carlson, 2001). This feature is present not only in the design of prisons through the architect's personal beliefs and biases but also in the interaction between different actors in the process of Decision-making during the design (Campus, 1999). By acknowledging that those actors are profoundly influenced by cultural, political, economic and material factors (Sorrell, 2018), it can be argued that their decisions and final products are the results of the Actualisation of the dominant political, social and economic powers. However, although the prison is a universal instrument used to cope with criminality, it is also a cultural local realities and values.

Accordingly, the nature of the Actual in each prison system must be considered partly as the consequence of the interaction of causal powers underlying different material entities such as prison buildings, and social entities, such as their principals (High-level Staff) and their designers (architects, engineers and technicians) among others. Some examples of causal powers can be: 'personal values' in the case of social entities, or economic value in the case of material entities). The result of this interaction represents the historical and cultural view of the establishment in which prisons and their associated stakeholders are placed and, accordingly, they will vary across the different models of imprisonment.

This thesis, ontologically underpinned on CR, will explore three different 'empirical' scenarios (the three prison models), in relation to prison design. The analysis aims to unveil the underlying causal mechanisms which could explain how and why the decisions related with health and well-being are made during the prison design process, in an attempt to find out the underlying causes of the process of Decision-making in each prison model, while accepting that this is never a complete account of the 'Real' (Bhaskar, 1975).

2.5.- Sub-conclusions

This chapter has presented the theoretical basis for developing the current research, in order to clarify how well-being is understood and approached in this study, how it fits with the different approaches to punishment and how reality is seen at the eyes of the researcher. The concepts of hedonic and eudemonic well-being were introduced to offer two different approaches to motivate inmates to desist on crime. After examining various perspectives and theories, Seligman's theory of well-being PERMA (Seligman, 2011), was finally selected as the most appropriate theoretical approach to investigate and demonstrate well-being within the healthy design of prisons because it offers the potential for more systematically understand and promote well-being. 'Critical Realism' (CR), as a multi-dimensional explanation of reality observes the visible phenomena from the domain of the Empirical —i.e., Which factors of design are actually considered important by decision-makers in the promotion of health and well-being in prison services of the Rehabilitation, the Safety and the Hybrid model (RQ2). It also reveals from the realm of the Actual which are the actualised forces and the mechanisms that produce these phenomena, addressing the second objective of this research— to understand how and why these factors are or are not considered by key decision-makers in the Hybrid, the Safety, and the Rehabilitation prison models. Finally, CR is a useful lens to fundamentally investigate which design factors are not considered and to understand when, how and why these factors are displaced by exploring which opposing forces remain unactualized. In order to develop the historical context for this research, the next chapter will critically focus on the chronological development of prisons in the USA, Latin America, and Scandinavia, relating to the broader cultural context for each of the chosen prison models and cases.

Chapter 3: Prison architecture: The historical context of the prison models

3.1.- Introduction

This chapter will focus on how health and well-being have been addressed in reality since the 19th century, specifically in relation to the three chosen prison models, Safety, Hybrid and Rehabilitation. The chapter will provide the basis for addressing the research questions "How are health and well-being factors addressed by key decision-makers in prison services internationally, and why?". It will discuss the international history of punishment to understand the development of prisons chronologically, as viewed through the lens of health and well-being. This review of prison design concerning health and wellbeing highlights the interaction of forces around the concepts of punishment and imprisonment. It also shows the historical development of classifications for prisons to grasp a better understanding of the different type of prisons and prison models. The history will be separated into three periods: the beginning of the prison reform during the eighteenth century, the consolidation of the penal reform during the nineteenth century, and the twentieth century until today.

3.2.- The beginning of the prison reform

In 1773, John Howard was appointed High Sheriff of Bedfordshire, in England. Howard conducted a three-year tour of British prisons. Howard was appalled by the conditions he found in nearly all the prisons. His published accounts led to awareness and increased public concern, which later resulted in a Penitentiary Act (Johnston, 2000). The buildings he visited were rarely purpose-built and usually in a deplorable condition. Howard later exposed those conditions in 1777 in his 'The State of the Prisons in England and Wales' (Howard, 1929), which ignited the penal reform movement in England. This reform movement spread to Europe and the USA.

Jeremy Bentham, a prominent actor in prison reform in England then developed the idea and design of a circular prison which he called a Panopticon. In the original design of 1787, the head keeper's house was in the centre, with the light coming from the external cell windows, allowing unseen surveillance of those cells from the dark interior of the centre house. In 1790 he submitted his ideal prison to the British Parliament, but it was rejected for being too radical with an extreme utilitarian philosophical perspective, in opposition to the humanitarian movement that fuelled Howards' work. Although Bentham failed to convince the British parliament, ultimately the implantation of his utilitarian idea of transforming the prison building in a productivity-enhancer machine, to treat the highest number of deviant elements possible, with the minimum of resources, was adopted widely.

3.3.- Nineteenth-century and the consolidation of penal reform

3.3.1.- Prison reform in the USA

3.3.1.1.- Pennsylvania: a separation system

In the USA, as a response to the overcrowding experienced at Walnut Street Jail, the construction of the Eastern State Penitentiary in 1829 represented the first full expression of the Pennsylvania model of total solitary confinement. It housed just one prisoner per cell, and prisoners served time rather like the monks in the monastic prisons in the Middle Ages, denied the basic social needs of communication and socialisation. The prison was not designed to cause pain. The design aimed to ensure adequate living conditions to promote a prisoner's health and well-being. This was the world's first penitentiary to serve a broad region being also the first prison of this scale to have centralised heat and indoor plumbing (Johnston, 2000, p. 67). It demonstrated a logical rationale for the organisation of space based on security, restriction of movement, and avoiding escape (Johnson, Dobrzanska and Palla, 2014). Its a distinctively geometric form (see Figure 3-1), and the regime of isolation became a symbol of progressive, modern prison principles, copied by many countries (Johnston, 2000).

The Quaker religious movement, heavily influenced by monastic ideas, saw isolation as a necessary part of reformation and moral change. There was a desire to change the essential nature of the criminal toward becoming a better member of society (McKelvey, 1977; Wener, 2012). However, it also promoted ostracism (triggering mental disorders) rather than teaching inmates how to cultivate positive relationships in order to live in society. Despite the intentions of reformation through meditation and repentance, the criticism concerning the number of suicides attempts and the psychiatric condition as a result of the solitary regime led to the Pennsylvania system being abandoned in 1913.



Figure 3-1: Eastern state penitentiary, Pennsylvania. Lithograph by P.S: Duval and Co., 1855

3.3.1.2.- Auburn: a congregate system

In New York, in less than a year of subsequent total isolation in Auburn prison's tiny cells, under the Pennsylvania system, five of the eighty-three prisoners had died, and many of the rest were diagnosed to be ill or insane. The high financial cost associated with the system was due to a design that required large exterior cells accompanied by an outdoor Space. This made it difficult to stack cellblocks to create huge multi-story facilities (Wener, 2012).

The warden thus established a new system at the prison, helped by his architect-builder John Cray and the architect John Haviland (Gill, 1962). Prisoners now slept in solitary cells but congregated in large groups for work and meals. However, no communication among inmates was allowed at any time (Johnson, Dobrzanska and Palla, 2014). The possibility for prisoners to see, as well as work surrounded by, other people was a considerable improvement on the total isolation imposed by the Pennsylvania system. However, neglecting the needs of communication among human beings was not seen as working against three of the essential elements of well-being: relationships, positive emotions and engagement.

The new more economical system could use smaller cells because the inmates only occupied them at night for sleeping and there was no need to include access to sunlight and air because inmates were not permanently restricted to their cells (See Figure 3-2). This utilitarian perspective dominated American prison design for many years, and even today, it is presented as a natural and acceptable rationale. While the argument of non-restricted cell time is helpful, these economy-based arguments do not consider the detrimental effect over the prisoner's well-being by placing a human being in an abnormal environment.



Figure 3-2: Old South wing of Auburn prison (Photo from www.cpa.eku.edu/images/)

3.3.2.- Scandinavian before the Rehabilitation prison model

During the 18th century and in the early decades of the 19th century, many prison reformers visited Scandinavia for inspiration. Their impression, however, was not positive. John Howard, for example, visited Denmark and Sweden found them "dirty and offensive" (Howard, 1929, p. 71) and described the treatment of inmates as "shocking to humanity" (ibid). Similarly, the Quakers Stephen Grellet and William Allen visited Oslo in 1818 and were very critical of the bad conditions in the Norwegian institutions. Smith and Ugelvik, in their account of Scandinavian prison development (2017), suggest that the willingness among Scandinavian royalty to listen to the critique from the travelling philanthropists was crucial to the development of the Scandinavian reform. In 1840, an anonymous publication in Sweden of the book on prisons, known as 'the yellow book', advocated for extensive prison reform based on the Pennsylvania model which won great interest among Scandinavian countries. Pratt and Eriksson (2011) reported that in Sweden, 45 cellular prisons were built in this style between 1846 and 1880. In Norway, a cellular prison was opened in Oslo in 1851. Although it was the only cellular prison built then in Norway, many other prisons were modified, and in 1857, the cellular system was prescribed for district prisons (Johnston, 2000; Roth, 2006). In Finland, four Pennsylvania system prisons were built in the 1880s. Pratt and Eriksson (2011) suggest the interest in this system lies in the influence of the Lutheran Church which places more importance on the individual's relationship with God than on the church itself. Lutherans thought of crime as only one of many earthly sins. Therefore, criminals were not considered, per se, dangerous outsiders (Pratt and Eriksson, 2011).

The unique socio-geographical characteristics of the Scandinavian countries are also presented as another important factor in the Scandinavian understanding of crime and punishment: "This may be accounted for by the fact that the old Norse traditions of blood vengeance merely reflected the harsh climate they had to withstand" (Teeters, 1944 quoted in Smith and Ugelvik, 2017, p. 15). Pratt (2008a) goes farther, saying that the geography of these countries had led to them being sparsely populated and often inhabiting unproductive lands with economic life developed in small units in the absence of an influential conservative upper class or anything resembling a feudal society. Communities tended to have similar social conditions and a good deal of autonomy, leading to a strong tradition of local democratic self-government without a powerful land-owning aristocracy, and considering everyone as an insider and a valuable member of

the community.

These socio-cultural characteristics are in clear opposition to the deterrent hedonistic punitive perspective that dominated the history of imprisonment at that time, preparing the historical basis for the development of Scandinavian penal exceptionalism. The vast majority of prisoners in Scandinavian countries were subjected to intense solitary confinement throughout much of the latter half of the 19th century and way into the 20th century. However, a progressive system was introduced during the 1860s, which allowed prisoners to read more books, write more letters and even get more out of cell time if they behaved well. The solitary confinement system was not abandoned, despite serious health problems and cases of insanity until the 1930s in Denmark, 1945 in Sweden, and 1958 in Norway.

3.3.3.- Latin American prison development and the roots of its Hybrid model

The replication of the new Spanish social structure in newly Latin American countries in the 18th century resulted in small, powerful land-owning aristocracy in each country, with strong links with both military power and religion. This resulted in highly militarised societies due to the recent independent campaigns and the need for controlling slaves and lower-class, illiterate citizens to benefit the small Creole aristocracy (Bethell, 1985). The permanence of slavery and other forms of labour, racial and social control contradicted the system of equality before the law and universal citizenship that most republican constitutions in Latin America promised (Aguirre, 2009). Cities were developed in a military layout around the main plazas, called Plaza de Armas (Plaza of weapons) where weapons were stored (Montaner, 2003; Correal Avilán, 2017). Brazil, which was controlled by Portugal, was characterised by the importation of slaves from Africa. Except for the aristocrats, the people in these countries were almost entirely illiterate and showed a high level of economic concentration (Bethell, 1985). While in some cities such as Mexico City, Lima, Buenos Aires or Rio de Janeiro the level of logistics organisation in the jails was somewhat more advanced, incarceration, in general, was a social practice designed simply to store detainees (Aguirre, 2009). Some political leaders criticised the colonial carceral conditions, but Republican rhetoric was almost always neutralised by discourses and practices that emphasised the need to control the undisciplined and immoral masses through severe punishment mechanisms. A relatively small group of state authorities in Latin America were anxious to imitate the social models of the

metropolis as a way of embracing modernity and applying successful control mechanisms over the undisciplined masses. (Aguirre 2009). Two prison models thus arrived in Latin America. The houses of corrections model came from England and arrived in Buenos Aires (1825) and on the coasts of Brazil (1834). The Philadelphia model arrived in Mexico (1840), Chile (1843), and Peru (1855), from North America (García Basalo, 2016). However, Bretas (1996) highlights that the modernity publicized by these States did not deceive anyone, and people knew that, indoors, the prison was still a place of suffering, abuse and violence.

Salvatore and Aguirre (1996) point out that the emergence of prisons in this region was the response of the States to the pressures exerted by civil society (the educated elite of each country), which demanded more civilized and modern sanctions. However, the Latin American elites also felt a deep mistrust towards the illiterate and dark-skinned rural masses as barbarous, ignorant, incapable of civilisation, and needing a necessary form of incarceration at times (Aguirre 2009).

In Chile, until these new models arrived, there were only local jails occupying rented houses or public buildings. The barbarous use of wheeled cages to expose inmates to the public in urban areas was a common practice. These 'mobile jails' moved to places that required minimum-cost labour. "Each car contained up to 14 inmates, with separate chains, among which they used to be paired with two linked by the same iron." (Alegria Herrera, 2011, p. 31). These practices not only targeted the self-esteem of inmates by exposing them to mistreatment by the public but also created an enormous psychological punishment. The public exposure affected their future capacity to establish normal relationships or to be able to return to normal social life.

Chile started building prisons between 1836 and 1847. The Santiago Penitentiary was the first (and only) purpose-built Fan-shaped prison in the country. At the end of the eighteenth century in Chile, there were two more prisons in the cities of Curico and Talca. However, they were rectangular buildings surrounding the inner courtyards. Before the end of the century, Pennsylvanian inspired designs were built in Argentina (Buenos Aires 1877; Sierra Chica 1882; Cordova 1890), and Auburnian designs were adopted by Colombia (Bogota 1876), Uruguay (Montevideo 1885 -Pentonville plan). Similarly, Aurbunian-inspired prisons were also built in Peru (Lima 1862 and Bolivia (1883). Although the separate Pennsylvania system was abandoned in the USA due to its harmful effects, it was widespread in Europe during the 19th century. However, in Latin America,

hybrid designs mixed Pennsylvanian fan-shaped layout and back-to-back Auburnian cells, with local modifications and little understanding of the underlying philosophies. As in most of the Latin American countries, the implantation of this hybrid design in the Chilean capital city, in addition to the maintenance of old punitive practices and no additional investments, resulted in the perpetuation of the cruel, severe and disproportionate punishment on prisoners. In those deterrent conditions, it was virtually unthinkable to talk about the well-being of the inmates.

3.4.- From the twentieth century to the present

3.4.1.- The positive school

During the last decades of the 19th century, a new scientific interest in understanding the causes and circumstances of crime emerged. This new movement, known as Positive School of criminology proposed that criminal behaviour is the result of external and uncontrolled factors rather than rational decisions. In Italy, Lombroso and Enrico Ferri thus initiated the principle of individualisation as part of this School of thought. For Lombroso, each offender can be recognised by some physical and physiological characteristics and features that make him a criminal man. Ferri stated that there is no free will involved in committing a crime because a criminal is conditioned in his actions by three types of factors: anthropological, physical, and social (Pifferi, 2016b). The Positive School rejected the doctrine of no punishment without law, emphasising the need for individualised scientific treatment as a way of protection of society against the criminal. It focused the attention on the act of crime as a psychological entity, depicting crime as a deterministic phenomenon (Jeffery, 1959). This thinking dominated the penal arena in Europe and America (North and South) during a significant part of the twentieth century and was the main driver for rehabilitation prison policies (Pifferi, 2016a).

3.4.2.- Prisons designed for behavioural change

The unprecedented fast development and reliance on scientific knowledge during the 18th and 19th century— in addition to the rationale postulating that buildings could change the behaviour of their occupants— led designers and reformers to start creating buildings supposedly capable of producing desirable effects. Hospitals, for example, were first transformed into wind machines in the fight against airborne diseases through mechanical and spatial ventilation, and architecture was understood as a unique tool in

healing the ill (Wagenaar, 2006). Prison design was seen as a building tool to produce moral changes in prisoners. However, the balance of power resulted in different outcomes. In hospitals, the subject 'patient' was backed by the pressure of society in favour of a quick and effective recovery from illness, which pushed for a constant improvement of the effectiveness of the system in recovering patients (Garcia Barreno, 1990). In prison, however, the subject 'prisoner' had had no such support or power and therefore no resistance to the configuration of the new building-machine as an instrument of economic rationalisation, intrusive observation, and normalisation in order to mould their behaviour into what was considered socially normal (Foucault, 1975).

3.4.3.- The prison machine

One event occurred in the USA, which is rarely mentioned in historical prison texts. Its effects lasted, however, for the whole first half of the twentieth century. In 1882 an original invention patent (No. 244,358) was registered for a mechanical two-storey rotative prison. The patent said: "The object of our invention is to produce a local detention facility (Jail), in which prisoners can be controlled without the necessity of personal contact between them and the jailer or guard. [The system] consists first, of a circular cell structure of considerable size (inside the usual prison building) divided into several cells capable of being rotated, surrounded by a grating in close proximity thereto, which has only such number of openings (usually one) as is necessary for the convenient handling of prisoners." (Lunden, 1959, p. 153). While in operation, its 32-ton carousel of sixteen cells (eight on each of two levels) could be guarded by just two men. The reduction in labour allowed it to be fully functional in many counties in the USA until 1938. The last one closed in 1973 (Kohlstedt, no date). Once again, the design of the living conditions of the users (inmates), was subordinated to the need for saving economic resources. Each time the carousel was rotated to access to one cell, all the prisoners could feel the movement, which aroused anxiety. The constant operation caused health problems associated with fracturing inmates' legs or arms trapped in the mechanism and was the leading cause for stopping the use of the rotary prisons. This shows the importance attached to saving money in the operation of prisons and the lack of importance placed on prisoners conditions during the first half of the twentieth century.

3.4.4.- Safety prison model development

Maximum-security prisons developed throughout the first half of the 20th century in the USA and were colloquially known as Big Houses. They reflected no grand scheme or purpose; neither penance nor profits were sought. Johnson, Dobrzanska and Palla (2014) report that routines were purposely meaningless, generating a permanent sense of lack of meaning for prisoners. Activities served no purpose other than to maintain order and their object was disciplined forced labour. Such prison work produced little interest or engagement. The big house, in the eyes of Johnson, Dobrzanska and Palla, was, however, an improvement in American prison history: "... a step forward, however modest and faltering, in the evolution of prisons. Humanitarian reforms helped to shape its inner world, though these had to do with reducing deprivations and discomforts rather than establishing a larger agenda or purpose" (2014, p. 31). Cells were deliberately small. Possessions were limited to the essentials. Sexual abuse was disturbingly common in custodial prisons run by men. However, prisons for women were no safer.

"Probably lonelier and certainly more vulnerable to sexual exploitation, easier to ignore because so few in number, and viewed with distaste by prison officials, women in custodial units were treated as the dregs of the state prisoner population" (Raker, 1990, p. 21 cited in Johnson, Dobrzanska and Palla, 2014). These institutions were very poorly designed with buildings composed of a vast number of cells that on average, held at least 2,500 men per building. Some of the best-known institutions include California's San Quentin Prison and New York's Sing Sing Prison. While in Europe, and later South America and Asia, radial-plan prisons were being built with cellular isolation, to be used for at least in the initial phase of a sentence, the USA did not follow their example. With few exceptions, the USA prison development from this time onwards followed nonradial layouts. The plans were to support an internal regime intended to reduce inmate contacts but not to provide twenty-four-hour separation, as attempted elsewhere (Johnston, 2000). This cannot be seen; however, as an improvement on inmates well-being conditions since the strict, harsh, and tedious prison regime did not provide them with any positive motivation.

The correctional institution typology emerged in the USA gradually from the Big House typology in the 1940s and 1950s. However, these correctional institutions did not correct, nor did they abolish the pains of imprisonment. They were fundamentally more tolerable human warehouses than the Big houses they supplanted. Correctional institutions were

marked by a less intrusive discipline. They offered more outdoor time and implemented more amenities, including a movie or an occasional concert and more educational, vocational and therapeutic programs, as well as more liberal mail policies and visits. Although these changes represented an essential improvement in terms of providing some elements to the promotion of the well-being of prisoners making life in prison less oppressive, prisoners still spent most of their time in their cells or participated in some sort of low-level work. Moreover, they often met in the courtyard with nothing constructive to do. (Johnson, Dobrzanska and Palla, 2014).

Between World War I and the 1960s, several new architectural typologies of the prison were developed in the USA, such as the telephone-pole plan which first appeared in prison at Stillwater, Minnesota; the rectangular layout; Courtyard or Self-Enclosed Prisons; or the High-Rise Prisons (See Nadel and Mears, 2018 for a review). However, all those typologies had a similar flaw: the low level of importance placed on the psychological and physical effect that the system produces to the health and well-being of inmates.

3.4.4.1.- Differentiation between Jails and Prisons in the USA

In the eighteen century, the concept of jail and prison was interchangeably used, but by the twentieth century, there was a clear differentiation. The most fundamental differences lie in the length of stay. As a general rule, jails are used for short-term stay and prison for the long-term. Jails are run by law enforcement in the local governments (Counties), for holding people who are awaiting trial, meaning that they are not yet found guilty, or who have been serving short sentences. The expected length of stay in jails is 25 days (Zeng, 2018). Prisons are run by the State governments, or the Federal Bureau of Prisons (BOP). Prisons are classified according to the level of custody (i.e., minimum, medium, or maximum security, solitary confinement). Although there are many differences between the design of jail in respect to prison, this thesis will refer to prison design interchangeably for jails and prisons, given that many of the design criteria that have changed the shape of jails in the last fifty years in the USA have also been adopted by prisons. The following sections will present the evolution of these criteria for prison design.

3.4.4.2.- Podular prison

The first real alternative to the first generation old-fashioned prison typologies of the 20th century was the podular system. It consists of a modified campus plan with a series of pods, or small housing units, and other facilities connected by secure passageways or open walkways. In this design, the perimeter security is provided by either the configuration of buildings and corridors or, where the structures are freestanding, an enclosure of single or double fencing (Johnston, 2000). There have been two versions of this model, named Second Generation prison and Third Generation prison respectively, which are explained below:

3.4.4.3.- Second-generation facilities

During the early 1970s in the USA, the National Clearinghouse for Criminal Justice Planning and Architecture was responsible for creating new guidelines that incorporated podular housing unit design with remote surveillance in a secure control room. The design principle was based on providing centralised services to inmates. There were some improvements, in terms of the health and well-being of inmates in eliminating some of the more aggressive visual elements of traditional prison design, by using security glazing rather than steel bar barriers to openings. Living areas were designed for 12 to 24 people, usually in a triangular layout with cells aligned along two of the three sides. Program services were brought to dayroom areas. However, the physical message that staff were treating 'deviants' and 'outsiders' was maintained. The staff used the improved technology to watch the inmates in the housing pods but were able to remain safe from assaults. Facilities were austere and designed to resist expected abusive behaviour with fixtures, finishes, and furnishings all designed for maximum security. The underlying operational assumption of second-generation facilities was that inmates would exhibit negative behaviour simply because they were inmates. So, barriers should be placed between inmates and correctional staff. Daily activities, such as visitation, counselling, attorney consultation, dining, exercise, and recreation occurred in locations far from the inmates' living areas (Atlas and Dunham, 1990). Although it was a small improvement from the inmate's well-being perspective, It was an essential step toward the understanding that normal-like environment promotes normal-like behaviour (Wener, 2012), opening the gates to the development of the third generation facilities.

3.4.4.4.- Third-generation facilities

The third generation of architectural management style, known as podular design with direct supervision, evolved just a few years later. They were designed with more manageable sized units of 36 to 60 inmates. The primary operational assumption here was that a normalised environment would evoke normal behaviour. This was a pivotal change in terms of how American prisons were understood and how their design should create a less aggressive environment rather than highly reinforced anti-vandal ones. A concentration of services close to the inmates reduced movement between areas and needed less staff supervision. In a third-generation facility, a correctional officer works within the living module in a supervisory role. Discipline is maintained through the principle of staff direct interaction among small groups of inmates in a normal-like environment. This crucially changed the message sent by the prison system to the inmates. The direct contact with prison officers without physical barriers emphasises the concept of trust, and although the different roles of being a prisoner and being a guard are maintained, there is the intention to send an implicit message that we are all humans. As reported by Wener (2006), the new working conditions also positively affected the sense of professionalism and mental well-being of the prison officers. "Officers in the first DS jails, including some who had been sceptical about working in such close proximity to inmates, commented that in these new jails, officers felt less like guards and more like professionals." (Wener, 2006, p. 401). Room furnishings in living areas consist of noninstitutional commercial-grade beds, wood desks, and porcelain sinks and toilets instead of traditional high-security stainless steel fixtures. The psychological aggression associated with the anti-vandal furniture and fixtures was modified by implementing normal-like elements. In this new approach, the misbehaving of inmates is confronted with two behavioural options: either conform to stated expectations of management or be moved from the general population to the segregation/isolation unit which is designed using second-generation facility principles. Because vandalism is not the norm, fixtures in third-generation prisons are not usually broken and are considerably cheaper to purchase and replace (Atlas and Dunham, 1990). This less destructive behaviour outcome could be understood as being due to relief from the physical and social oppression of inmates and therefore, an improvement in their well-being. Podular design/direct supervision model relies on the staff's ability to supervise and interact, rather than using structural or technological barriers. However, for Wener (2012), the change in the officer's role is "neither universal nor has it been universally accepted" (Wener, 2012, p. 54). The title change from guard to the officer has not been accompanied with a substantive alteration in the duties of enforcement and custody of by the traditional prison guard in many institutions (ibid).

Although the third-generation facilities are a clear step forward for both improving the health and well-being of inmates, and creating favourable conditions for rehabilitation treatment, the reality shows that they are still far from being the optimum system in terms of well-being promotion. The American conception of normal environments in prisons does not allow inmates to be in an external environment. Inmates only can stay in natural ventilated enclosed areas, with some exceptions such as the Chicago Metropolitan Correctional Center, where inmates can be in an open area on the rooftop of the building. The economic and logistic constraints of the system keep inmates in their assigned pod, without being able to have a normal daily routine, including outdoor activities.

The third-generation prison facilities have been promoted as the most significant breakthrough in American and British prison design, with significant benefits in terms of normalising the environment; improving staff working atmosphere and safety conditions; decreasing level of stress, tensions, vandalism and suicide among inmates. However, there is a notable lack of research to evidence the actual effect of this prison design approach on the general health and well-being of inmates. Despite good intentions, the historically unbalanced relationship of powers between prison authorities and prisoners favours the economic and administrative interests of the former, while not seriously considering the overall quality of life, health, well-being and rehabilitation possibilities of the latter. The lack of prisoner consultation in the process is evident in the absence of their perspective and perceptions during the design process.

3.4.4.5.- Supermax prisons

During the 1970s and 1980s, the combination of the meaningless existence within the big houses in the USA and the efforts of imposing discipline resulted in an uncontrollable increase in prison violence. The mismanagement resulted in dozens of prison guards being murdered, triggering a rapid and robust response from the authorities. Unfortunately, the response was not to relieve pressure through the use of directsupervision prison system but rather to simply strengthen the previous harsher typology through the development of Supermax prisons (Rhodes, 2005; Roth, 2006; Useem and
Piehl, 2006). Supermax prisons have been promoted as the way to control the 'worst of the worst' and make prisons safer places to live and work. However, studies have not found any evidence that supports the hypothesis that supermax prisons reduce levels of inmate-on-inmate violence, and there is the mixed support that they increase staff safety (Briggs, Sundt and Castellano, 2003). Conversely, empirical research suggests that this typology has the potential to damage inmates' mental health while failing to meet the institutional goals (Pizarro and Stenius, 2004). The purposeless life and lack of meaning in the long hours and days staying in such facilities, with no possibility to establish any relationship with other human beings, or being involved in any activity that produces engagement or fosters positive emotions, subverts any human-centred process of socialisation and desistance. The regime of solitary confinement - also called Administrative Segregation (AS) - has been studied by several scholars and the most recent results conclude that the use of AS in long periods (>30days to several years) "will produce iatrogenic consequences that will violate reasonable standards of humane care" (Gendreau and Labrecque, 2018, p. 357).

3.4.5.- The consolidation of the Rehabilitation, prison model

3.4.5.1.- The Nordic model

Nordic European countries take a very different approach, compared to other countries, recognising prisoners as citizens with rights and considering the restriction of liberty as sufficient punishment in itself (Wilson, 2015). They have been universally recognised for their successful outcomes in terms of the lowest rates of recidivism, the lowest imprisonment rates and profoundly humane carceral conditions (Pratt, 2008a, 2008b; Larson, 2013; Vessella, 2017b). John Pratt has referred to this approach as Scandinavian Exceptionalism whose foundations lie in the highly egalitarian cultural values and social structures of these societies (Pratt, 2008a).

The Scandinavian societal approach to punishment is based on the eudaimonic philosophy of restoring communal values with respect for the prisoner as a fellow human being. The concept of the Scandinavian open prison began in Finland in the 1930s, where, inmates were allowed to work on farms. Later in 1946, a new type of labour colony prison was introduced where '... no limit was to be placed on the freedom of those sentenced to labour colonies except were called for by maintenance of order and work discipline, and inmates [were to] be paid according to the normal wage' (Lahti 1977,

p.137, cited in Pratt, 2008a). Inmates in these open prisons pay taxes and 'rent'. They travel to the local food market to buy food. They save and send money to their family and their victims (Pratt, 2008a; Smith and Ugelvik, 2017).

In Norway and Sweden today, however, these prisoners simply receive an allowance, as in closed prisons (Pratt, 2008a). Inmates' living conditions are similar to ordinary social housing in the local area, minimising the differences in living a healthy life. Mental and social well-being is also promoted by providing the same basic facilities that could be found anywhere in the outside community. During the 1970s, Nordic countries started to develop the concept of Normality within their penal practices, but in most of the cases, it was established in the law itself.

Finland, Greenland, Denmark, Sweden, Faroe Islands and Iceland state within their enforcement Acts the right of inmates to a normal environment (Engbo, 2017). They have a different focus on the law but, in one way or another, these countries' laws established that inmates should enjoy the same quality of services as the general population, and a day lived inside prison must not be different from a day lived in freedom (Pratt, 2008a, 2008b; Larson, 2013; Smith and Ugelvik, 2017). Maybe the most precise definition of normality is seen in Finnish law: "To the extent possible, prison conditions must be arranged to reflect living conditions in society" (Chapter 1, Section 3, Finnish imprisonment Act, cited in Engbo (2017)).

This concept of Normality must be here clearly differentiated from the Foucauldian concept of Normalization which refers to the construction of an idealized norm of conduct, in which individuals are moulded to behave in a 'normal' or standard way. The Nordic concept of Normality respects and recognises the character of the offender as a valuable member of the community, and an insider of society, even though they are temporarily separated from it. This principle has important implications for the rehabilitation process and prisoners' mental, physical and social well-being. Norway seems to be the only Nordic country that does not include Normality as a written concept within its legislation. However, the Norwegian Execution Sentence Act states that the correctional service Kriminalomsorgen "must collaborate with other public authorities to make sure that inmates receive the public benefits to which they are entitled according to law" (Section 4, of the Execution Sentence Act, cited by Engbo (2017)). Perhaps the idea of Normality is so firmly present in Norwegian prison service that the legislator found it superfluous to make a written reference to it in the Act (ibid).

Nevertheless, the current prison reality in Scandinavia is the result of social evolution with various entities in continuous opposition to the forces of authority (Mathiesen, 2011). In 1966, groups of non-governmental political associations for penal reform were formed by criminologists, lawyers and social workers as pressure groups in this arena. This started in Sweden with a significant national meeting in 1966, called 'The Parliament of Thieves' in which "prisoners and ex-prisoners for the first time in Scandinavian (and perhaps international) history in large numbers and openly told the audience and the press what prison was like" (Mathiesen, 2000, p. 1).

The movement expanded throughout the region. It was called KRIM¹⁵ in Denmark (established in 1967) and KROM¹⁶ in Norway (established in 1968), and there were also similar developments in Finland (ibid). Those organisation created constant pressure on prison services and governments. In Norway, KROM started organising annual conferences in the mountains with mainly consisting of ex-convicts, because prison authorities denied inmates the chance to participate and did not attend themselves until the early 1970s. "The very existence of a prisoners' organisation was understood as a provocation" (Mathiesen, 2011, p. 16). Between the 1970s and 1990s, in Scandinavia, several prisoners strike supported from the outside by these organisations, demanded better prison conditions, better payment, better visiting-conditions, more liberal censorship of mail. "Invariably, the reaction of the prison administration was totally negative" (Mathiesen, 2000, p. 5). Between the 1980s and 1990s, the level of violence and conflicts between prison staff and inmate was high, resulting in the death of two prison officers.

However, the attitudes of the prison authorities and people in the criminal justice system started to change partly due to the growth of the welfare state and the prisoners' organisations (Mathiesen, 2011). The mountain conference chaired by KROM has a regular audience between 100 and 200 participants (Pratt 2008a). Unlike in other countries, Norwegian (Tonry, 2001) and Danish (Roth, 2006) prisons are not allowed to

¹⁵ Danish NGO. KRIM takes an interest in human rights-issues related to the activities of the police, the prison-service and the judicial system in particular.

¹⁶The Norwegian Association for Penal Reform, KROM, a non-governmental political organization and pressure group in the area of penal policy.

be overcrowded, creating the concept of 'prison queues' outside of the prison. A person can be convicted and sentenced but, if there is no room in prison, that person has to wait in freedom till they receive a notification that there is enough space to serve their sentence unless it is a serious-crime offender, or the person represent a threat to the community, in which case they will be immediately incarcerated (Ugelvik, 2016).

The Scandinavian highly educated society has also been highlighted as an essential factor that must be included in the equation to explain the different level of evolution of the Scandinavian perspective. The long and high level of training of prison staff and the tradition of decision-making processes based on evidence, guided towards a clear purpose, seems to support this thesis (Pratt, 2008a).

In the 1960s and 1970s, the Swedish prison system was seen as the more humane system and attracted considerable interest in reform-oriented circles in the USA (Ugelvik and Dullum, 2012). This could explain the appearance of the podular third-generation system and the spread of normalisation ideas in American designs of the time. Sweden was said to be "friendly, providing homelike conditions and a good measure of privacy for the prisoners" (Connery, 1966, p.409). Nevertheless, there is a fundamental difference between Scandinavian and American approach. The current American concept of Normality lies within a hedonic perspective on punishment where prisoners are expected to change their behaviour as an attempt to avoid pain. Therefore, the infliction of pain is seen by the Americans as necessary, but not by the Scandinavians.

3.4.5.2.- New developments in Scandinavia

In Norway, the design and construction of Halden Prison have been identified as the most innovative example in the field of prison architecture in Scandinavia and possibly in the world (Awofeso, 2011; Hancock and Jewkes, 2011; Urrutia-Moldes, 2011; Ugelvik, 2016). Halden prison is a campus-like high-security prison placed in the forest nearby the city of Halden. It is the first prison in Norway designed and built with a total observance of the principle of Normality. However, Halden prisons have not been free of problems and criticism. With this prison costing 230 million dollars to build (Berger, 2016), the Norwegian prison service started to look for a more cost-efficient design, developing the 'Model 2015'. Some scholars have seen this as a step backwards in design for rehabilitation and reintegration to society. Fridhov and Grøning, (2018 p. 284) argue that in the Model 2015, "it is difficult to find deeper reflections about how a prison should be

constructed in order to satisfy legal requirements regarding rehabilitation and satisfactory conditions for the inmates". They claim that, although the layout of the housing units is similar to the ones found in Halden prison — twelve individual rooms sharing a living room, kitchen and washing room— there is no indication in the documentation available concerning external areas and the concept of normality outside the housing units (see Figure 3-3).



Figure 3-3: Floor plan of the Norwegian 'Model 2015'. extracted from Demo Prosjekt Report (Prosjekt Norge, 2018)

3.4.6.- Hybrid prison model in Chilean and Latin American prisons in the 20th century

Salvatore and Aguirre (2017), state that the development of the prison system in Latin American countries during the first half of the 20th century was strongly influenced by the Positivist School of Criminology which tuned into the dominant paradigm. Chile also embraces this paradigm. The Chilean Journal of Criminal Sciences (published since 1933) promoted the ideas of 'dangerousness' of the offenders and 'social defence' as the basis of the Chilean penal system. In 1949, it created the law of «anti-social states» reaffirming the idea that the Chilean State could apply both preventive and pre-criminal measures to defend society better. The positivist criminologist approach focuses attention on the poor, illiterate and alcoholic members of the proletarian class labelling them as naturally dangerous who, when caught, should be placed in prison to change their behaviour.

Like almost all Latin American countries, Chile has always been a highly punitive society. In 1911 the total Chilean population was 3.3 million people, and the prison population was 7,241 inmates. Prisoners were housed in 101 institutions among penitentiaries, prisons, jails and houses of corrections (Gendarmería de Chile, 2016). During the first half of the 20th century, most of the prisons were built based on the rectangular typology, similar to the San Michele juvenile prison in Rome.

Despite the construction of new buildings as well as extensions of existing ones, the process of closing old buildings as well as the demolition of others after earthquakes the total number of prisons at the end of the 20th century did not show much change. Most were built based on the primary objective of storage people using a traditional rectangular typology consistent in a long corridor with cells in one or both sides.

In some cases, cells were designed as collective dormitories for up to 30 inmates who shared two open toilets, such as Concepcion Prison. During the late 1990s,' an explosive increase in the prison population resulted in excessive levels of overcrowding. This resulted in dormitories such as the Concepcion prison being occupied up to 100 inmates, which can be considered as an inhumane and degrading treatment. In 2013 in an attempt to regulate how to calculate the capacity of cells and dormitories in prisons, the National Director of Gendarmeria sent the instruction to quantify the capacity of any dormitory or cell, by counting the number of double bunks that were possible to place, leaving a minimum distance of 80 cm between them (Gendarmería de Chile, 2013). However, the

instruction did not mention the amount of air, daylight, or sanitary installations needed in addition to this, leading to potentially degrading conditions. The Chilean prison population in 2000 was 32,000 people, reaching 45,000 in 2016 (Gendarmería de Chile, 2019). The prison occupancy level was reduced during the first decade of the current century to a current 110.9% (ICPS, 2015 based on official capacity) through the development of a Public-Private Partnership (PPP) program of construction in which seven new prisons were designed and built between 2000 and 2010 with a total capacity for 13,530 inmates. Although those prisons imply a big step forward in prisoners conditions, the fact that they were designed in a typical rectangular layout of indirect supervision (A corridor with cells on the sides) perpetuates the punitive hedonic prison philosophy and the lack of interest for inmates well-being.

3.5.- Sub-conclusion

This chapter has explored and explained how punishment and imprisonment have evolved through history under three different prison models. It has focused on how attitudes towards health and well-being have changed and how this is manifested in the evolution of prison design. The modern idea of prisons was developed in Europe and the USA based on religious morality and economic restrictions. However, there has also always been the goal of incapacitation of the prisoner through the coercive action of the state —with retribution as the price that inmates have to pay— and the use of deterrence in the belief that fear will prevent further wrongdoing.

Prison design in the USA evolved to promote more health and well-being, but in the last thirty years, this concern was reduced due to the creation and promotion of supermax prisons in this country. The evolution of the Hybrid prison model was from the beginning, a tool for the Actualisation of power over the poor and uneducated population by the elite. These types of prisons placed inmates in inadequate and even inhumane physical conditions, with no consideration of their health or well-being. In Chile, these conditions have worsened during the last thirty years, and the Hybrid prison design model here is still heavily based on incapacitation and control. The older prisons in Chile also, continue to have severe hygienic problems, affecting the health and well-being of inmates permanently. Since the middle of the 20th century, the steady pressure put on the Scandinavian prison services through organised pressure groups and individual actions

has resulted in a slow yet sustained change. The way in which prison services were seeking to achieve the goal of desistance of inmates from crime changed from deterrence and incapacitation to rehabilitation based on the respect for inmates' dignity as human beings.

The health of inmates in Scandinavia and some countries of Northern Europe is now a State concern, and their well-being seems to be considered as important as the wellbeing of the staff. Additionally, prison Staff are trained to be tutors and role models, rather than being prison guards. This suggests that there may well be design lessons from the Rehabilitation model that could be transferred to other contexts, which would help to addressing the third research question: "what are the key elements necessary to add or modify in the dynamic of each of the mentioned prison models as part of a wider framework to improve and/or prevent the decrease in the consideration of health and well-being in the design of the prison" RQ3. However, these lessons need careful investigation particularly in relation to the view of the staff who are responsible for prison design and management, in order to develop a design framework —as expressed by the fourth objective of this study— that is feasible to apply in any prison model.

To provide a comprehensive background for that investigation, the next Chapter will provide evidence that complements the historical analysis of health and well-being in prison design by addressing contemporary concerns.

Chapter 4: Health and well-being in prison policy and research

4.1.- Introduction

This chapter constitutes the first of two chapters that focus on unveiling the research gap that justifies the current research, by critically evaluating the discourse on prison design in relation to health and well-being. The chapter will start by exploring the evidence showing how inconsistencies between the physical environment, the organisational objectives, and the role played by staff —their intentions, belief and actions— affect inmates' personal development, and as a result, push down the odds that offenders can desist from crime. Additionally, it will assess efforts made at the international level to position health and well-being in prison policy and procedures —through international policy debates and subsequent national policies— in order to show the inadequate response of prison services, and the low attention given to the subject by the academy. Finally, the chapter will discuss the latest research in prison design, aiming to show the current gap in this area about health and well-being.

4.2.- The importance of health and well-being in prisons and prison design

In all three prison models considered in this study, it is possible to observe the existence of institutional efforts to positively change the lives of those in prison and to provide rehabilitation (Burnett, 2008), or facilitating the social re-integration of inmates by providing them tools to be active members of society. For instance, by bringing them working skills, or teaching the inmates how to live a life free of crime (Griffiths, 2007). However, there is also an evident problem of coherence between what is said (the aims), what is decided in terms of how those aims must be implemented (including the prison design projects), and what is done. According to McNeill and Schinkel (2016), achieving rehabilitation requires a strong coherence between three elements: the context in which the programs are implemented; the programs themselves; and the intentions, beliefs and actions of the supervisors. When each of these elements is sending different messages, this coherence is broken, and the goal is not reached (McNeill and Schinkel, 2016). The terms rehabilitation, social reintegration, and re-adaptation have been used interchangeably referring to either a process or an aim. Rehabilitation, as institutional processes consider the provision of programs, treatments or interventions necessary to "enable individuals to overcome previous difficulties linked to their offending so that they can become law-abiding and useful members of the wider community" (Burnett, 2008, p. 243). However, when rehabilitation is mentioned as an aim, it refers to desistance. An offender who desists from crime is defined as a person who, after being punished with a legal sanction, and as a result of successful programs and interventions, can be considered free of the possibility of reoffending, and finally return to his/her place in the community without being considered a risk for the society (McNeill *et al.*, 2012).

Theorists today have addressed desistance from five different perspectives. First: as the result of successfully patching up the broken connection between the self and the society (Sampson and Laub, 2003). Second: by developing a coherent, pro-social identity (Maruna, 2001). Third: producing cognitive changes in outlooks and thinking of the offender (Giordano, Cernkovich and Rudolph, 2002). Fourth: the result of an internal conversation during which offenders weigh up the pros and cons of desisting, and how they see themselves and how this fits into their values (Vaughan, 2006). And fifth: the process in which offenders choose to try to become something/someone else that is different from how they currently are (Paternoster and Bushway, 2009).

Liebling and colleagues have found that promoting personal development plays a significant role in successful desistance (Liebling et al., 2012). Prisons have to provide an environment that helps prisoners to stop offending behaviour, preparing them for release and developing their potential (Liebling, 2012, p. 7).

Recent research suggests that positive physiological changes triggered by favourable environmental conditions —are crucial to reach the minimum levels of self-efficacy and capability, needed for success in rehabilitation (Michie et al., 2014, Karthaus, Block and Hu, 2019). Additionally, a strong common characteristic of a good prison is that they promote human well-being (Liebling, 2011), and enable positive change through identity reconstruction (Stevens, 2012). These prisons promote flourishing through enhancing positive emotions, allowing engagement in daily tasks, promoting positive relationships, finding meaning and promoting the accomplishment of personal goals. Indeed, when talking about the process of being prepared for release, prisoners chose the term 'personal development' in preference to terms like 'rehabilitation' because the former reflects a less limited emphasis on growth and 'becoming' (Liebling, 2012). The Prison Research Centre of the University of Cambridge (Liebling, 2011) has also developed a measurement of the quality of prison life (MQPL) which contains a domain related to personal development. Few prisons scored well in the domain of personal development, but there was a statistically significant positive correlation between personal development and factors such as:

- Support and encouragement;
- Humanity (an environment characterised by kind regard and concern for the person);
- Staff confidence and competence in the use of authority;
- Transparency and responsivity of the prison system and its moral recognition of the individual; and
- Organisation and consistency (Liebling, 2011).

These findings support the thesis that to promote rehabilitation and desistance, the promotion of inmates' well-being is vital. Indeed, there must be a coherent message between three core elements:

- A) The objective pursued (providing the appropriate programs that help offenders to develop positive emotions, engagement, and accomplishment),
- B) The right staff approach to the goal, through aligned intentions, beliefs and actions (a social environment that promotes well-being as human flourishing), and
- C) The right context, as the adequate physical environment in which the process takes place (a physical environment that promotes the health and well-being of users).

The built environment has an essential role in promoting the health and well-being of inmates and providing them with the essential skills for flourishing, being rehabilitated and therefore desisting from crime. In turn, the prison regime, as the norms and manners that rule the daily routine will vary from one prison model to another and communicate to inmates their position in the social fabric of the prison (Jewkes, 2018). Last but not least, the concern that the authorities place in the maintenance of the originally planned living conditions, through the provision of the adequate number and qualification of staff and the economic resources for maintenance of the physical environment, play a crucial role. The occupants internalise these messages. When talking about the Safety model prisons, Jewkes notes that "hard architecture - [with] bars on windows, concrete walls, hard-

surface floors, drab colours, indestructible and uncomfortable furniture - not only destroys the prisoner's (or patient's) self-esteem, and influences the ways in which staff think of and behave towards the people in their custody and care, but also determine certain types of identity and behaviour." (Jewkes, 2018, p. 3).

In turn, the overcrowding and the lack of resources to maintain the buildings in the Hybrid and Repressive prison model send a clear message of apathy and lack of interest for inmates health and well-being by the authority, and contempt from the society.

Most prison systems aim for rehabilitation and/or desistance, but none of them mentions prisoners' well-being as a necessary element in reaching these aims. The rehabilitation of prisoners is the primary objective of modern European penal policy through the European Prison Rules and the European Court of Human Rights (Ovey, 2014). The mission of the Chilean prison service is to take care, monitor, and contribute to the social reintegration of people who are deprived of their liberty (Gendarmería de Chile, 2019). Similarly, the Mexican prison service aims to re-adapt those sentenced to imprisonment and provide treatment to juvenile offenders (O.A.D.P.R.S., no date). The Peruvian prison service aims to positively reintegrate inmates into society (Instituto Nacional Penitenciario del Peru, no date). The Norwegian correctional service states that their task is to ensure proper execution of remand and prison sentences, with due regard to the security of all citizens and attempts to prevent recidivism by enabling the offenders, through their initiatives, to change their criminal behaviour (Kriminalomsorgen, no date). The goal of the Finnish prison service is defined as to contribute to the security in society by maintaining a lawful and safe system of enforcement of sanctions and reduce recidivism and endeavour to break social exclusion that also reproduces crime (Criminal Sanctions Agency, no date). The UK Prison Service statement of purposes is to "...carry out sentences given by the courts, in custody and the community, and rehabilitate people in their care through education and employment" (HMPPS, no date). In the USA, the Federal mission is "to protect society by confining offenders in the controlled environments of prisons and community-based facilities that are safe, humane, cost-efficient, and appropriately secure, and that provide work and other self-improvement opportunities to assist offenders in becoming law-abiding citizens" (Federal Bureau of Prisons, no date). Despite these official statements, in most cases there is a significant difference between the declared purposes of care and rehabilitation, and what happens in reality through practice (Craig, 2004; Meseret, 2018). None of these policies tackles the well-being issue directly, as if the very concept of promoting prisoners' well-being were inconceivable.

The apparent denial of inmates' health and well-being by prison services contrasts strongly with the efforts of the international community to promote them and implement them as policies as discussed in the next section.

4.3.- International concerns related to health and well-being in prison

In 1996, a presentation at the first international conference on Healthy Prisons ignited the discussion of health into the prison settings (Smith, 2000):

"In the World Health Organisation (WHO) we have for too long now overlooked the problem of health in prisons. The 'Healthy Cities' Project has now been running for over ten years, and there was no way, ten years ago, we could have predicted the potential of that project. Healthy Cities has become a movement, a global movement. And I would like to think of an occasion like this that it is possible to start a similar movement as we did for Health Cities but now for prisons." (Goos, 1996, p. 20, cited in Woodall, (2016)).

In 2003, a WHO Declaration on Prison Health as Part of Public Health was adopted (WHO, 2003). This recognised the right to physical and mental health and well-being, and that "In all countries of the world, it is people from the poorest and most marginalised sections of the population who make up the bulk of those serving prison sentences, and many of them, therefore, have diseases such as tuberculosis, sexually transmitted infections, HIV/AIDS and mental disorders" (WHO, 2003, p. 2). Members agreed to develop close working links between their Ministries responsible for the penitentiary system and the Ministry of Health in their countries to meet minimum health requirements for light, air, Space, water and nutrition. However, there is no reference to health promotion, well-being, or settings-based approaches.

In 2007 the WHO Regional Office for Europe edited a volume of guidelines for health promotion in prison settings (Møller et al., 2007) which is the first to mention well-being. The guidelines establish that Prison administrations have a responsibility not simply to provide health care but also to establish conditions that promote the well-being of both prisoners and prison staff. It also states as a principle for prison administration, that

prisoners should not leave prison in a worse condition than when they entered.

Another publication on Prison Health Setting in 2014 (Møller, Galea and Udesen, 2014) aimed to improve the health of those in prison and to reduce both the health risks of imprisonment and risks to society. However moving prison health management from the beginning of the 2007 guide, right to the end of the 2014 publication, is a step backwards in the WHO efforts to consolidating the movement (Woodall, 2016).

The initial euphoria and commitment in launching the Health Promoting Prison (HPP) movement on the back of these publications seem to have lost strength over time, with it focusing more on practical lifestyle interventions and a worrying decrease of support for health-promoting prisons (Woodall, 2016). This is even clearer in a global UN sustainable agenda plan of action which contains 17 Sustainable Development Goals (SDGs) to stimulate action until 2030. SDG 3 is to: "Ensure healthy lives and promote well-being for all at all ages" (United Nations, 2015) and includes targets such as the end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases, among others. Despite conclusive evidence that prisoners face disproportionate levels of chronic ill health, disease and disability (WHO, 2014), nothing is said in the SDGs about prisons and prisoners.

Prison design has also received remarkably little academic attention over the years (Moran, Jewkes and Turner, 2016) despite international policy efforts. The next section will present some of the last research development in prison design, to further demonstrate the gap between the aims of prison design and the aims of improving health and well-being as a necessary element for rehabilitation and desistance.

4.4.- Latest developments in prison architecture research

Academic interest in prison architecture specialisation¹⁷ and research is now increasing (Moran, 2012, 2013, 2015; Beijersbergen et al., 2014; Grant and Jewkes, 2015; Vessella, 2017a, 2017b; Fransson, Giofrè and Johnsen, 2018; Fridhov and Grøning, 2018; Jewkes,

¹⁷ Initiatives such as the eight-months specialisation course in judicial and prison architecture, recently launched in Argentina by the Universidad Abierta Interamericana (Inter-American Open University) constitute an excellent example of possible academic involvement in the improvement of prison design. The Argentinian program is the first on its kind in Latin America and possibly in the world. Initiatives in this line would improve the possibilities of prioritisation of health and well-being

2018), security (Drake, 2012; Ricciardelli and Sit, 2016), fear and violence (van der Helm et al., 2011; Wener, 2012; Griffin and Hepburn, 2013; Morin, 2016) and how the built environment affect inmates' life (Hancock and Jewkes, 2011; Jewkes and Moran, 2015; Moran, Jewkes and Turner, 2016; Moran and Turner, 2018; Turner and Moran, 2019), their well-being (Bierie, 2012b; Fraser, 2014; Karthaus et al., 2017) and their rehabilitation and desistance on crime (Gleeds Head Office, 2016).

In 2016, Gleeds —a UK based independent property and construction consultancy company— released a report called 'Rehabilitation by design' (Gleeds Head Office, 2016), with the help of leading academics and expert in the field. In five chapters the book suggests ways to integrate rehabilitation and prison design, by building a culture of hope and aspiration, revising the needs for bringing the outside world inside the prison, the various purposes of UK prisons¹⁸, and how to reduce operational and construction costs while supporting rehabilitation. Although this report is one of the first attempts to look to the Scandinavian experience and learn from it, there are little references to direct scientific evidence that could support their recommendations.

Karthaus et al., (2017) recently published a report called 'Well-being in prison design. A guide'. The document contains a limited literature review on architectural factors that could improve well-being in prison design in the UK, as well as providing design guidance to implement the research findings in prison projects. Although it attempts to identify how to improve the well-being of inmates and staff, the design guidance shows little improvement in the exemplars shown. Indeed, the propositions are based on layouts that have been proved inefficient in terms of prison security as well as providing poor safety and well-being to inmates (Nadel and Mears, 2018). This research also considers only the UK context, which corresponds to just one of the four mentioned prison models.

The work of Jewkes, in particular, has focused on the need to re-think carceral design in England and abroad (Grant and Jewkes, 2015; Hancock and Jewkes, 2011; Jewkes, Crewe and Bennett, 2016; Moran, Turner and Jewkes, 2016; Jewkes and Moran, 2017; Jewkes, 2018). In her publication 'Just design: Healthy prisons and the architecture of

¹⁸ As detox, mental heath, and elderly facilities, as well as emergency department, worship and faith, and staff training places

hope', Jewkes (2018) interviews of 14 prison architects who have designed prisons in England and Wales, Scotland, Ireland, Norway, Denmark, Australia and New Zealand. The study shows that current prison design is heavily driven by social perception about punishment, instead of promoting health and well-being. Jewkes states that architects show a lack of empathetic engagement with the users, and the strong influence of previous development in prison design is ensuring that lessons are never learned, and mistakes are perpetuated. Her findings suggest that politicians and policymakers believe that the heavily surveilled prison model is the most effective way of maintaining order and the most profitable in terms of obtaining votes for future elections (Jewkes, 2018). However, there is no mention in the publication of policy-makers actually being interviewed. It is also argued that prisons across the world are being designed to be hard, restrictive and ugly, with a view of the 'prisoner' as the dangerous 'others' (Jewkes, 2018, p. 16). Although the Norwegian prison 'Halden' is presented as an example to be followed in the promotion of inmates' well-being and desistance, the research does not explore other approaches that policymakers, prison designers and prison administrators take in relation to well-being. Neither does it consider wider prison models operating in the USA and other parts of the world beyond Europe, Australia and New Zealand. Moreover, her study aims to specifically critique carceral design in the UK, rather than to consider prison regimes and built environments more generally.

Moran, co-leads the development of 'Carceral geography' (Moran, 2012; Jewkes and Moran, 2017) as a new sub-discipline of human geography which researches into prisons, and analyses the prison process of "what happens - in England and Wales - between a decision being taken that a new building is required, and the ground is broken to create it" (Moran, Turner and Jewkes, 2016, p. 1). One British study found that the position of architects, as meaning-maker and guarantor of the promotion of health and well-being through design, becomes relegated and blurred by underlying forces in the dynamic of procurement, commissioning, tendering, project management and bureaucratisation that characterise the current relationship between the State and the desire to win the bidding by the participants of the tender. This research highlights the marginalisation of the architect within increasingly technological lego-like architectural solutions. It argues that the architect should have a more prominent role in balancing a humanistic and meaning-based view of design in equilibrium with the tight regulations and security perspectives (Moran, Turner and Jewkes, 2016). This study constitutes a big step forward in the

understanding of the underlying forces in the decision-making process of prison design in England and Wales. However, it is limited to the safety model and more specifically the British context, without any discussion about the health and well-being factors that should be present in the design.

Nadel and Mears (2018) show that the architectural designs in the USA prison systems are primarily focused on improving safety, as well as on creating some level of retribution, in a cost-efficient manner. The study, however, found relatively little theoretical or empirical evidence that these designs actually achieve their goals. Moreover, the study makes no mention of rehabilitation (or desistance) as a model or the promotion of health and well-being within prisons.

Turner and Moran (2019) as part of a wider research in prison architecture and the lived experience of carceral spaces, explored the many meanings and effects of water in the carceral life. In their paper, they explore how water can have beneficial outcomes when is used to induce calm— such as in blue landscapes views— or psychologically harmful consequences when is used as punishment tool or in the presence of even the smallest malfunctions. Although the paper explores a narrow area of carceral environment, it is an important one in terms of how the inadequate management of prison facilities result in additional and unnecessary pain on inmates.

There is also increasing interest among scholars in promoting a meaningful, articulated, and theoretically driven rationale for the carceral design, with a humanistic perspective that effectively addresses the goals of rehabilitation and desistance. However, most of this research addresses health and well-being in prison design as the aim to be followed such as in Karthaus et al. (2017) and Karthaus (2018). These studies, however, do not pay attention to the different powers involved in the interplay of forces during the process of carceral design, how the different entities involved interact, what priorities are interacting and why this interplay of forces produces a different outcome in each prison model. Moreover, although some research attempt to make an international comparison in prison design approaches in order to transfer design practices—such as Jewkes (2018)— the existing research is heavily focused on a handful of developed countries, without recognising the different nature in terms of the prison model to which they belong, and neglecting the reality of developing countries. There is a research gap in understanding international perspectives and priorities in each of the Moldan's three prison models, particularly among the high-level staff in prison services and prison

designers, as the two main entities that interact during the decision-making process of prison design. No studies are investigating the commonalities and differences in the approaches between designers, from each three prison models, towards health and wellbeing in prison. There is also a gap in understanding the differences in the approach of prison authorities in each of the three prison models towards the promotion of health and well-being in prison design. Moreover, there is still a gap in understanding what considerations have to be taken into account to reposition critical prison design factors to improve health and well-being in prison projects internationally.

In summary, there is no single study on prison architecture that takes into account the multiple prison model context and addresses the causes and circumstances of when, how and why health and well-being factors are considered or disregarded by the entities involved in the associated design processes. These research gaps lead to the three research questions considered in this study:

- i. Which design factors should be considered in the promotion of optimal health and well-being in prison design, and why?
- ii. Which factors of design are considered important by decision-makers in the promotion of health and well-being in prison services of the Rehabilitation, the Safety and the Hybrid model, and why?
- iii. What are the key elements necessary to add or modify in the dynamic of each of the mentioned prison models as part of a wider framework to improve and/or prevent the decrease in the consideration of health and well-being in the design of the prison?

4.5.- Sub-conclusion

This chapter explored and evaluated concepts of health and well-being as crucial elements in the goal of rehabilitation and desistance of inmates. The chapter shows how the incoherence in the threefold message sent by the prison system to inmates (organisational objective, staff intensions, believes and actions, and the adequate physical environment), inhibits the success of rehabilitation programs and reduces the possibilities for desistance of crime by inmates.

Furthermore, the public discourse of prison authorities in all three of Moldan's prison models presents rehabilitation and reducing recidivism as their fundamental goals at a national level, but there is no mention of concepts of health and well-being in their policies or organisational mission statements.

Internationally, the efforts by WHO have been recently backed by research studies interested in developing the notion of promoting health and well-being through prison design. However, there is still little knowledge of how the carceral environment affects the health and well-being of inmates. There is also no research about the different approaches that both designers and prison authorities take in relation to inmates' health and well-being during the process of prison design across the three prison models considered in this study. Finally, no information was found concerning the underlying forces in the decision-making process, preventing the consideration of health and wellbeing in the design of prisons in each prison model. These research gaps led to three key research questions being identified, which this thesis will address.

To help to answer the first of these questions next chapter will identify the critical health and well-being factors that must be considered in prison design. Chapter 5: Health and well-being factors

5.1.- Introduction

While there is relatively little research on prison architecture, and the majority of it is historical (Moran, Jewkes and Turner, 2016) there are many research areas which can inform the design of prison architecture to promote health and well-being, such as environmental psychology, healthcare design, housing and psychiatric hospital design research (Jewkes, 2018). In order to address the first objective of this study and identify the architectural factors which can create healthy environments and promote well-being in prison design, this chapter will draw on PERMA theory to review the evidence of how the built environment can promote the health and well-being of their users.

5.2.- Environmental stressors to health

Environmental stressors to health in normal life condition can be augmented as a result of the conjunction of non-natural factors in prisons, such as:

- The involuntary permanence of a place (Mckendy, 2018),
- The reduced areas within those places (Sibley and Van Hoven, 2009),

The loss of identity and autonomy (Foucault, 1975) for prisoners over small variations in environmental conditions can result in considerable improvements or unacceptable detriments in prisoners physical, psychological or social well-being (Fairweather, 2000a; Jewkes, 2018). Accordingly, a literature review was conducted to highlight the factors that must be considered into the design of the prison, to specifically promote prisoners' health and foster their positive emotions, engagement, positive relationships, meaning or purpose in life, and accomplishment (PERMA theory).

Environmental psychology research has demonstrated that environmental stimuli affect both moods (Knez, 2001), and behaviour (Webb, 2006). Good daylight levels, good ventilation or the provision of open space, have a positive impact on mental well-being, physical health and positive emotions (U.K. Green Building Council, 2016). However, these design features are often not well considered in prisons with inmates continuously exposed to sensorial physical and psychological stressors, potentially harmful for inmates and staff health and well-being (Bierie, 2012b) as discussed next.

5.2.1.- Physical environmental stressors

As humans have a limited capacity for processing information, sensory or information overload results in selective attention, ignoring low-priority inputs (Sundstrom et al., 1996). Both total elimination or overexposure to environmental conditions such as noise, light, air quality, temperature, and physical environment stressors over certain levels of acceptance, affect biological and psychological human performance (Evans, 2003; Souza, 2012). These considerations have a particular impact on prison design and should be carefully considered, especially when designing living areas and are discussed next.

5.2.1.1.- Noise and well-being

The excess of noise has been strongly linked with the decrease in well-being and health (Stansfeld and Matheson, 2003) and can lead to psychological alterations in prisoners. Prisons are 24-hour institutions where noise is an omnipresent element. Its effect can be dramatically augmented due to the echoing produced by the overuse of iron bars, metallic surfaces and the absence of noise dampening materials. Rostad and Witke (1997) found that noise is one of the most critical contributors to tension or stress within prison staff. One warden in this study said: "Noise levels can be used to mask aggressive inmate behaviour in the housing unit. When a flushing toilet drowns out calls for help, the safety of my staff is in danger, background noise forces staff and inmates to raise their voices just to be heard. Raised voices increase tension, and the ability to maintain a safe environment is undermined" (Rostad and Witke, 1997, p. 2). He also said that "Noise can jeopardise the delivery of programming and treatment... To get results, we need to get through to inmates, and we cannot if we must compete with amplified noise levels in normal unit operations" (Ibid). Noise can also cause confusion and anxiety, resulting in a reduction of wayfinding ability among people with mental issues (Faith et al., 2015). Although violence can be significantly lower in prisons with less noise (Bierie, 2012a), there is relatively little research measuring noise conditions in prisons and its psychological effect on staff and inmates.

Positive emotions can be affected by noise through a decrease in life satisfaction (Van Praag and Baarsma, 2005). This factor is essential when designing inmates accommodation areas because hope and optimism are two kinds of positive emotions that have been linked to how people perceive their lives. Optimism is linked to higher life

satisfaction, whereas pessimism is related to symptoms of depression (Chang and Sanna, 2001). Noise interference with daily activities, feelings, thoughts, sleep, or rest, can result in negative responses, such as annoyance, anger, displeasure, exhaustion, and stress-related symptoms (Basner et al., 2014). Excessive noise levels and the tendency to annoyance may be a risk factor for psychiatric morbidity (Stansfeld, 1992).

However, scientific knowledge about noise seems to be underestimated by prison design guidance. In the USA, the American Jail Asociation (AJA) sets the maximum noise level for day rooms during daytime at 65 dbA (Krasnow and Parker, 1998). The American Correctional Asociation (ACA), however, sets the maximum level in 70 dbA during the day and 45dbA at night (ACA, 2003). Neither guide refers to any research. Moreover, even recent global UN technical guidance on prison planning does not mention any dbA level of acceptance (UNOPS, 2016).

The most important non-auditory effect of noise is related to sleep quality (Basner et al., 2014) where pressure levels as low as LAmax¹⁹ 33 dB can induce physiological reactions (Basner, Samel and Isermann, 2006). Levy-Leboyer and Naturel (1991) found that noise is especially irritating at night and particularly so when there is evidence that the perpetrator of the intrusive noise is unconcerned and cannot be controlled (e.g. another prisoner or guard). Nocturnal noise exposure might be more relevant to the creation of long-term health outcomes, such as cardiovascular disease, than daytime noise exposure (Jarup et al., 2005).

5.2.1.2.- Light as a health and well-being stressor

5.2.1.2.1.- Light in prisons standards

Appropriate lighting is a critical feature in good design and a crucial aspect in healthy prison environments. Whether it is artificial light, daylight (also called Natural light), or direct sunlight (direct exposure to solar rays on the skin), it has a direct effect on physical and mental well-being. However, prison design standards barely consider setting accurate lighting conditions. National standards in the USA state that for inmate cells, the

¹⁹ LAmax is the maximum A - weighted sound pressure level recorded over the period stated

artificial light must be at least 215 lx²⁰ at desk level (ACA, 2003) and that artificial light levels should preferably reach 238 to 753 lx at 30 inches above the floor surface (Kimme, Bowker and Deichman, 2011). European prison standards only state that "artificial light shall satisfy recognised technical standards" (Council of Europe, 2006, p. 9) with no specific reference to prison conditions.

5.2.1.2.2.- Non-visual effect of light

People can live with the absence of daylight for long periods without being aware of the effects of lack of natural light (Bellia, Barbato and Pedace, 2012). However, low positive emotions have been associated with insufficient exposure to sunlight (Lambert et al., 2002). Although intuited for years, it was not until 2002 that a real biological connection between light and body functioning was found (Berson et al., 2002). Light signals are processed and passed from the eye retina to the pineal gland, which is responsible for secreting the hormone melatonin mainly during the dark hours of the 24-hour cycle. Melatonin, commonly known as the hormone of sleep, regulates the sleep/awake body system synchronising several psychobiological functions (Braun et al. 2009). Cortisol hormones are produced mainly during the early morning, increasing blood sugar level and enhancing the immune system, thus preparing the body for activity. Because of this, cortisol is called a stress hormone and can be imbalanced due to excessive lighting conditions.

5.2.1.2.3.- Artificial light: much more than just illuminance

Inadequate exposure to light can negatively affect staff and inmates moods, levels of depression and productivity. Research in artificial light has found interactions between behavioural responses and illuminance (McCloughan, Aspinall and Webb, 1999), correlated colour temperature (Knez, 1995), intensity and time of exposure (Juslén and Tenner, 2005; Wong et al., 2014) and attention needs to be paid to all of these mentioned light features, not just illuminance levels. Lack of exposure to light results in alteration of

²⁰ Light level is measured in lux (lx), which is the International System. It is a unit of illuminance and luminous emittance, which is used to measure luminous flux per unit area. In other words, the intensity of light in a given location, as perceived by the human eye (Boyce, 2014).

the biological clock while exposure to blue light- usually present in LED lamps- in as little as 136 lux during night hours, can vitally imbalance melatonin and cortisol levels (West et al., 2011). This can have a major impact when inmates are exposed to artificial 'night light' in cells and dayrooms that do not allow to be shut off by inmates (ACA, 2003, p. 160).

Conversely, good lighting can promote positive emotions. Lighting that mimics the daylight spectrum has treated Seasonal Affective Disorders (SAD) (Even et al., 2008). Bright-light treatment led to a more than 50% decrease in the Hamilton Rating Scale for Depression (HRSD) in a study by Rao et al. (1992) producing an increase in subjective mood and alertness (Leichtfried et al., 2015). Technological advances now allow the selection from an extraordinarily wide range of light emission sources to suit the needs of different areas of prisons. However, Fluorescent lighting has shown increased fatigue ratings relative to LED and with slower response times on tasks requiring spatial and verbal memory (Hawes et al., 2012). Conversely, the narrow wavelength spectrum of LED has been mentioned as harmful to human health (Mercola, 2016). The goal in terms of health and well-being must be a balanced exposure to both blueish (LED) and reddish wavelengths (Fluorescent) using these types of lighting.

5.2.1.2.4.- Sunlight as a nutrient for life

Insufficient exposure to sunlight results in vitamin D deficiency (Boyce, Hunter and Howlett, 2003), causes several problems which affect positive emotions among inmates, and precipitates and exacerbates osteoporosis and fractures in adults associated with increased risk of depression, autoimmune diseases, hypertension, and infectious diseases (Holick and Chen, 2008). In the UK and the USA prisons, inmates show poor intake of vitamin D (Collins and Thompson, 2012). A more recent study in the USA found that prison inmates were mainly either vitamin D deficient (33%) or vitamin D insufficient (34%).

Additionally, a higher proportion of black inmates, regardless of their incarceration level, had a lower vitamin D level compared to the non-black inmates (p=0.015) (Nwosu et al., 2014). These findings show that prison standards to ensure adequate access to sunlight are not being met.

5.2.1.2.5.- Daylight and human responses

Natural light has a range of influences on prisoners positive emotions and meaning with appropriate exposure being critical for inmates health and well-being (Kreitzer and Koithan, 2014). Studies on human circadian rhythm have found that the human body clock actually has a day cycle of 25 hours. This cycle is reset every time humans are exposed to the bluish part of the spectrum of light, especially sunrise(Boyce, 2004) or sources of artificial light which also trigger this process, potentially at the wrong time, leading to a disrupted rhythm.

ACA Standards only state that "All inmate rooms/cells [must] provide access to natural light." requiring in dayrooms "a minimum of 12 square feet of transparent glazing with a view to the outside, plus two additional square feet of glazing per inmate whose room/cell does not contain an opening or window with a view to the outside" (ACA, 2003, pp. 41-42). Inmates confined in cells for more than ten hours a day have to have access to natural light via a window or opening of at least three square feet with a view to the outside (ibid). Although the NIC's Jail design guide recognises that natural light contributes to good physical and mental health, it only vaguely states "the need or desire for natural light in housing areas should be balanced against security concerns" (Kimme, Bowker and Deichman, 2011, p. 256) warning that providing natural light can create potential security problems such as escape; the passage of contraband; vandalism; view conflicts with persons outside the facility; or view conflicts between housing units (ibid, p. 158). In the European Prison Rules, natural light is only vaguely mentioned in one rule (18.2) where "the windows shall be large enough to enable the prisoners to read or work by natural light in normal conditions and shall allow the entrance of fresh air except where there is an adequate air conditioning system" (Council of Europe, 2006, p. 9). Neither ACA nor European Prison Rules mention the word sunlight, and the NIC's Jail design guide only mentions it in association with exercise areas, although it recognises that direct exposure to sunlight is especially beneficial to both emotional and physical well-being (Kimme, Bowker and Deichman, 2011).

The prefered level of exposure to light for circadian rhythm entrainment is 4000 lux for 8 hours/day (Duffy and Wright, 2005) but institutional settings such as prisons, may offer far less lighting than the minimum required.

5.2.1.3.- Quality of air and thermal comfort:

Prisoners typically have a high prevalence of tuberculosis (TB) related to the normal population, and the difference is even higher in many low-income countries (Fazel and Baillargeon, 2011). TB in prisons is a primary concern among many European countries and the WHO (Møller et al., 2007). The quality of indoor air is an influential variable of health and well-being through communicable diseases and Prisons that house a large number of people are high-risk places of contagion (Aguilera et al., 2016). Designers need to be more careful than in normal buildings when considering the physical conditions and air circulations.

Thermal comfort has been associated with well-being (Rehdanz and Maddison, 2005), and health (Hawkins, 1981). This is particularly important in prisons, given a long time that prisoners may spend in their cells. In a controlled environment, the increasing operative temperature can have a slight but significant adverse effect on general Sick Building Syndrome (SBS) symptoms, such as the intensity of a headache, well-feeling or fatigue (Kolarik et al., 2007). A lack of control of temperature and humidity will contribute to the day-to-day variation in complaints of illness and discomfort (Hawkins, 1981). Additionally, there is strong evidence that positively correlates the increase in temperature with suicide rates (Gao et al., 2019). The management of temperatures in prison could be an essential tool to improve violence control. However, there is not sufficient research suggesting the optimal temperatures for prison settings (Krames and Flett, 2005).

5.2.2.- Psychological environmental stressors

Psychological stressors in prisons are the result of the interaction of people with the built environment and the presence/absence of the natural environment and need to be understood in terms of how they can affect the well-being and health of inmates, and why.

5.2.2.1.- Space and well-being

Overcrowding affects many prisons in several countries and states have agreed to make efforts to reduce it (WHO, 2003). However, even short-term exposure to overcrowded prison environments has revealed significant negative impacts on positive emotion and psychological distress (Evans, 2003). Crowding can directly affect the ability to develop positive relationships, leading to social withdrawal, reduced pro-social or cooperative behaviours, and stress-related impacts on physical and mental health (Wener, 2012).

Moreover, overcrowded prisons increase the risk of aggression and affect feelings of safety. In order to prevent this situation, inmates have to be able to maintain distance from other inmates if they want. An increasing level of available Space in prison units has been associated with a decrease in aggressive incidents (Rago, Parker and Cleland, 1978). Conversely, lack of Space and privacy has been linked with increased aggression, especially in men (Zimring, 1981). The harmful effects of overcrowded prison exposure are not eliminated immediately after changing the environment. Higher rates of sick call were found among prisoners exposed previously to high-density conditions than among prisoners who had resided in lower density conditions (Wener and Keys, 1988). Illness, complaints, and perceived crowding increased as the number of inmates increased (Fairweather, 2000b).

There is no agreement on what an adequate size of a prison cell should be. It depends on the number of occupants, the level of risk, the layout of the living area, and the cultural nuances in each country. The UN recommends a minimum Space of 5.4 m² for individual cells and 3.4 m²/person in multiple cells with single beds or 2.6 m²/person when using double bunks and 2.3 m²/person with triple bunks (UNOPS, 2016). The ACA standards In the USA, however, state that single cells must have 3.25 m² (35 square feet) of 'unencumbered Space' defined as usable Space that is not encumbered by furnishing or fixtures (ACA, 2003).

The European Prison Rules do not define a space standard, suggesting that 9 to 10 square metres is a desirable size for a cell for one prisoner (Council of Europe, 2006). However, the Committee of Prevention of Torture (CPT) states the minimum standard for personal living Space in prison is only 4 square metres in shared accommodation and 6 square metres for an individual prison cell with at least 2m of Space between walls and 2.5m between floor and ceiling of the cell (Council of Europe, 2015). This can be seen as a big step backwards in the definition of adequate humane space in prison.

Brazil is the only South American country that has prison design space standards; a minimum area of 6 square meters per individual cells with a minimum radius of 2 meters

(Ministério da Justiça do Brasil, 2011). For Casale and Plotnikoff, (1989), the minimum time an inmate must be allowed to spend out of their cell will depend on whether they are in a shared cell and if this meets the minimum per capita space requirement. However, in terms of well-being, it is argued that it is the number of people in the cell that triggers the unhappiness rather than Space per person(Fairweather, 2000b).

5.2.2.2. Privacy

5.2.2.2.1.- Privacy in prisons

Lack of privacy not only negatively affects positive emotions through exposure to degrading situations and loss of dignity but also can negatively affect human relationships, producing a loss of meaning in life through dehumanisation (Fairweather, 2000b). The absence of privacy can also make concentration (the base of engagement) a difficult task. It creates insecurity and stress (Fairweather, 2000b). Privacy has been defined as a balance between the level of interpersonal contact wanted and the contact available, allowed and achieved (Altman, 1975).

Inmates, in particular, need to feel they have control over the environment (or situation), in order to achieve a state of privacy. Privacy is not merely being alone, but when loneliness is desired (Wener, 2012). Many prison systems exacerbate invigilance to levels that undermine the privacy and dignity of prisoners. The lack of privacy in prison during normally private acts such as using the toilet, prevent inmates from having the sensation of a normal life through such dehumanisation (Fairweather, 2000b). Overcrowding is shockingly common in many prisons around de world where privacy is scarce, and the lack of space affects well-being, increasing the probabilities of poor physical health (Evans, 2003).

5.2.2.2.2. Key shared areas

The experience of being for the first time in prison is full of fear (McCorkle, 1993), and the feeling of unsafeness is even higher for those with mental disorders and recent prisonbased victimisation (Blitz, Wolff and Shi, 2008). Fear of crime, theft victimisation and physical assault negatively influences inmates and staff's well-being (Sulemana, 2015). Feelings of vulnerability and fear of crime have a major impact on positive emotions and indirectly in life satisfaction by decreasing people's sense of control over their lives (Adams and Serpe, 2000). Victims of crime systematically report lower levels of wellbeing, and, to some extent, higher levels of fear than non-victims (Denkers and Winkel, 1998).

Several examples show how this fear factor affects prison design. One relates to the common practice of designing open/shared toilets, which has been heavily criticised for producing a dehumanising effect (Fairweather, 2000b). Another study found that the area considered most dangerous were showers and segregation units, followed by travel to and from prison wings, with 23% of the prison population perceive danger in these places (O'Donnell and Edgar, 1999).

5.2.2.3.- Quality of views and contact with nature as well-being factors

Prison authorities in many places argue that contact with natural surroundings can be used for hiding weapons or drugs. Generally, the higher the security level, the lower the contact with nature, despite considerable evidence showing how the positive effects of having contact with and enjoying views of nature may improve well-being (Moran and Turner, 2018). Being surrounded by vegetation can significantly lower feelings of aggression ($p \le 0.05$) (Frances E Kuo and Sullivan, 2001) and the incidences of both violent behaviour and violent crimes committed by residents of relatively 'greener' buildings were significantly reduced compared to the incidences in buildings with less vegetation in surrounding areas (Frances E. Kuo and Sullivan, 2001).

Even exposure to pictures of nature has benefits on mood. Brooks et al., (2017) contrasted three studies of contact with nature vs built environment in fall and winter seasons using either actual contact or pictures of nature, measuring mood (positive and negative affect), and a standardised measure of stress, anxiety, and depression. The pattern of mood scores across the three studies suggests that both actual and pictorial nature contact benefits moods, but actual nature is more effective (Brooks et al., 2017). These findings are relevant in the existing prison buildings with little access to outside views and in places where inmates (and staff) have no access to actual views of nature.

In a study about the effect of views of nature, conducted in prison, half the prisoners had views of the prison courtyard and the other half could see the natural green landscape and forests surrounding the prison. The number of visits to the infirmary for legitimate health reasons was significantly less for patients with an 'outward' natural view ($p \le 0.05$) (Moore, 1981). Similarly, short-term recovery from stress or mental fatigue, faster physical recovery from illness and long-term overall improvement on people's health and well-being was identified as effects of exposure to natural landscapes (Velarde, Fry and Tveit, 2007). Gardening as contact with nature has also been used in prisons in the USA (Lindemuth, 2007) and the UK (Inglis, 2014), providing food and effective and rehabilitative therapy and positively affecting all the PERMA components of well-being.

5.2.2.4.- Colours and patterns

Contrary to what is commonly thought, the evidence supporting the influence of colour on mood has been both minimal and limited. A review required by NASA, to enhance the habitability of space-station interiors, examined 200 studies to determine the relative contributions of hue, saturation, and brightness (Wise and Wise, 1988). They argue that there are demonstrable perceptual impressions of particular colour applications that, in turn, can affect the experiences and performances of people in different settings. These may involve cognitive processing which produces positive emotions and meaning by creating a readable, understandable and predictable physical environment. "The key lies in not looking for the magic link between colour and emotions, but in exploiting the ways that colour affects one's appreciation of objects and people involved in the setting." (Wise and Wise, 1988, p. 51).

When looking to improving positive emotions and engagement, Wilkins (2015) argues that the combination and patterns used are more important than what colour is to be selected. His studies demonstrate that visual discomfort is associated with colour combinations and patterns that are rare in nature but quite normal in an artificial prison environment (Wilkins, 2015).

5.2.2.5.- Stress and well-being

Inmates in prisons are exposed to high levels of stress. First-time inmates struggle to understand prison rules and fellow inmates' codes (Schmid and Jones, 1993) and also, senior inmates are exposed to psychological pressure and chronic stress (Maitland and Sluder, 1996). Prison workers also demonstrate high levels of chronic stress (Brummel, 2012), risking a phenomenon referred to as 'burnout.' This is a term used to describe emotional exhaustion, detachment, and withdrawal (Paradise, 1983). Farber (1985)

identifies burnout as a condition that is produced when stress is not mediated, or the individual can not reduce it.

Burnout includes psychological symptoms as well as physiological symptoms by some (Nucho, 1985). If not carefully managed from the design, the built environment in prison is one of the elements responsible for causing stress. Research suggests that some diseases are psychosomatic and that exposure to the external surroundings, as a positive distraction, has a significant impact on human health (Antonovsky, 1996). The effect of well-being on health is not solely due to illness having a detrimental impact on health, but also to well-being having a salutary impact on health (Howell, Kern and Lyubomirsky, 2007).

5.2.2.6.- Quality of materials

Prisons seem to be permanently in need of more budget (Fan, 2011). In particular prisons in developing countries such as in Latin America, facing a continuous lack of budgets, which results in almost non-existent building maintenance, poor sanitary conditions and inhuman living conditions (Darke and Garces, 2017). The permanent exposure to such a depressive environment can prevent the generation of positive emotions, and meaning in life, damaging inmates' health and well-being. This damage is done directly to a critical contributor to the health and well-being of the people in their living place: the perception of the quality and design of the living area and their surrounding built environment. (U.K. Green Building Council, 2016). Indeed, living in an area which people perceive as deprived reduces subjective well-being (Guite, Clark and Ackrill, 2006).

The malfunction of the carceral infrastructure and the quality of the built environment can also negatively affect prisoners' well-being and personal relationships, as exposed by Turner and Moran, (2018) and also highlighted in a large-scale study in a prison setting, including 1,715 prisoners in 32 Dutch remand centres. The study found that prisoners housed in older units and units with more double cells were less positive about the officer–prisoner interactions (Beijersbergen et al., 2014). Another study, in USA prisons, but this time concerning prison staff, found that poor physical conditions in their prisons were detrimental for their well-being, resulted in more sick-leave and with increased levels of drinking and smoking (Bierie, 2012b).

5.2.2.7.- Sleep disorders

Sleep deprivation in prison inmates can be related to aggressive behaviour, violence, and anger (Vogler et al., 2014). Disorders like insomnia, depression and anxiety as a consequence of inadequate schemes of light exposure have been studied by several researchers (Wong et al., 2014). Sleep problems have also been associated with a decrease in both positive emotion and a sense of purpose in life (Steptoe et al., 2008), as well as lower life satisfaction (Ferrer-i-Carbonell and Gowdy, 2007), and deterioration of physical and mental health (Altevogt and Colten, 2006).

Kamphuis et al., (2012) found that some studies suggest that treatment of sleep disturbances reduces aggressiveness and problematic behaviour and that sleep deprivation increases angriness and the outward expression of aggressive impulses in humans. Treatment can be particularly helpful in a prison environment, where anger management is a vital issue (Vogler et al., 2014).

Overall aggression was found to be predictive of sleep quantity and quality in a sample of incarcerated adolescent male (Ireland and Culpin, 2006), highlighting, in particular, a role for hostility. For Kamphuis et al., (2012), the relation between sleep problems and aggression remains unclear most likely contributing to a loss of control over emotions, including loss of the regulation of aggressive impulses to context-appropriate behaviour. Conversely, 'optimal sleepers' (those reporting an average of 6–8.5 hours of sleep per night) have reported higher levels of environmental mastery, personal growth, positive relations with others and self-acceptance (Hamilton et al., 2007).

5.2.2.8.- The sense of coherence: Normality, and universal design

Antonovsky, (1987), argued that there were no such states as 'health' or 'illness' in a strict sense, but rather an 'ease-disease continuum' on which we all move back and forth during our lifecycle. He developed the concept of 'Sense of coherence' to explain why some people become ill under stress, and others stay healthy.

The Sense of coherence is composed of three components: Firstly, the ability of people to understand what happens around them; secondly, to what extent they were able to manage the situation on their own in their social network; and thirdly, the ability to find meaning in the situation. These three elements— comprehensibility, manageability 'sense of control', and meaningfulness— have been independently or collectively related

to well-being (Dilani, 2001b, 2008). The concept of Sense of coherence is completely aligned with PERMA as discussed next.

When inmates can understand the spatial configuration of prison layout (comprehensibility), they are more likely to increase social well-being because they feel safe. This state will improve positive relationships through social integration, social engagement, participation, and social support (Armstrong, 2000). As mentioned by Antonovsky (1987), feeling in control of situations (manageability) is an essential factor affecting stress levels and health conditions.

For example, blind-spots in common areas in prisons or the inability of inmates to manage to switch on and off their lights create an unnecessary and harmful psychological effect. Finding refuge in the housing area of the prison contributes to the sense of manageability and therefore, to the general well-being because it offers protection not only from the elements but also from negative social conditions (Evans, 2003).

A coherent design of common areas, as well as housing areas in prison, must provide the possibilities to find meaning in the daily prison situations, which is essential for improving both inmates and staff well-being. Among individuals with disabilities, Cooper and Rodman (1994) found that control over social aspects of the housing areas was more important than control over physical aspects in predicting satisfaction. Moreover, the high prevalence of mental disorders among the prison population (Fazel and Danesh, 2002), makes it even more important to consider ageing and dementia as a factor of design in prisons. A sense of coherence is a crucial aspect when designing for dementia. Wayfinding cues, efficient lighting, and colour schemes are key aspects that can improve the way people with dementia use the physical environment (Hadjri, Rooney and Faith, 2015).

5.3.- Summary of findings

The literature review in this Chapter has highlighted seventeen factors that have to be considered in prison design to promote health and well-being that are presented in detail in Appendix 1, including references to studies and recommendations from existent literature. However, Table 5-1 shows a condensed summary of these factors in relation to the associated harmful agents and the relevant PERMA component affected.

Factor	Stressors	Individual F	PERMA Com	ponents	
Acoustic Levels	Noise	Positive Emotions	Relationships	Engagement/ Flow	
Artificial Light	Inadequate exposure	Positive Emotions	Relationships	Accomplishm ent	
Indoor air quality	Airborn deseases	Relationships			
	Discomfort	Relationships			
Indoor bathrooms	Lack of privacy	Meaning	Positive Emotions		
	Fear	Engagement/Flow	Relationship		
	Feeling unsafe	Engagement/Flow			
Thermal comfort	Temperature	Relationships	Positive Emotions		
Colours	Non-natural patterns	Positive Emotions	Meaning		
	lack of Colours	Meaning			
Natural light and sunlight	Lack of sunlight	Positive Emotions	sitive Emotions		
	Lack of light	Positive Emotions	otions		
	Lack of full light spectrum	Relationships	ationships		
	Lack of exposure	Positive Emotions	ositive Emotions		
Contact with nature and sunlight	Lack of Nature	Positive Emotions	Relationships		
Quality of views	lack of views	Meaning	Positive Emotions		
Space	Lack of Space	Positive Emotions	Relationships		
Quality of materials and environment	Lack of Design	Relationships			
	Grime	Positive Emotions			
	Deprivation	Positive Emotions			
Stress control	Bad quality of sleep	Positive Emotions			
	Negative perceptions	Positive Emotions			
	Burnout	Positive Emotions			
Depression/suicide	Lack of Control	Positive Emotions			
	Sleep deprivation	Meaning	Positive Emotions		
	Deprivation	Meaning	Positive Emotions		
Mental healthcare	Sleep deprivation	Positive Emotions			
	Lack of Control	Positive Emotions			
Sense of coherence	Lack of Comprehensibility	Relationship			
	Lack of Control	Relationship	Positive Emotions		
Universal design	Lack of control	Accomplishment			
Antisocial behaviour	Sleep deprivation	Relationships	Positive Emotions		

Table 5-1: Factors to be considered in the design of health and well-being promoting prisons.
5.4.- Sub-conclusions

To address both the first research question— Which design factors should be considered in the promotion of optimal health and well-being in prison design, and why? — and the first objective of the study — To identify the architectural factors which can create healthy environments and promote well-being in prison design, this chapter has reviewed a comprehensive set of evidence regarding harmful agents, discussing their effects on the physical and psychological health and well-being of people. This includes identifying relevant findings of research in this area that apply to the prison setting and, identifying the architectural factors involved.

As a result of the review of scientific evidence, sixteen factors of design susceptible to harmful agents were identified, affecting one or more PERMA components. How these factors and their associated harmful agents are addressed by both prison designers and high-level staff of prison services, and how their views vary depending on the prison model, is still unknown and require further investigation. The methodology for this investigation is explained more clearly in the next chapter on the methodology.

Chapter 6: Methodology

6.1.- Introduction

The previous five chapters introduced the thesis, its philosophical basis and a review of research literature as state of the art and evidencing the critical design factors that are necessary to be considered to promote health and well-being in prisons design. The purpose of this chapter is to discuss the research approach and methods employed to achieve the aim and objectives of this study in the context of the identified state of the art in research. The current Chapter also offers a rationale for the research process undertaken to obtain the essential data and information needed to address the research questions.

6.2.- Research design

The following sections will present the research design based on the system proposed by Saunders, Lewis, and Thornhill (2015). The research design will start from the analysis of the research approach to theory development, following by the methodological choices; the strategy to be selected; the time horizon of the research; and the methods of data collection and analysis (Figure 6 1). This system provides an explicit and multi-layer guide through the decision-making process of the research design, from the initial ontological decisions presented in Chapter 2, to the analysis of the collected data.



Figure 6-1: The research onion. Source: (Saunders et al., 2015)

6.3.- Research approach to theory development

6.3.1.- Inductive, Deductive, Abductive and Retroductive approaches

Inductive and deductive approaches are the two main stratagems used to do this research (Creswell and Clark, 2011). In an inductive approach, the themes identified are strongly linked to the data themselves (Patton, 1990). In this approach, the researcher works from the "bottom-up, using the participants' views to build broader themes and generate a theory interconnecting the themes" (Creswell and Clark, 2011, p.23). The deductive research approach is useful when prior research on a specific phenomenon is intended to be analysed from a new perspective or with updated information that could be a contribution towards further understanding (Hsieh and Shannon, 2005) by retesting existing data in a new context (Elo and Kyngäs, 2008). Deductive researchers "work from the 'top-down', from theory to hypotheses to data to add to or contradict the theory" (Creswell and Clark, 2011, p.23). It is typically linked with a positivist ontology (Saunders et al. 2015).

Unlike the deduction approach, which moves from theory to data, or the inductive approach, moving from data to theory, abduction — also known as theoretical redescription— is a key step in Critical Realist analysis, in which empirical data are redescribed using theoretical concepts. This approach moves back and forth between everyday concepts and meanings combining deduction and induction, beginning with the phenomenon as a surprising fact to working out a plausible theory of how this could have occurred (Saunders, Lewis and Thornhill, 2015).

Retroduction is a further method of conceptualising, which requires the researcher to identify the conditions or the circumstances without which something (the concept) cannot exist (Meyer and Lunnay, 2013). Both abductive and retroductive inferences require the researcher to move between theory and data and to find the data that are not in keeping with the initial theoretical framework, which becomes significant to the discussion of the findings, moving the analysis of data beyond the original research premise. However, Meyer and Lunnay (2013) argue that unlike abductive inference, the researcher must initially use assumptions when employing retroductive inference. "It is the a priori knowledge which allows the researcher to move beyond, and to begin to question and clarify the basic prerequisites or 'conditions' for a priori assumptions or theoretical frameworks" (Meyer and Lunnay, 2013, p. 3).

6.3.2.- Reasons for selecting the abductive and retroductive approach

To address the research questions this research will apply an abductive and retroductive approach to reinterpreting empirical observations in light of a particular theoretical framework in order to discover connections and relations between those observations (Danermark et al., 2002). Critical Realism (CR) acknowledges that different theories can be used to understand the world, but none can ultimately explain 'reality' (Fletcher, 2016). Usually, in theory-driven research, the deductive analysis compares data back to the initial theoretical framework and data that are not part of the initial framework are often excluded from the analysis. However, the abductive inference is a complementary tool which allows for a more comprehensive analysis of theoretically-driven data (Meyer and Lunnay, 2013, p. 1).

Abduction involves analysing data that fall outside of an initial theoretical frame or premise. Indeed, it is through abduction that new ideas are introduced (Habermas, 1972). Data is initially analysed deductively from theory, but the outcomes obtained are not enough explanation for the causal properties of the entities involved in the process (Bhaskar, 1975). Thus, an inductive approach is subsequently used to explore possible explanatory answers for all the research questions. However, the findings will also be analysed abductively to explore the underlying causes of phenomena. The Discussion in chapter 12 will use retroduction in an attempt to identify the conditions without which the underlying causes of the phenomena cannot exist.

6.4.- Qualitative research as a methodological approach

An adequate research methodology must consider the approach to theory development, the characteristics and the research strategies (Saunders, Lewis and Thornhill, 2015) to provide a clear standpoint for the researcher to carry out their work from. (see Table 6 1). Accordingly, the methods to be used must be selected because of their appropriateness about what the researcher is trying to find out (Silverman, 2013) as well as sitting within the ontological research position adopted (Critical Realism).

	Quantitative Research	Qualitative Research	Mixed Methods	
Approach to Theory Development	Usually associated with a deductive approach using data to test the theory but also with an inductive approach using data to develop a theory	It can use any of the approaches	It can use any of the approaches	
	Abductive reasoning about the data starts with the data and subsequently moves towards hypothesis formation			
Characteristics	Mainly numerical variables analysed by statistical and graphics techniques. It used to incorporate controls to ensure the validity	It studies the participant's meaning and interactions using a variety of data gathering technics and analytic procedures	Qualitative and quantitative techniques are used in a variety of ways	
Research Strategies	Mainly associated with experimental and survey research	It uses a variety of ontologically and epistemologically rooted strategies such as narrative research, case study research, grounded theory, ethnography, action research, among others	As a combination of both methods, mixed methods use a wide variety of research strategies. Usually, it uses comparative analysis to compare how each kind of data supports another	

Table 6-1: Methodological Choices

Source: developed from Saunders (2015) and Silverman (2013)

6.4.1.- Selection of qualitative research

The approach selected for this study is qualitative because firstly, this research is trying to provide an in-depth understanding of the research participant's decisions by learning about their experiences, circumstances and perspectives. This is in order to try to identify the underlying causes of the different approaches to health and well-being in prison in different prison models. Secondly, there are a small number of key decision-makers within the prison institutions and an even smaller group of designers in the field of prison design. Thus, the samples to be considered are small in scale and purposively selected. This qualitative approach aims to reveal the causes underlying the decision-making processes of prison design, about the inclusion of concepts of well-being and healthy environments. It investigates the interaction of both material entities (e.g. Prison authorities, prison

designers, prison buildings) and immaterial entities (e.g. norms and standards, prison services as systems, related institutions), focusing on how and why the different causal powers of each entity are actualised (or not actualised) and whether there may be other underlying causes beyond these entities.

This investigation concerns staff among prison authorities and prison designers as the lowest-level f immaterial entities forming part of higher-level material entities such as prison institutions or architectural offices, which are in permanent interaction. This interaction involves - directly or indirectly - a long list of other material and immaterial entities, such as prison buildings, security equipment, Laws, Standards, among others. All these entities playing their roles in a) the production of the local reality, b) the understanding of how these other entities interact (in the 'real' domain) and c) the understanding of how these other entities affect the decisions of both prison authorities and prison designers (in the 'actual' and 'empirical' domain).

These interactions can be traced back by qualitatively examining the discourse of key decision-makers and confronting their discourse against the observable outcomes in the domain of the 'empirical' and through theories. This exercise can reveal hidden causal structures in the 'real' that produce effects in the actual and the empirical realms. The ability to engage in explanation and causal analysis rather than only describe the phenomenon makes CR useful for analysing social problems and suggesting solutions for social change (Fletcher, 2016). This can highlight possible breaks in patterns of events that could evidence the mechanisms of interaction of broader causal powers and the entities that are involved.

Qualitative research usually collects data in non-numerical formats such as textual, visual or audio-visual material, typically to study the participants' meanings and the relationships between them (Robson and McCartan, 2016). This is discussed in more detail under Section 6.7 as the Case Study methods. Table 6-2 shows the relationship between research questions, objectives, and the objectives served by each method.

Research Question	Objective	High-Level Staff Interviews	Designers Interviews	Direct Observation
RQ1:Which design factors should be considered in the promotion of optimal health and well-being in prison design, and why?	Objective 1 To identify the architectural factors which can create healthy environments and promote well-being in prison design.	X	X	
RQ2:Which factors of design are considered important by decision-makers	Objective 2: To understand how and why these factors are or are not considered by Key decision-makers in the Hybrid, the Safety, and the Rehabilitation model.	X	X	X
in prison services of the Rehabilitation, the Safety and the Hybrid model, and why	Objective 3: To understand when, how and why these factors are displaced in the Hybrid, the Safety, and the Rehabilitation model in the design process.	X	X	
RQ3:What are the key elements necessary to add or modify in the dynamic of each of the mentioned prison models as part of a wider framework to improve and/or prevent the decrease in the consideration of health and well-being in the design of the prison?	Objective 4: To develop a new framework for promoting health and well-being in relation to prison design.	X	X	X

Table 6-2: Relation between research questions, objectives and data collection methods

6.5.- Case study strategy

Although there are numerous initiatives linking health and well-being to architecture, there is a limited amount of academic research addressing the issue in prisons, and the vast majority of the literature is mainly historical (Moran, Jewkes and Turner, 2016). Given these limitations, and the early stages of this research topic, a case study method is appropriate (Eisenhardt, 1989). Secondly, case studies are accurate instruments for examining sequences of causation or causal mechanisms, improving the odds of identifying a context in which a specific causal mechanism is identified and explored (Edwards, O'Mahoney and Vincent, 2014b). Thirdly, it is often possible to "generalise from a single case, and the case study may be central to scientific development via

generalisation as a supplement or alternative to other methods" (Flyvbjerg, 2006, p.12). Finally, case study represents an opportunity for Critical-Realist researchers to identify the operation of underlying mechanisms or a process as a whole (Edwards, O'Mahoney and Vincent, 2014a, p. 24) because the perceivable operation of those mechanisms can only be observed in the realm of the 'empirical'. Indeed, the deeper, and not always perceptible events (and non-events), that live in the 'actual' domain behind the empirical, are the consequence of the interaction of the underlying mechanisms themselves, which inhabit the realm of the 'real'.

A case study is defined as a "Detailed inquiry into a bounded entity or unit (or entities) in which the researcher either examines a relevant issue or reveals phenomena through the process of examining the entity within its social and cultural context" (Salkind, 2010, p. 115). Case studies also "retain the holistic and meaningful characteristics of real-life events" such as prison design (Aberdeen, 2013, p. 4). Thus, the case study method seems appropriate as it captures a contemporary phenomenon within its real-life context, where boundaries between phenomenon and context are unclear and in which multiple sources of evidence are used (Verschuren and Doorewaard, 2010). The phenomena of how and why the three prison models, identified in Chapter 1, do or do not address concepts of well-being and healthy environments in prison design will be examined through the answers and opinions of various agents within their social and cultural context, as the key components of the case study.

6.6.- Case study design:

6.6.1.- Different case study types

Flyvbjerg (2006) states that the strategic selection of cases can increase the generalisability of case studies. Yin (2013), defines four types of case study design:

Type 1: A single case design in which the case is considered as the whole unit of analysis.

Type 2: Several units of analysis encased in a single case study design.

Type 3: A multiple case design in which each case has a single unit of analysis.

Type 4: A multiple case design in which multiple units of analysis are embedded within each of the cases under analysis.

Flyvbjerg (2006) highlight four sampling strategies to be used in case study research:

- a. The extreme/deviant case,
- b. The critical case, which includes the least likely case and the most likely case
- c. The paradigmatic case, and
- d. The maximum variation cases

This research uses a combination of paradigmatic cases (c) and maximum variation cases (d) within a case study Type 4 (See Figure 6-2) as a design strategy.



Figure 6-2: Case study type 4. Source: Cosmos Corporation cited in Yin, 2013

The main characteristic of the selected cases is that they are organised around different cultural paradigms that shape their particular understanding about punitive and criminal management conceptions such as what must be understood as punishment, how a prison must look like or even the understanding of what an inmate is. Accordingly, the selection must be focused on representativeness within the paradigm that they typify (Flyvbjerg, 2006). Paradigmatic case studies organised around specific cultural paradigms can be seen as representative because they highlight more general characteristics of the societies in question (Flyvbjerg, 2006).

As explained in Chapter 1, this research will consider the Safety, Rehabilitation and Hybrid prison models, as used nationally within different countries, as different paradigms, leaving aside the Repressive prison model due to its incompatible nature with the aims of this research. Instead, as the fourth paradigm, an international cross-prison-model group of experts in prison policies from the United Nations (UN) will be included.

This entity is different from the rest of the cases because it has no direct intervention during the design of new prisons. However, the UN has a vital role in prison design,

through monitoring international covenants which in theory control prison design. The advice of these experts potentially influences the decision-making process in prison design in countries within each prison model, representing a humanistic perspective and possible underlying cause of the improvement of carceral conditions.

Heterogeneity can be a problem for small samples because individual cases are so different from each other. However, the maximum variation sampling strategy takes advantage of those differences by understanding that: "any common patterns that emerge from great variation are of particular interest and value in capturing the core experiences and central, shared aspects or impacts of a program" (Patton, 1990, p. 172). Maximum variation involves the selection of cases which are very different in one dimension such as size, the form of organisation, location or budget, etc. (Flyvbjerg, 2006, p. 34).

Two different embedded units of analysis will be studied within each prison model. Within the first case, two agents were identified as the unit of analysis: Prison Policy Advisors (PPA), who monitor countries compliances with the minimum rules for the treatment of prisoners (the Nelson Mandela Rules), and Prison Health Advisors (PHA), who work in or provide support to the World Health Organisation (WHO).

Cases two, three and four will consider Designers and High-Level Staff related to the decision-making process in prison design. These agents are chosen because they can directly influence prison design decisions. On the one hand, designers, from an architectural perspective, can introduce minimal design criteria for places to live and work that may or may not be accepted by the prison authorities. High-Level Staff, on the other hand, have the power to influence the design according to their professional and institutional perspective of priorities.



Figure 6-3: Multiple case study of prison models and international experts

Representative samples within each case will improve the possibilities of generalisation within cases, improving the odds of identifying shared patterns that cut across cases. Consequently, using both the Paradigmatic and Maximum Variation strategies provide enough detail for comparative purposes, while remaining manageable as a research project within the time available. The next section will describe the criteria for selection of the paradigmatic cases.

6.6.2.- Criteria for selecting cases

The following criteria have been developed for the selection of the paradigmatic cases:

Criterion 1: Representativeness of the model: The framework must identify the State, country or countries selected as representative of the selected prison model for classification of prison systems by objectives (Moldan, 2012), as belonging to this particular model and have a recognised relevance within it.

Criterion 2: Representativeness of the Country: Due to the dispersion of criteria of management and design of prisons, representativeness can provide more information about cross-national patterns than a critical sampling (Patton, 1990; Flyvbjerg, 2006), allowing for generalisation for the entire population. If a multiple-state country is selected, it should be represented by one of their states which meet the following sub/criteria:

Criterion 2.1.- Land Size: States with a much larger territory than the average of the country are more likely to be affected by problems like transport, basic services supply, and inmates are feelings of rootlessness. States with a considerable smaller land size than the average of the country could represent an atypical situation because of the closeness between staff and inmates and also between inmates and the community. A representative State within this type of countries will be selected by creating a list of all the States of the country with their correspondent land areas. The States will be ordered from the biggest to the smallest area. The land area of the selected State must be within the central 60% of the ranking, i.e., the State must not be within the 20% biggest States, nor within the 20% smallest.

Criterion 2.2.- Imprisonment Rate: The prison population rate (Inmates per 100.000 inhabitants) of the selected State, including prison and pre-trial population, must not deviate by more than 20% of the National imprisonment rate in order to be representative.

Criterion 3: Recent Prison Design History: The places selected must have a recent history of prison construction to be able to collect opinions about recent design experiences.

Criterion 4: Global coverage: To have the best possible global coverage for maximum variation, the selected countries must be in different hemispheres of the planet and in different continents.

Criterion 5: Across prison-model Experts: A group of international experts in the field of International prison policies, related to human rights, carceral conditions, or health in prison, must be considered to provide a broader vision unconstrained by national or local policies and agendas. Professionals belonging to this group must work in an international body, related to the area, or be an advisor for international bodies.

6.6.3.- Case study time horizon

The time horizon for this research study is a Cross-sectional one (Saunders, Lewis and Thornhill, 2015) meaning the four cases selected will be studied at just one point in time rather than monitoring the changes over an extended period (Salkind, 2010). This decision was based on time and economic constraints. Additionally, prison services are usually highly bureaucratic social entities, with an extremely high cost of construction and low replacement of prison buildings or upgrading of them. Thus, a longitudinal study would not show a significant difference in comparison to a cross-section study due to this low speed of change.

6.7.- Data collection

6.7.1.- Sources of data

According to Yin (2013), case study research can obtain evidence from six different sources: documents, archival records, interviews, direct observation, participant observation, and physical artefact. Cross-relating these sources will allow the researcher to reach more convincing and accurate conclusions (Patton, 1990). Consequently, although the primary source of information of this research will be semi-structured interviews, photographs taken during the visits to prisons in each country as well as selected architectural drawings and policy documents will be used during the discussion of the findings, to support or challenge them. These visits will take the form of direct non-participatory observations in which the researcher will take photographs of prison buildings, common areas, and prison cells.

6.7.2.- Semi-structured Interviews

6.7.2.1.- Definitions and justification of the choice

Gray (2013) identifies three main types of interviews in social research; structured interviews, semi-structured interviews, and unstructured or in-depth interviews (see Table 6-3). The semi-structured interview is more common and useful in conducting explanatory and evaluative research and especially when the researcher is trying to understand the reasons behind the decisions of the interviewee (Saunders, 2013). The decision was made to use semi-structured interviews, to understand how and why concepts of well-being and healthy environments are addressed by the interviewees, collecting their

experience and knowledge and personal areas of interest among the general topics. Semi-structured interviews interrogate the more profound question of 'why?' Instead of 'how many?' or 'how much?'. They can be used to investigate sensitive topics and can help to go further in the areas or questions that the participant considers more relevant (Miles and Gilbert, 2005). Moreover, semi-structured interviews have greater capacity than structured interviews, to retrieve deeper knowledge from the explanation and clarification from the interviewee, while still maintaining the ability to compare different answers to the same question. (Gray, 2013).

Structured	Semi-structured	Unstructured	
Quick to data capture	Slow and time-consuming to data capture and analyse	As for semi-structured	
Use of random sampling	The longer the interview, the more advisable it is to use random sampling	Opportunity and snowball sampling often used in organisations targeting key informants	
Interview schedule followed exactly	Interviewer refers to a guide containing a mixture of open and closed questions. Interviewer improvises using own judgement	Interviewer use aide- memories of the topic of discussion and improvises	
Interviewer -led	Sometimes interviewer-led sometimes informant-led	Non-directive interviewing	
Easy to analyse	Quantitative parts easy to analyse	Usually hard to analyse	
Tend to the positivist view of knowledge	A mixture of positivist and non-positivist	Non-positivist view of knowledge	
Respondent anonymity easy guaranteed	Harder to ensure anonymity	The researcher tends to know the informant	

Table 6-3: Characteristics of interviews by type. Source: Gray (2013)

6.7.2.2.- Sampling strategy for interviews

When conducting interviews, non-probability sampling (Flick, 2014) is used when there is a relatively small number of participants who are not proportionally represented within the defined population (Saunders, Lewis and Thornhill, 2015). It can be divided into five types: quota sampling, purposive sampling, snowball sampling, convenience sampling and, selfselection sampling (Ibid). For this study, two kinds of sampling techniques from the nonprobability group will be used: purposive sampling and the snowball method. Purposive sampling uses judgement in this study to select interviewees, focusing on the best way to answer the research questions and meet objectives (Patton, 1990; Silverman, 2013). Although it is not possible to demonstrate representativeness, this form of sampling is often used in case study research working with small samples (Silverman, 2013). Due to the specificity of the subject, the selection of new interviewees recommended by the previously selected participants is used as a valid secondary strategy. The disadvantages of this strategy, known as snowballing, are the slow process of contacting people and the possible biased options from within the professional group (Faugier and Sargeant, 1997). However, considering both the broad scope of the research and the specificity of the subject, snowballing seems to be the faster strategy of sampling, ensuring that new participants will not only have the knowledge, and the experience required but are also currently involved in the area of research (Johnson and Weller, 2011).

6.7.2.3.- Sampling size

Although the number of interviews needed to explore a given research question depends on the nature of that question and the kind or type of knowledge the interviewer seeks (Johnson, 2011, p. 15), the minimum number of interviews usually seems to fall between twenty and thirty for non-ethnographic qualitative interview studies (Warren, 2011). Accordingly, the design of this research considered an initial number of twenty-four interviews, as shown in (Table 6-4) distributed among the four cases. This minimum was established as a feasible quota to meet in order to ensure a suitably representative coverage across all the cases, considering the unusually small number of designers and high-level staff and the limited number of international experts in the field.

			PRISON MODEL		
			Hybrid	Safety	Rehab.
ES	HIGH-LEVEL STAFF		3	3	3
EWE	DESIGNERS		3	3	3
INTERVIE	INTERNATIONAL ADVISORS	HEALTH IN PRISON	3		
		PRISON ADVISORS	3		

Table 6-4: Number of interviewees by case and professional group

6.7.2.4.- Semi-structured interview and design of the questions

An interview question guide was designed to capturing the respondents' experiences in prison design and their views about the health and well-being of prison's users, both inmates and prison staff (Figure 6-4). Thirteen questions were initially developed to address different research objectives. Three ice-breaking questions were designed to create adequate rapport with the interviewee (Johnson and Weller, 2011). Question 4 aimed to reveal the architectural variables that are (or are not) being considered to promote health and well-being in prison design. This question used several prompts in order to lead the interviewee to express personal views concerning factors not previously mentioned. Another four questions aimed to reveal the mechanisms and the reasons why variables are (or are not) being actualised. Three additional questions aimed to investigate the patterns of events and conditions that enable the Actualisation of counterpowers, which can preclude health and well-being from being considered in prison design. Finally, two questions were designed to obtain interviewee views on what can be improved or shared in the process of designing and managing prisons. To evaluate the efficacy of the questions designed, the length of the interview and the need for elimination, reformulation or addition or new questions, a pilot interview was conducted.

Prison Research Interviews:

Time: 40min.

Questions: 13 (3min each answer on average)

Ice-breaking questions:

1. How many years have you been working in the field of prisons?

2. Which do you think has been the most important (project/ work) you have involved on?

3. How did you learn about the design requirements for prison projects?

Objective 1: To identify the architectural factors which can create healthy environments and promote well-being in prison design.

4. What architectural factors do you consider indispensable to promote a healthy environment and well-being in prison cells design and Why?

4.b.- Prompt: what about (daylight, noise, colours, etc.)

5. Considering everything we have discussed so far, would you consider dispensing with any of these factors? Why?

Objective 2: To understand how and why these factors are or are not considered by key decisionmakers in the Hybrid, the Safety, and the Rehabilitation prison models.

6. How necessary do you think it is to consider the above factors in the design of prison cells?

7. To what extent are these factors addressed to you in the design of prison cells

8. There are different kinds of healthy design standard for bedrooms, such as in healthcare, or hotels, hostels, housing, residential schools or others. If you have to use an existent standard in prison design, which of them do you think is a good match.

Objective 3: To understand when, how and why these factors are displaced in the Hybrid, the Safety, and the Rehabilitation model in the design process

9. What do you think have been the key reasons which have prevented architectural factors related to health and wellbeing to be considered in the design of prison and prison cells?

10. What, in your personal view, could preclude factors of health and wellbeing for being considered and why?

11. At what stage of the process of the design does the decision to include or not include these factors occur?

Objective 4: To develop a new framework for promoting health and well-being in relation to prison design.

12. What do you think can be done to overcome the barriers and to bring architectural factors related to well-being into play?

13. Is there anything else you would like to say about the design of prison cells?

Figure 6-4: First version of the research interview.

6.7.2.5.- Pilot interviews

A pilot interview has several different purposes: getting started, practising interview questions, getting feedback on the topic (Griffee, 2005) in order to have an idea about the real length of the interview, test the clarity of the questions, make changes if necessary, and provide the researcher with prior experience in interviewing.

It was not possible to test the pilot interview on a prison architect at the time. Thus, pilot interviewee selected was an architect with considerable experience in healthcare design, which was the closest category related to the thesis objectives. As a result of this exercise, the following changes were implemented for the final version of the interview questionnaire (Figure 6-5):

Prompts: five new prompts were added to the list of prompts and the word 'etc.' was eliminated from the list to consider a finite and short list of variables to include.

Additional questions: Two new questions were added, questions 7 and 8, to include participants' knowledge at the international level.

Modifications of questions: the original question 7 was placed in ninth place due to the inclusion of new questions 7 and 8.

The final interview questionnaire has fifteen questions divided into five sections, which are the first group of ice-breaking questions followed by four sections to address the research objectives 2,3 and 4 (see Figure 6.5).

Prison Research Interviews:

Time: 45min.

Questions: 15 (3min each answer on average)

Ice-breaking questions:

1. How many years have you been working in the field of prisons?

2. Which do you think has been the most important (project/ work) you have involved on?

3. How did you learn about the design requirements for prison projects?

Objective 1: To identify the architectural factors which can create healthy environments and promote well-being in prison design.

4. What architectural factors do you consider indispensable to promote a healthy environment and well-being in prison cells design and Why?

4.b.- Prompt: what about (smell control, daylight, noise, artificial light, colours, comfort, air quality, self-control)

5. Considering everything we have discussed so far, would you consider dispensing with any of these factors? Why?

Objective 2: To understand how and why these factors are or are not considered by key decisionmakers in the Hybrid, the Safety, and the Rehabilitation prison models.

6. How necessary do you think it is to consider the above factors in the design of prison cells?

7. In your opinion: To what extent the discussed factors have been considered in the design of international policies about prison design?

8. What do you think have been the key reasons which have prevented architectural factors related to health and well-being from being considered in policies about prison design?

Objective 3: To understand when, how and why these factors are displaced in the Hybrid, the Safety, and the Rehabilitation model in the design process

9. To what extent are these factors addressed to you in the design of prison cells

10. There are different kinds of healthy design standard for bedrooms, such as in healthcare, or hotels, hostels, housing, residential schools or others. If you have to use an existent standard in prison design, which of them do you think is a good match.

11. What do you think have been the key reasons which have prevented architectural factors related to health and wellbeing to be considered in the design of prison and prison cells?

12. What, in your personal view, could preclude factors of health and wellbeing for being considered and why?

13. At what stage of the process of the design does the decision to include or not include these factors occur?

Objective 4: To develop a new framework for promoting health and well-being in relation to prison design.

14. What do you think can be done to overcome the barriers and to bring architectural factors related to well-being into play?

15. Is there anything else you would like to say about the design of prison cells?

Figure 6-5: Final version of the interview questionnaire with changes highlighted

6.7.3.- Direct non-participant observation

Direct non-participant observation is particularly useful to obtain first-hand information rather than relying only on interviewees or secondary data (Yin, 2013). Although the primary sources of data of this research are the interviews, the aim is to visit at least one prison in each country involved in the study. The purpose of these visits will be to visualize the field what the interviewees are talking about, and taking photographs of the places (interior and exteriors), in order to have a set of empirical data that enable comparisons and contrast the interview data with the observable reality in their prisons.

Photography has a long tradition in ethnography (Flick, 2014b) and can support research findings from other methods, or reveal contradictions, also making visible what could be overlooked in the interviews. Because photography is also culturally constructed in itself, what is photographed and the way it is photographed is also important (Rose, 2001; Pink, 2013). Photographs will be taken only to show physical elements and layouts. Additionally, due to the nature of their places about security restrictions, the places to be photographed will only be the ones that have consent by the prison authorities.

6.8.- Data analysis methods

Miles and Huberman (1994) define Qualitative Data Analysis as the result of three convergent elements; 'Data reduction', 'Data display', and 'Conclusion drawing and verification'. Data reduction is understood as the process of "selecting, focusing, simplifying, abstracting, and transforming data" (1994, p. 10). This process occurs during the whole project through writing-up notes, transcribing interviews, coding or writing memos. Any conclusions must maintain the possibility of revision and scepticism (Miles and Huberman, 1994).

Content analysis (Krippendorff, 2004), as used in this study, classifies all the text into much smaller content categories in order to exclude the "unusable fillers in an interview-issues that are unrelated with the topic in hand." (Burnard, 1996, p. 2). This preserves important information that could show patterns of social events while providing an increase in the precision of text and higher accuracy resulting from more or finer distinctions (Weber, 1990).

6.8.1.- Data coding and identification of demi-regularities using content analysis

For Critical Realists, social meanings, decisions, and ideas can produce causal effects in the world. However, social events do not follow a deterministic regularity. In the social world -which consisting of open systems- events can overlap and interact and people can learn and change (Danermark et al., 2002) Therefore, CR aims to find tendencies, not laws, and calls them 'demi-regularities' (ibid). Demi-regularities can be seen, for example, in rough trends or broken patterns in empirical data, and they can be effectively identified through qualitative data coding (Fletcher, 2016, p. 11).

6.8.1.1.- Using coding to unveil demi-regularities

In content analysis, the textual data to be analysed is first separated in chunks of text with a specific meaning. A short name that identifies the essence of the sentence is assigned to each chunk of text. This name is referred to as 'CODE'. Coding is defined as "the analytic act as one that assigns rich symbolic meanings through essence-capturing and/or evocative attributes to data" (Saldaña, 2016, p. 40). Saldaña also claims that coding is a heuristic exploratory problem-solving method, flowing from data to concepts which can bring together the data belonging to that concept. Saldaña claims 'coding' as a craft but also as "the best way to analyse qualitative data" (Saldaña, 2016, p. 2). Nevertheless, he recognises six common critiques of coding, stating that coding is no more than counting, or that it can be reductionist or even dangerous (Hashimov, 2015) and he thus offers 32 coding methods as profiles set in order for researchers to select the most appropriate method to be used. In the case of the current study, the most appropriate approach has been identified as a qualitative analysis based on coding frames (Kondracki, Wellman and Amundson, 2002), due to the rich textual nature of the research study and also the extensive amount of data. Within this approach, Qualitative Content Analysis has been selected as the most appropriate method for analysing the research data.

6.8.2.- Qualitative Content Analysis

Qualitative Content Analysis has not been free of critiques. According to Sandelowski (2010), much energy is spent focusing on philosophical details, which often have little or nothing to do with what the researchers do. Morgan (1993) argues that if in the content

analysis, only the frequency of codes is counted to find significant meanings in the text, there is the danger of missing the context. Moreover, for some researchers, the problem is that a word or coding category may occur more frequently in the speech of one person or group of people than another, for different reasons. A frequent occurrence could indicate greater importance, but it might simply reflect a greater willingness to talk about the topic (Joffe and Yardley, 2003; Twycross and Shields, 2008). Nevertheless, although it is true that QCA is a time-consuming method, the risk of missing the context and the overuse of specific concepts by a given interviewee will be minimised by the process of inter-coding validity and consideration of the value attached by the interviewee over each code.

6.8.3.- Pareto analysis

The Pareto principle, popularly known as the 80/20 rule is described as: "In any series of elements to be controlled, a selected small fraction, in terms of numbers of elements, always accounts for a large fraction in terms of effect" (Goodman, 2007, p. 370, cited in Sarkar, Mukhopadhyay and Ghosh, 2013, p. 1). The principle proposes that a large percentage (usually around 80%) of the overall effects in any scenario is due to a small number of causes, termed the 'vital few', and the rest 20% of the impact is due to other causes, called the 'trivial many' (Sarkar, Mukhopadhyay and Ghosh, 2013). Although the Pareto principle has been defined as a "transformation of positivist epistemology into sociology" (Albert, 2004, p. 59), the Critical Realist approach encourages the study of reality by using different analytical methods to reveal underlying causes (Bhaskar, 1975).

6.8.4.- Overall approach to data analysis

This research will interrogate data adopting two different approaches of Qualitative Content Analysis, using a Manifest Content Analysis (MCA) (See Figure 6-6), in combination with a Pareto Analysis, and a Latent Content Analysis (LCA). Although Pareto Analysis is a useful graphics tool for uncovering priorities, it does not provide any information about the context and the extent of those priorities. In this regard, MCA can expose the entities involved and analyse interviewees' priorities in context. However, the outcomes obtained from the MCA do not offer a sufficient explanation that could help to unearth the causal properties of the entities involved in the process (Bhaskar, 1975). In this regard, LCA seems to be a useful additional method to reveal those causal properties, because instead only observing the level of incidence of the themes that the interviewees

want to talk about, LCA deals with the relationships between those themes and involves an interpretation of the underlying meaning of the text (Braun and Clarke, 2006).



Figure 6-6: Relation between main theories and main approaches in qualitative data analysis.

Source: Developed from (Braun and Clarke, 2006; Smith, Bekker and Cheater, 2011; Crowe, Inder and Porter, 2015)

Firstly, data will be analysed by using MCA to identify the variables related to health and well-being present within the interviews. The result of this analysis will be processed, to evaluate the level of importance that each interviewee place in each variable as will be described in section 6.8.4.2. Using Pareto Analysis priorities from the Professional groups will be revealed. The discussion of the Pareto results combined with relevant quotes obtained from the MCA will help to reveal key emerging manifest themes. An LCA will be performed on the three prison models to uncover the causal properties of the entities involved in the decision-making process of prison design. The LCA will not be performed on International Advisors because they are not part of this process. Finally, the manifest themes obtained will be triangulated with the results of the LCA.

6.8.4.1.- Manifest Content Analysis

When the coding process used is based on the appearance of a particular word, or certain behaviour of the subject or content that is on the surface and easily observable, the process is referred to as Manifest Content Analysis (MCA) (Potter and Levine-Donnerstein, 1999). MCA can facilitate predictions about the variables of interest or about the relationships between variables when research is based on existing theory or one or more existing research studies about an incompletely analysed phenomenon (Hsieh and Shannon, 2005).

All interviews will initially be analysed by using MCA to provide a more detailed analysis of some aspect of the data (Braun and Clarke, 2006). Considering the literature and the research questions, two families of relevant variables will be developed for the construction of the analytical frame. Codes will be grouped within those families, forming themes and sub-themes:

Family 1: Eudemonic Variables. These variables are strictly related to factors which are known to directly affect individual health and well-being and cover two themes. The primary source of a selection of such variables is the literature review presented in Chapter 4 and tabulated in Appendix 1.

- Theme 1.- Architectural variables that can promote or negatively affect the health and well-being of building users.
- Theme 2.- *Physical and Psychological variables* that can promote or negatively affect health and well-being and are related to the design or the way of managing the physical environment.

Family 2: Institutional and Professional Variables: they extend beyond Eudemonic Variables to included secondary institutional variables that can also influence the Eudemonic variables.

- Theme 3.-Prison factors or issues which represent elements of the particular managerial style that can promote or negatively affect health and well-being through the interaction between the previous factors and the prison issues.
- Theme 4.-Interviewee's personal views and experience in prison design.

The identification of a list of variables, that should be considered when designing a prison to promote optimal human physical, and psychological responses were firstly addressed by the review of the evidence-based literature, related with health and well-being in design. However, identifying what is currently being considered by the key decision-makers in the process of prison design will also identify where and how significant the possible gap is between the ideal and the reality in each prison model. This outcome will help to address the second and third research questions.

6.8.4.1.1.- Manifest content analysis using a pre-coding book

This section will define the basis for coding the data in order to inform the first objective of the research. It shows how the pre-coding book will be built and how validity will be reached.

6.8.4.1.1.1.-Pre-coding and unit of analysis

To understand how the interviewee's answers are aligned with the literature about health and well-being, health in prison and prison design, the literature-driven pre-code book will be built, based on the findings of Chapter 4. Then, the interview text data will be coded and analysed quantitatively—counting frequencies of codes. The preparation phase starts with identifying the segments of the text that will be reduced to a code. This segment is known as the 'unit of analysis' (Krippendorff 2004) and refers to a discrete element of the text that is observed, recorded, and after that considered data. The 'unit of analysis' will be considered as a 'Thematic Unit' (Rourke et al., 2001, p. 10) referring to a unit of words, sentences or paragraphs related to the same central meaning. Codes will be assigned using a mutually exclusive approach, meaning that each unit of analysis is coded with no more than one code (Krippendorff, 2004). When two or more central meanings are found in the same paragraph or sentence, the text will be separated to only include one central meaning.

6.8.4.1.1.2.-Building the pre-coding book

The research will analyse the frequency of codes associated with each of the four analytical themes derived from the literature as a way of determining how much value place the interviewees on each of the codes generated. Codes for each of the four themes and sub-themes will be generated (Figure 6-7) following the Descriptive Coding Method (Saldaña, 2016, p.87). To build the first version of the pre-coding book, codes will be extracted deductively from the literature review.



Figure 6-7: Pre-coding book first version

6.8.4.1.1.3.-First applications:

After finishing the first version of the pre-coding book, additional codes will be generated inductively from each interview as is explained below, as an effort to identify new possible variables and underlying causes emerging from the data that should be taken into consideration in prison design. This second move will reformulate the existing model or theory from which the deductive list of codes was drawn (Gilgun, 2011). The inductive generation of codes will also aim to capture the personal views of participants (see Figure 6-8).



Figure 6-8: Pre-coding book final version

The first interview transcription will be read carefully, and each Unit of Analysis associated with a deductive code (a code existent in the first version of the pre-coding book) will be coded by writing down the name of the code in the margin. Applying an iterative process, the same first interview transcription will be re-read paying attention to every chunk of text without any code associated. Every Unit of Analysis with potentially essential attributes will be condensed by highlighting it and writing down headings in the margins to describe all aspects of the content. The process will be repeated until no further codes emerged,

resulting in a list of inductively generated codes that are placed into the correspondent sub-theme among the four key themes shown in Figure 6.8, in addition to the existent inductively generated codes. The outcome of this process will be the final version of the pre-coding book, which will provide the basis for the inter coding validity assessment.

6.8.4.1.1.4.-Validation of pre-coding book

Inter-coding or intercoder agreement refers to the extent to which two or more researchers apply the same code for the same qualitative data. The process usually considers two analysts using the same codebook over a piece of text or interview. The analysts compare their coding decisions and their differences where their coding does not match (Guest, MacQueen and Namey, 2014). Although there are many variations of Intercoder agreement process, Guest et al., (2014) identify three methods as the most commonly used: Percentage of Agreement, Subjective Assessment, and Cohen's Kappa statistic. Percentage of Agreement is calculated by dividing the total number of times the analysts' coding is in agreement by the total number of code comparisons, which include agreements plus disagreements (Lombard, Snyder-duch and Bracken, 2002). Values higher than 80% are considered good (Guest, MacQueen and Namey, 2014). In the case of Subjective assessment, coders review the double-coded text section by section. Each time the coders reach a point of disagreement, analysts discuss the reasons for the discrepancy, agree on a solution, recode the master coding document, and revise code definitions if necessary. Finally, Cohen's Kappa provides a measure of "the amount of agreement, taking into account the amount of agreement that could be expected to occur simply through chance" (Guest, MacQueen and Namey, 2014, p. 15). Kappa coefficient goes from -1 to +1, and the value of +0.8 is considered as a high level of agreement. However, Kappa has been criticised as not appropriate for small samples (Lombard, Snyder-duch and Bracken, 2002; Guest, MacQueen and Namey, 2012). This research uses intercoder Percent of Agreement to validate the definition of codes within the codebook and the process of coding.

A combination of Percent of Agreement and subjective assessment was used to validate the pre-coding book. The agreement was calculated as follows: the second version of the pre-coding book and a complete transcribed interview were sent to an independent researcher to validate the accuracy of the coding. The coded texts were compared, and a percentage of agreement between both coding criteria was calculated. Discrepancies and additional modifications proposed by the independent researcher to the second precoding book were discussed and evaluated. As a result of this process, new codes were agreed, and the third version of the pre-coding book was built. This process was repeated with new transcribed interviews until the percentage of agreement in the whole individual interview analysed exceeded eighty per cent resulting in the final version of the pre-coding book.

6.8.4.1.2.- Selection of software NVivo

Qualitative data analysis software (QDAS) programs are well-established research tools. ATLAS.ti[™] and NVivo[™] QDAS programs are the most commonly used in research (Muhr, 1991). Studies using NVivo have been most commonly used programs to support analyses of data gathered through analysing focus groups, interviews, field notes, and open-ended survey questions. (Woods et al., 2016). In the early years of QDAS some authors critiqued its use, suggesting that data fragmentation could arise from its inappropriate use and transform the research into a rigid automated process, neglecting the role of human interpretation and reflection (Kelle and Laurie, 1995), or that it does not always facilitate close engagement and connection with the data (Lee and Esterhuizen, 2000). However, modern versions and technology development has minimised those claims through the development of highly versatile and interconnected platforms (Hutchisona, Johnstonb and Breckona, 2010; Zapata-Sepúlveda, López-Sánchez and Sánchez-Gómez, 2012; Zamawe, 2015; Woods et al., 2016).

NVivo 11 has been selected as a tool to be used in this study because of its versatility and recognised capacity for working with a high amount of data and its high compatibility with the research design for this study. NVivo has features such as character-based coding, rich text capabilities and multimedia functions that are crucial for qualitative data management. Moreover, Nvivo has been described as a highly useful tool which ensures easy, effective and efficient coding (Zamawe, 2015). Although files are located in different digital places within the same project, "the links that are created make retrieval simple while in manual coding a researcher can spend a long period searching for the missing papers or files rendering the process ineffective and inefficient" (Zamawe, 2015, p. 14).

6.8.4.1.3.- Coding process

After the pre-coding book is validated, all the transcribed interviews will be formatted using a template to ensure heading style recognition. This process will prevent the interviewer's words and questions from being included in the interviewee's intervention analysis. Transcriptions will be uploaded to Nvivo11 on a case basis. Interviews in Spanish will be transcribed in their original language, and the analysis of those interviews will be made attaching a code in English to the Spanish Unit of Analysis. This decision was made to maintain the accuracy of the content during the coding process and supported by the fact that Spanish is the mother tongue of the researcher.

6.8.4.2.- Pareto analysis

6.8.4.2.1.- Coding by the level of importance

Counting frequencies of appearance of concepts in qualitative data are "integral to the analysis process, especially to the recognition of patterns in data and deviation from those patterns" (Sandelowski, 2001, p. 231). Moreover, counts effectively communicate the frequency of occurrence of some feature in the text (Miles and Huberman, 1994). However, because it is not possible to observe a concept's value by making direct comparisons between codes' frequencies of appearance, it is necessary to use an index, grounded in data, that can bring an accurate weighing to the frequency's code. With this purpose in mind, this researcher has developed a procedure to build that index, which will be called 'Importance Index' and identified with the letter (M).

Each Code's frequency will be multiplied by the 'Importance Index' (M) to transform the value of a simple frequency of code into an overall level of importance or relevance that each interviewee attaches to each code, enabling comparisons between different codes. This section will explain how this index is built.

Before building the 'Importance Index', the different weight (Individual Level of importance) attached to each code by each interviewee must be registered. Thus, the following procedure will be applied to each code, every time a code is counted in the text:

- Each Unit of Analysis associated with the code will be read in context. The Unit of Analysis will be expanded if necessary in order to find any value judgement

supporting the personal opinion of the interviewee. A 'value judgement' will be understood as an expression that can clarify the level of importance that the interviewee attached to the code analysed.

- Each time a code is founded in the text, it's level of importance will be identified reading the code carefully in context. Then, following the criteria described in Table 6-5, an individual level of importance in a continuum from 1 to 5 will be attached to the code in the study.
- Finally, the number of times in which this code was labelled along with the text as "Highly important", "Important", "Neutral", "Less important" or "Not-Important" will also be counted.

Level of importance/ relevance	Description	Criteria for attaching a level of importance to an individual code
(<i>i</i>) = 1	Highly important	The interviewee makes a clear statement about the high level of importance of the code. Expressions such as "Highly important", "Is very important", "is the goal" should be seen as indicators of pertinence to this level
(<i>i</i>) = 2	Important	The interviewee makes a clear statement about the importance of the code. Expressions such as "important", "relevant" or "necessary" should be seen as indicators of pertinence to this level
(<i>i</i>) = 3	Neutral expression	Even though the text analysed refers to the code, there is no indication of if it is important or not. Expressions in which the code is mentioned about another matter should be seen as indicators of pertinence to this level
(<i>i</i>) = 4	Less important	The interviewee manifests the lower importance of this code. Expressions like "less important", not relevant" or "It depends" should be seen as indicators of pertinence to this level
(<i>i</i>) = 5	Non- Important	The interviewee clearly says that the correspondent code is not important.

Table 6-5: Criteria for the classification of importance attached

6.8.4.2.2.- Building the Importance Index (M)

The Importance Index M proposed by this researcher is the numerical expression of the general value judgement attached by an interviewee to an individual concept coded.

Because each code mentioned by each interviewee has attached a different level of relevance, there will be an independent value of 'M' for each code and interviewee. Indeed, the level of relevance attached to the code, such as 'air quality', can be different for two different interviewees and can be mentioned by the same interviewee with different levels of relevance attached in different passages of the interview. To calculate a more accurate Importance Index (M) for each code mentioned by each interviewee, the following formulas were built:

Considering:

- a) an interviewee (j) talking about code (x).
- b) A ranking of Importance Level (i) from 1 to 5 (see Table 6-6) derivate from Table 6-5
- c) An individual factor (Z) associated with the importance level (i) (see Table 6-6)
- d) A frequency (F) of the appearance of the code (x), attached to an Importance Level (i)

The Importance Index (M) associated with the code (x) to an interviewee (j) will be:

Equation 1: Value of Index 'M' if there are no mentions of the code. (Personal development)

$$M(x,j)=0;$$

Equation 2: Value of Index 'M' in any other case. (Personal development)

$$M(x,j) = \frac{\sum_{i=1}^{5} [Fi(x,j) \times Zi]}{\sum_{i=1}^{5} [Fi(x,j)]};$$
 in any other case

Table 6-6: Importance Level and Individual Factor.

(Personal development)

Importance level (i)	Individual factor (Zi)	
i = 1. Highly important	1.90	
i = 2. Important	1.45	
i = 3. Neutral expression	1.00	
i = 4. Less important	0.55	
i = 5. Not important	0.10	

Note: Each time a code is found in the text, its level of importance (i) will be determined using the criteria established in Table 6-5: Criteria for the classification of importance attached

The original frequency of the code (F) must be finally multiplied by the importance index (M) calculated by Equation 1 or 2, in order to obtain the weighted level of importance of the code. This operation will be repeated for each interview and each code.

6.8.4.2.3.- Matrix construction

The result of the multiplication of the frequency associated to each code and their correspondent Importance Index will be shown in a matrix (Table 6-7) to identify the level of relevance attached to each code by each interviewee.



Table 6-7: An example of a table of weighted frequencies

6.8.4.2.4.- Outcomes: Pareto analysis

The result of the analysis organised in Table 6-7 will be processed using Pareto analysis (Sahay, 2017, pp. 80–86), obtaining the average level of importance of each code within each professional group in each case. The information obtained will be presented in a Pareto graph, to identify the codes in descending order or relevance, allowing comparison between different professional groups and between different cases. In this research, the Pareto principle will be used to graphically show which are the 'vital few' codes (research variables) that can explain most of the concerns of each professional group and which are the 'trivial many'.

6.8.4.2.5.- Graphic Analysis of outcomes

Pareto Analysis is usually applied to identify a very small number of variables —usually around 20% of the total number of variables— that are responsible for a large percentage of the results —usually 80% — in order to produce the highest possible impact by

modifying the lowest possible number of variables. However, because this research goes further by trying to reveal the interactions between those variables, a higher percentage of variables is required to be analysed. Therefore the most important variables (codes) will be highlighted as the ones with the highest individual level of importance that accumulate together up to one-third of the total importance. An exception to this rule will be found in the presence of primary cases. This is when the most important variable (or the second most important) has an individual level of importance, which is roughly double the importance value of the subsequent variable. When this occurs, the group of most important variables will consider - in addition to the primary cases - the subsequent variables that accumulate together to form one-third of the total importance.

The analysis also will highlight which are the variables that were not mentioned by any of the interviewees of each professional group, in order to try to understand the reasons for neglecting them. Due to the individual, personal and professional preferences, different ideas and bias are possible in practice. Indeed, although for some groups, the importance may be more equally distributed, groups may argue that only a small number of variables represent the most important ones. Therefore, in order to objectively compare the level of inequality in the distribution of importance between groups, a Gini coefficient for each professional group will be calculated (Yitzhaki and Schechtman, 2013).

The Gini coefficient is a statistical measure for comparative purposes. It is a value from 0 to 1 that expresses the level of inequality (concentration) of distributions that can be used to compare the concentration of the distribution of data from two or more different populations. It means that the ideal distribution of absolute equality (all the variables have the same importance level) represents a Gini value = 0; and the absolute inequality (one variable accumulate the 100% of importance) is represented with a Gini value = 1. The coefficient only expresses how far —or near— a specific distribution is from absolute equality and therefore, which distribution is more—or less— unequal. This will help in identifying patterns and gaps among professional groups and cases.

Graphics comparison by using 2D scatter plot (Walton, 2005) will be made to compare the average value of variables between professional groups within the cases in order to make observations or to look for patterns about the research questions. Scatter plot remains one of the oldest, most straightforward and most flexible and widely used visual representations method of analysis (Walton, 2005; Sahay, 2017). In a second stage, the outcomes among the same professional group will be compared across all the cases using comparative tables with the values of the highest scores. Designers and High-Level staff will be compared with their counterparts in cases #2,#3, and #4. Case #1 will be analysed individually and will be used to explore outcomes of international experts against cases #2,#3, and #4.

6.8.4.3.- Latent Content Analysis

Similar working methods or theories applied by different systems at an empirical level can result in different outcomes because of the particular way in which their parts interact in the Real dimension (Bhaskar, 1975; Fletcher, 2016). An LCA will, therefore, also be conducted, in addition to the Manifest Content Analysis and Pareto. The application of the second coding method will deliberately approach the data inductively to obtain the latent meaning behind the surface of the text. LCA will be used to uncover the causal properties of the entities involved in the process of prison design, and how the particular combination of those entities supports and configures the different actual realities and visions of prison architecture within the actors in each prison model and among different prison models.

LCA starts with "identifying and quantifying certain words or content in the text to understand the contextual use of the words or content" (Hsieh and Shannon, 2005, p. 7). The analysis then considers a process of interpretation of the context around specific words or sentences, and the analysis of what the text talks about through an interpretative coding process. This involves the subjective interpretation of the underlying meaning (Kondracki, Wellman and Amundson, 2002; Hsieh and Shannon, 2005).

The process of data analysis in the content analysis according to Elo and Kyngäs (2008) is divided into three steps: Preparation, Organising and Reporting. Preparation considers the immersion of the researcher in the data and obtaining the sense of the whole, selecting the unit of analysis, and deciding on the analysis of manifest content or latent content. Organising consists of coding data and creating categories, grouping codes under higher order headings, formulating a general description of the research topic through generating categories and subcategories. Finally, the analysis and the results are reported by highlighting rough trends or broken patterns in empirical data through models, conceptual systems, and conceptual map or categories (Elo and Kyngäs, 2008). This last step includes the thematic analysis that interrogates the results abductively against the
theory, in order to understand the causal mechanisms that result in such demiregularities.

6.8.4.3.1.- Defining the meaning unit and boundaries

To differentiate it from the 'Unit of Analysis' defined in section *6.8.4.1.1.1*, the chunk of text selected to be coded during the LCA will be identified as a 'Meaning Unit'. There are some differences between the manifest 'unit of analysis', and the latent 'meaning unit'. In the former, codes are assigned in a mutually exclusive approach, while in the latter, codes will be assigned in a non-mutually exclusive approach, meaning that when two or more ideas are found in the same paragraph or sentence, and the text cannot be separated without losing or damaging one of the ideas or the context of them, all the meanings included will be written separately. Thus, a meaning unit can have more than one code, while a unit of analysis cannot.

6.8.4.3.2.- Creating latent codes

The process is started by reading each transcribed interview several times to familiarise with the data and obtaining a sense of the whole, before searching for specific ideas that will constitute the meaning units. A table will be created using MS word (Cole, 1988; Dey, 1993), to place the data and to work with it (Figure 6-9). Each interview text will be placed in a separate table in the first column. Meaning units will be identified and placed in the second column of the table. The identified meaning units will be re-read to ensure that all aspects of the content had been covered about the aim (Burnard, 1991). Before defining the adequate latent codes, the meaning unit must be condensed to reduce the number of words without losing the main idea of the unit (Graneheim and Lundman, 2004). Condensed meaning units will be placed in the third column of the table unit. Then using an open coding approach, the condensed meaning units will be abstracted through a cognitive process into the explicit meaning or possible underlying meanings and given codes in relation to the context (Kelle, 2007; Elo and Kyngäs, 2008; Holton, 2010; Cho and Lee, 2014) in contrast with the deductive pre-coding book used in the first part of this research.

Data	Meaning Unit	Condensed	Code
		meaning unit	
	Meaning unit theme, A: An extract of the theme A from the original paragraph	Extract of meaning unit A	Code 1
Data as a whole paragraph including themes A, B, and C	Meaning unit theme B: An extract of theme B from the original paragraph	Extract of meaning unit B	Code 2 Code 3
	Meaning unit theme C: An extract of theme C from the original paragraph	Extract of meaning unit C	Code 4

Figure 6-9: An example of an MS Word table used for latent coding

6.8.4.3.3.- Validation of coding

The validation of codes will be made following the same process described in 6.8.4.1.1.4. After finishing the latent coding of the first interview; it will be integrally coded by an external researcher and codes compared. Differences in meaning units, condensed meaning units, and codes will be discussed, and a percentage of the agreement will be calculated and agreed.

6.8.4.3.4.- Creating sub-themes, themes and meta-themes Using NVivo

All the tables created will be transferred into NVivo11, separated by clusters of the professional group within each case. Codes will be merged into groups generating sub-themes, and when they were related, sub-themes will be grouped into higher concepts called themes. In cases where themes are still inter-relating around a higher concept, they will be grouped forming meta-themes.

Finally, a list of meta-themes, themes and sub-themes identifying the number of codes associated with each one will be extracted and displayed using sunburst charts (Figure 6-10). A Sunburst chart is a multilevel pie chart used to visualise hierarchical data in the form of concentric circles. The circle in the centre represents the root node, meaning the highest concept with the hierarchy decreasing outward from the centre. The sunburst charts can have as many layers as necessary. Sub-themes are the more external layers of the circle and the meta-themes the more central ones.



Figure 6-10: Graphic explanation of a sunburst chart

6.9.- Direct non-participation observation analysis

Observation as a method (Genzuk, 2003; Pink, 2013) and photographs (Chaplin, 1994; Collier and Collier, 1986) of the buildings and interiors will be used to support the discussion of outcomes of the LCA described above, and its relation to PERMA theory. Ethnographic observations aim to capture the reality in "natural" settings, settings that exist independently of the research process, rather than in those set up specifically for the purposes of research (Genzuk, 2003, p.3). however, observation does not claim to produce an objective or truthful account of reality but should aim to offer versions of researchers' experiences of reality (e.g. through field notes), that are as loyal as possible to the context (Pink, 2013, p.35). Additionally, although the whole view of a prison setting cannot be captured by a photograph, the research photographer can gather a semblance of the whole circumstance in a compressed sample of items and events observed in time and space' (Collier and Collier, 1986: 163). In this research, photographs will be used as proposed by Chaplin (1994), printing them out as visual evidence next to the outcomes and discussions. However, they will have a small textual description (caption) with the

indication of the prison name, the type of facility, their location, the area photographed and what this is intended to show. This strategy will seek to minimise the loss of autonomy of photographs and allow them to make contributions to the research (Chaplin, 1994). Images will be placed next to the text of the research analysis or discussion which is being supported by the correspondent picture, creating a subtle separation between the research text and the images, allowing a higher degree of autonomy to the researcher from the analytical narrative, and also to the reader, to interpret them in relation to one another (Chaplin, 1994; Pink, 2013).

6.10.- Analysis of outcomes

6.10.1.- Outcomes within each prison model

As shown in Figure 6-11, the results of the LCA will be presented separately for each case. Within each case, results will be presented and discussed first by each professional group and then, comparing the results of the professional groups included in the case. The graphic distribution of importance and discussion of the variables will help to reveal which, in the eyes of the interviewees, are the most important determinants of health and well-being of inmates in the process of prison design. The findings chapters will enrich the discussion by using quotes extracted from the Manifest Content Analysis related to the correspondent variable analysed. This process will produce a list of key themes. Additionally, the list of variables that were not mentioned at all during the interviews will be discussed within a methodological triangulation with the support of photographic evidence from the field. Additionally, the results and perspectives of each professional group will be compared to highlight similarities and try to understand the causes of contradictions. Finally, a summary of the key emerging themes organised around meta-themes will be presented.



Figure 6-11: The analysis and discussion scheme.

6.10.2.- Analysis of the different prison models

The comparison and review of the findings among the three prison models will be made using three strategies of analysis: an international comparison between the High-Level Staff across prison models; an international comparison among designers of the three prison models; and a comparison of the findings related to designers and high-level staff across prison models.

Although each prison model has different categories of designers (governmental, independent and both), this step will try to find patterns and undercover possible causes and barriers within designers and High-level Staff among different realities. The Cross-case comparison of results will cross-compare the results of High-level Staff of the three prison models. The second step will be the analysis and discussion of the results of all the designers of the three prison models. The second step wills. Additionally, a general cross-case comparison of all the cases will be made. The results obtained from the first case (International

Advisors) will be used as a reference throughout the analysis and discussion of each of the two first strategies of analysis described above, highlighting the differences between the local view by model and the international perspective. The General comparison will aim to understand the particular complexities of the interaction of physical (e.g. buildings), social (e.g. institutional organisation and Unions), and biological entities (e.g. people) by prison model, in an effort to identify the necessary conditions to produce positive changes in the way of addressing health and well-being by each prison model. During the discussion, cross-case meta-themes will be identified, which in addition to the meta-themes identified in the individual case discussion, will be used to reveal the dimensions involved, and will be the basis on which to build a new framework for prison design.

6.10.3.- Thematic interpretation against PERMA

During the interpretation and discussion described in the previous two sections, the findings will be observed through the lens of PERMA theory and theoretical interpretation compared again against the findings to answer the research question two "*Which factors of design are actually considered important by decision-makers in the promotion of health and well-being in prison services of the Rehabilitation, the Safety and the Hybrid model and why?*" and research question three "*What are the key elements necessary to add or modify in the dynamic of each of the mentioned prison models as part of a wider framework to improve and/or prevent the decrease in the consideration of health and well-being in the design of the prison?"*. This theoretical analysis will focus on how and why outcomes are or are not related to each of the PERMA well-being theory components. The theory itself will also be challenged in terms of its partial understandings, given that CR believes in a reality that is theory-ladened, not theory-determined.

6.10.4.- Overall thematic interpretation

An overall discussion of outcomes and findings will also relate the results of the data analysis to Seligman's theory of well-being (PERMA). A final discussion will attempt to produce answers to the research questions, grounded in both theory and data, from a critical realist perspective. Table 6-8 below shows how each research question is linked with their associated objectives, and how the selected method will match with the appropriate data to reach the objectives of the analysis. Table 6-8: The relationships between research questions, research objectives and methods of
analysis of this study

Research Question	R.Q.1 Which design factors should be considered in the promotion of optimal health and well-being in prison design, and why?	R.Q.2 Which factors o considered important b the promotion of heal prison services of the Safety and the Hybri	R.Q.3 What are the key elements necessary to add or modify in the dynamic of each of the mentioned prison models to improve and/or prevent the decrease in the consideration of health and well-being in prison design?			
Objectives	Objective 2: To understand how and why these factors are or are not considered by key decision-makers in the Hybrid, the Safety, and the Rehabilitation prison models.	Objective 2: To understand how and why these factors are or are not considered by Key decision makers in the Hybrid, the Safety, and the Rehabilitation model.	Objective 3: To understand when, how and why these factors are displaced in the Hybrid, the Safety, and the Rehabilitation model in the design process	Objective 4: To develop a new framework for promoting health and well- being in relation to prison design.		
Data	Interviews (all questions)	Interview questions numl Photographs, Architectur archival documents	Interview questions number 4 to 15			
Method	Literature review Qualitative Content Analysis	Qualitative Content Analy Non-participation observa	ysis ations	Qualitative Content Analysis		
Analytic Method	Manifest Content Analysis based on: -Cross-Tabulation of frequencies -Pareto graph of frequencies	Latent Qualitative Conter Content Analysis: Cross- with LCA Sub-themes Matrixial interrelation of re	nt Analysis relation of Content esults with PERMA	Latent Qualitative Content Analysis		
Objective	A) To understand to what extent subject responses are aligned with factors present in literature	A) Analysing the latent content of the text to discovering underlying meanings of the words or the content and cross-relating with PERMA theory		Analysing the latent content of the text to discover underlying meanings of the words or		
of analysis	B) To find which factors are considered important for interviewees.	B) Contrasting MCA, LCA photographs and docum discussion to support fine any contradictions	A and data against ents during the dings and to expose	the content to unearth the causal properties of the entities involved in the process		

Finally, as a result of the decisions taken and presented in this chapter, the current research is graphically presented in Figure 6-12 as:



Figure 6-12: The current research pathway

6.11.- Sub-conclusion

This methodological chapter has outlined the different layers of this research study, exposing the possible choices in each one and justifying the decisions taken in each case, before going to the next layer, to develop a coherent research design. The recognition that underlying and hidden forces influence design decisions led to the choice of CR as the ontological perspective of the research. The research approach adopted combines deduction and induction by moving back and forth between concepts and meaning and is known as the Abductive approach. Additionally, Retroduction will be used to reinterpreting empirical observations. Aspects related to the type of enquiry and the size of the sampling universe justified the decision to use a qualitative research approach. The lack of research comparing perspectives of prison design decision-makers in different prison models suggests that a case study is most suitable as a research approach. Additionally, time and economic constraints are the main reason for selecting a crosssectional rather than a longitudinal time horizon, and this is recognised as a limitation with the research. Multiple methods for data collection and analysis were described regarding their relevant application for this thesis. The fieldwork methods are document review, semi-structured Interviews, and non-participant observation, turning this study into multimethods qualitative research. The analytical methods involve Manifest Content Analysis, Pareto Analysis, and LCA in order to answer the research questions. The justification for the case choices and the initial results of the data collection process will be presented in the next chapter.

Chapter 7: Case study initial results

7.1.- Introduction

This chapter sets out the rationale for the cases chosen for the case study to represent the three prison models under consideration in this research: the Safety, the Hybrid and the Rehabilitation. It explains the process of selection of countries representatives of each case and the process of recruiting participants.

The second half of this chapter explains how the final pre-coding book was built and presents the resultant matrix of the importance of variables among the different professional groups within each prison model, derived from the results of the initial Manifest Content Analysis and LCA.

7.2.- Case details:

This section presents the rationale and results of the process of selection of countries to be included in each case following the criteria deployed in section 6.6.2. It shows how unexpected situations were managed and sorted out in each case and how they relate to each other.

7.2.1.- Rationale and result of the selection:

7.2.1.1.- International bodies

This particular case is a group of international experts from international bodies that works with all the prison models. Therefore, the selection of professional groups aligned with the criterion No.5: (section 6.6.2) are from two different offices from the United Nations:

The United Nations Office on Drugs and Crime (UNODC), and the World Health Organisation (WHO), representing experts working at the highest level internationally.

7.2.1.2.- Hybrid prison model

Hybrid prison models consider the goal of rehabilitation, but their prisons are designed and built with a strong emphasis on security. Additionally, they are run with little resources for rehabilitation programs and small staff/ inmate ratio. Prisoners are mainly in collective dormitories with few individual cells and no privacy.

Chile can be considered as a good representative of the Hybrid prison model in this research (criterion #1). Additionally, because of the author worked as part of the staff of

the Chilean prison service "Gendarmeria de Chile" he had access to the information and knowledge about the real conditions of the prisons in Chile.

Gendarmeria de Chile was invited to participate in this research and accepted the invitation.

7.2.1.3.- Safety prison model rationale and result of the selection:

The Safety model is characterised by a strong emphasis in isolation from society and permanent attention to new ways and technics to prevent violence, contraband, and escape.

The USA was chosen to represent the Safety model with its Supermax prisons as a very clear model. The decision was then made to look for a representative State (criterion #2.1), with a rate of prison population per inhabitant as near as possible to the national rate (criterion #2.2).

Following this criterion, the States of Kentucky, Virginia and South Carolina appeared to have more recent projects (criterion #3). Thus, those three Correctional Departments were invited to participate in this research, with a positive acceptance received only from the Correctional Department of Kentucky.

7.2.1.4.- Rehabilitation prison model

Norway, Denmark, and Finland are clear representatives of the Rehabilitation Model (criterion #1) (Pratt, 2008b; Johnsen, Granheim and Helgesen, 2011; Larson, 2013). These countries also have recent prison projects (Criterion #3). Accordingly, these prison services were invited to be part of this research, with positive acceptances from Norway and Finland. Thus, Norway was selected as a representative of the Rehabilitation Model. However, it was only possible to interview one of their High-Level Staff.

For this reason, and since Finland, Norway, Denmark and Sweden works together in the establishment of common policies of prison design in a Scandinavian board, a decision was made to include staff from Finland and Norway together, as one case representative of the whole model.

7.2.2.- Sampling

Twenty-eight interviewees were identified:

- Thirteen technical prison designers, including three governmental designers and four independent designers from the Rehabilitation model, three governmental designers from the Hybrid model, and three independent designers from the Safety model;
- Three high-level staff, as key technical, political, and/or economic decision-makers from prison services or governmental institutions directly related to prison project decisions in each of the three prison models under consideration;
- Six international advisors from different offices of the United Nations and the WHO: two of them as prison policy advisors and four related to health in prison.

The head of each prison service selected was contacted by letter in order to ask for authorisation to conduct the research and obtain a proposed list of possible participants in both categories, High-Level Staff and Designers.

The same procedure was undertaken in the case of the UNODC and the WHO, to recruit the experts on the field (see table 7-1). The following sub-sections will explain the process of sampling, the problems faced in the field, and how those problems were addressed.

				PRISON MODEL			
			R	S	Н		
ES	HIGH-LEVEL STAFF	3	3	3			
M		Governmental	3	0	3		
IVIE .	DESIGNERS	Independent	4	3	0		
NTER		Prison Health Adv.	4				
-	ADVISORS	Prison Policy Adv.		2			

Table 7-1: Total number of interviews by Professional group and relation with the prison model.

7.2.2.1.- International Bodies

After contacting the three possible UNODC candidates, one of them was discarded due to the lack of experience about a prison built environment or health and well-being in prison. The second candidate was considered for the group of Prison Policy Advisors (PPA). The third candidate was also considered but within the group of Prison Health Advisors (PHA). Finally, using the snowball technique, a fourth candidate who has considerable experience in the field of prison design was contacted and included.

The PHA group resulted in one expert in health in prison policies from the WHO in Denmark, one expert from the UK Centre for health in prison, and one expert in Prison Health in Germany. All the interviews were conducted face-to-face in the interviewees' offices with one exception in which the interviewee proposed a public place in the city centre to avoid interruptions.

7.2.2.2.- Hybrid prison model

The Gendarmeria de Chile prepared a list of possible participants, including high-level staff and designers who work in the architecture department of the prison service but no independent architects. Three High-Level Staff and three Governmental Designers were recruited. All the interviews were conducted face-to-face in the interviewees' offices.

7.2.2.3.- Safety prison model

Kentucky Correctional Department also sent a list of three High-Level Staff, but they indicated that they have no governmental designers since all designs are hired out to the external architectural offices. For this reason, a letter was sent to the American Correctional Association (ACA) asking for names of architects with relevant experience in prison design who could be invited to participate in this research.

A list of six architects was received. All of them were invited by email, but only three of them answered the invitation positively. These three interviews were conducted face-to-face in the interviewees' offices.

7.2.2.4.- Rehabilitation prison model

The Norwegian prison service stated that they would arrange meetings with High-level Staff (HLS) at the Kriminalomsorgen headquarters. They also sent a list of names of designers in two categories; Governmental Designers (GD) who work in Statssbygg (which is the Norwegian Directorate of Public Construction and Property) and Independent Designers (ID), with experience in the design of the latest projects developed in Norway. Three GD and three ID were contacted and recruited by email. However, there were two unexpected issues. Firstly, during the visit to the Kriminalomsorgen Headquarters, for unknown reasons, it was possible to interview only one HLS. Therefore, it was decided to include two HLS related to the RISE — The Finnish Criminal Sanctions Agency— who were previously contacted and had shown interest in participating in the study. The second issue occurred in one interview with an independent designer. The meeting took place in the professional office of the recruited independent designer, who included in the interview a colleague who also has extensive experience in prison design. Although the research design called for individual interviews, there was no possibility to arrange a separate interview. Therefore, at the time, the decision was taken to proceed with the interview as a group interview of both participants, trying to ask the same question to each one in the most fluent manner possible. Therefore, this new participant was considered as a fourth ID interviewee. Table 7-2 shows the list of participants and their backgrounds for all prison models. Additionally, in Appendix 2 shows a histogram of the length of the interview. Overall, the interviews were an average length of 53 minutes, with the most common length between 21 to 61 min.

Interview Number	Interviewee ID		6			Pedanad	Length of interview
1		Main Group	Specific group	Country	Company/Institution	Background	(min)
1	PHA-UI	Intern. Policie Makers	Prison Health Advisors (PHA)	UK		Psychologist	48
2	PHA-UZ	Intern. Policie Makers	Prison Health Advisors (PHA)	Cormony	WHO Europe	Medical Doctor	30
3	PHA-03	Intern. Policie Makers	Prison Health Advisors (PHA)	Germany			05
4	PHA-04	Intern. Policie Makers	Prison Health Advisors (PHA)	Austria	UNODC		50
5	PPA-01	Intern. Policie Makers	Prison Policy Advisors (PPA)	Austria		Lawyer	6/
6	PPA-02	Intern. Policie Makers	Prison Policy Advisors (PPA)	Denmark	UNOPS	Engineer	/3
/	HLSH-01	Hybrid Model	High Level Staff (HLS)	Chile	Gendarmeria de Chile	Social Worker	46
8	HLSH-02	Hybrid Model	High Level Staff (HLS)	Chile	Gendarmeria de Chile	Comandante	63
9	HLSH-03	Hybrid Model	High Level Staff (HLS)	Chile	Gendarmeria de Chile	Building Advisor	54
10	GDH-01	Hybrid Model	Governmental Designers (GD)	Chile	Gendarmeria de Chile	Architect	65
11	GDH-02	Hybrid Model	Governmental Designers (GD)	Chile	Gendarmeria de Chile	Architect	58
12	GDH-03	Hybrid Model	Governmental Designers (GD)	Chile	Gendarmeria de Chile	Architect	88
13	HLSS-01	Security Model	High Level Staff (HLS)	USA	Kentucky Dep. of Corrections	Criminologist	47
14	HLSS-02	Security Model	High Level Staff (HLS)	USA	Kentucky Dep. of Corrections	Justice Administration	37
15	HLSS-03	Security Model	High Level Staff (HLS)	USA	Kentucky Dep. of Corrections	B.S. Correction Justice	40
16	IDS-01	Security Model	Independent Architects (IA)	USA	Indep. Architecture Office	Architect	58
17	IDS-02	Security Model	Independent Architects (IA)	USA	Indep. Architecture Office	Architect	32
18	IDS-03	Security Model	Independent Architects (IA)	USA	Indep. Architecture Office	Architect	60
19	HLSR-01	Rehabilitation Model	High Level Staff (HLS)	Norway	Kriminalomsorgen	Engineer	46
20	HLSR-02	Rehabilitation Model	High Level Staff (HLS)	Finland	Ministry of Health	Engineer	53
21	HLSR-03	Rehabilitation Model	High Level Staff (HLS)	Finland	RISE	Criminologist	43
22	GDR-01	Rehabilitation Model	Governmental Designers (GD)	Norway	Statsbygg	Engineer	42
23	GDR-02	Rehabilitation Model	Governmental Designers (GD)	Norway	Statsbygg	Engineer	46
24	GDR-03	Rehabilitation Model	Governmental Designers (GD)	Norway	Statsbygg	Architect	57
25	IDR-01	Rehabilitation Model	Independent Architects (IA)	Norway	Indep. Architecture Office	Architect	54
26	IDR-02	Rehabilitation Model	Independent Architects (IA)	Norway	Indep. Architecture Office	Architect	31
27	IDR-03	Rehabilitation Model	Independent Architects (IA)	Norway	Indep. Architecture Office	Architect	C7
28	IDR-04	Rehabilitation Model	Independent Architects (IA)	Norway	Indep. Architecture Office	Architect	6/

Table 7-2: List of participants

7.3.- Manifest Content Analysis results

7.3.1.- Pre-coding of interviews

The first version of the pre-coding book was built based on the well-being factors discussed in Chapter 5, by using the process explained in section 6.8.4.1.1. Seventeen variables (Codes) were identified and separated into six sub-themes, as shown in Figure 7-1.



Figure 7-1: Initial pre-coding book.

During the process of expansion and validation, a series of new variables that could affect the health and well-being outcomes of prison design emerged. Those variables were registered as inductive codes. The final version of the Pre-coding Book²¹, which included all the deductive and inductive codes consists of 60 codes (see Figure 7-2), separated into ten sub-themes, which divided into four themes and included the theme 'Interviewee personal views' in addition to the original three themes mentioned above.

²¹ For an explanation of meanings of each code see 'Codebook Manifest Data Analysis' in Appendix 3



Figure 7-2: Final version of the pre-coding book

The frequency of each code across all transcripts was calculated using the software Nvivo11 (see Appendix 5). Using the same software, the frequencies of each code, corresponding to each interviewee were separated and computed. Interviewees were grouped by a professional group and then by case. With this information, the base of the 'Matrix of importance' explained in 6.8.4.2.3 was built as discussed next.

7.3.2.- Determination of the level of importance

The total importance attached to each code by each interviewee was calculated, grouped and averaged for each professional group and organised by each case (see Appendix 6 and 7). The final Matrix of importance (see tables 7-3 and 7-4 below) shows the importance of each variable (code) as a percentage of the total importance attached by each professional group. The information from this Matrix was finally ordered from highest to lowest level of importance in a Pareto chart, as explained in sections 6.8.3 and 6.8.4.2.4. The result of this process will be shown separately by professional groups and each case in chapters 8 to 11 during the discussion of the findings.

The variables with the highest level of importance are concentrated in the second group 'Institutional and professional' (see table 7-4) suggesting that in all cases the interviewees' concerns are focused on obstacles, processes, and procedures that can prevent — or are actually preventing— the consideration of health and well-being of inmates, rather than emphasizing harmful agents and scientific evidence. Additionally, there are apparent similarities among International Advisors and the Hybrid model, as well as several similarities in the level of importance of specific variables such as Natural light (see table 7-3), Financial obstacles; non-financial obstacles or Decision-making process (see table 7-4), that will be analysed in more detail and evaluated in context, in later chapters.

		Reh	Rehabilitation Model		Saf Mo	Safety Model		Hybrid Model		International Advisors	
Family	Variables	GD-R (%)	ID-R (%)	HLS-R (%)	ID-S (%)	HLS-S (%)	GD-H (%)	(%) H-S-H	РНА-I (%)	PPA-I (%)	
	01. Acoustics levels	1.1	3.5	1.8	3.3	1.2	2.7	1.4	2.4	1.0	
	02. Artificial light	1.8	1.3	1.5	1.7	3.5	1.8	1.5	2.5	1.6	
	03. Indoor air quality	2.5	1.6	4.7	0.8	1.5	5.2	2.7	5.8	6.1	
	04. Indoor bathroom	0.3	1.4	3.4	0.0	0.0	1.9	0.0	1.7	0.0	
	05. Thermal comfort	0.0	0.0	1.2	0.0	0.0	1.1	0.6	0.8	2.8	
	06. Colours	2.5	0.7	2.4	5.2	3.3	3.9	3.0	1.3	0.0	
	07. Natural light	4.4	2.3	6.4	9.8	9.0	6.1	2.9	4.5	4.9	
	08. Contact with nature	0.9	2.5	1.7	2.3	0.7	0.2	0.0	0.5	0.8	
	09. Quality of views	1.9	2.4	2.0	3.0	0.4	1.8	1.2	2.3	1.5	
	10. Space	0.2	1.9	4.2	1.3	8.0	2.8	4.2	4.4	5.6	
	11. Doors features	1.5	0.0	1.4	0.5	0.4	0.4	0.0	0.7	0.0	
	12. Floor features	0.0	0.0	0.0	1.0	0.0	0.0	0.7	0.0	0.0	
<u><u> </u></u>	13. Quality of materials	1.5	0.8	1.3	0.5	0.4	1.7	0.3	0.0	0.8	
	14. Furniture and fixtures	1.3	0.7	0.2	1.7	0.5	0.5	0.7	0.1	0.0	
à	15. Walls features	0.0	0.4	0.0	0.9	0.0	0.0	0.7	0.0	0.0	
<u>ē</u>	16. Windows features	3.4	3.3	2.0	1.5	1.0	0.7	0.7	1.5	2.0	
	17. Health in prison	0.7	0.0	2.2	0.0	0.0	0.0	0.7	0.3	0.8	
ш	18. Stress control	1.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	2.8	
	19. Depression / suicide	1.3	1.7	1.7	1.0	0.0	0.0	0.9	1.9	0.0	
	20. Communicable diseases	0.3	0.5	0.0	1.2	1.1	2.0	0.0	6.0	2.8	
	21. Mental health care	0.3	0.0	1.6	1.5	2.0	0.5	0.6	1.8	0.8	
	22. Non-communicable diseases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	
	23. Negative distractors	0.0	1.7	1.5	0.0	0.0	0.0	0.0	0.0	0.0	
	24. Sense of coherence	5.7	3.7	4.3	6.3	5.4	1.9	4.9	1.7	2.6	
	25. Preventing isolation	5.9	2.9	1.7	0.0	0.0	0.0	4.8	2.0	0.0	
	26. Human senses	0.0	0.0	1.2	0.0	0.0	0.5	0.7	0.3	0.0	
	27. Positive distractors	0.3	0.3	2.8	0.0	0.0	0.2	3.3	2.6	0.8	
	28. Normality	4.3	6.0	1.1	0.0	0.0	0.0	2.1	2.1	0.0	
	29. Self-esteem	0.6	0.6	0.0	0.0	0.0	0.0	0.0	1.0	0.0	
	30. Universal design	1.0	0.0	0.5	0.0	0.5	0.2	0.0	0.7	0.0	
							_				
	Abbreviations and colour codes	GD: Governm. Designers	ID: Independent Designers	HLS: High-level staff	PPA: Prison Policy Advisors	PHA: Prison Health Advisors	R: Rehabilit. mode	S: Safety Model	H: Hybrid Model	l: International level	

Table 7-3: (Part 1 out of 2) Table of the importance of each variable within each professional
group

		Rehat	bilitation	Model	Safety Model		Hybrid Model		Intern Advi	International Advisors	
Family	Variables	GD-R (%)	ID-R (%)	HLS-R (%)	ID-S (%)	HLS-S (%)	GD-H (%)	H-S-H (%)	PHA-I (%)	PPA-I (%)	
	31. Antisocial behaviour	1.2	1.4	0.3	1.0	1.2	2.1	3.8	2.5	0.0	
	32. Avoid escape	0.4	0.5	0.7	0.3	0.0	0.7	1.6	0.0	0.0	
	33. Emergency in prison	0.8	0.0	0.0	0.0	0.4	0.7	1.0	0.2	1.1	
	34. Traffic and drugs	0.0	0.7	0.7	0.0	1.5	0.0	0.0	1.2	0.0	
	35. Inmates education	0.4	0.5	0.0	1.7	0.0	0.0	0.0	1.3	0.0	
	36. Rehabilitation	3.3	3.6	3.7	3.6	4.2	2.4	3.8	3.0	1.1	
	37. Only lost of freedom	3.8	1.7	1.2	0.0	0.4	0.7	0.0	1.0	1.1	
a	38. Inmates' work	0.0	0.3	0.0	0.5	0.0	0.5	0.8	1.6	0.0	
	39. Designing for humans	2.1	2.4	1.6	2.4	0.0	1.4	1.7	1.6	4.3	
si c	40. Policy (in or about prison)	2.4	0.0	0.8	0.5	0.0	3.0	4.7	5.3	3.2	
S	41. Design standards	2.0	1.1	3.7	1.5	2.0	5.8	4.7	2.6	2.1	
) fe	42. Heritage as a 'burden'	0.2	0.9	0.7	0.0	0.0	1.5	0.4	1.1	0.0	
L L	43. Perception of evolution	2.7	1.5	4.8	5.7	4.4	2.1	2.5	0.3	1.1	
	44. Layout regarding program	2.5	6.1	3.7	3.3	4.5	0.8	2.1	2.1	0.0	
	45. Staff issues	2.4	5.5	1.8	2.2	1.7	0.0	1.6	1.5	1.1	
σ	46. Decision making process	8.2	1.5	1.1	3.2	5.9	6.1	4.9	2.8	7.5	
a	47. Financial obstacles	4.0	7.7	4.6	3.2	10.0	5.8	5.8	2.3	6.4	
	48. Hierarchies	2.4	2.2	0.8	0.0	0.9	0.3	1.0	0.0	0.0	
ti	49. Inmate status	0.4	0.0	0.7	2.7	2.6	1.4	0.0	0.0	1.6	
tu	50. Non-financial obstacles	3.0	7.2	2.3	8.7	4.6	13.7	8.4	8.0	15.5	
;ti	51. Setting priorities	3.7	1.2	2.3	2.9	3.7	3.1	2.5	1.2	1.1	
L C	52. Considering well-being	0.8	2.2	1.5	1.3	2.2	1.8	0.5	1.3	2.1	
_	53. Assumptions	0.6	1.2	1.2	0.0	0.0	0.3	0.0	0.2	0.0	
	54. Social pressure	0.7	0.9	0.0	1.2	2.6	0.9	0.8	2.0	0.0	
	55. Improvements	0.0	0.3	1.1	1.1	1.7	1.6	2.7	0.7	3.2	
	56. Cultural and social context	1.2	2.1	2.0	3.6	0.0	1.2	1.5	0.8	6.4	
	57. It must be a punishment	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	
	58. Learning about prisons	2.3	1.8	1.5	2.4	1.8	2.4	1.1	1.4	0.5	
	59. Positive attitude on well-being	1.9	2.9	2.3	3.0	3.8	2.0	3.0	2.5	3.2	
	60. Extranational unfamiliarity	2.0	2.4	1.8	0.3	1.3	0.0	0.6	2.0	0.0	
	Total of the column	100%	100%	100%	100%	100%	100%	100%	100%	100%	
	Number of unmentioned variables (10	12	10	19	23	14	15	9	26	
	Gini Coeficient	0.52	0.55	0.46	0.61	0.67	0.61	0.57	0.70	0.50	
	Abbreviations and colour codes	GD: Governm. Designers	ID: Independent Designers	HLS: High-level staff	PPA: Prison Policy Advisors	PHA: Prison Health Advisors	R: Rehabilit. model	S: Safety Model	H: Hybrid Model	l: International level	

Table 7-4: (Part 2 out of 2) Table of the importance of each variable within each professional
group

7.4.- Latent Content Analysis

As explained in the previous Chapter, the Latent Content Analysis (LCA) aims to unearth the causal properties of the entities involved in the decision-making process of prison design in each prison model. Therefore, the focus of this process was on designers and High-level Staff, from the three prison models. The process was applied only from question 4 to 15, omitting the 'ice-breaking' questions, designed to put the interviewee at ease. All the open codes were grouped by the professional group and prison model, generating sub-themes, themes and meta-themes resulting in one sunburst chart for each group using an MSExcel spreadsheet in each case (see Appendix 13). The Sunburst charts show the main themes and meta-themes that emerged from the conversation of the interviewees, evidencing the real concerns, and approaches of each professional group about the consideration of health and well-being in prison design as it was the topic of the interviews. These will be discussed in more detail in Chapters 9 to 11.

7.5.- Direct non-participation observation

As explained in section 6.8.5, several prisons were visited in the selected countries. Table 7-5 shows the list of prison visited during the study, while the description of each prison can be seen in Appendix 12.

Country	Prison Name	Location	Prison Popula- tion	Security category	
Norway	Halden Fengsel	Halden, Norway	250	High-security; Closed prison	
Finland	Vantaan Vankila	Vantaa, Finland	186	High-security; Closed prison	
Finland	Helsinki Vankila	Helsinki, Finland	312	High-security; Closed prison	
Finland	Vanaja Vankila	Hämeenlinna, Finland	100	Low-security; Open prison	
USA	Luther Luckett Correctional Complex	40 km northeast Louisville city, Kentucky	997	High-security; Closed prison	
USA	Louisiana State Penitentiary	90 km northwest Baton Rouge.	6,300	High-security; Closed prison	
Chile	CP Bio-Bio	Concepcion city, Chile	1,200	Maximum-security; Closed prison	
Chile	CDP Santiago Sur	Santiago, Chile	4,486	High-security; Closed prison	

Table	7-5:	List	of	prisons	visited	by	country	/
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7.6.- Sub-conclusions

This chapter described the case selection and interview recruitment process. An International Level case was represented by Policy advisors from the United Nations as well as an expert in health and well-being related to the WHO. The Chilean Prison system was selected as being representative of the Hybrid Prison Model. The USA Prison system, and more specifically, the State of Kentucky was selected as being representative of the Safety Prison Model. Finally, the Rehabilitation Prison Model was represented by a combination of the Prison systems in Norway and Finland. A pre-coding book was built based on the analysis of the state-of-the-art research and used to interrogate the interviews. The results were presented in terms of two categories of Eudemonic and Professional/Institutional Variables in an attempt to discover hidden patterns in the data. Following this, a Matrix of Importance was constructed, using Manifest Content Analysis, which revealed the level of importance attached to each code by each professional group within each type of prison model represented in this thesis.

Several initial findings were identified, such as the importance place by all the cases on obstacles, processes and procedures rather than in the harmful agents that can directly affect the well-being of inmates. Commonalities among cases focused on the importance of specific variables, such as natural light or financial obstacles, which need to be examined in context next. The construction of the matrix of importance was followed by performing an LCA which revealed critical thematic results and showed clear different approaches and justifications in each case regarding their perspective to health and wellbeing, the causes of the current situation in their respective prison systems, and the needs and flaws that characterise them. Chapter 8 to 11 discuss the results of the analysis of each case, starting with the International Advisors, following to the Hybrid, Safety and Rehabilitation prison models.

Chapter 8: International Advisors

8.1.- Introduction

This Chapter presents the MCA and Pareto analysis of the two international professional groups, Prison Policy Advisors and Prison Health Advisors. The objective of this chapter is to provide an informed, independent view about health and well-being in prison design, and the reality in the field. The outcomes of this analysis will be used in the following three chapters to address the second objective of this study, which is "To understand how and why these factors are or are not considered by key decision-makers in the Hybrid, the Safety, and the Rehabilitation model". The findings from both Prison Policy Advisors and Prison Health Advisors are compared with each other in order to identify which variables are perceived to be most important in this group in relation to the health and well-being of inmates during the process of prison design. The level of importance of the variables will be discussed and emerging themes identified to synthesis the concerns of the international advisors as the first of four cases (International Advisors, Safety Model, Hybrid Model and Rehabilitation Model).

8.2.- International Advisors – analysis and discussion

8.2.1.- UN Prison Policy Advisors:

8.2.1.1.- Manifest content analysis and Pareto analysis

The UN globally monitors the compliance of international agreements on human rights, the minimum rules of treatment of prisoners, (men, women or juvenile), and the prevention of torture. In this regard, the UN International Prison Policy Advisors (PPA-I) has a global mandate to assist countries in building and reforming their prison systems, in compliance with human rights principles (UNODC, 2018a). There are, however, particular countries in which this task is more urgent, as characterised by prison systems that fit into the Repressive and Hybrid prison models, and which affected by numerous shortcomings, some of them seriously affecting inmates safety and security. Special attention is given to these countries by the Prison Policy Advisors concerning their carceral conditions and prison system practices. The Pareto analysis is shown in Figure 8-1).



Figure 8-1: Pareto analysis of importance PPA-I

The entire list of sixty variables is displayed in descending order of importance showing one primary case— *Non-financial obstacles*— as clearly the most important variable for the Prison Policy Advisors (PPA-I) which has a level of importance of 15.5%, more than the double of the second variable. Additionally, the next five variables account for 32% of the accumulated importance: *Decision-making process* (7.5%), *Financial obstacles* (6.4%), *Cultural and social* context (6.4%), *Indoor air quality* (6.1%), and *Space* (5.6%) (see table 8-1). In turn, the total importance of obstacles, which include financial and *Non-financial obstacles* is 21.9%.

			PPA-I			
Family of Variables	A.c.a	Cub area	Variables	Importance %		
Family of Variables	Area	Sub-drea	Variables	individual	accumulated	
	Prison factors or issues	Decision process	50. Non-financial obstacles	15.5	15.5	
Institutional and			46. Decision making process	7.5	23.0	
Professional			47. Financial obstacles	6.4	29.4	
	Interviewee personal view	Points of view	56. Cultural and social context	6.4	35.7	
Fudamania	Architectural variables	Comfort	03. Indoor air quality	6.1	41.8	
Eudemonic	Architectural variables	Sensorial	10. Space	5.6	47.5	

Table	8-1:	Most	important	variables	among	PPA

8.2.1.1.1.- Non-financial obstacles

Non-financial obstacles are referred to as any barrier (other than financial) that is or could be, preventing the consideration of health and/or well-being in prison design. Among the main concerns of the advisors is the eagerness to punish as present in many countries, which seek to reduce crime by deterrence and provide justice by retribution (see 2.4.2). In these cases, the built environment is used as a tool to inflict pain and to punish prison inmates:

"and also, unbelievable, [in] many countries it is the sense that [the objective of] the prison is not [about] the privation of liberty, it is [about] the punishment. The punishment is the privation of liberty under the worst possible conditions". PPA-01

The worrying contradiction in many prison services between the declared purposes of rehabilitation or social reintegration and how they actually treat inmates is also highlighted:

"Despite the factors, maybe the legislation or the regulations and the constitution says that the prison- the privation of liberty- has the purpose of social integration, the reality on the ground is that there is no social reintegration. They are here kept, secure, and they actually have to pay for their mistakes. I think it requires a change in mentality". PPA-01

These incongruences, seen to be in many Latin American countries by the advisors, must be understood as events that occur in the realm of the Empirical, but where their Actualisation is the result of non-visible processes that produce and reproduce the ordering of events and social institutions (Easton, 2010). Additionally, the non-occurrence of an expected event requires explanation, which may also provide very useful insights. In this regard, the prison services' contradiction between purposes and actions shows that rule number one of the United Nations Standard Minimum Rules for the Treatment of Prisoners — " *All prisoners shall be treated with the respect due to their inherent dignity and value as human beings.* " (United Nations, 2016, p.8)— is in many cases, an unactualised event that requires explanation.

One advisor explains the apathy of prison authorities and politicians concerning the

prisoners physical and mental conditions in terms of their disregard for well-being:

"So, there is no sympathy for what happens with the prisoners. And that happens to me, like, eh, a couple of months ago. I made a presentation of the Nelson Mandela Rules, and one of the participants said: 'I don't know why we are wasting our time worrying about the well-being of prisoners' "PPA-01

The underlying theme emerging from the manifest data here is: Contradiction in Prison Services between purposes and actions.

There is also a concern about the overuse of imprisonment where it is seen as the only option, even for minor offences, disregarding the criminogenic effects that such imprisonment can have on people:

"Maybe for two years, maybe you corrupt your studies, you messed up your life, you got some nasty diseases in prison, you [can be] influenced by extremely dangerous prisoners, and you come up with a social gap, ... [but they think:] 'we don't care. You have to pay'. ... This is so self-defeating, and I still haven't found the arguments to try to convince people and to say 'Sorry, but this has no sense'." PPA-01

This phenomenon places additional pressure on prison services, which have no resources to respond to an increase in the prison population.

In this case, the manifest theme emerging is: Overuse of imprisonment

8.2.1.1.2.- Decision-making process

Another critical obstacle highlighted by advisors is the lack of self-reflection by the authorities and designers on what is the best solution in terms of how their design decisions affect people that live and work inside those prisons. Designing and building prisons is seen as a mechanical process where old solutions are thoughtless and uncritically repeated:

"...In many countries I think they have a kind of standard designs, and they are there, and people don't ask themselves very much [about the validity of the standards], but in many questions, they probably think it is just a [matter of] calculating how much concrete you need and how much steel or ... bars, and so that is how prisons are built." PPA-01

The underlying emerging theme here is: *Make designers aware of the consequences* of their design decisions on humans.

The UN intervention in countries considered to be in humanitarian crisis has led them in a few cases, to provide the design and supervise the construction of prisons. However, this depends on the perspective of these countries towards punishment. The UN perspectives on punishment and respect for inmates' human rights are considered during the design and construction, but their consideration during the prison operation is not guaranteed, which presents another obstacle:

> " ... in some situations we've actually been told [by the prison authorities] to do certain things with parts of [the architectural] solutions that we've put forward, and we've objected adversely on the basis that we're UN and we cannot be seen to be condoning certain types of solutions, and pretty much they're backed off each time because they don't want to be seen... to not comply with what the UN wants. ..., and probably now those facilities, that we built, are probably being operated in entirely a different way to the way we had conceived them. But, and that's not within our control." PPA-02

The underlying theme that is emerging from the manifest data here is: Lack of power of the UN to enforce countries to abide by norms.

8.2.1.1.3.- Financial obstacles

Where prison designers are hired by the State, the problem is that the selected designer is often the cheapest one— due to limited economic resources available, or the underestimation of the complexities of prison design. This results in inadequate designs because these designers have little experience in prison settings and a poor understanding of prison issues: "... [economic resources] are so limited that if they have to ... build the prison; they just take the first guy engineer or architect that is available. Because they have such a small pool of professionals in the country. Maybe [designers] are not even interested in building a prison rather than maybe a five-star hotel. So, that's also the issue of attracting. That they hire people and they are not really the top of the band which is available to put together a prison project. I've seen young architects who were put in one of his first jobs 'ok, let's build the prison'. I think it is a bit unfair because you also need maturity. I don't mean that young people cannot do it, but you also need a lot of professional maturities to understand all the various aspects and issues. Again, it's not purely technical." PPA-01

The lack of economic resource represents a key financial obstacle to the development of adequate prison designs capable of promoting health and well-being. Similarly, the lack of experienced prison designers represents an additional non-financial obstacle.

The underlying theme that is emerging from the manifest data here is *Need of professional maturity of designers.*

In other cases, when local authorities look for experienced designers abroad or receive donated projects from developed countries, they may have a prison project made by designers who didn't consider the economic and cultural reality of the country in which the prison will be placed. The view from one advisor is that this can be dangerous and can create new problems:

> "Sometimes there is over-relying on modern models or the donors and ... where they say 'I will try, I will give you a project for your prison', and the project is done thousands and thousands of kilometres away [by] people who don't have a clue.... I'm very, very careful with these sort of 'presents' from the outside, from other countries, from other donors, because they can be a bit dangerous from the sense they don't solve the problems they add new problems" PPA-01

8.2.1.1.4.- Cultural context

The variable *Financial obstacles* (7.5% of importance), which exposes the economic constraints on design, and the variable *cultural and local context* (6.1%), illustrate the concerns of the advisors related to cultural differences. This can be reflected in the understanding of what a prison cell is, in the cultural expectations of how many people a cell can contain, and the elements and features that have to be present. The advisors recognise the existence of inhumane practices, in many Latin American prisons, for example, where hundreds of people are confined in just one cell, in a clear disregard for prisoners' health and well-being:

"...the difficulty is understanding what a cell is. You know, and if you are dealing in a situation in some places in Latin America where you might have 300 people in effectively one room, just on quadruple level bunk beds, is that an acceptable cell? I would say not. Is that a level of risk there that's significant? Yes, enormous risk. Does it lead to riots? Loss of control? Most probably. "PPA-02

The Manifest theme emerging from the data above is: *Need for understanding the concept of cell.*

On the other hand, the advisors acknowledge that some countries see the individual cell as a form of torture, arguing that their citizens need to socialise and the isolation can negatively affect their well-being:

> "But for instance in Kosovo where the rooms were intended to be single-person occupant rooms, they insisted that the Kosovo people are sociable to such an extent that that would be considered a form of torture not to have someone to talk to."PPA-02

Although the need for socialising in the cell during the lock-in hours can be argued as a cultural matter, the author's experience in developing countries where the economic resources are insufficient to hire mental healthcare professionals, suggests that socialising can also be used by prison authorities as an effective measure to cope with inmates' *Depression* and suicide attempts, while indirectly (but not as a desired objective), improving their well-being.

In this case, the manifest theme emerging is: Need for consideration of cultural

differences

8.2.1.1.5.- Indoor air quality and Space

The last two variables among the most important ones (*Indoor air quality* and *Space*) highlight the deplorable conditions of the physical environment in those prisons. Advisors warn that the poor *Indoor air quality*, the lack of *Space* and *Natural light* in cells are overwhelming:

Indoor air quality:

"Terrible. A terrible sense of smell. And I don't know; probably people get used to that, I hope for them, because when you visit a prison, sometimes is really overpowering the smell that you can feel into a cell or even walking into it.."PPA-01

Space:

"And then always concerning the mental health and the conditions, also how people have to sleep pfff... it's horrible. People overcrowding is per se a form of torture. You see people sleeping on the floor. In fifty square meters, you have sixty seventy people one on top of the other; I found it absolutely unacceptable. As a human being, I'm shocked every time." PPA-01

The underlying emerging theme here is: Need to eradicate deplorable carceral conditions.

These findings underline the urgent need for designing prisons in accordance with the international minimum rules for the treatment of prisoners, to fulfil basic human needs, which states: "All accommodation provided for the use of prisoners and in particular all sleeping accommodation shall meet all requirements of health, due regard being paid to climatic conditions and particularly to cubic content of air, minimum floor Space, lighting, heating and ventilation" (United Nations, 2016, p.10). Indeed, there is a clear level of frustration among advisors when talking about the repressive and hybrid prison models. They want prison authorities to understand that they are treating human beings, trying to

make them into better citizens and that nobody wants to live in these conditions of overcrowding:

"I don't know how you can expect to make these people better citizens by treating them like that. And I'm also not going to say: 'ah, the conditions outside are also not better' because I think nobody would live in a house in those conditions. You would add-on a little piece of something and expand. You will not stay there like seventy people one on top of the other. They are not even your family. These are people you don't even know. So, is really, I find it unbelievable, to be honest." PPA-01

The underlying theme that is emerging from the manifest data here is: Authorities and society have to be educated.

The higher the Gini value (co-efficient of distribution of importance), the more concentrated the distribution is, and the more focused the attention is of the professional group on a few variables. In this regard, the data from the Advisors group (Gini coefficient of 0.70) shows a high level of concentration in the distribution of importance among the sixty variables, showing the degree of urgency that advisors place on the first variables.

8.2.1.1.6.- The importance of unmentioned variables.

Twenty-six variables are rated at zero (see Table 8-2) indicating that no interviewee mentioned them, showing the difficult operational theatres advisors have to operate in, with an overwhelming number of urgent problems to deal with daily demanding that they set out clear priorities.

Eamily of Variables	٨٢٥٥	Subaroa	Variables	Importance %
	Alea	Sub-alea	Valiables	individual
		Comfort	04. Indoor bathroom	0.0
			11. Doors features	0.0
	Architectural variables	Physical features	12. Floor features	0.0
		Filysical realures	14. Furniture and fixtures	0.0
			15. Walls features	0.0
		Sensorial	06. Colours	0.0
Eudemonic		Health and safety	19. Depression / suicide	0.0
			22. Non-communicable diseases	0.0
			23. Negative distractors	0.0
	health and well-being variables		25. Preventing isolation	0.0
		Well-being	26. Human senses	0.0
			28. Normality	0.0
			29. Self-esteem	0.0
			30. Universal design	0.0
			53. Assumptions	0.0
	Interviewee personal view	Points of view	54. Social pressure	0.0
			57. It must be a punishment	0.0
			60. Extranational unfamiliarity	0.0
		Decision process	48. Hierarchies	0.0
Institutional and		Prison architecture	42. Heritage as a 'burden'	0.0
Professional		T hour architecture	44. Layout regarding program	0.0
	Prison factors or issues	Prison nurnose	35. Inmates education	0.0
			38. Inmates' work	0.0
			31. Antisocial behaviour	0.0
		Security	32. Avoid escape	0.0
			34. Traffic and drugs	0.0

Table 8-2: List of variables rated zero among PPA

8.2.2.- Prison Health Advisors:

8.2.2.1.- Manifest content analysis and Pareto analysis

Among the group of International Prison Health Advisors (PHA-I), six variables are the most important ones, with a clear graphic separation from the rest of the variables (see Figure 8-2).



Figure 8-2: Pareto analysis of importance among PHA-I

Non-financial obstacles again lead the group with 8.0% of importance, followed by *Communicable diseases* (6.0%), *Indoor air quality* (5.8%), *Policy in or about prison* (5.3%), *Natural light* (4.5%), and *Space* (4.4%) (see Table 8-3). The total importance of obstacles, which include financial and *Non-financial obstacles*, is 10.3%. A Gini coefficient of 0.50 shows a moderate level of inequality of the distribution of importance among the sixty variables

PHA-I								
Family of Variables	Aroa	Sub area	Variables	Importance %				
Family of Valiables	Alea	Sub-alea	Vallables	individual	accumulated			
Institutional and Professional	Prison factors or issues	Decision process	50. Non-financial obstacles	8.0	8.0			
Eudemonic	health and well-being variables	Health and safety	20. Communicable diseases	6.0	13.9			
Eudemonic	Architectural variables	Comfort	03. Indoor air quality	5.8	19.7			
Institutional and Professional	Prison factors or issues	Prison architecture	40. Policy (in or about prison)	5.3	25.1			
Eudemonic	Architectural variables	Sensorial	07. Natural light	4.5	29.6			
Eudemonic	Architectural variables	Sensorial	10. Space	4.4	33.9			

Table 8-3: Most important variables among PHA-I

Prison Health Advisors, as a professional group, brings together professionals with a physical and mental health background, who work for or are related to the World Health Organisation in the promotion of health in prisons internationally. Therefore, the six most important variables mentioned above, show their professional concerns for promoting healthy environments as a preventive measure to reduce as much as possible *Communicable diseases* such as HIV, TB or hepatitis. This is coincident with the main activity of the Health In Prison Program²² (HIPP), established by the World Health Organisation, and the role of the United Nations Office on Drugs and Crime (UNODC), suggesting again, a high degree of reliability in the Pareto calculation of importance index.

8.2.2.1.1.- Non-financial obstacles:

Under '*Non-financial obstacles*', the concern is mainly about the physical conditions of many older prison buildings, which represent the majority of the prison facilities in the countries that these advisors work in:

"Most of the prison facilities in [these] countries are very, very old. Still, you use a prison built in the eighteen hundred and so on, so

²² The HIPP states that their main activities are "to give technical advice to the Member States on the development of prison health systems and their links with public health systems and on technical issues related to communicable diseases (especially HIV/AID-S, hepatitis and tuberculosis), illicit drug use (including substitution therapy and harm reduction) and mental health" (WHO, 2018). Similarly, the UNODC aims to support countries to achieve universal access to comprehensive HIV prevention, treatment, care and support services for people who use drugs and for people in prisons (UNODC, 2018b).
it's the State not taking into account - it is just taking into account what is easy, what can be secure, and especially the star [radial layout] design, which is commonly used in most countries, Victorian-style prisons" PHA-02

and also about the competing forces and counterforces in the assignation of priorities between staff needs, inmates' needs, rules, and health and human rights:

"I believe that many people are not putting health in prison as a priority. And let's not forget that the managers, stakeholders, the leaders in this specific area are not coming from a medical background. This is true. So, I'm Covering health. I'm coming from a medical background, I talk about health, and I put health very high, but you might not have the same interest in putting health at the same level. I put it first, for example. You might put it second or third. So, this is what I mean by competing challenges and priorities" PHA-04

For Health advisors, prisons are usually old and bad maintained buildings, full of health risks. They are neglected by the community and also, many times, by authorities who justify themselves by saying that inmates must not have better conditions than the general population. However, health advisors emphatically dismiss this by saying:

"Politicians should be brave enough to argue that of course, prison should have good conditions, but we've also to try to make it outside good if that is the case. But they should not [be allowed to] make the prison conditions worst because they don't have been able to have a good society outside." PHA-02

In this case, the manifest theme Need for eradicating deplorable carceral conditions appears again.

The lack of ventilation, as well as the low amount of *Space* and the insufficient *Natural light* usually found in hybrid prisons, violates rule number 13 of the international rules for the treatment of prisoners: "*All accommodation provided for the use of prisoners and in particular all sleeping accommodation shall meet all requirements of health, due regard being paid to climatic conditions and particularly to cubic content of air, minimum floor*

Space, lighting, heating and ventilation" (Rule 13, United Nations, 2016, p. 10)

8.2.2.1.2.- Communicable diseases

Ventilation, *Space* and *Natural light* are also considered the main factors in promoting the spread of *Communicable diseases* in prisons. The international efforts of the WHO in controlling *Communicable diseases* in prison settings is a response to the disproportionate levels of TB, HIV and hepatitis presented in prison settings in comparison to the normal population in all the prison models (Knowles, 1999; Scottish Prison Service, 2002; Aguilera et al., 2016). Hence, Health advisors acknowledge the importance of making prisons abide by the same strict norms on environmental conditions for infection control as any other healthcare facility:

"Infection control is very important, which also apply to the health facilities in the community. We talked about infection control. We have to make sure that all the health intervention that is happening in prisons is following the standard rules for infection control that is happening outside the prisons. It doesn't mean that if it's a prison, it should be different. It should be exactly strictly the same." PHA-04

The underlying theme emerging from the manifest data here is: *Need for adequate infection control Policy.*

The importance of *Policy* as a variable is because Health advisors want governments and their prison services— to comply with the international agreements about providing inmates with the same quality of healthcare and e opportunities for access to health as the normal population:

> "The issue is that healthcare has to be provided in the prison because you might not have the choice. That is an important thing. Do you understand my point? Is it clear? Because if you are in prison, you don't have the choice. ... So, the responsibility of health is lying on the State." PHA-04

In this case, the manifest theme emerging is: *Seeking equal access to health.* However, there is also a recognition of insufficient clear and concise regulation on the design of prisons to promote health and well-being. Health Advisors mentioned that it is only possible to find general guidelines among bodies of norms such as the United Nations Standard Minimum Rules for the Treatment of Prisoners (Nelson Mandela Rules), but there is no specific document on health standards in prison design:

> "If you look into the European prisons' rules and so on, it's not a major role it plays.... and the UNODC now, you know, the Mandela Rules and so on, it's very little. You can also, of course, find it between the lines but not as a separate thing so" PHA-02

The underlying emerging theme here is: Need of a compendium of design standards.

8.2.2.1.3.- Importance of unmentioned variables

Nine variables were not mentioned by any of the interviewees (see Table 8-4). This considerably less than the previous group, suggesting that Health advisors consider a broader range of variables. This scope can be explained by their medical background and their training to look for the underlying causes of diseases comprehensively.

Additionally, three out of four of the Health advisors interviewed worked in a European context, and only one of them had to face the reality of countries with hybrid or repressive prison models. This difference in the operational theatres for Health advisors compared with Policy advisors explain the low level of importance placed in *Financial obstacles* (2.3%) and the broader spread of importance among the variables (Gini coeficient= 0.50) for advisors in Europe. Indeed, the higher GDP per capita and the lower inequality of income distribution of European countries in comparison to countries from Asia, the Middle East, Africa or Latin America, puts European prisons in a better position for policy implementation and budget allocation, tempering and broadening their Health advisors perspective when considering how to improve inmates' health and well-being.

Family of Variables	Area	Sub-area	Variables	Importance %		
Eudemonic	Architectural variables		12. Floor features	0.0		
		Physical features	13. Quality of materials	lity of materials 0.0		
			15. Walls features	0.0		
	health and well-being	Health and safety	18. Stress control	0.0		
	variables	Well-being	23. Negative distractors	0.0		
Institutional and Professional		Security	32. Avoid escape	0.0		
	Prison factors or issues	Desision process	48. Hierarchies 0.0			
		Decision process	49. Inmate status	0.0		
	Interviewee personal	Points of view	57. It must be a punishment	0.0		

Table 8-4: Variables rated zero among PHA-I

The high level of importance attached to *Natural light* (4.5%) and *Space* (4.4%), in addition to the moderately high scores for variables such as *positive distractors* (2.6%), *Acoustic levels* (2.4%), or *quality of views* (2.3%), contrasts with the silence of Health advisors on variables related with mental well-being such as *'stress-control'* and *'negative distractors'*.

This apparent contradiction suggests that the Health advisors' view on carceral conditions are more in line with positive psychology and the promotion of favourable conditions for health rather than focusing only on eliminating illness. Again, this can be understood as a result of the medical interviewees' background. The long health research tradition of focusing on the interaction between both the physical and social environment with health outcomes, in addition to the recent emphasis placed on Evidence-Based Design in healthcare, could explain why Health Advisors views align with positive psychology, and therefore, the PERMA theory of well-being.

8.2.3.- Comparative analysis PPA-I / PHA-I

The scatter plot (Figure 8-3) compares each variable from these two professional groups and shows that three variables have a high level of importance for both Prison Policy Advisors (PPA-I) and Prison Health Advisors (PHA- I): *Non-financial obstacles (#50)*, *Indoor air quality (#3)*, and *Space (#10)*, emphasizing environmental factors. *Non-financial obstacles* are undoubtedly still the most critical variable for both Policy advisors and Health advisors. However, the Policy advisors group places a much greater emphasis on the importance of *Non-financial obstacles* than the group of Health advisors. This difference could be associated with the different operational theatres in which Policy advisors and Health advisors work, in addition to their different professional perspectives. The former group is focused on repressive and hybrid prison models, trying to influence authorities in countries where social, cultural and political barriers have a more significant impact on prison administration, while the latter is more in touch with safety and rehabilitation prison models within Europe.

Although both groups place high importance on *Indoor air quality* and *Space*, the underlying causes are different. On the one hand, the importance that Policy advisors place on these variables highlights the scarcity of these resources and the urgency to meet these basic needs in the prisons in which they work, where the physical conditions and prison practices do not respect basic human needs for inmates, violating the international agreements about minimum rules for the treatment of prisoners. On the other hand, Health advisors highlight the minimum requirements that must be present to prevent the emergence and proliferation of diseases affecting inmates and staff well-being. This difference in focus on the same variables explains, at least in part, the group differences in priorities.

The considerable difference in the number of variables unmentioned by each group also evidences their different professional approach to addressing the health and well-being of inmates due to their professional background and the differences in the operational theatres in which each group works.



Figure 8-3: Scatter plot comparing the importance of variables

Many western European prisons operate in old buildings, where there seems to be a real concern about human rights and minimum conditions of hygiene and health —which does not always occur in the Hybrid prison model. Indeed, the degree of urgency attached by Policy advisors to physical conditions of habitability in the repressive and hybrid prison models contrasts with the low level of urgency placed on any specific variable by Health Advisors.

There are also some contradictions in the importance attached to some variables when they are compared between groups. *Communicable diseases, Natural light* and *Policy*, are considered highly important among Health advisors. However, these variables only show a moderate level of importance for Policy advisors, suggesting different motivations related to their different professional areas of health and *Policy*, respectively. While Policy advisors have to deal directly with authorities from the prison services and ministries of justice as the main responsible institutions of the administration of punishment, the work of Health advisors is directed to the ministries of health, having an indirect impact on the prison administrators' priorities.

Similarly, there are three variables: *Decision-making process*, *Financial obstacles*, and *Cultural and social* context, that are highly important for Policy advisors but show moderate to the low level of importance among Health advisors. This shows the strong emphasis that Policy advisors place on their efforts to produce changes directly in the field, dealing with *Financial obstacles* and cultural nuances, in comparison with the Health advisors' work, who are focused on influencing the implementation of health policies in prison settings. Indeed, the *Cultural and social* context shows the greatest contradiction in terms of importance, being scored 6.4% among Policy advisors while Health advisors only attached 0.8% of importance on it.

For Health advisors, it appears more important to think about the general health policies of prevention of diseases, to help make health authorities understand the economic benefit of treating prison inmates during their stay in prison:

> "that is also why we try to put some more focus on it, to get the ministry of health interested in this topic because it's actually costeffective if you do something. And they should take care of this because it's so much more expensive to have them going out

around, sick, outside to prison. So, when you have them, do as much as you can." PHA-I 02

From these advisors, having such a select unhealthy population in one place provides a unique opportunity, as it usually has no contact with the healthcare system. This selected group of unhealthy inmates will be in prison for a period which should be used to treat them as an effective strategy for improving the health of the greater community:

"Many of them do not consult the health care system, ... but when they come up to the prison, we have a chance to get them in touch, to treat them, to cure them, and to try also to secure that they get out of their dependencies. So, we use this time in prison as much as you can to improve the health conditions and [they] can go into a normal life in society after release" PHA-I 02.

However, the diminished level of importance placed by Health advisors on *Decision-making process*, *Financial obstacles*, and *Cultural and social* context, reveals a certain level of resignation toward the conditions they have to work in, as well as their limited scope to influence institutional decisions:

"So, you have entered a prison which is about a hundred and thirty years old. You have seen this old good Prussian architecture. It's a historic building; there are small cells in. Or are you planning a new prison? So, the only way you can still use it [this old prison], is when you come to the point that the cells are too small, [you have to] take a wall out, then make one cell out of two. [In old prisons there are] several problems, that is so difficult. It is not just about standards. You can think about optimizing, but for different conditions, you don't want to get optimal from my point of view." PHA-I-03

8.3.- Key emerging themes and meta-themes

Twelve key themes emerged from the International Advisors discussion concerning health, well-being, and prison design. These themes were grouped into five Meta-themes — Need for specialisation of designers, Inadequate built environment, Low level of external influence, Operational incoherence, and Need for education of authorities and society (See Table 8-5).

Emerging Theme	Meta-theme
 Need for professional maturity of designers Need for a compendium of design standards Need for understanding the concept of cell Need for consideration of cultural differences 	Need for the specialisation of designers
Need for eradicating deplorable carceral conditionsNeed for adequate infection control	Inadequate built environments
 Lack of power of the UN Seeking equal access to health 	Low level of external influence
 Prison services' incongruences Overuse of imprisonment 	Operational incoherence
 Make designers aware of the consequences Authorities and society have to be educated 	Need for education of authorities and society

Table 8-5: Key themes and meta-themes emerging

The first Meta-theme — *Need for specialisation of designers* — reveals the main global issue for prison design according to the international advisors. The small market that prison design represents in comparison with other areas and the usually secretive world of procedures and security measures can turn the design of prisons into an unattractive professional niche for designers. As a result, prison design — as the design of places that could fulfil multiple objectives and not merely security— is heavily influenced by security perspectives. This could be preventing not only the inclusion of designers with enough professional maturity, but is a clear obstacle to introducing broader ideas of how to

provide safety, promoting curiosity, excitement, or calm, without jeopardising the security. There is also need for new ideas of how to create positive emotions and adequated *spaces* that could promote engagement, how prison design could help to improve the quality of the relationships and bring meaning to inmates' life while providing skills for the accomplishment of their personal goals — in other words, using design to improve the well-being of the prison users. This lack of expertise is aggravated by the lack of clear national design norms that promote and advocate for the health and well-being of both inmates and prison staff.

The second Meta-theme — *Inadequate built environment*— brings together two themes that expose the harsh reality of the physical conditions in many prison services globally. These conditions are directly damaging inmates and staff health, as well as negatively affecting their well-being. The third meta-theme — Level of External influence - shows a certain level of frustration among the UN officers in their struggle to get the State members to comply with international covenants concerning health and well-being, which is the primary objective of both Prison Policy Advisors and Prison Health Advisors (Ovey, 2014). The influence of international advisors is low, and the continuity of the results is fragile because they depend on the country's cooperation with the UN's mechanisms and the country's willingness to follow their recommendations, in order to maintain the international reputation of the UN (Smith, 2019). The forth meta-theme—Operational incoherence— highlight both facts that some prison services routinely override any guidance from advisors based on an internal belief that imprisonment in itself will produce positive outcomes, and that, in many cases, words as organisational aims do not correspond to deeds. Accordingly, the last meta-theme -Need for Education of *authorities and society*— shows what international advisors see as the main obstacles that are preventing the evolution to a more human-centred approach.

8.4.- Sub-conclusions

This Chapter has presented the findings of the manifest content analysis from the International Advisors concerning their views on health and well-being in prison design. As a subset, Prison Policy Advisors show a highly concentrated concern for just six key variables in prison design — Non-financial obstacles, Decision-making process, Financial obstacles, Cultural and social context, Indoor air quality, and Space. Similarly, Prison Health Advisors are focused on just six key variables — Non-financial obstacles, Communicable diseases, Indoor air quality, Policy (in or about prisons), Natural light, and Space. It is notable that three variables — Non-financial obstacles, Indoor air quality, and Space — are considered highly important by both International Health advisors and Policy advisors, showing a particular emphasis on environmental factors. One finding of concern is that the Policy advisors' group did not mention twenty-six identified variables during the interviews. However, the number of variables not mentioned by Health advisors was only nine, suggesting that their medical background plays an important role in their approach to the subject. This contrast shows the different perceptions of urgency for each group, due to the different operational theatres in which they work. Prison Policy Advisors are focussed on the particular obstacles of the hybrid prison model which do not provide the minimum conditions to enhance or promote health and well-being. In turn, the Health Advisors are more focused on safety and rehabilitation models within Europe, and their general health policies of prevention of diseases. Their aim is to make the health authorities related to the Hybrid model understand the economic benefit of treating prison inmates during their stay in prison, and there is a unique opportunity to control and treat a population that usually has no contact with the healthcare system. Twelve themes emerged from the analysis, generating five meta-themes. These relate to the goal of the UN in relation to health and well-being in prison, the obstacles at the national level that international advisors have to deal with when working on the field, and the problems related to prison design that prevent the consideration of health and well-being in prison design. The next Chapter discusses the detailed findings of the manifest content analysis for staff in the Hybrid Prison Model, revealing their particular perspectives, comparing their congruent views and analysing their contradictions.

Chapter 9: The Hybrid prison model

9.1.- Introduction

This chapter aims to understand which architectural factors related to health and wellbeing are considered important for each professional group individually, and the Hybrid prison model as a whole. It addresses the second and third research objectives in relation to the Hybrid model, which are "To understand how and why these factors are or are not considered by key decision-makers in the Hybrid, the Safety, and the Rehabilitation model", and "To understand when, how and why these factors are displaced in the Hybrid, the Safety, and the Rehabilitation model in the design process". The chapter starts with a brief review of the current prison context in which Chilean prison staff and designers work within the Hybrid prison model, in order to better understand the situation that interviewees have to face. The following sub-sections discuss and compare in detail the analysis of the data from High-level Staff and Governmental Designers, respectively, by using the same analytical approach developed in the previous chapter consisting of the perceived level of importance of the variables and detection of emerging themes through the MCA. To uncover the causes involved in the decision-making process of prison design, an LCA was also performed in the interviews from the cases belonging to the three prison models, leaving aside the International advisors because they do not participate in the process of decisions during the design of prisons.

The emerging MCA themes will then be contrasted against results of their correspondent LCA and photographs taken during the visits to the prisons in this model in order to reveal congruent and conflicting views that could help to uncover hidden structures and competing forces. By triangulating the emerging themes extracted from previous sections in this chapter and the LCA, the final part of this chapter reveals the meta-themes that characterise the Chilean Case.

9.2.- Chilean prison design in the context

The total prison population in Chile is 49,945 inmates (Gendarmería de Chile, 2019). The Chilean prison service (Gendarmeria de Chile) manages 105 detention and sentencing centres distributed in the 4,400 Km length of the country. Eighty-one of these centres are closed system prisons where inmates confined in areas usually surrounded by a perimeter security corridor with double walls, and they are not allowed to leave their areas without custody. The other twenty-one centres are open centres in which 639 inmates are

trained and work in enclosures without perimeter security. They are usually farms, which inmates are allowed to leave during the weekends. There are 79 male prisons and five female-only prisons. A report issued in 2018 by the Supreme Court of Chile in relation to the carceral conditions established that the 'CDP²³ Santiago Sur' (1843) — the largest and oldest prison in Chile with an official capacity of 2,384 inmates — was housing 4,486 inmates, at nearly twice the official capacity (Supreme Court of Chile, 2018). There are another 11 prisons in which the prison population varies between 11 and 3,800 inmates, while seven prisons house less than 20 inmates. The largest female prison has 611 inmates, and the smallest has 44 inmates (Gendarmería de Chile, 2019). Most of the Chilean prisons were built between 1960 1989. The seven newest prisons were procured through Public-Private Partnership between 2000 -2010.

Chile's prison service personnel is divided into uniformed and non-uniformed personnel. There are approximately 13,000 uniformed personnel and 2,600 non-uniformed professionals, technicians and administrators, amongst others (Zúñiga, 2010). The rehabilitation-related professionals in the latter group. Uniformed personnel are divided using military ranking into 789 Commissioned Officers and 12,300 Non-commissioned Officers (Sanhueza and Brander, 2017).

9.3.- Hybrid prison model – analysis and discussion

The first part of this section will analyse and discuss findings from interviews of the Highlevel Staff of the Chilean prison service followed by the Governmental designers, to finally compare the priorities and views of both professional groups.

9.3.1.- High-level Staff:

9.3.1.1.- Manifest content analysis and Pareto analysis-

The distribution of importance attached to the variables by High-level Staff in the Hybrid prison model is shown in Figure 9-1 below.

²³ Prisons in Chile are called CDP (Prison detention Centre) when most of the population is pre-trial detainees. A prison is called CCP (Prison Compliance Center) when the majority of the prison population have been sentenced. A prison is called CP (Prison Complex) when there is a high number of both pre-trial detainees and sentenced inmates .



Figure 9-1: Pareto analysis of importance HLS- the Hybrid model

There is a high level of concentration in the distribution of importance (Gini coefficient = 0.57), with eight main variables. These eight variables accumulate 42.3% of the total importance (see table 9-1 below). *Non-financial obstacles* ranks highest again, rated at 8.4%, followed by *Financial obstacles* (5.8%), *Decision-making process* (4.9%), *Sense of coherence* (4.9%), *Preventing isolation* (4.8%), *Design standards* (4.7%), *Policy* (4.7%), and *Space* (4.2%).

			HLS-H		
Family of Variables	Area	Sub-area	Variables	Importance %	
			Variables	individual	accumulated
Institutional and Professional	Prison factors or issues	DECISION PROCESS	50. Non-financial obstacles	8.4	8.4
Institutional and Professional	Prison factors or issues	DECISION PROCESS	47. Financial obstacles	5.8	14.2
Institutional and Professional	Prison factors or issues	DECISION PROCESS	46. Decision making process	4.9	19.1
Eudemonic	health and well-being variables	WELL-BEING	24. Sense of coherence	4.9	23.9
Eudemonic	health and well-being variables	WELL-BEING	25. Preventing isolation	4.8	28.7
Institutional and Professional	Prison factors or issues	PRISON ARCHITECTURE	41. Design standards	4.7	33.5
Institutional and Professional	Prison factors or issues	PRISON ARCHITECTURE	40. Policy (in or about prison)	4.7	38.1
Eudemonic	Architectural variables	SENSORIAL	10. Space	4.2	42.3

Table 9-1: Most important variables among HLS-H

9.3.1.1.1.- Non- financial and financial obstacles:

The three highest priorities (Table 9-1), *Non-financial obstacles*, *Financial obstacles* and *Decision-making process*, accumulate 19.1%. However, although 'obstacles' seems to be the main issue when talking about the prison system and the inmates' well-being, *Financial obstacles* are less urgent than the internal problems classified as *Non-financial obstacles*, such as the subordination of rehabilitation to security. This conflict emerges in the comments from a non-security staff interviewee:

"I believe that [health and well-being must be considered] from the beginning. No, I can not- I do not think that this can be modified later. [However], I feel that there is a predetermined approach to privilege what is security in any of the situations." HLS-H-01

The underlying theme emerging here is: Subordination of rehabilitation to security.

9.3.1.1.2.- Financial obstacles:

For the High-level Staff in the Hybrid model, *Financial obstacles* relate to lack of governmental financing for new prison projects or improving the current carceral conditions to provide the minimum *Space* recommended by international bodies. This is because prisons are highly expensive and improving offenders living conditions is not always a political priority. As expressed by one interviewee:

"Improving cells in spatial terms will undoubtedly have an impact on public investment and will depend on the policy of each government. It will depend on if they are interested in these issues or not, which are not liked by the community. The square meter of a prison can be more expensive than that of a hospital." HLS-H02

Additionally, Prison staff argue that investment evaluation criteria do not consider the well-being of inmates and are based more on economic indicators such as the cost per square meter, or the construction cost per prisoner:

"The design of a prison cell responds to economic criteria rather than to the valuation of people" HLS-H03

The emerging theme here is: Social retributive views affect budget allocation.

9.3.1.1.3.- Decision-making process:

The dominance of the security perspective is underpinned by the lack of influence that rehabilitation-related staff have over the decision-making process of design:

"Because of course, today we have some participation, from the social reintegration, from what is the technical sub-directorate. But not from the beginning. We are suddenly called to an opinion when designs are already made. The possibility of modification in this stage always implies greater expense; then it becomes difficult." HLS-H01

Failure to properly consider the opinion of rehabilitation-related staff is seen by these staff to be due to the lack of evidence-based knowledge or technical elements during the decision-making process. Neither systematic nor updated data link health, well-being and rehabilitation outcomes or recidivism indices to the design process. This has allowed authorities to prioritise security in prison design and operation rather than health and wellbeing and rehabilitation:

> "But it is clear that [among us] there is a lack of technical elements that can allow us to have a definition of these elements of health and well-being. To have them better developed. As deep as I have for the security ones. I mean, I have the security ones developed in-depth. Of course, there is a need for discussion; there is a lack of discussion." HLS-H-02

The underlying emerging theme here is: Lack of priority given by prison authorities to health and well-being.

The decision-making process in the Hybrid model represents an obstacle in itself. For High-level staff, the consideration of health and well-being factors matters. However, they lack any plan on how to progress beyond stating that the two concepts of physical and mental health need to be considered together in prison design:

"That is to say; I think we have to be thinking about how not to harm the physical as well as the mental health of the people when a

prison is designed or built I think they are two concepts that have to be very to avoid the loss of health, obviously" HLS-H-01

In the Hybrid model, the historical supremacy of security perspective over rehabilitation and humane treatment is set against the weakness of the rehabilitative rhetoric and these different perspectives on imprisonment and their different interests can be seen as disconnected discourses. For security staff, the primary purpose of the prison seems to be keeping the prison population controlled, and their main concern is how the design can facilitate this, assuming that violence and dangerousness are intrinsic features of the inmates, as explained by one HLS-H:

> "The first step was standardising a cell, and the minimum time inmates spend outside the cell. Today the challenge is standardising the general design of the prison in terms of the typology of prison, the number of inmates per cell, and also the number of cells per wing in a way that allows us to keep the control over the prison, having the capacity to respond to critical events. Because this is not a mall - there will be critical events."HLS-H-02

The underlying theme emerging here is: Subordination of rehabilitation to security.

In turn, the high importance attached to health and well-being considerations by rehabilitation professionals within High-level staff contrasts with their recognition of the massive gap between what the physical conditions of a prison should be and what they are in reality in the Hybrid model:

"How is it possible that a hundred and seventy-three-year old prison has two-hundred per cent of overcrowding? It is not of common sense or coherence, right? Neglect of such magnitude. However, how can it be solved when there is a whole social perspective that- or a whole social valorisation in which the bad ones must be imprisoned and in bad conditions? Because nobody has shown that the right way has to be different." HLS-H-03

The emerging theme here is: Deplorable prison conditions.

In addition to the decision process sub-area (see table 9-1 above), the five other most important variables have a very similar rate of importance between them: Sense of

coherence 4.9%, Preventing isolation 4.8%, Design standards 4.7%, Policy (in or about prison) 4.7%, and Space 4.2%, reaching accumulated importance of 42.3% in the whole first group. This suggests that the staff are equally concerned about physical and social factors.

9.3.1.1.4.- Sense of coherence:

A sense of coherence (SOC), relates to the possibility of understanding, managing, and finding meaning from situations. It can be translated to design by allowing inmates to manage everyday situations and trying to avoid surprises of uncertainty. *Sense of coherence*, which is also identified as a well-being-related variable, is a recurring theme for High-level staff interviewees, who aim to reach an ideal situation rather than the current reality where security is predominant. A Rehabilitation-related High-level staff interviewees:

"I think that it could be ideal that inmates can manage their light." HLS-H-01

However, it seems that such a *Sense of coherence* is quickly lost, as later, the same interviewee, despite his rehabilitation-related background, argues that to give any greater degree of autonomy to inmates would affect the prison security:

"Today, it is difficult to let inmates manage the light of their cell because from a security point of view they will have access to the electrical wire, and they could make a power cut." HLS-H-01

A security-related High-level staff is even more clear in justifying this position, evidencing the need for control s and their perception of the inmate as an intrinsically violent:

"Because of the inmates' culture, it was never called into a question to have dormitories and collective cells, ... although during the night abuses occur when there are not control, but it is so difficult to have control during the night. To do it, I should sleep in the cell." HLS_H02

However, staff fears are often the result of a combination of highly populated prisons, insufficient prison staff and poor habitability and programs.

In this case, the theme emerging is: Lack of control of inmates' actions inside the prison.

9.3.1.1.5.- Preventing isolation:

'Preventing isolation' is an essential variable for High-level staff, and linked to the current efforts of the Chilean prison service to prevent inmates committing suicide, due to the unexpected increase of suicide rate associated with the launch of Public-Private-Partnership prisons in Chile between 2000 and 2010 (Martínez-Mercado and Espinoza-Mavila, 2009) which introduced the use of individual cells:

"We had bad experiences with the concession prisons. When passing the inmates from living in groups in their dependencies to sleeping in individual cells, we had a significant percentage of suicides when they began to be occupied this type of prison" HLS-H01

In response to these events, the Chilean prison service is now promoting the design of cells for two inmates rather than individual ones according to one interviewee:

"in discussion with the Technical Sub-directorate staff, we reached a consensus, that of course, the psychological aspect, security aspects allowed us to point out that the cell, the best type of distribution of inmates per cell, would have to be two" HLS-H02

The underlying theme emerging from the data here is: Importance of preventing suicide.

9.3.1.1.6.- Design standards and policy

The high ranking of design standards and policies simply highlights the absence of clear long-term policies about the rehabilitation of inmates and *Design standards* related to prison design:

"I think a challenge was this lack of definitions that made that each project was defined according to the criteria of who was leading the project. From the point of view of [their] personal experiences rather than from an institutional perspective, or rather a [institutional] strategy. That is why our designs of prisons are not well defined either in architectural terms nor in terms of the requirements that we have as a country in the penitentiary administration." HLS-H-02

This call for standardisation is accompanied by a lack of knowledge of international norms and confusion between international minimum standards and institutional approaches. Surprisingly, given these issues, the' Handbook of Human Rights for Prison Administration edited by the Technical Sub-directorate of the Chilean prison System 'Gendarmería de Chile (2014) is an adaptation of the 1955 version of the UN Standard Minimum Rules for the Treatment of Prisoners (United Nations, 1977). This Handbook transcribes almost literally rule number 10 of the UN Standard:

> "10. All accommodation provided for the use of prisoners and in particular all sleeping accommodation shall meet all requirements of health, due regard being paid to climatic conditions and particularly to cubic content of air, minimum floor Space, lighting, heating and ventilation." (United Nations, 1977, p. 2)

These requirements have only been used as guidance for the ideal situation when trying to upgrade the harsh conditions of many old prisons, and have not been yet translated into an institutional standard:

"What I know about international policies that can be used by any penitentiary system, are these five minimum rules of cell design. I do not know if there are other parameters, such as what should be the width of the staircase. I think it does not exist. Therefore, here, we took into account definitions made by, I do not know, by the municipality to design schools. We did not have something that responded to our needs. We are working on that. However, not as an international policy but rather as institutional policy." HLS-H-02

The underlying emerging theme here is: Lack of design regulations.

9.3.1.1.7.- Space

The comments of the interviewees are based on the recognition of the importance of providing enough cell *Space* in order to promote physical and mental well-being, acknowledging that the current reality among most of the prisons in the country makes it

almost impossible to reach that goal:

"Nowadays, there are conditions where, from the point of view of the place where inmates sleep, some places have footage of zeropoint forty-eight square meters per-inmate. That is absolutely insufficient. That is not worthy. That is not to value the people who are deprived of liberty and [neither does it] promote a different behaviour" HLS-H-03

Given these comments are made by a non-security related interviewee, it could be argued that the highly influential perspective of security-related staff ensures the status quo is maintained. The evidence here also shows that staff working at the highest level in the prison service are also aware of the real magnitude of the problem. They observe the system that they are mandated to drive damaging the people they are mandated to take care of. However, the institutional struggles below the surface of the Empirical domain are even stronger.

The non-security related High-level staff of the prison service— whose role is professional and technical but primarily political—know that the prison population is being punished by placing them in overcrowded prisons, by locking them out in cold dormitories and cells, with insufficient daylight and poor hygiene. They also know that toilets in prison are a focus for disease and that the physical and psychological integrity of inmates is always under risk:

"There is a precariousness so evident in the hygienic services, in the condition of how the prisoners are fed, and in the reduced spaces" HLS-H03

Nevertheless, they face inner forces that prevent them from bringing the situation to the light and push to solve it effectively. This is the inner contradiction of wanting to provide better living conditions for people who have been sent to 'suffer ' a sentence in the Hybrid model. It is perhaps also, the fears of being seen as defending the inmates' rights, in a society that believes that the punishment has to be enough to deter other people from committing a crime. This internal struggle makes it hard for non-security related staff to resist the security-related High-level staff perspective.

Equally, the prison service has the legal obligation to receive every person that the

criminal justice system sends to prison, despite any lack of *Space* available or lack of personnel. The Chilean prison service has a theoretical average of one prison guard per every 3.8 inmates. This, however, creates a false impression of adequacy, given that staff have to work in shifts and only a small portion of them actually work in direct contact with inmates. There are challenging situations such as in the Santiago-Sur prison, where there is one prison guard to every eleven inmates (Vedoya M., 2018). Thus, the perspectives of security-related Staff and non-security Related Staff is always must always be related to the inmate's well-being in order to be able to address these issues. The former group's concern about security measures and protecting the physical integrity of the *staff* must be balanced with the latter group's concern over the effect that the current prison practices have on the *inmates*' mental and physical health.

The underlying theme emerging from the data here is: Divergent views between security and rehabilitation.

9.3.1.1.8.- Unmentioned variables

Finally, as with the two previous groups, there are fifteen variables not mentioned by any of the interviewees, and the majority of them relate to health and well-being and architectural variables (see Table 9-2).

Importantly, neither communicable nor non-communicable diseases are mentioned by the High-level staff of the national prison service, notwithstanding that Chile has a relatively high tuberculosis rate in prison at 123.9 per 100, 000 prisoners, which is double the general population rate (Aguilera *et al.*, 2016). This neglect can be seen as further evidence of the lack of real interest in inmates' health and well-being, aggravated by the normalisation of deeply unequal access to healthcare in Chile.

Indeed, as Rotarou and Sakellariou argue, the neoliberal two-tier —private and public healthcare system in Chile created during the military dictatorship has created "a structural disadvantage for several parts of the population – particularly the poor, the elderly, and women – who cannot afford the better-quality services and timely attention of private health providers" (Rotarou and Sakellariou, 2017, p. 495).

Moreover, in this context, probably the relatively faster access of inmates to healthcare is why there are relatively few complaints from inmates about healthcare inside prison with a high degree of satisfaction (Osses-Paredes and Riquelme-Pereira, 2013). This lack of complaint reduces political and media pressure, and as a result, healthcare is not a particular concern for prison authorities.

HLS-H						
Family of Variables	Area	Sub-area	Variables	Importance %		
	Architectural variables	Comfort	04. Indoor bathroom	0.0		
		Sensorial	08. Contact with nature	0.0		
		Physical features	11. Doors features	0.0		
	health and well-being variables		18. Stress control	0.0		
Eudemonic		Health and safety	18. Stress control 0.0 20. Communicable diseases 0.0 22. Non-communicable diseases 0.0			
			22. Non-communicable diseases	0.0		
		2	23. Negative distractors	0.0		
		Well-being	29. Self-esteem	0.0		
			30. Universal design	0.0		
	Prison factors or issues	Security	34. Traffic and drugs	0.0		
Institutional and Professional Prison factors or issues Decis		Drisen numpees	35. Inmates education	0.0		
		Phson pulpose	37. Only lost of freedom	0.0		
	Decision process	49. Inmate status	0.0			
	Interviewee personal view	Points of view	53. Assumptions	0.0		
		FOILS OF VIEW	57. It must be a punishment	0.0		

Table 9-2: Variables rated zero among HLS- the Hybrid model

9.3.1.2.- Methodological triangulation between manifest emerging themes and LCA among the Hybrid model high-level staff

The deeper latent content analysis of the interviews among the Chilean prison service's High-level Staff shows three underlying areas of concern (see Appendix 13) as follows:

- The way to improve (54% of the total codes): showing what interviewees consider necessary in prison design, and what are the steps needed to evolve to a more humane and rehabilitative approach.
- 2. It is not our fault, and we cannot solve it (30% of the total codes): where interviewees talk about the political nature of the decisions, the inadequate budget allocation, and their recognition that the problem is slipping from their grasp.
- 3. **Inmates' well-being is not the priority** (16% of the total codes): which shows that although there is a recognition that a problem exists, and that some health and well-being factors of design are beginning to be considered, there are also urgent priorities which exclude health and well-being factors.

The Manifest themes emerging from the previous section are next compared with the

LCA themes, to find the links between each set of themes in order to understand why these themes are so relevant for interviewees (see Table 9-3).

Manifest emerging theme	Latent theme	Latent Sub-area	Latent
			Area
Subordination of rehabilitation to security	 We can easily lose control of the prison Security reasons must determine everything 	What is necessary to be considered / Security matters are first	
Lack of control of inmates' actions inside the prison	 Critical events will occur Security staff must be consulted 	What is needed to go forward	The way to
Lack of design regulations	The needs for standards in prison design		improve
Importance of preventing suicide	 Two to four inmates per cell Just for sleep 	What is necessary to be considered / What a cell should consider	
Social retributive	Desire for retribution is far stronger than rehabilitation	Decisions are political	
views affect budget allocation.	 Minimising cost is the rule Low state priority of prison conditions 	•	
Deplorable state of prisons	 Low state priority of prison conditions A big obstacle is the lack of money Health and well-being is not seen as important Low state priority of prison conditions 	Inadequate budget allocation	It is not our fault, and we cannot solve it
Divergent views between security and rehabilitation	 Health and well-being is not seen as important Low state priority of prison conditions 		
Lack of priority	 Low state priority of prison conditions 		
given by prison authorities to	We are dealing with more urgent problems		Inmates'
health and well- being	Concerns for well-being have been rare	Well-being is beginning to be considered	is not the priority

Table 9-3: Links between manifest e	merging themes a	and LCA o	f High-level	Staff of the	Hybrid
	prison model				

9.3.1.2.1.- The way to improve

This grouping of the latent themes reveals what the High-level staff interviewees believe is important to improve. There is a cluster of codes grouped around the latent sub-area 'Security matters are first' which show possible reasons for overzealous security. Indeed, the Chilean prison service faces a combination of forces that potentially could increase the loss of control by the authority inside prisons such as:

a) The insufficient prison building footprint which results in overcrowding:

"How is it possible that a hundred and seventy-three-year old prison has a two hundred per cent of overcrowding." HLS-H -03

b) Poor maintenance of older buildings in non-PPP contract prisons connected with the manifest theme 'Deplorable prison conditions'. This is, in turn, attributable to the inadequate budget allocation, which is insufficient even for basic maintenance or to providing safe living conditions:

"If we had the level of investment that the USA, we would not have this kind of problems of having had 81 inmates burned to death in San Miguel prison, which is what we don't want it to happen again, but it will probably happen again because the infrastructure [the design and the maintenance conditions of existent prisons] is bad" HLS-H-02

c) The high number of inmates and the legal obligation of the prison system to receive— and take care of — every new inmate sent by any court even if there is no room available for a new inmate:

"Sadly, sometimes in a cell where there are four inmates, we need to house eight." HLS-H-02

- d) The low number of security staff; and
- e) The extremely low number of rehabilitation-related personnel.

All these forces interact in opposite directions, trying to maintain the stability of the system. Behind this reality, security prison staff have one main concern evident: Do not

lose control. For them, in this historically overpressured scenario, inmates are capable of dangerous reactions, that must be maintained under control. In the Hybrid model, the priority is keeping the perimeter secure, due to the incapacity of the system to maintain control in the internal areas of the prison at all time. This is evident by the use of double perimeter walls (see Figure 9-2 and 9-3), typically used in in the Hybrid prison model, with armed guards in guard towers with orders —and training— to shoot at those who try to escape.



Figure 9-2: Double-walled security area with guard tower -PPP Bio-Bio Prison, Chile



Figure 9-3: Double-walled security area with guard towers in Concepcion Prison, Chile

Prison guards have to deal with a crowd of inmates who are usually quiet but could lose control over any small change in the equilibrium of forces, or due to variations in the general mood of the prison population. In the newest prisons, the clauses of the PPP contracts allows them to maintain a more manageable number of inmates in each prison area. However, fights between inmates and inmate-staff assaults in PPP prisons are not unusual and probably worsened by the harsh and psychological oppressive environment (See Figure 9-4).



In the traditional older prisons, nevertheless, the delicate equilibrium is constantly threatened by the overcrowding and poor living conditions (See Figure 9-5).



Figure 9-5: Prison block yard CDP-Santiago Sur Prison, Chile. The prison was built in 1843.

The difficulty of maintaining this fragile balance is the reason why security staff highlight the need for being prepared for the 'critical events' and any decision regarding design requires the approval of security staff.

"Everything that happens inside the prison is my subject, from the intervention, the logistics and the security, the elements that are big elements. I have to see them." HLS-03

In this situation, it is easy to understand the emerging theme of '*Lack of control of inmates*' *actions inside the prison*' from staff. The environmental conditions also clearly cannot evoke positive emotions such as feeling safety, calm, or serenity among inmates or staff.

Long term solutions will need a considerable amount of resource. However, considering that existing budgets do not cover even the basic maintenance of prison facilities, inmates' well-being is simply seen to be too costly as an additional concern for prison authorities to spend money on:

"To say that we are going to develop a cell typology, which goes beyond what we have developed today, has to do with investment. So, I can put on the table today that I need more space to develop activities inside the prison, but it is not even defined how many square meters there must be for an inmate in a cell. For me it is nefarious. What do I do? If not even the distance between towers guards is defined? Disastrous" HLS-H03

In this scenario of overcrowding and long idle periods, inmates are seen as dangerous. Therefore, rehabilitation work has to be subordinated to security, due to the insufficient number of rehabilitation-related personnel, and the delicate balance of forces that security staff have to control.

The most urgent problem for these security staff seems to be suicide attempts. The institutional intention to prevent suicide is coherent with the latent themes that describe the ideal cell as capable of housing two to four inmates and to only use it for sleeping purposes. This ideal, which is aimed at preventing suicide attempts, is justified by one security-related interviewee, in their empirical observation of the carceral social culture:

"[to prevent suicide] We have to observe the idiosyncrasies in our prisons and perhaps in South America, [in which inmates use to] staying in groups of pairs, both to protect themselves as well as to facilitate their stay in prison." HLS-H02

However, there seems to be no evidence-based research digging into the real causes of the problem or self-criticism from authorities regarding the responsibility of the prison service for the psychological effects on inmates resulting from the conditions in which they are being kept. Staff may argue that the inmates' practice of staying in pairs is their way to deal with loneliness and the emotional burden of being in prison. However, it seems also evident that the need for protection is the result of the failure of the state to provide safety and security to inmates while in custody. The staff concern is based on the rise in suicides, committed in individual cells after the inauguration of the first prisons built by PPP contracts. However, the implementation of multiple occupation cells is the only response to the problem, acting as a substitute for psychological attention, and dealing with inadequate staffing for rehabilitation purposes:

"They could not bear being alone, and their difficulties could not be shared with a couple, conversed, contained by their peers, in this case, at night they began to ramble with their thoughts. I say it by letters that they left, comments that were made. When I was talking about not let them die, that is, at least we have to avoid an event that could put the inmate's physical integrity at risk" HLS-H02

The intention to prevent suicides contrasts with the deplorable physical conditions in which inmates are kept in traditional prisons; in the oppressive psychological conditions that characterise PPP contract prisons; and the lack of professional mental health support. The only important guiding principle seems to be, at least for the security-related interviewee, the avoidance of escape and misconduct:

"From my point of view, I think that the designs are mainly aimed at security. Avoid the inmate leaving the cell." HLS-H02

The protection of the inmates' human rights is present in the discourse of security-related High-level staff as a declaration of good intentions. However, the main objective for them is avoiding escape and keeping them alive to fulfil the prison sentence, as highlighted by one interviewee:

"The institution must guarantee the individual rights of the penal population. It must provide better conditions of habitability, remembering, obviously, the psychological and physical aspects of the person who is confined, as well as ensuring that they do not escape, that they are elements that are part of the essence of our institution. Ensuring that they do not die, that they do not escape, are things that allow the effective fulfilment of a sentence" HLS-H02

This incongruence suggests that the prevention of suicide could be both a security and an administrative concern, due to the effect that these events produce in the rest of the prison population, the concern to avoid the administrative and legal consequences for prison guards, and for High-level staff to avoid the political aftermath.

9.3.1.2.2.- It is not our fault, and we cannot solve it

The divergent views between security and rehabilitation are further exposed in some of

the latent sub-themes in this area. The inclusion of concepts such as the normal environment; physical and mental well-being promotion; or *Sense of coherence*, reveal good intentions but contrast with the reality of even the newest prison designs. They also contrast with the recognition by High-level staff that the concern for inmates' well-being in cell design is relatively rare:

"Last week, I visited the criminal unit of Temuco, where a Space of intimate visits was inaugurated. And when I entered to see the Space, I found that what used to be the isolation cells was converted into a Space of impressive warmth. ... It was a Space covered the wooden walls, already, with a stove attached to the wall, with very good ventilation, with a television, with a very good bed of a square and a half and a very good mattress. That is the spaces, which were given to inmates to receive their partners. I was shocked but pleasantly" HLS-H01

This intervention contrasts with the hard prison cells of the newest designs (PPP prisons) containing concrete or steel beds, concrete closet, 12cm wide windows, and a bathroom without a door (see Figures 9-6 and 9-7). It contrasts even more with traditional prison cells, providing housing of as many inmates as possible (see Figure 9-8).





Figure 9-8: Overcrowding. Collective dormitory in Concepcion Prison (Photograph was taken on 20.12.2013) Dormitory dimensions 6.2mx12mx3.2m. The official capacity was 28 inmates, considering double-bunk bed in each side and a central corridor. However, in practice, some of they have exceeded 100 inmates.

The Latent analysis suggest that the concern of Chilean High-level staff is not just the 'Lack of priority given by prison authorities to health and well-being', but also the lack of any political interest by governmental authorities in allocating the basic financial resources needed for treating inmates with respect for their condition of human beings and invest in rehabilitation. (see quote in letter 'b' in section 9.3.1.2.1.)

Nevertheless, prison authorities must balance of forces and avoid loss of control, despite the flaws of the system such as overcrowding (see Figures 9-5 and 9-9) and deplorable sanitary conditions (see Figures 9-9 and 9-10). Although there is a recognition that the existence of prison *Design standards* could help to avoid many designs mistakes and

arbitrary decisions, the 'lack of design regulations' is also helping to keep the prison service working, no matter how big the economic deficit is or how bad the conditions are.



Figure 9-9: Overcrowding. Entrance to a prison block. CDP-Santiago Sur Prison, Chile


Figure 9-10: Deplorable hygienic and sanitary conditions. Entrance to a prison block. CDP-Santiago Sur Prison, Chile

9.3.2.- Governmental designers:

9.3.2.1.- Manifest content analysis and Pareto analysis

Non-financial obstacles' (13.7%) is once again the primary variable for Governmental Designers, ranked twice as high as the second-highest variable *Decision-making process* (6.1%) (see Figure 9-11). The concentration of importance of the variables among Governmental Designers (Gini coefficient = 0.61) is even higher than for High-level staff.



Figure 9-11: Pareto analysis of importance among GD- the Hybrid model

Natural light (6.1%), *Financial obstacles* (5.8%), *Design standards* (5.8%), Indoor air quality (5.2%), and *Colours* (3.9%), constitute the following group of the most important variables accumulating 46.5% of the total importance (See Table 9-4).

			GD-H		
Family of Variables	Area	Sub-area	Variables	Importance %	
		ous area		individual	accumulated
Institutional and Professional	Prison factors or issues	DECISION PROCESS	50. Non-financial obstacles	13.7	13.7
Institutional and Professional	Prison factors or issues	DECISION PROCESS	46. Decision making process	6.1	19.8
Eudemonic	Architectural variables	SENSORIAL	07. Natural light	6.1	25.8
Institutional and Professional	Prison factors or issues	DECISION PROCESS	47. Financial obstacles	5.8	31.6
Institutional and Professional	Prison factors or issues	PRISON ARCHITECTURE	41. Design standards	5.8	37.4
Eudemonic	Architectural variables	COMFORT	03. Indoor air quality	5.2	42.7
Eudemonic	Architectural variables	SENSORIAL	06. Colours	3.9	46.5

Table 9-4: Most important variables among GD-H

9.3.2.1.1.- Non-Financial obstacles

Lack of planning is the most recurrent non-financial obstacle, highlighted by designers as technical elements that are missing, such as the lack of prison standards; no plans for the replacement of old prisons; no trusted centralised data management system to show the real situation; no plans for the maintenance of buildings; and therefore the almost non-existent budget assigned to maintenance. Additionally, the lack of concern of prison authorities about the well-being and health of inmates is seen by Governmental Designers as the result of the lack of authority commitment to deal with historical problems. For designers, prison authorities are failing to confront the deplorable carceral conditions where the predominance of poorly maintained old buildings, is combined with high levels of overcrowding (Institute for Criminal Policy Research, 2018), resulting in unhealthy, harmful and dangerous places:

"One of the factors could be the historical debt of a forgotten system. Let me explain myself. The historical debt has to do with how to face this huge sea wave that I told you, this huge historical wall. One way is not to face it, going away to the other side or bypassing it, because this huge sea wave will pass. I think that the justification is only that. Because honestly, for me, it is not justifiable." GD-H-03

The underlying theme emerging from the data here is: Lack of authorities' commitment.

Accordingly, the importance of '*Non-financial obstacles*' is highlighted by one of the Governmental Designers as the lack of political interest by the National prison service authorities and government to plan to provide a real solution:

"I think that [what is needed is a] change of mentality, in the sense of ...our authorities should understand that although it is true [that], we are a service which deals with the daily contingencies, it is not possible to improvise. You need to think, to think before." GD-H-01

The underlying emerging theme here is: Lack of planning.

This problem is exacerbated by the lack of a department of planning and design, which is capable of thinking ahead methodically.:

"We should know how to structure ourselves, [how to] organising ourselves in such a way that [despite the daily issues] these people continue doing their work, which is very methodological. And not being, let us say, interrupted. Because we are already very behind on the issues, let us say light-years behind to change something in the medium-long term, because talking about the short-term is impossible." GD-H-01

9.3.2.1.2.- Decision-making process

The lack of planning, in addition to the lack of institutional objectives genuinely aligned with the respect of people's dignity, impacts on the *Decision-making process* by focusing on the quantity of accommodation rather than its quality:

"If I have an accommodation capacity of one hundred [inmates], and I want to improve the conditions of habitability in terms of eliminating collective dormitories and implementing individual cells, or cells for a small number of inmates, I could lower in sixty or forty per cent the current capacity of the prison, and in public policy that is not the objective. The objective is always to be able to have the maximum capacity of seclusion possible" GD-H-02

The Emerging theme here is: Incongruence between political and rehabilitation goals.

9.3.2.1.3.- Natural light, indoor air quality and colours:

Natural light', 'Indoor air quality', and *'Colours'* stand out as key architectural variables directly affecting health and well-being. They are mentioned by Governmental Designers

as necessary elements to improve prison spaces in new projects. Nevertheless, there is an awareness that this is not always possible in old, overcrowded prisons:

> "From an architectural point of view, the obstacle is habitability. Today there are no adequate conditions. Today there are conditions of overcrowding, mixing type of inmates, and they have created their own internal system for many years. So, breaking that is very difficult." GD-H-01

The underlying theme emerging from the data here is: Resignation due to the size of the problem

Designers are aware that in the eyes of the general population and also from the prison staff perspective, the concept of habitability is disengaged from the concept of prison:

"It seems that the condition of habitability or the concept of habitability is in everything up to a mall but not in a cell. So I believe that this is a great flaw in the model today, eh, that does not contribute to reintegration and rehabilitation" GD-H-01

In this case, the theme emerging is: Social apathy.

9.3.2.1.4.- Financial obstacles:

There are different perspectives from the designers compared to High-level staff in relation to *financial obstacles*. The designers acknowledge that the Prison Service does an important job with the little budget available to administrate almost 100 prisons, and they are aware that prisons are not the most attractive investment for society. However, there are indications from an interviewee that lack of money can be argued as an easy excuse to justify the rest of the shortfalls:

"I would say that the main reason that precludes health and wellbeing in prison design is] the financing. Because the easiest thing is always to blame the lack of money. 'There is no budget' or 'there are no economic resources'. However, no. I think it has to do with the lack of public prison policies, it should be a public policy about prison" GD-H-03 The underlying emerging theme here is: lack of prison policy.

9.3.2.1.5.- Design standards:

Design standards (5.8%), appears among the most important variables due to the unanimous concern about the absence of these for prisons in Chile. As mentioned by the interviewees, the architectural department of the prison service used to consider some minimum guidance for prison design. This was developed during the process of international bidding for Public-Private Partnership (PPP) contracts in 2000, also called 'Concession prisons'. However, for Governmental Designers, this guidance is not easily transferred to new projects within existing prisons due to the diversity of layouts, climatic zones and countless architectural modifications that these prisons have:

"Because we have a variety, not only of typologies that respond to certain years or certain fashions or certain systems that at that time were thought to be the best but also to different climatic conditions or conditions of location and security that make each prison a different world." GD-H-01

The use of minimum guidance is optional and an amendment in the Chilean construction law in 2009, means the Chilean prison service must abide by national construction norms but does not have an obligation to submit and obtain authorisation for the blueprints of their buildings from the municipal authorities (Gobierno de Chile, 1975). Some designers see this as a potential problem:

> "I did a project for the Social Rehabilitation Department, and I wanted to design emergency stairs, but the budget was not enough. ... we have special regulations, only because we do not need to ask for legal permission. So, it is hilarious in the end, isn't it? Because the regulations oblige you, but it does not force you." GD-H-03

This exceptionalism added to the lack of minimum design standards could result in missing essential elements for the health and well-being of prisoners due to economic reasons. Moreover, prison projects can be built with serious non-compliances with the National design rules (such as the omitted emergency stairs in the previous quote), affecting human safety, by citing security reasons.

The underlying theme emerging from the data here is: Lack of design regulations.

9.3.2.1.1.- Colours:

The final most important variable is 'Colours' (3.9%), which can help to improve inmates' well-being by promoting positive emotions and meaning through creating readable, understandable and predictable physical prison environments, as well as by reducing visual discomfort (Wise and Wise, 1988; Wilkins, 2015). In Concession prisons the design and maintenance are the responsibility of the private sector in the PPP contract, and therefore walls must be painted, and damaged elements must be repaired, but traditional prisons have little budget to do maintenance. Thus, although designers talk about the importance of preventing aggressive responses by using pastel colours rather than red, this use of *Colours* also emerges as a subtle and economical architectural tool to overcome the lack of an adequate physical environment. In this regard, The use of *Colours* in new projects or in the refurbishing of existent areas in traditional prisons, helps designers to enhance positive emotions among inmates in oppressive places where security imperatives and *Financial obstacles*, prevent the implementation of more comprehensive architectural solutions:

"We think about colours, from our small creative corner, but it is not thought as something fundamental within the design. Here the fundamental thing is the security, and that inmates do not escape. That is the first concept. So, it is difficult. You must do it in an almost secret and very creative way, where nobody takes much attention. Because you will not invest, for example, in internal green areas. The cost of maintaining an inmate is high, very high, and if you add [green areas is] even more, but you can make it creative, you can use colour, they do not have it so apprehended, let us say within the penitentiary concept. For them, it must be closed, and that is it. And has to be a punishment and having a bad time" GD-H-03

The underlying emerging theme here is: designers resistance to the retributive design approach.

9.3.2.1.2.- It must be punishment:

The punitive perspective does, however, seem to be present among some designers. Although not a highly significant variable, it is noticeable that Hybrid Governmental Designers are the only group in the whole study that mentions *it must be a punishment*,. One designer believes that even the design of prison should act as a punitive tool:

"... Because although it is true, it is necessary to maintain a certain quality and well-being for the inmates, they also should not forget in the condition in which they are. "GD-H-01

Another governmental designer, when talking about the quality of the views that inmates should enjoy from their cells mentions:

"...in terms of security, I think it is important to be able to control the inmate's views. I think it is important to be able to control where I want inmates to look at. Because to a certain extent, it is a way to tell those people where they are, and maybe that question leads them to question themselves asking 'do I want to be here for a longer time?' or 'do I want to continue here?' So, I think that in terms of security it is important to be able to control it." GD-H-02

The above shows that these designers views reflect a society which beliefs in prison for punishment, asking for retribution and teaching inmates by deterrence, rather than rehabilitation. In this case, the theme emerging is: the tendency to deterrence and retribution through design.

9.3.2.1.3.- Unmentioned variables:

Fourteen variables were not mentioned by any of the interviewees (Table 9-5), with eight of them directly related to the area of health and well-being. Despite their professional background, the designers do not talk about walls or floors features, which could be understood in the Chilean context as a clear sign of these lacking importance, providing they are strong enough. Additionally, the large number of neglected health and well-being factors shows the apathy of designers towards designing in some basic needs of inmates. Moreover, the neglect of s*taff issues* shows also a degree of apathy towards designing staff living and working conditions. This is partly due to the continuous feeling of

helplessness concerning the contradiction between what is expected from them and the available resources.

GD-H				
Family of Variables	Area	Sub-area	Variables	Importance %
	Architectural variables	Physical features	12. Floor features	0.0
			15. Walls features	0.0
Eudemonic	health and well- being variables	Health and safety	17. Health in prison	0.0
			18. Stress control	0.0
			19. Depression / suicide	0.0
			22. Non-communicable diseases	0.0
		Well-being	23. Negative distractors	0.0
			25. Preventing isolation	0.0
			28. Normality	0.0
			29. Self-esteem	0.0
Institutional and Professional	Prison factors or issues	Security	34. Traffic and drugs	0.0
		Prison purpose	35. Inmates education	0.0
		Decision process	45. Staff issues	0.0
	Personal view	Points of view	60. Extranational unfamiliarity	0.0

Table 9-5: Variables rated zero by GD-H

9.3.2.2.- Methodological triangulation between manifest emerging themes and LCA between governmental designers.

The nine Manifest Themes emerging from the Manifest analysis of the Hybrid models' Governmental Designers are next compared with the findings of their LCA, to reveal why interviewees give attention to these themes. The LCA revealed two areas of concern (see Appendix 13):

- 1. The responsibility of the state and the prison service: where designers talked about the profound changes that the prison service needs, to evolve towards a more consistent and efficient prison design and exposed the lack of importance placed on inmates' health and well-being by both the State and the Prison Service.
- 2. The scope of the intervention of designers: where designers talked about the design obstacles, professional perceptions and perspectives in the current reality, and their view of what should be a good prison design.

Each Manifest theme was linked with one or more Latent themes, to shed light on the reasons why they emerge as themes within the designer interviews (see Table 9-6).

Manifest	Latent theme	Latent Sub-area	Latent Area	
emerging theme				
Lack of planning	 We need planning Lack of prison policies and planning is the main obstacle to go forward 			
Lack of design regulations	We have no design standards			
Deterrence and retribution through design	The design must remind them where they are	Profound changes are needed	The	
Lack of prison policy	 Lack of prison policies and planning is the main obstacle to go forward We are a reactive institution 		responsibility of the state	
Lack of prison authorities' commitment	 We need committed authorities 		prison service	
Incongruence between political and rehabilitation goals	 For authorities, prison capacity is more important that habitability Disregard of inmates' needs 	Inmates' well- being is not a		
Social apathy toward offenders	 Disregard of inmates' needs Society wants retribution 	state phonty		
Designers resistance to retributive design approach	 No justification for not consider well- being variables Architects are responsible for what authorities will approve 	Designers are in part responsible / we are doing what we can	The scope of	
Resignation in front of the size of the problem	 We feel helpless Improving the sanitary conditions is more urgent than the well-being 	There are more urgent priorities / we are doing what we can	the intervention of designers	

Table 9-6:	Links bet	ween Manifes	t themes an	d LCA of	GD-H
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9.3.2.2.1.- The responsibility of the state and the prison service

The first seven manifest emerging themes are aligned with the first area of the LCA '**The responsibility of the state and the prison service**'. *Lack of planning; Lack of design regulations; Deterrence through design; Lack of prison policy;* and *Lack of authorities' commitment*, are all related with the first LCA sub-area '**Profound changes are needed'**, while *Incongruence between political and rehabilitation goals*; and *Social apathy* support the second LCA sub-area '**Inmates' well-being is not a State priority'**. The lack of planning as designers see Chilean prison service as a reactive institution, which is not prepared to prevent the occurrence of negative events:

"Today, all these respond rather to contingency situations. We are a service that we are more reactive than preventive. That is the situation" GD-H01.

The non-existence of an architectural research department is also highlighted. It could

gather reliable data and inform fit-for-purpose guidance, policies and design standards:

"That is a subject that is a lot discussed. In fact, to date, we have nothing like a manual or an instruction that tells us how much the standard should be." GD-H01.

Designers acknowledge that the true extent of the habitability problem is also unknown. There are little systematised information and reliable data, to compare with existent National general *Design standards*, and reveal the real gravity of the situation. Although the prison service has a clear vertical administrative structure, departments are seen as soulless by designers due to the non-existence of common aims nor planning as revealed by one designer:

> "... as an architect I need at least to have the necessary supplies. So, it is necessary to have analysis and studies - the Infrastructure Department today has a project area and another one of Studies, [but] studies today - it does not do that. Today, studies are dedicated to tasks that are administrative that must be supported, that is financed." GD-H01

Additionally, because the prison service is exempt from presenting prison design blueprints to the national authorities, and prison *Design standards* are virtually nonexistent, this allows the proliferation of solutions based on designers trying to meet security needs but leaving aside their effect on the physical or mental health of inmates. As mentioned by one designer with six years of experience in prison design:

> "Because if you check the number of window solutions that we have, and which one is more creative than the other, — some are better than the others, but do not offer a proper solution. When I asked here, what is the window for a cell? R: 'Well, they are some slots in the wall'; and another told me 'well, it is expanded metal mesh' other said 'It is better a compact polycarbonate'; another said, 'No, it is better a perforated polycarbonate then, so they have ventilation'. However, in the end, I did not know. To date, I do not know!" GD-H03

The lack of long-term policies is seen by one designer as the main reason why rehabilitation is not considered in the process of prison design and one of the obstacles that prevent long-term planning:

"The problem is that today, there are no policies. There are no policies at the State level, there are no policies at the institutional level, but rather we are concentrated today in attending inmates, monitoring them and, to a very lesser extent, to rehabilitating them. However, this rehabilitation seems to be in a quite reduced percentage" GD-H01

The only consistent element that designers perceive in the *Decision-making process* is the desire to maximise the use of *Space* to maintain capacity. increase:

"If I have a capacity of one hundred and I want to improve the conditions of habitability in terms of eliminating collective dormitories and implementing individual cells or cells for a smaller capacity, I could lower by sixty per cent or forty per cent the current capacity of the prison. Moreover, in public policy, the objective is not that. The objective is always to be able to have the maximum capacity of seclusion." GD-H02

This supports the view of designers that —to change this scenario— commitment from authorities through their policies being truly combined with rehabilitation and respect for human dignity:

"... however, what is needed is commitment. We need a commitment from our authorities to be able to change from top to bottom all this way of working" GD-H01

However, prison designers do not expect any change in the future because the well-being of inmates is not a priority for the authorities. The apathy of society about the living conditions of inmates in addition to the desire for retribution seems to drive national authorities to neglect the State responsibility for inmates' health and well-being. This concern is expressed by designers when talking about the insufficient budget allocation for updating and providing the basic maintenance to the buildings and equipment of the prison facilities throughout the country: "To date, the budget assigned to the Chilean prison service to updating and maintenance is not enough to provide solutions. It is not possible to respond to all the needs in prison infrastructure [of the whole country] with USD 2.25 million a year." GD-H01

A positive change could be possible if some of the internal actors (Prison Service, Prison Staff Unions, and Government) or the external actors (Judicial power, Community, or international bodies) apply enough pressure in the right direction. Designers, who somehow resist the retributive design approach, feel this pressure will not come from the internal actors, and that the Judicial power does not have enough legal attributions to intervene. However, designers also claim that the interventions of international bodies such as the UN are symbolic and lack effectiveness:

"the UN Subcommittee on Torture is asking about improvements that are being made in terms of habitability. We talked today in the morning, but the truth of these things is that today it seems that these consultations are purely symbolic rather than a concrete action designed to improve a situation."GD-H01

Indeed, the intervention of International bodies is seen by designers as an additional problem because it only shows what is already known, without helping to facilitate the solutions or demanding allocation of the budget from the State:

"We are no longer able for recommendations because the needs of the inmates are now. The recommendations say: 'we recommend that ...' No! The international organisation must ensure that this is done. If it is not done, if these improvements are not made, we will continue on the same track. So, I think that international organizations should support much more by monitoring. ... I would tell the international organisations that if goals are set, even if they are small, they must be set with demanding financial support from the authorities and monitoring their compliance. Because if not, changes are never going to happen." GD-H03

9.3.2.2.2.- The scope of the intervention of designers

The last two Manifest emerging themes from designers' manifest analysis: 'Designers creative attempts to overcome economic and punishment-approach barriers to wellbeing'; and 'Resignation in front of the size of the problem'; are related with the second area of designers' LCA: **The scope of the intervention of designers**. However, these themes are only part of what this LCA area reveals. Designers briefly referred to what prison design should be but focused on evidencing the obstacles and criticising the prison system, their authorities, and also themselves. Although they acknowledge partial responsibility for the situation, there is also a clear perception that they are designing places to contain dangerous, violent and harmful people:

> "...if you give him a key, the guy is not going to open the door. That is what is ingrained a bit in the cultural concept. He will use the key to get out one eye on another guy" GD-H03

There is, moreover, a true feeling of helplessness among designers due to the lack of financial support from governmental authorities and the disregard for prison conditions. This feeling is aggravated by the acknowledgement that resources are not enough to solve the more basic needs, and therefore, well-being is not even considered as a priority, according to one designer:

"As long as no significant investment is made, and we had a systematisation that allows year to year to be investing in pumping systems, in improvements of roofs, in reparation of walls and floors, year after year, the hole is growing, and the money is still the same. There is no way of, let us say, confront the situation. It is just getting worse."GD-H01

This scepticism about possible changes is because they believe the political authorities already know about the deplorable living conditions in prisons. Indeed, judges report twice a year on the conditions of prisons to the *Ministry of Justice and Human Rights*, exposing the most important and common problems. In a report sent by the Supreme Court of Chile to the Chilean President Secretary in February 2018, the Judicial power exposed the level of overcrowding, problems of insufficient access to running water, lack of access to medical care assistance, and deplorable conditions of prison facilities. (Supreme Court of

Chile, 2018).

9.3.3.- Comparative analysis between high -level staff and governmental designers

9.3.3.1.- The important variables

Having analysed separately the High-level Staff and Governmental Designer responses, a comparison between scores of importance attached by each group was performed (see Figure 9-12).



Figure 9-12: Comparison of the level of importance of variables between High-level Staff and Governmental Designers of the Hybrid prison model

Four variables were coincidently rated as highly relevant by both groups: *Non-financial obstacles, Financial obstacles, Decision-making process, and Design standards.* The variables *Natural light, Indoor air quality, and Colours, all related to the theme 'Architectural Variables', are highly important among designers but show a low level of importance among High-level Staff. Similarly, there are four variables, highly rated by this latter group, that show a low level of importance among Governmental Designers. They are <i>Policy, Space, sense of coherence, and preventing isolation.*

The comparative distribution of importance attached by both High-level staff and designers to the variables, shows a similarly high concentration (Gini HLS-H=0.57; Gini GD-H=0.61), suggesting the existence of a shared feeling of urgency in addressing critical problems that are precluding the consideration of health and well-being in their prisons. Indeed, there is an agreement among both groups concerning four of the most important variables: *Non-financial obstacles, Financial obstacles, Decision-making process,* and *Design standards.* There is also a shared sense of urgency to solve *Non-financial obstacles* as a primary variable. This urgency, however, has a different focus in each group. For staff, it is about the unbalanced supremacy of the security perspectives over the rehabilitation of people in prison, while for designers, it is about the lack of technical and political guidelines. Although they seem to be different foci, the former issue of security is actually influencing the latter issue of guidelines.

From a Critical Realist perspective, there are constant struggles in the underlying play of forces between human and non-human entities, such as:

- a) The prison population size: 242 inmates per 100,000 inhabitants in 2016, with 43,603 inmates in total (ICPR, 2018)
- b) The number of security staff: the Chilean prison service has a very low rate of guards per inmate: 1 prison guard every 4.6 inmates (Zúñiga, 2010)
- c) The number of rehabilitation-related professional staff. The total number of professionals of any background in 2008 was 1162, one professional per 40.3 inmates (Zúñiga, 2010)

d) The buildings: The age and poor condition of the majority of the prison buildings, in addition to the high level of overcrowding that in some cases reach 200% (Bulnes *et al.*, 2017)

In this scenario, shared by most of the Latin American prison services (Dammert and Zúñiga, 2008), the concern about inmates health and well-being is seen as relevant by security-related staff only to the extent that it can trigger security problems inside the prison:

"The problem is that [health and well-being factors in prison design] have not been considered. They have never been discussed; they have never been anything (pause). You know, as [member of the] Operative Sub-directorate who represent the security aspect, I must put on the table that the security parameters, like some others, will have to establish what are the well-being and health requirements of the inmate. However, I think that ultimately ...we cannot stop observing that, that if I do not give the inmate the minimum conditions of living, of habitability, I will have a conflict." HLS-H-02

The above comment also highlights the failure of rehabilitation-related staff to defend the need for inmates' health and well-being to be considered. Based on the scarce number of these professionals in prison services, it could be argued that rehabilitation is seen as an appendix to a security model prison institution:

"What has prevented [health and well-being] from being considered? I think basically two things ... One is the budget, and the other is the vision of security over of these spaces. I obviously do not share it, but it is what prevails. I do not know if...if the coldness of Space will have something to do with security, but it seems that yes." HLS-H-01

The struggle between the rehabilitation and security perspectives is fuelled by social prejudices encouraged by the elites in a highly punitive society (See 5.2.5.3 and 5.2.6.3). This conflict allows the overuse of incapacitation and control in prison design and precludes the establishment of clear policies and technical guidance about health and well-being. These forces make the designers try to persuade the authority in each project

to adopt a more humane perspective, which does not always occur. This situation is exemplified by one of the Governmental Designers interviewed:

"I think that what must be done is immediately go to those basic needs of health and well-being in the penal units. Now, how to do it, it is funny, but sometimes you must sensitise the authority when there is no rule. So, what is normally done? You always hear that, at least in Chile, that you must raise awareness. Do you want to pose a problem? You must sensitise. It seems incredible to me, but it is necessary to sensitise because people seem to have forgotten the basic feelings of the human being. I think that one must raise awareness first with the technical teams that oversee the improvement of the prisons" GD-H-03

High-level staff are more concerned with *Policies, Space, Sense of coherence and, Preventing isolation.* They mention managerial issues, such as the lack of clear policies and the need for reducing overcrowding, and how to prevent suicides. However, inmates are seen as intrinsically malicious people, and —because of the lack of money to repair or for maintenance— the design should be able to prevent their malicious acts. That is why they talked about a *Sense of coherence* as something desirable but inapplicable in prisons. Designers, by contrast, place a high valuation of physical variables such as *Natural light*, and *Air quality* because these are missing elements in the field, and *Colours* because this is an easy and cheap way to mask the depressive reality of old prisons (see Figure 9-10, 9-14 and 9-13) and the harsh environment of the new ones (see Figure 9-15 and 9-16).

The priorities for designers are firstly their own professional needs, which require purpose-based design work, with authorities committed to this, and having clear and enforceable *Design standards*. Secondly, they see as most urgent the need for old prisons for *natural light* and *air quality*, as well as using *colours* to compensate for shortcomings in design. Designers also mention *Space*, but as an individual need per person, in contrast with the institutional priority of generating more capacity to house more prisoners.





Although the problems in the Empirical domain are many, and solutions are needed urgently, there are many counterforces in the domain of the Real that explain why the system, as a whole, makes limited efforts to affect inmates' lives positively. Such counterforces include: the lack of money available to the prison service to tackle those problems; the lack of commitment of political and institutional authorities to find and funding real long-term solutions; the supremacy of security perspectives; and the lack of interest in the effective rehabilitation of inmates.

In Hybrid model, the lack of a comprehensive design approach, as well as the regime structure and process, works against the health and well-being of the prisoners (McNeill and Schinkel, 2016), and does not provide the minimum conditions to accomplish PERMA goals (Seligman, 2011). Moreover, these minimal efforts are set within the poor conditions of the facilities, precluding the emergence of positive emotion and meaning (Shields and Price, 2005; Ferrer-i-Carbonell and Gowdy, 2007). Indeed, the inmates' personal development seems to be possible only in "prisons where the regimes are characterised by both the availability of practical help and by relationships and processes that are legitimate and consistent" (McNeill and Schinkel, 2016, p.615), which seems not to be the case in the Hybrid model.

9.3.3.2.- Highest contradictions between professional groups

Figure 9-17 shows a comparison between the neglected variables of both professional groups, highlighting some contradictions between the staff and designer perspective. The greatest contradiction is seen in *Preventing isolation*, which was rated as 4.8% among staff, but not mentioned by governmental designers. This aligns with a similarly noted contradiction in the variable *Depression/Suicide* rated as 0.9% by staff and ignored by designers. Despite the high importance placed by staff in preventing suicide, and their efforts to cope with *Depression* among inmates, there is surprisingly no mention among designers of these subjects. The analysis reveals no apparent cause for the neglect of both *Preventing isolation* and *Depression/Suicide*, suggesting that there is a clear disconnection between staff purposes, and the designers work and that perhaps the designers are not as aware of these issues as they should be due to this disconnect.

Variables	HLS-H	GD-H
25. Preventing isolation	4.8	0.0
28. Normality	2.1	0.0
45. Staff issues	1.6	0.0
19. Depression / suicide	0.9	0.0
12. Floor features	0.7	0.0
15. Walls features	0.7	0.0
17. Health in prison	0.7	0.0
60. Extranational unfamiliarity	0.6	0.0
18. Stress control	0.0	0.0
22. Non-communicable diseases	0.0	0.0
23. Negative distractors	0.0	0.0
29. Self-esteem	0.0	0.0
34. Traffic and drugs	0.0	0.0
35. Inmates education	0.0	0.0
08. Contact with nature	0.0	0.2
30. Universal design	0.0	0.2
53. Assumptions	0.0	0.3
11. Doors features	0.0	0.4
37. Only lost of freedom	0.0	0.7
49. Inmate status	0.0	1.4
57. It must be a punishment	0.0	1.6
04. Indoor bathroom	0.0	1.9
20. Communicable diseases	0.0	2.0

Figure 9-17: Neglected variables in the Hybrid model compared. High-level Staff (HLS-H) and Governmental Designers (GD-H)

9.4.- Key emerging themes and meta-themes

Sixteen key themes emerged from the analysis of both High-level Staff and Governmental Designers. The review of those themes against the LCA and the reality shown in photographs from the field developed into five Meta-themes — *Fear of legal and political consequences, Lack of priority of health and well-being, Designers sense of helplessness, Lack of commitment,* and *Lack of control.* (See Table 9-8).

, , ,	<i>y</i> 1		
Emerging themes	Meta-themes		
Importance of Preventing suicide	Fear of legal and political		
Tendency to deterrence and retribution through design	consequences		
Subordination of rehabilitation to security	CONSEQUENCES		
Divergent views between security and rehabilitation staffs			
Social retributive views affect the budget allocation	Lack of priority of boalth and		
Incongruence between political and rehabilitation goals			
> Lack of priority given by prison authorities to health and well-being	weii-beilig		
Social apathy toward offenders			
Designers resistance to retributive design approach	Designers sense of		
\succ Resignation due to the size of the problem.	helplessness		
≻Lack of authorities' commitment	Lack of Commitment		
≻Lack of prison policy			
≻Lack of design regulations			
≻Lack of planning	Lack of control		
The deplorable state of prisons			
Lack of control of inmates' actions inside the prison			

Table 9-7: Key emerging themes and meta-themes in the Hybrid prison model

Additionally, a scenario that represents the interactions between the themes and metathemes was created, based on the classification made in this table and the analysis developed in this Chapter. This was based on a deeper investigation of the interviewees' responses in relation to the Empirical reality and the Actual forces underlying this from a Critical Realist perspective (See Figure9-18).



Figure 9-18: Hybrid prison model scenario

This synthesised scenario highlights the conflicts—which key actors in the Hybrid prison model have to deal with. People who work in the rehabilitation sub-directorate are unable to resist the forces of a neglectful and dismissive political and managerial perspective and approach. The high importance attributed to the security and preventing critical events is based on the traditional institutional strategy of housing inmates whatever the space available or the conditions of habitability. This results in deplorable physical conditions — which is not necessarily intentional but rather the result of the inadequate budget, the legal obligation of receiving any inmate sent by the court, and the apathy of prison authorities and society towards the carceral conditions.

This historical-cultural perspective reduces efforts and resources to simply ensuring that nobody escapes and avoiding riots, thus making rehabilitation an appendix to the institution. Additionally, several technical and managerial flaws, such as the lack of planning, norms, and commitment from the authorities —resulting from the previously described politico-administrative scenario, allow the accustomisation of the actors to the chaotic and aberrant situation. Staff and authorities seem to be trying to avoid being affected by the legal or political consequences of riots, suicides or escapes, rather than focussing on the quality of life of inmates inside the prison, or their rehabilitation.

Finally, the designers seem to be in the middle of the play of forces in the domain of the Actual, using their creativity to Empirically improve inmates' living conditions but resigned to the problem and the overwhelmingly neglectful approach of the prison system which results in a lack of control.

Based on the overall discussion in this chapter and the scenario developed in Figure 9-18, a systemic representation of the Hybrid prison model was developed, using a causeeffect loop diagram (See Appendix 14). This diagram shows — in Critical Realist terms the mechanisms in the domain of the Actual, in which the main entities interact, and how this interaction results in the current scenario of a Hybrid model.

9.5.- Sub-conclusions

This Chapter has analysed responses from two professional groups in the Hybrid Prison Model. The highest perceived rate of importance for both High-level Staff and Government Designers relates to *Non-financial obstacles*. This is similar to the International Advisors primary variable— well ahead of all other variables. This shows the magnitude of the conflicts faced by these two professional groups in relation to the supremacy of security perspectives over the rehabilitation of people in this prison model, and the lack of technical and political guidelines to support design and management for rehabilitation.

The other main variables for the High-level Staff are Financial obstacles, Decision-making process, Sense of coherence, preventing isolation, Design standards, Policy, and Space while for the Governmental Designers they are Decision-making process, Natural light, Financial obstacles, Design standards, Indoor air quality, and Colours. This shows a concentration in both groups on the institutional and professional family of variables — which are more related with obstacles, processes and procedures—similar to the Prison Policy Advisors group, evidencing the urgency placed on these variables and the low priority placed on the harmful agents included in the family of Eudemonic variables. Both High-Level Staff and Designers also share similarities in terms of their perceived issues of importance, suggesting a transversal agreement on the diagnosis of their local reality. They place a high level of concentration of importance—nearly half of the total— over just a few variables, evidencing the subjects that they perceive as the main obstacles in the improvement of the carceral conditions.

Both groups also left a large number of variables unmentioned during the interviews. Most of these were from the Eudemonic family— which, along with the justification by some interviewees of the harsh conditions as punishment, shows a possible denial of the rights of inmates to some positive Eudemonic variables or at least an unawareness from the interviewees about the need for them. Both groups share a concern with *Non-financial obstacles, Financial obstacles, Decision-making process*, and *Design standards*, highlighting the areas which need to change in order to transform the Hybrid prison system from a neglectful deterrent to an ideal rehabilitative and human-centred system.

Five meta-themes emerge from the discussion in this Chapter— Fear of legal and political consequences, Lack of priority of health and well-being, Designers' sense of

helplessness, lack of commitment, and a lack of control. These synthesised meta-themes underlie the chaotic scenario that prison designers have to deal with, and the conflicts of interests and incongruent views at higher levels in the prison service that allow the perpetuation of a neglectful and deterrent approach.

A systemic representation of the Hybrid prison model was developed, which shows the critical mechanisms and interactions between the main entities involved in the Hybrid model. This shows that the main counterforces that prevent the Actualisation of a rehabilitative approach are the lack of money available to the prison service to tackle problems; the lack of commitment of political and institutional authorities to find and funding real long-term solutions; the supremacy of security perspectives; and the lack of interest in the effective rehabilitation of inmates. The next chapter examines the second of the three prison models considered in this thesis, using a similar analytical approach.

Chapter 10: The Safety prison model

10.1.- Introduction

This Chapter discusses the results and analysis of the data from the USA case (Safety prison model). It addresses the second and third research objectives of this study, which are "To understand how and why these factors are or are not considered by key decisionmakers in the Hybrid, the Safety, and the Rehabilitation model", and "To understand when, how and why these factors are displaced in the Hybrid, the Safety, and the Rehabilitation model in the design process". It starts with a brief review of the prison context in which prison authorities and designers work. A further section discusses the data from High-level Staff and Independent Designers respectively and finishes with a cross-comparison of these professional groups. The sub-sections within this section, organised as two parts, identify emerging themes, possible inconsistences and a deeper understanding of these through the LCA. The last sub-section compares the views of High-level Staff and Independent Designers in order to reveal possible conflicting perspectives and uncover the play of forces involved in the decision-making processes. Finally, the meta-themes that characterise the Safety model case are revealed, based on the Manifest emerging themes extracted from previous sections and their discussion triangulated with the LCA.

10.2.- Prison design context in the USA

In the USA, there are 1,719 state prisons, 102 federal prisons, 942 juvenile correctional facilities, and 3,362 County prisons, including the 79 Indian Country prisons (Wagner and Rabuy, 2016). Local and County prisons are, therefore, the most common type of project in which architects are involved. Although the architects interviewed have experience in Federal prisons design, they are more aware of the design of State prisons and County prisons, which currently correspond mostly to the Direct Supervision or Third Generation prison design (see 5.2.6). Knowledge about third-generation direct-supervision prison design within the USA and abroad is gradually permeating and guiding the design of traditional State prisons. The USA has the largest prison population in the world. In 2016 in the USA, there were 655 people incarcerated per 100,000 population with a total of 2,121,600 inmates, which is well within the official capacity of the prison system at 2,140,321 (Institute for Criminal Policy Research, 2018). The Kentucky Correctional Department has a prison population of 24,003 inmates with 11,515 inmates (48%) in State prisons, 848 in private prisons, 414 inmates in an open system (halfway houses) and

11,226 inmates (47%) in County prisons (Kentucky Department of Corrections, 2019).

10.3.- Safety prison model – analysis and discussion

10.3.1.- High-level staff in the safety model

10.3.1.1.- Manifest content analysis and Pareto analysis-

The distribution of importance of variables in this group shows a very high level of concentration (Gini:0.67), evidencing a strong alignment in the discourse among High-Level Staff and a clear institutional focus on what they consider as important variables in the design of prisons and jails. 38.3% of the total importance is explained by just five out of sixty variables —*Financial obstacles, Natural light, Space, Decision-making process,* and *Sense of coherence*—(see Figure 10-1).



Figure 10-1: Pareto analysis of importance among HLS in the Safety model

Moreover, within the highest scores of importance (See Table 10-1), the first three variables *Financial obstacles* (10%), *Natural light* (9%), and *Space* (8%) are more important than the last two *Decision-making process* (5.9%), and *Sense of coherence* (5.4%). In this instance, *Non-financial obstacles* (4.6%) is still perceived as an issue but

is not among the variables considered most important.

			HLS-S	5	
Family of Variables	Area	Sub-area	Variables	Importance %	
				individual	accumulated
Institutional and Professional	Prison factors or issues	DECISION PROCESS	47. Financial obstacles	10.0	10.0
Eudemonic	Architectural variables	SENSORIAL	07. Natural light	9.0	19.0
Eudemonic	Architectural variables	SENSORIAL	10. Space	8.0	27.0
Institutional and Professional	Prison factors or issues	DECISION PROCESS	46. Decision making process	5.9	32.9
Eudemonic	health and well-being variables	WELL-BEING	24. Sense of coherence	5.4	38.3

Table 10-1: Most important variables among HLS-S

10.3.1.1.1.- Financial obstacles

Financial obstacles is recurrently mentioned concerning those in charge of financial resources, at the governmental level, who do not know how prison works and what its needs are, rather than there being any actual lack of finance. Moreover, because the governmental decision-makers who decide about the financing of the prison service are elected by the community, they tend to favour initiatives with a more significant social and political return (e.g. votes for catching criminals) rather than build new buildings to rehabilitate offenders and attend to their well-being. Cuts in project budgets and changes in design priorities are decided without the required knowledge of how to run prison or, understanding the long-term consequences of their decisions, as stated by one high-level staff member:

"So, when they go to finance it, and I've given them a price of, 200 million, they say no, we're gonna spend 180 million. So, they look at what they can cut out. So, they say, the single-cell I put in was a 100 square ft. People who don't understand corrections, people who don't work in corrections say, we can cut that down from a 100 to 50, cut the footprint down, cut our cost on half of themselves. And that's what they do, and architects call it, 'value engineering'. And I give you a good example, with a jail in Kentucky, that had a property room. And they bought, wire baskets to put the inmate's clothes in,

you might- you've probably seen them before. For the story's sake, there were 300 inmates. When they tried to put the wire baskets into the room, the room was too small for the 300 baskets. They valueengineered; they cut that room down in half, to save money. Now they can't get all the property in that room, so you got property here, and you got property over there, instead of being in one location. So, sometimes people that don't run the jails, downsize and change things even though we're against it, to make the budget meeting." HLS-S-01

The *importance placed in the initial cost* appears here as an emerging theme. Indeed, the lack of knowledge of financiers in prison matters and their needs of financial optimisation by reducing the initial cost can result in design mistakes with long-term effects. The education of whoever is in charge of financial resources is thus a key factor to ensure health and well-being factors are considered in new prison projects:

"I'd like to say [that what is needed is] more money, (laughs). Unfortunately, I don't think they're putting in any more of that, any time soon, so, probably I think the most reasonable thing, again, is just going back to that education. We are fortunate that we're starting to see that a lot of research is being done, so we've got good information out there. We are reducing recidivism; we have been able to do some of these things and bring that to the table and, educating the people who are charged with making these huge investments, saying that this really is for the overall good of everybody" HLS-S-02

Financial cuts made during the design stage particularly affect the prison administrators in the long term, due to the lack of further financing of maintenance and renovations, which makes it even more vital that the financial decision-makers are educated about these areas:

"... and usually in State facilities, we do not- we may - receive the funding to build a prison, we receive little to no funding to maintain the prison, and there's absolutely zero funding to renovate." HLS-S-03

Therefore the underlying theme emerging here is *Financers' lack of knowledge in prison matters.*

10.3.1.1.2.- Natural light

The second most important variable *Natural light* (9%) is seen by staff as having an important role in the improvement of the mental health condition of inmates. This is because the Safety model County prisons are usually designed as sealed environments, in which inmates are not allowed to go to the exterior, or having a view of it (see 5.2.6.1.5). Even though State prisons cells have windows, there are no standards on how much daylight should be allowed and the need for security results in heavily reinforced windows with diminished *Natural light*.

"Natural light, again, is one of the things that in Kentucky is lacking, and when you go places, in other States that I have been and visited, that is something that you see a lot of. It's - you know - those windows and that natural setting. Here we do not have the requirement for Natural light." HLS-S-02

Although staff awareness of the importance of *Natural light* for the inmate's mental health, their grasp is intuitive rather than based on evidence:

"I believe the more Natural light you have, helps with an inmate's mental health. ... I think that has something to do with their mental attitude, and I know it does, because, you and I know when we get up and it's a raining drizzly day, the sun doesn't shine, you don't feel quite the same." HLS-S-01

For staff from the security model, bringing *Natural light* into prison areas is a goal to reach, but the quality of view is not well considered. Providing long and narrow windows slots to bring the amount required ignores the concept of *Quality of views* which, for them, is the least important variable (see Figure 10-1 above) as stated by another staff member:

"... you can gain that Natural light by, maybe the - you know - our windows have to be somewhat narrow, for security reasons. But that does not mean that they can't be longer, and provide the same amount of - you know - square inch, of Natural light coming in, but just in a different manner" HLS-S-03

The theme emerging from the data is that Having a view is dispensable, but *Natural light* is not.

10.3.1.1.3.- Space

Space (8%) is described as the key element to avoid conflict in inmates groups, allowing individual privacy if the inmate wishes it. Decreasing the occurrence of violent events is seen by staff as closely linked with the possibility of inmates controlling their different interpersonal distances. Critical interpersonal distances people choose while interacting with others are: public distance, in which voice shifts to higher volumes and eye contact is minimised; social distance, maintained during more formal interactions; personal distance, maintained during interactions with friends; and intimate distance, maintained in close relationships (Sorokowska *et al.*, 2017). These distances depend on the personal attitude toward another person and on certain characteristics like their gender or age, and the social environment where the interaction takes place (Hall, 1966). Staff awareness interpersonal distance requirements are highlighted in one description of third-generation direct-supervision facilities:

"If I took you to one of them [direct-supervision facilities], you'd go 'you gotta be kidding me'. I mean, it's just so open. It's huge, so if you and I have a conflict, I can get away from you. If we're in this little tiny small room in here, I can't get away from you. And that stress, or that whatever we call that, keeps building and building and building and building, to probably a punch in the nose. But in a great big dorm, you can go all the way back over to your bed where you belong and get away from this guy." HLS-S-01

However, the possibility of increasing the *Space* in new projects is actually limited, due to the increase in the budget that bigger spaces demand, and the negative response from governmental financers who work to minimum standards:

"The design of those cells is by standards, which are the minimums. so, we'd be forced to build them small, which is 40 square foot for a single cell." HLS-S01

Enough Interpersonal Space is here the underlying emerging theme.

10.3.1.1.4.- Decision-making process

Decision-making process (5.9%) is another important variable for staff and related to the difficulties with managing their own projects. For them, the client should drive the architect and not the other way around. However, as the government pays for the design and construction, and the prison authorities have to accept governmental decisions according to one staff member:

"I'd like to think that I'm the correctional expert. I make recommendations of what I want, what I think it should look like, smell like, and [how it should] be run, but I have to go to the government, to finance it" HLS-S-01

Often government decisions are based on political outcomes rather than rehabilitation or social impact. The staff concern within the Safety prison model is primarily their diminished power when at the negotiation table with government financiers during the design and construction of new prisons. This imbalance of powers allows external forces, unrelated to the correct administration of prisons and the health and well-being of inmates, to prevail:

"I think one of the big struggles for us though is, again, that political side of things and the economic side of things that tend to, at the end of the day, be the decision-making factor for those people who can affect that change."HLS-S-02

The underlying theme that is emerging from the manifest data here is *Lack of priority* given by authorities to health and well-being.

10.3.1.1.5.- Sense of coherence

A Sense of coherence (5.4%), is here considered necessary to improve the inmate-staff relationship with a psychological supplement of trust, where the positive outcomes of
social integration, social engagement, and participation can be generated by well designed built and natural environments (Leyden, 2003; Abraham, Sommerhalder and Abel, 2010). Such design moves can offer clear meaning for and prevent negative emotion according to one staff interviewee:

"When we took them to medical in the past, it looked like the same old jail; it was jail. So, we turned our medical areas to look more like urgent care areas: different colours, different signage, everything was different, so that the inmate had that same impression in his mind like 'wow, this looks like a doctor's office!'. There's an example - I made the doctor hang his sign upon the wall. I wanted the inmate to read it too, so they know they're real doctors, cos they're always accusing them of not being doctors. Ahmm, every chart that you can think of as medical, I had hanging in my medical area. Skeleton, joints, nerves, ears, throat, you name it, because it made them feel like they're in a medical area." HLS-S-01

In this case, the emerging manifest theme is: Minimising uncertainty and increasing trust by design.

During the interviews, the staff talked about the need to consider health and well-being variables during the design of new State and County prisons, but they merely have a utilitarian approach - to produce quieter, more secure and safer prisons, thus improving working conditions for staff:

"... remember, I'm being selfish. Why am I doing it? Better behaved inmates, easier on my staff. So, I would say to my folks: some would call us inmate huggers, or soft on crime, I would tell you no, absolutely not, it's made for a better working environment for my employees." HLS-S 01.

The underlying emerging theme here is: Utilitarian approach to inmates' well-being.

10.3.1.1.6.- Unmentioned variables:

Twenty-three variables are rated zero, which represent the second-highest number of unmentioned variables in the whole research. This explains the high level of concentration

of staff priorities and makes it clear that the health and well-being of inmates are not a priority for them. Indeed, it is noticeable that ten out of fourteen variables related to the area of health and well-being were not mentioned by any of the interviewees (See Table 10-2).

HLS-S					
Family of Variables	Area	Sub-area	Variables	Importance %	
	Architectural variables	Comfort	04. Indoor bathroom	0.0	
			05. Thermal comfort	0.0	
		Physical features	12. Floor features	0.0	
			15. Walls features	0.0	
		Health and safety	17. Health in prison	0.0	
			18. Stress control	0.0	
Eudomonic	Health and well- being variables		19. Depression / suicide	0.0	
Eudemonic			22. Non-communicable disease	0.0	
		Well-being	23. Negative distractors	0.0	
			25. Preventing isolation	0.0	
			26. Human senses	0.0	
			27. Positive distractors	0.0	
			28. Normality	0.0	
			29. Self-esteem	0.0	
	Prison factors or issues	Security	32. Avoid escape	0.0	
Institutional and Professional		Prison purpose	35. Inmates education	0.0	
			38. Inmates' work	0.0	
		Prison architecture	39. Designing for humans	0.0	
			40. Policy (in or about prison)	0.0	
			42. Heritage as a 'burden'	0.0	
	Interviewee personal view	Points of view	53. Assumptions	0.0	
			56. Cultural and social context	0.0	
			57. It must be a punishment	0.0	

Table 10-2: Variables rated zero by HLS in the Safety model

It is also striking that both *Preventing isolation* and *Depression/suicide* are not mentioned in a country constantly debating about the effect of solitary confinement practices over the mental health of inmates.

10.3.1.2.- Methodological triangulation between manifest emerging themes and LCA among the Safety models' high-level staff

The result of the LCA revealed three areas of concern among the High-level Staff in the Safety prison model (see Appendix 13):

- The way we work and the reality as we see it, showing how High-level staff address health and well-being in their prisons, their purposes and objectives, and their willingness to learn from successful experiences.
- 2. **The causes of our problems**, where staff reveal their concerns and point out possible causes for the obstacles that the prison service have to face; and
- 3. What we think should be done to improve but is unlikely to happen, where staff expose action that, although unlikely to be achieved, they consider essential

to produce a positive mindset.

Four of the Manifest emerged themes highlighted in the previous section (Interpersonal Space; Having a view is dispensable, Natural light is not; Minimising uncertainty and increasing trust by design; and Utilitarian approach to inmates' well-being)are related to the first LCA area 'The way we work and the reality as we see it'. The last two Manifest emerged themes are interrelated with the other two LCA areas 'What we think should be done to improve but is unlikely to happen' and 'The causes of our problems' (see Table 10-3).

Manifest emerging theme	Latent theme	Latent Sub- area	Latent Area	
Interpersonal Space	 Maximising interpersonal Space while keeping prison control is key 			
Having a view is dispensable. Natural light is not.	 Natural light is the most important element We do consider inmates' well-being 	How we address health well-being	The way we work and reality as we see it	
Minimising uncertainty and increasing trust by design	The more unsafe inmate feels the more risk for staff	Purposes and objectives of the		
Utilitarian approach to inmates' well-being	 Improving trust will improve security 	prison		
Financers' lack of	Financers must be educated on how prisons work		What we think should be done to improve but is unlikely to happen	
matters	 Wrong decisions are very costly 	Key decisions made by people without	The equate of	
Lack of priority of authorities to health and well-being	 Political and economic intercets 	prisons knowledge with external interests	our problems	
Importance placed in the initial cost	111010313			

Table 10-3: Links between Manifest Content Analysis and LCA of the Safety model High-level staff

10.3.1.2.1.- The way we work and reality as we see it

The manifest theme '*Interpersonal Space*' interviewees' explanations about how they address health and well-being in the LCA. Secure *Space*, in combination with good sightlines, is considered to improve the confidence and reduce the fears of inmates who

can feel to be in a safe place as highlighted by one member of staff:

"The ability to move freely but also, at the same time, the ability to secure the area quickly, if it was needed. So, I think a lot of it would be to provide a lot of movement, but at the same time providing security - you know - and a lot of the time the inmates do better when they know it's a secure environment, rather than just an open environment with poor sightlines" HLS-S03

Indeed, not having enough *Space* result in feelings of loss of privacy, which in turn increase the odds of violent reactions by inmates (see Section 5.2.2.1).

Although there is an institutional intention to provide better living conditions and improve the well-being of inmates, there are clear design incongruences that contradict this intention. The manifest theme '*Having view is dispensable*. *Natural light is not*'. is incongruously linked to two latent themes — 'Natural light is the most important element' and 'We do consider inmates' well-being'. with continuous assertions by High-level Staff that they do consider inmates' well-being and the general emphasis placed on Natural *light* as the most critical element in prison design.

The point that one interviewee makes is that, although they are open to learning from successful experiences from other prison services of the country or even internationally, the consideration of health and well-being is not neglected in the design of their prisons:

"I think those factors have definitely been weighed in the construction of prisons here in Kentucky. We have kind of a prototype of what we have picked as our prison design, and they're in our three newest constructions. They're all built very similar. They provide for a lot of interaction with inmates, a lot of natural light, lot of open space. It's secure at the same time, but provides for inmate movement, provides for inmate interaction with staff, so I think yeah, on a national level, especially this state level, I see those elements being implemented." HLS-S03

However, this strong conviction seems to be based on their strict compliance with the ACA standards on prison design, assuming that those standards will fulfil the level of wellbeing that inmates need: "A lot of those are A.C.A. standard driven - most of it has to do with Space that is available to the inmate. So those are the standards we follow, and we find it- you know - they are very much conducive to inmates well-being." HLS-S03

Both interpersonal *Space* and *Natural light* are current trends in County prison design. However, these two factors are not so evident in State prisons. In local County prisons, the design is expected to create a sense of connection with nature without any real connection with the exterior (see Figures 10-2 and 10-3).



Figure 10-2: Interior of a dayroom in Lexington-Lafayette County Detention Centre

Photography taken from the webpage of the construction company DCK Worldwide: http://www.dckww.com/project/lexington-fayette-county-detention-center/.



Figure 10-3: Aerial view. Lexington-Lafayette County Detention Centre. Photography was taken from the webpage of the construction company DCK Worldwide: http://www.dckww.com/project/lexington-fayette-county-detention-center/.

It seems that the Safety prison model design has to fulfil the most basic physiological and psychological needs, such as air, *Natural light*, sunlight, and personal security, leaving aside element needed for full human being development, which is seen as dispensable and subordinated to prison security needs. However, despite the interviewee's emphasis on *Natural light*, this and *Space* in the living areas are negatively affected by security elements and restrictions such as windows' bars, barred gates, and segmentation of areas (see Figure 10-4, 10-5 and 10-6).



Figure 10-6: Living area of the State prison block, Luther Luchett Correctional Complex, Kentucky.

This low quality of connection with the natural environments in state prisons reminds inmates at all times that they are in prison. This seems to be more accepted among staff, because inmates have to move, for small periods, from one building to another through open areas during the day, which is seen as enough contact with nature to reduce inmates' anxiety. Paradoxically, this lowering of inmates' anxiety enables a more invasive use of security elements inside living areas, to reduce the risk of misconduct and/or escape. Security elements in this model have the double purpose of deterrence and ultimately by mechanical resistance. Such elements have to be strong and perceived as such (See Figure 10-7 and 10-8).



Figure 10-7: External fence area. Luther Luchett Correctional Complex, Kentucky.



Two Manifest Emerging Themes—*Minimising uncertainty and increasing trust by design,* and *Utilitarian approach to inmates' well-being*—inform the interviewee's view of security as the main priority. This view is, in turn, part of a higher Latent concept (sub-area) called 'Purposes and objectives of the prison' and it can be argued that well-being is used here as a reward in a stick and carrot policy. Health and well-being 'rewards' can be removed from an inmate, by the prison administration, depending on his/her behaviour according to one interviewee:

> "In my housing here's a good example, if you demonstrate a certain behaviour, you're over here. if you demonstrate a different type of behaviour, you're over there. so you get to pick and choose, where you wanna be, and I'm gonna work really hard over here, to make

this as comfortable and as nice as any place in the institution. Cos, I want them to live over here." HLS-S01

This is evident in a solitary confinement section of a State prison in where sanctioned inmates have to wait in iron cages, while being moved (see Figure 10-9), and are kept 23 hours a day in permanently lit cells, without any view to the exterior, and in which *Natural light* only can enter through thin slots on the wall (see See Figure 10-10).



10.3.1.2.2.- 'What we think should be done to improve but is unlikely to happen' and 'The causes of our problems'

The Manifest emerging theme *Financers' lack of knowledge in prison matters* is present in the LCA as part of the second and third Latent Areas of staff concerns, called respectively 'What we think should be done to improve but is unlikely to happen' and 'The causes of our problem'. In this regard, the LCA clearly shows that what is precluding the consideration of health and well-being in prison projects, from the interviewees perspective, is the lack of knowledge of key decision-makers in how prisons work. As mentioned by one interviewee when talking about health and well-being factors:

"I think it should start at the very beginning, I mean, that has to be a consideration, again, educating those folks who are paying for this, because you know, the majority of them are seeing dollars signs, so educating the people on what needs to be there and why" HLS-S-02

For staff, financers must be educated to avoid technocratic or political reasons reducing the building's footprint, which damages prison operation and outcomes:

"one of the things that we focus on here more is strictly the square footage and the layouts of the facilities because once that's done, that footprint is set, and those can't really be adjusted" HLS-S02

However, this education needs to extend to designers during the design process:

"I think you need to have professionals, that know how to manage prisons, being involved in designing prisons, I think sometimes you could - somebody who has not worked in prison should not be involved in designing prisons" HLS-S03

The Lack of priority given by authorities to health and well-being is also present in the LCA as part of the third Latent Area: 'The causes of our problem'. This highlights the existence of interests not related to prison purposes, which results in a diminished allocation of financial resources as highlighted by one member of staff when talking about legislators:

"People in prisons don't vote. they're not their constituents. those people out there who work every day, middle class, that's whom they listen to." HLS-S-01

10.3.2.- Independent Designers in the Safety model

10.3.2.1.- Manifest content analysis and Pareto analysis

The designer group in the Safety model, in a similar pattern to staff, shows a high level of concentration of importance in a small number of variables, (Gini: 0.61). There is a noticeable differentiation between the group of five more important variables and the rest of the variables (see Figure 10-11), suggesting a high level of agreement among the interviewees regarding what factors are the most important to be considered in the promotion of health and well-being in prison design.



Figure 10-11:Pareto analysis of importance among ID- the Safety model

The five most important variables for designers among the Safety prison model are *Natural light* (9.8%), *Non-financial obstacles* (8.7%), *Sense of coherence* (6.3%), *Perception of evolution* (5.7%) and *Colours* (5.2%), which accumulate 35.8% of the total importance (see Table 10-4). Unlike for High-Level Staff in this model, the highest rates within this distinct upper group are *Natural light and Non-financial obstacles, and* the lower rates are *Sense of coherence, Improvements*, and *Colours*.

ID-S					
Family of Variables	Area	Sub-area	Variables	Impo	rtance %
	,		Valiabics	individual	accumulated
Eudemonic	Architectural variables	SENSORIAL	07. Natural light	9.8	9.8
Institutional and Professional	Prison factors or issues	DECISION PROCESS	50. Non-financial obstacles	8.7	18.6
Eudemonic	health and well-being variables	WELL-BEING	24. Sense of coherence	6.3	24.9
Institutional and Professional	Prison factors or issues	PRISON ARCHITECTURE	43. Perception of evolution	5.7	30.6
Eudemonic	Architectural variables	SENSORIAL	06. Colours	5.2	35.8

Table 10-4: Most important variables among ID-S

10.3.2.1.1.- Natural light

The possibility for inmates to see the sunlight reflected on the floor and moving through the day in dayroom areas is seen by designers as the most important element of *Natural Light* to promote health and well-being for people in prison (9.8%). One designer argues that it helps to maintain their connection with nature and life outside the enclosed area of the prison:

> "But a normative environment from an architect point of view has one key ingredient which is sunlight. I believe the sunlight should enter the housing unit and hit the floor. And then you can watch the pass of the sun during the course of the day, and have a feeling of time passing; you're connected to the rhythm of society, you're connected to nature" ID-S-03

The underlying theme emerging from the data here is: Connection with nature through daylight.

The importance of Sunlight and *Natural light* is even higher when designing prisons in which inmates are not allowed to be outside the building or in contacts with nature, such as in County prisons, third-generation State prisons or solitary confinement in high-security prisons. For designers, it is challenging to combine the provision of sunlight and daylight, with the requirements for maintaining high-security standards. They also argue that in traditional Safety model prisons, the inclusion of *Natural light* is much easier than in County prisons because cells can have windows:

"There is a point of view that is easier in a (large) prison setting to get daylight, because the buildings are often in a kind of compass [shape] and they might be kind of spread out so you might have wings, and so your cells can have windows, and then one could argue over how much opening you should provide, but when they're out of their cell in the housing area they should have daylight provisions.." ID-S-01

Nevertheless, designers must put their priorities behind client priorities. This has led designers to use borrowed light in cells, offering an architectural solution that can fit both purposes according to another interviewee:

"... we have windows in the cell, but in cell design, we use borrowed light. Borrowed light is where the front of the cell is completely glass, so the front of the cell, the cell is solid on three sides, and the front is glass. If there is a toilet in there, there is a modesty panel. The cell faces onto the day room, which has a huge wall of glass, with daylight coming in. So you do not necessarily have a window out of your - in your cell, you have a view into the common space and from the common space to the sky with trees beyond." ID-S-03

The borrowed light solution provides another benefit in terms eliminating the need for having windows in the cell with views to the outside, making of the prison look less like a prison to the neighbours, and helps to drive down general social rejection of the institution, by design:

"And it has been very successful, it makes modern jails good neighbours, because you don't have these little windows with bars on them that speak to jails, and therefore the public rejects them. ... These buildings are in residential areas; they don't have fences around them; the building itself is a secure perimeter." ID-S-03

The underlying theme emerging from the data here is: Avoiding having windows to the exterior.

Borrowed-light, however, does not provide a view, which has negative consequences on health (Wilson, 1972; Moore, 1981) and well-being (Ulrich, 2002; Velarde, Fry and Tveit, 2007). The loss of privacy for inmates due to the large glass screen in their cell can also affect the sense of *Meaning* in life, and promote negative emotions (Fairweather, 2000; Evans, 2003; Evans, Wells and Moch, 2003). In the power play between the architects and the prison administrators and governments, some health and well-being factors have a less favoured place than the designers would wish, which is why their second most important factor is *Non-financial obstacles* (8.7%).

10.3.2.1.2.- Non-financial obstacles

The most recurrent *Non-financial obstacle* for designers is a tendency by the prison and governmental authorities to avoid any element that could be seen as letting inmates enjoy any conveniences. This is either because they believe in deterrence as an effective way to change people's criminal behaviour, or because they do not want to be seen by the community as rewarding criminals:

"... some jails where I've worked on where the client wants a very Spartan if that's the right word... they don't wanna spend money on carpeting, and they want to look very Spartan, because of political considerations." ID-S-01

The underlying emerging theme here is: Avoiding amenities that do not lead to an increase in security.

In many cases, this perspective can be seen as desensitisation towards well-being issues, due to the explosive increase of the prison population and the rapid need for more accommodation. As one designer explains:

"I don't think they haven't been considered, it's just that by the time you get through all the process of budgeting these things, building these things, and the numbers that have been built here in the States over the last 40 years, I think to a certain extent, to clients, a cell is a cell. so, I don't think that is necessarily not considered, I just think it's a discretion item that's not on the agenda necessarily, and maybe it should be." ID-S-02 Equally, due to the competitive nature of the prison project selection, the inclusion of wellbeing variables as part of a project will only be possible if clients can see the benefit:

> "But this, this- my belief [is that those considerations] can only be recognised, or energised, or realised, if the owner of the facilities, the department of corrections, or the county government, recognises the benefit of these design principles. And, rather than thinking that it will increase cost with no benefit, they see that there is a benefit. And we know from experience that environment does queue behaviour" ID-S-03.

In this case, the theme emerging is: Health and well-being is considered when benefits are evidenced.

10.3.2.1.3.- Sense of coherence

The Sense of coherence (6.3%) is the third most important variable with different perspectives among designers. One designer wants to allow inmates a higher degree of control over their personal environment:

"Well, if you can give somebody the ability to turn their light on and off, somebody is not turning them on at 7 in the morning. You have your own choice to turn the light on and off. It's a little thing, but little things are very important ... those little things are amazing, how much it changes the actions within the facilities." ID-S-02

This is also related to the increasing problem of an ageing population among prisoners in the USA where a *Sense of coherence* is seen as particularly important for creating the right environment for life-sentenced inmates:

> "We had many people now in 'for life'. They are not getting out, and so as our population ages in these facilities, how do we treat them? What do we do? It's been a long time looking at how healthcare treats ageing people. Handrails, guard rails, straight walls versus curved walls, all the things that you have to deal with as people grow older. Dementia, harder to walk, meaning rest stops, and water breaks. And, I think it's part of health and wellness in reality, but it's

a whole new issue you have to deal with, about the ageing population" ID-S-02.

However, for another designer, the degree of autonomous control by inmates is seen as a commodity, which must be used only as a reward for good behaviour in a certain classified part of prison:

> "Now, if you're in a certain classification, that might be a benefit that you get, it's a behavioural incentive, like if you're in this group here, you behave yourself, you don't have any violations over a period of weeks, now we move you over here, you have more space, a nicer bed, you can control- you have a reading light, this and that, kind of things that make it a little bit more human." ID-S-03

The emerging theme from the two perspectives here is again: Minimising uncertainty and increasing trust by design.

The current practice of use of *Artificial light* uncontrolled by the inmates in addition to the use of night-lights, means continuously emitted blue light. There are now well-known negative biological and psychological effects of permanent exposure to this part of the light spectrum (Figueiro *et al.*, 2005; Rea *et al.*, 2005; Frank *et al.*, 2013; Boyce, 2014) which is being neglected in these prison settings due to the need for security:

"You can't turn the light off. They can't be in darkness. The light fixtures in jails have typically two settings: one for night-time, and one for sleeping time. So, the night time will be at one level of luminosity, and the sleeping light will be much much lower. But the officer has to be able to have enough light to be able to see the inmate. To see the head of the inmate" ID-S-03

The underlying theme that is emerging from the manifest data here is: Neglecting unhealthy effects of overuse of *Artificial light*.

10.3.2.1.4.- Perception of evolution

Despite various obstacles to promoting health and well-being in the Safety model prisons outlined above, there is a favourable view of the future, according to some designers. The variable *Perception of evolution* (5.7%), relates to designers reporting an increased level of awareness among local governments and prison services about research evidence that shows the over-use of harsh prison conditions and deterrence practices, such as solitary confinement, which have adverse effects on the mental health of prisoners:

"There was a study done by the department of justice where they found that what was also called solitary confinement was being overused, and people were sitting in solitary confinement for years, and not getting the proper treatment like getting out of the cell enough so, the American Correction Association got involved as well and re-analysed their standards." ID-S-01

They also perceive that professional associations in the USA and internationally have had an influence on the design of prisons to promote inmates' well-being to help to improve safety and security as well as improve the possibilities of rehabilitation, as reported by another designer:

> "The ICPA has gone a long way in gathering these foreign nations together, looking at standards. The red cross has done interesting work with their standards. I think that all those standards are not widely accepted across nations, but I think that [there is] just the fact that more facilities are now being done like the ones in Costa Rica, called programming facilities." ID-S-02

The underlying emerging theme here is: Indirect external participation.

10.3.2.1.5.- Colours

Colours (5.2%), are seen as important to promote health and well-being in prison design

by designers who acknowledge that decisions on *Colours* can produce non-desirable responses if badly selected:

"So, you tend to tone those down, not use vivid colours in a large amount, whereas you might be in a shopping centre where vivid colour is attractive for shoppers, but in a housing environment, it might be too agitating to have. Especially if you are looking at it 24 hours a day, a bright red wall." ID-S- 01

For this reason, *Colours* are carefully chosen with the help of interior designers, and as sometimes some requested by the owners, to avoid using vivid *Colours* for operational purposes in the delimitation of zones:

"The client might want to have a pastel colour to distinguish one from the next and normally vivid colours are not as popular." ID-S01

The manifest theme that emerges from data here is: Avoiding agitating Colours.

10.3.2.1.6.- Unmentioned variables:

Following the trend of High-Level Staff within the Safety prison model, nineteen variables were not mentioned by any of the Independent Designers (see Table 10-5), and again, the most neglected area was Health and well-being, with 10 out of 14 variables not mentioned at all. This is because they are not a design requirement and therefore, not a priority for their clients.

ID-S				
Family of Variables	Area	Sub-area	Variables	Importance %
	Architectural variables	Comfort	04. Indoor bathroom	0.0
			05. Thermal comfort	0.0
	health and well- being variables	Health and safety	17. Health in prison	0.0
			18. Stress control	0.0
			22. Non-communicable diseases	0.0
Fudemonic		Well-being	23. Negative distractors	0.0
Eudemonic			25. Preventing isolation	0.0
			26. Human senses	0.0
			27. Positive distractors	0.0
			28. Normality	0.0
			29. Self-esteem	0.0
			30. Universal design	0.0
Institutional and Professional	Prison factors or issues	Security	33. Emergency in prison	0.0
			34. Traffic and drugs	0.0
		Prison purpose	37. Only lost of freedom	0.0
		Prison architecture	42. Heritage as a 'burden'	0.0
		Decision process	48. Hierarchies	0.0
	Interviewee	Points of view	53. Assumptions	0.0
	personal view	r on to view	57. It must be a punishment	0.0

Table 10-5: Variables rated zero among ID in the Safety model

Preventing isolation appears again among the neglected variables that affect health and well-being. One plausible explanation is that in the Safety prison model, the prison regime usually does not allow inmates to stay in their cells during daytime hours, and maintains them under strict visual control at all time which effectively eliminates this variable from design consideration.

10.3.2.2.- Methodological triangulation between manifest emerging themes and LCA among the Safety models' independent designers

The LCA shows that designers here focus their interventions in two areas: 'Our view on prison design' and 'Our problems and obstacles' (see Appendix 13). In the first of these areas— which covers 86.3% of the total latent codes—designers reveal their point of view about prison design through the emergence of latent themes grouped in four sub-areas: prison design philosophy; relationship client-architect; operational issues that drive design; and architectural variables that affect health and well-being. The second latent area 'Our problems and obstacles' covers the remaining 0.16% of the total codes and exposes the barriers that designers face when designing prisons.

The link between the Manifest emerging themes and the LCA is concentrated in the latent sub-areas 'Architectural variables affecting health and well-being' and 'Relationship

client-architect' (see table 10-6), with some connections with the sub-area 'Operational issues, are driven design' and the area 'our problems and obstacles'. However, to understand why these themes are so important for designers, it is also necessary to explore the rest of the latent content themes which are related to but not immediately linked with the manifest emerged themes, which is discussed next.

Manifest emerging theme	Latent theme	Latent Sub- area	Latent Area
Connection with nature through daylight	 There must be plenty of <i>natural</i> <i>light</i> Sunlight is a key source for well-being 		
Avoiding having windows to the exterior	 It is hard to include views Nature is expensive and a security threat 	Architectural variables affecting	Our view on prison design
Neglecting unhealthy effects of overuse of Artificial light Minimising uncertainty and increasing trust by design	 Artificial light affects security rather than health 	health and well-being	
Avoiding agitating Colours	 Colour selection is a matter of taste 		
Health and well-being are considered when benefits are evidenced	 We have to show the staff's benefits 	Relation client-	
Indirect external participation	Designers are pushing clients into more humane prisons	architect	
Avoiding amenities that do not	It must be a rewards and sanctions system	Operational issues drive design	
iead to an increase in security	Social pressure and owner's apathy prevent improvements		Problems and obstacles

Table 10-6: Links between Manifest Content Analysis and LCA of the Safety model designers

10.3.2.2.1.- Our view on prison design

The apparent contradiction between the first two Manifest themes from table 10-5: 'Connection with nature through daylight' and 'Avoiding having windows to the exterior' must be analysed in light of the underlying latent content. Indeed, when the four latent themes are considered together, there seems to appear to be a clear principle, which is that in county prisons inmates should lose visual contact with the exterior world, except for a sky view. When County prisons are placed in urban areas, the clients are willing to prevent inmates from having visual contact with the exterior, in order to preserve privacy for surrounding inhabitants and also for inmates. In turn, designers, in their efforts to win the bids, are willing to grant clients' wishes. To prevent communities from observing inmates through the windows —because inmates will try to make contact with people outside and vice versa— the façades of urban prisons are similar in appearance to vertical fortresses (See Figure 10-12 and 10-13).



These designs seek to fulfil the human physiological needs for *Natural light* and the associated perception of time passing while avoiding inmate contact with the exterior urban reality:

"But from the dayroom, we have the cell looking onto the dayroom, and from the dayroom, we have a recreation area, that is also enclosed with solid walls around it but open to the sky. Even if we are three or four five levels above the street, we still have this recreation yards or porches, out there" ID-S03

This also applies to and some State prisons located in rural areas in the USA where, although there is no possible visual contact with the community, the intention is preventing

inmates from seeing staff movements. (see Figure 10-14 to 10-16).

Figure 10-14: Louisiana State Prison 'Angola' Camp B Corridor and row or cells (right) in front to windows for contact with daylight (left)



Figure 10-15: Louisiana State Prison 'Angola' Camp A Corridor and row or cells (left) in front to translucent polycarbonate windows for contact with daylight (right)



Figure 10-16: Louisiana State Prison 'Angola' Camp A View from the exterior facade of translucent polycarbonate windows.'

Any views to the exterior and contact with nature are thus seen as potential security threats. Therefore, the designer has to find a way to simulate them inside the prison to avoid the negative side effect of eliminating them, as one designer explained:

"We have a facility we are working out where the intake, where they are first coming into the facility, we do have a small walled garden. We do not have that in the housing areas itself. Also, in terms of, if you cannot see actual images of, you know, view of nature, having a simulated view, having a mirror of an outside view."ID-S01

However, the consideration of simulated nature and views will depend on the clients' willingness, due to the operational cost associated with having them:

"There's so many small window slits and smaller windows, where you could do it larger, but the clients have not invested in that. I guess it's talked about, but it's not high in people's lists" ID-S02

Designers may justify the avoidance of windows because of the high cost,

"... and the glass the other problem is that it's such an expensive material. The glass is very expensive." ID-S01

but they are proud to mention that internal cell walls are heavily glazed to allow inmates having access to borrowed *Natural light* coming from the dayroom (see Figures 10-2 and 10-3 on page 239).

This contradiction shows that design must first fulfil the prison authority's requirements, which, in turn, are focused on controlling inmates behaviour rather than rehabilitation.

Similarly, the requirement that inmates are never allowed to be in darkness is a prison system requirement for control, internalised and operationalised by designers, despite the scientific evidence about the effect of permanent lit environments:

"There are studies that show the importance of understanding the effect of lighting when you have a secure environment, and you have someone who's on the night shift, and they' re supposed to do- you know- make sure everyone is safe and so forth. How much light do they need to do that versus the light level that should be there so that the inmates can sleep" ID-S01

The importance placed by designers on *Colours* is underpinned by knowledge on the effect of *Colours* on human behaviour, as discussed in Chapter 5. However, their opinions in relation to which kind of *Colours* to use are diverse. While one designer suggested that pastel *Colours* are the most appropriate because of the agitation properties of vivid *Colours*:

"You know the colour theory that says that the red is agitating. And you wanna do something that 's softer. So, you tend to tone those down, not use vivid colours in a large amount "ID-S01

For another, the selection is based on his professional experience, highlighting the lack of reliable research evidence in this matter:

> "You know, over the years, I've talked to a lot of different people about colours. I've been through the whole pink room excitement of the early seventies, and all those things, I just always seem to come back to some good earth tones. They have really a great calming

effect. Not the stark white, not the harsh silver white, or grey-white tones, but just good earth tones. They're warming, as well. So, we've always tried to stay with a pallet of earth tones. And it's a personal opinion, but it just seems like that's been a very warm calming colour to use. And I know people have done studies on it and a lot of the studies are people's opinions on them, you know, there hasn't been a lot of good empirical data about what's right. There's a lot of opinions about it. I just always use earth tones, just that" ID-S02

Significantly, the level of importance placed on *Colours* can thus simply be related to the designer's personal experience rather than being based on scientific evidence.

Designers will not do anything that could jeopardise security. Nevertheless, they show possible alternatives and additional perspectives, encouraging clients to soften the environment, even if only eventually:

> "if you encourage them to have some more appropriate softer furnishing and they can' t afford them, maybe they can buy it eventually - you know - they might not have money initially but purchase them - you know - maybe a couple of years after the building is finished" ID-S01

The design process is clearly a play of opposite forces in the Actual, in which the early stages are seen as crucial for designers to influence clients trying to educate them positively. They try to make clients understand the positive outcomes that design variables can have on human behaviour and the possible benefits for staff safety and the success of the prison operation. Nevertheless, they recognise these negotiations usually do not favour the designers, as revealed by one interviewee:

"That kind of thing needs to be established early right away, and of course you might get a push back from the client or from people who are establishing the budget for the facility: 'you really need to do that?', 'how much is it gonna cost?', is it going to help these people here?' - you know- 'is there proof that it will help them?'. Yeah, that is fundamental- that fundamental criteria need to happen early. I would be very excited about that, but normally there is too much of a push back - you know - to do those things" ID-S01

10.3.2.2.2.- Problems and obstacles

Additionally, designers feel the social pressure from political authorities, not wanting to be seen as 'pro-inmates' by providing 'nice environments' for them:

"I can't make it look too nice because the government officials will say it's not a good public image to make it look too nice. It doesn't happen all the time, but there certainly is a consideration" ID-S01

The transition from the Safety prison model—keeping control over the prison population at all time to prevent violence— to the Rehabilitation prison model, aiming to rehabilitate inmates, seems to be a distant possibility given the cultural beliefs of how to deal with criminality according to one designer:

"There's a lot of jokes about, you know [Norwegian prisons]. If the government is perceived as spending too much money- you know - they'll use that as an example: 'we don't want our jails looking like that' - you know - because the inmates shouldn't be cuddled, they need to be - you know - punished for what they did" ID-S01

However, designers perceive that their influence is gradually encouraging clients to open their minds to the need to consider factors that promote health and well-being:

> "I think that how you deal with those issues is something that each person has to look at, but I don't think there's any reason not to consider them in any facility, and I think most of the clients do a very good job now at least having that discussion about it. How do we introduce colour, how do we introduce light, how do we introduce, to these people" ID-S02

Although they are clear that this is a long-term fight and the results will not be seen any soon:

"I've seen it over the course of my career; it takes years to change people's ideas. Because they're good ideas, that doesn't mean they're going to be accepted. These ideas have been around for years, what we're talking about. But, as practitioners, we're happy to implement those ideas, and in the laboratory of the real world, and see how they work and then improve on them."ID-S03

10.3.3.- Comparative analysis between high-level staff and independent designers

Although both professional groups, in this case, show a high level of concentration of importance in just a few variables (Gini HLS-S: 0.67; Gini ID-S:0.61), unlike the two previous cases —International Advisors and the Hybrid prison model— the Safety prison model has no variable that can be seen as the most important.

As shown in the scatter plot (see Figure 10-17), two variables are considered highly important for both professional groups: *Natural light* and *Sense of coherence*. Although the focus of this model is on controlling the variables that can trigger violence among inmates, there is a clear difference with the Hybrid model regarding variables that positively affect inmates' well-being. Indeed, the concern of the Safety model staff and designers in the provision of *Natural light* directly benefits inmates' positive emotions and meaning in life, and as a consequence, it increases the odds of improving their relationship with other inmates and with staff.

Similarly, the attention placed in this model to the variable *Sense of coherence* shows a clear understanding that the fewer inmates and staff are exposed to unknown situations, the lower the anxiety and therefore the higher the feeling of trust and safety among them. Although the aim here is only to improve the safety and security of the prisons, the feeling of being in control of their own *space* and environment reinforces the emergence of positive emotions and positive relationship through the improvement of trust. This cannot boost a sense of meaning by itself, but the avoidance of inmates' infantilisation and over control of their daily routines, helps to at least avoid the loss of meaning in life by maintaining inmates' self-esteem.



Figure 10-17:Comparison of the level of importance of variables between High-Level Staff and Independent Designers of the Safety prison model

Maybe the most relevant finding in terms of their different priorities relates to the importance of *Space* variable, which is very high (3rd) for staff but low for designers (28th). Prison staff in the Safety model highlight the benefits provided by the standards and design of space in third-generation direct-supervision type of facilities for the safety and security of guards and inmates. Prison staff also recognise the failure of old prison design philosophies, which did not consider the psychological effect of the environment on inmates behaviour or acknowledge the effects of the old prison designs on the high levels of prison violence.

The rather surprising lack of interest among designers concerning the amount of *Space* in cells and common areas can be explained as the consequence of a highly standardised process of prison design. Although the use of *Design standards* such as ACA, NIC or local States' standards are voluntary, the recurrent lawsuits that prison services have faced in many States as a result of tragic events have forced them to insist architects comply with these norms.

Some of the perceived improvements in prison conditions seem to be the result of the authorities' fear to be found guilty of negligence by a Court, for not following the minimum standard recommendations, rather than wishing to improve the design itself:

"...I think we are getting to where we see [attitudes] slowly start to evolve. You know - we've had a lot of very costly lawsuits in this country, with regard to prisoner rights and those types of things. So, I think that you're seeing more and more of that coming to the forefront, and agencies being forced to really take a look at their facilities and making sure that those are adequate conditions for that population." HLS-S-02

Conversely, the importance attached by designers to *Colours* and improvements is not shared by staff. This may be partly attributable to disciplinary training and education.

10.4.- Key emerging themes and meta-themes

A total of fourteen themes emerged from the analysis of the Safety prison model. The review of those themes against the LCA and the reality shown in the fieldwork photographs revealed five Meta-themes — Using design to lower stress, Designing prison to retain prison control, Reward and punishment, Uneducated decisions, and Slow

evolution— which are shown in Table 10-7 below.

Table 10-7: Key themes and meta-themes emerging from the Safety prison model

Emerging Theme	Meta-themes
 Interpersonal Space Trust by design Avoiding agitating Colours 	Using design to lower stress
 Nature through daylight No windows to outside Having a view is dispensable. Natural light is not Overuse of Artificial light 	Designing prison to retain prison control
 A utilitarian approach to inmates' well-being Health and well-being only if benefits are evidenced Avoiding amenities that do not lead to increase security 	Reward and punishment
 Financers' lack of knowledge in prison matters. Lack of priority of authorities to health and well-being Importance placed in the initial cost 	Uneducated decisions
 Indirect external participation 	Slow evolution

The first three meta-themes showed in table 10-7 —*Using design to lower stress, Designing prison to retain control,* and *Reward and punishment* — expose the main characteristics of the process of design new prisons as both Staff and Designers express it.

The classification of themes and meta-themes in addition to the information presented in this Chapter led to a diagram that represents the scenario of the Safety prison model (See Figure 10-18). Additionally, and as in the previous case, a Critical Realist analysis of interactions shown in and the overall discussion of this prison model, developed a systemic representation of the Safety prison model, through a cause-effect loop diagram (See Appendix 14). This diagram shows which are the mechanisms in the domain of the Actual, in which the main entities interact, and how this interaction results in the current scenario of a Safety model.



Figure 10-18: Safety prison model scenario

The focus is placed on controlling prison population, maximising the safety and security of staff and inmates, by avoiding the physical and psychological determinants of fear and aggressiveness and providing prison guards with the best possible conditions for keeping control at all time. The purpose is to help inmates to release the psychological and emotional pressure that is produced by living 24 hours a day in an environment that is effectively cut off from the outside world.

Although State prisons are not the same as county prisons, these principles still apply to both types, apart from not having windows to outside. These three first meta-themes synthesise the utilitarian nature of health and well-being for prison authorities and governmental administrators and its links with the prison philosophy of treatment of inmates based on reward and punishment.

The last two meta-themes —*Uneducated decisions* and *Slow* evolution— highlight the slow process of evolution toward a system that respects human dignity. The education of authorities is seen as a cornerstone to provide inmates with better conditions and avoid both prejudices and conflict of interest. These prejudices are present in decisions based on the punitive and retributive approach on crime (see 4.2.3.), while the conflict of interest is present when decisions are taken based on political and/or economic reasons, regardless the adverse effects that this would produce on the prison administration and the accomplishment of the prison systems goals. However, although there is an awareness that there is a considerable amount of educational work to do, there is also the perception that things are starting to change, and authorities are gradually taking in consideration inmates' health and well-being. Nevertheless, the evolution that the Safety prison model interviewees are talking about is related with providing more *Space* and considering human dignity in design, while maintaining —and perhaps refining— the strict regime and its prison philosophy.

10.5.- Sub-conclusions

This Chapter presented and discussed the results and findings of the analysis of the Safety prison model. Both High-level Staff and Independent Designers show a high level of concentration of the importance of just a few variables related to health and well-being, showing a narrow focus of attention on the perceived determinants of health and wellbeing. Interestingly, the Safety prison model has no primary variable, unlike the two cases discussed previously. For High-level Staff in the Safety model, the focus of attention is placed on Financial obstacles, Natural light, Space, Decision-making process, and Sense of coherence. The Independent designers are more aligned with their professional discipline, prioritising Natural light, Non-financial obstacles, Sense of coherence, Perception of evolution, and Colours. Unlike the results from the two previous chapters, for both groups here, the importance of both families of variables --Eudemonic, and Institutional and professional- is distributed in a similar proportion. This shows interviewees from both professional groups also have a higher degree of acknowledgement of the Eudemonic variables. Additionally, in comparison with the previous two cases, there were a large number of variables not mentioned by both professional groups in the Safety model, which is more in line with the international Prison Policy Advisors group and emphasises a similar narrow focus of concern. Only Natural *light* and *Sense of coherence* were considered as highly important for both professional groups in the Safety model, while the most critical contradictions were the shallow level of importance designers attributed to Space, revealing the significant and negative role that the highly standardised design approach demanded by this model plays in terms of spatial consideration by the designers.

The Safety model aims to control the prison at all times by avoiding the Actualisation of forces that could trigger violent responses. This issue of violence is addressed by staff and designers through promoting the health and well-being of inmates on a Utilitarian basis, aiming to prevent violence from occurring in the first place. The four synthesised meta-themes emerging from the discussion reveal the dominant approach of reward and punishment and using design to lower stress and retain control as well as the underlying problems of uneducated decisions made by politicians and financiers, and the slow speed of the evolution of humanitarian views. These meta-themes also illustrate the main characteristics of prisons and the priorities of governmental authorities within the Safety prison model. The designers' overall design ambition is to focus on factors that can help

to release internal pressure within the prison, and their authorities look for support and education of investors to enhance the model. The next chapter describes the final Rehabilitation prison model findings and completes the discussion of all the cases before moving onto Chapter 12, which discusses the findings as compared across the four cases.

Chapter 11: The Rehabilitation prison model
11.1.- Introduction

This Chapter discusses the perceptions of High-level Staff, Governmental Designers and Independent Designers in Norway and Finland as the Scandinavian case relating to the Rehabilitation Prison model. The aim is to address the second and third objectives of this study, by understanding which architectural factors related to health and well-being are perceived to be essential for each professional group individually, and for the model as a whole, as well as why, when, and how these factors are displaced. As with the last two cases, this chapter starts with a brief review of the prison context in which prison authorities and designers work. The following section then discusses the findings from each of the three professional groups present in this case, finishing with a comparison across these professional groups follow the same structure used in the previous two chapters.

11.2.- Prison design context

Norway and Finland relatively have similar characteristics. Norway has a prison population of approximately 3,900 inmates and an imprisonment rate of 63 inmates per 100,000 inhabitants. In Finland, the prison population is approximately 3,100 inmates, with an imprisonment rate of 51 inmates per 100,000 inhabitants (Institute for Criminal Policy Research, 2018).

In Norway, there are 64 prisons. Almost two-thirds of these are high-security. The largest prison is in Ullersmo with a capacity of 400 cells. The smallest prison has only 13 cells, and the average is about 70 cells. Some 3,600 full-time equivalent staff are employed in the prison service. Medical, educational, and library services are imported from community services (Norwegian Correctional Service - Kriminalomsorgen.no, 2018). There is no overcrowding in Norwegian prisons. As a matter of principle, the Norwegian prison service does not overbook their prisons. There is a waiting list of convicted people (known as prison queue) who are waiting to be sent to prison to serve their sentence, although people convicted for serious crimes will go straight from pre-trial imprisonment to serving their sentence (Ugelvik, 2016). However, today, this queue has been discontinued due to the government plans to double the prison places and increased use of electronic control (Kriminalomsorgens Yrkesforbund, 2019). Finland has 26 prisons. 70% of the total prisoners are in closed prisons and 30% in open prisons. The Finnish

prison service RISE employs approximately 2,700 officials (Criminal Sanctions Agency -Rikosseuraamuslaitos, 2018).

In both countries, the prison facilities are owned by a governmental agency. Statsbygg is the Norwegian governmental advisory body for purchasing, leasing and construction of the government projects, and is where governmental designers have worked since 1816, developing the design briefs and bids. The Finnish governmental institution for this purpose is Senaatti Properties. These institutions also own the public buildings on behalf of the governments, and are responsible for managing the performance in terms of their operation and maintenance. Among these buildings are the Government quarters, governmental offices, and also the prisons.

11.3.- Rehabilitation prison model – analysis and discussion

11.3.1.- High-level Staff

11.3.1.1.- Manifest content analysis and Pareto analysis-

The professional group of High-Level Staff in the Rehabilitation model (HLS-R) shows the lowest Gini value of all the groups in the study (Gini=0.46), resulting in a greater number of variables in the group of most important ones. This could be the result of the interaction of at least two causal factors. Firstly, the problems faced in the Rehabilitation model prisons seem to be far less overwhelming and acute, and their goals more realisable than in the Hybrid model, meaning that the Rehabilitation High-Level Staff do not feel the same impotence revealed by Hybrid interviewees. Secondly, the findings from the Rehabilitation model staff, when compared with the Safety prison model staff, suggest that a broader range of variables must be considered and controlled for, in order to design a better prison in terms of health and well-being. Indeed, the Rehabilitation model high-level Staff are more aware of the factors that will affect the well-being of the users both staff and inmates, and not just focused narrowly on the safety and security of the operation of prisons, as with the previous two cases.

Sixty variables are displayed in decreasing order of importance (see Figure 11-1). Ten variables were identified as the most important variables, which accumulate 43.4% of the total importance (see Table 11-1). The first six are *Natural light* (6.4%), *Perception of evaluation* (4.8%), *Indoor air quality* (4.7%), *Financial obstacles* (4.6%), *Sense of coherence* (4.3%), and *Space* (4.2%) accumulating 28.9% of the total importance



Figure 11-1: Pareto analysis of importance among HLS- Rehabilitation prison model

The next three variables (*Rehabilitation, Layout regarding program*, and *Design standards*) have the same individual level of importance (3.7%). The last variable included in the group of the most important ones is *Indoor bathrooms* (3.4%). When all these variables are taken together, they mark a clear graphic boundary between the first group of ten variables (in red) and the rest of the variables.

HLS-R						
				Importance %		
Family of Variables	Area	Sub-area	Variables	individual	accumulated	
Eudemonic	Architectural variables	SENSORIAL	07. Natural light	6.4	6.4	
Institutional and Professional	Prison factors or issues	PRISON ARCHITECTURE	43. Perception of evolution	4.8	11.2	
Eudemonic	Architectural variables	COMFORT	03. Indoor air quality	4.7	15.9	
Institutional and Professional	Prison factors or issues	DECISION PROCESS	47. Financial obstacles	4.6	20.5	
Eudemonic	health and well-being variables	WELL-BEING	24. Sense of coherence	4.3	24.8	
Eudemonic	Architectural variables	SENSORIAL	10. Space	4.2	28.9	
Institutional and Professional	Prison factors or issues	PRISON PURPOSE	36. Rehabilitation	3.7	32.7	
Institutional and Professional	Prison factors or issues	PRISON ARCHITECTURE	44. Layout regarding program	3.7	36.4	
Institutional and Professional	Prison factors or issues	PRISON ARCHITECTURE	41. Design standards	3.7	40.0	
Eudemonic	Architectural variables	COMFORT	04. Indoor bathroom	3.4	43.4	

Table 11-1: Most important variables among HLS-R

11.3.1.1.1.- Natural light

It is understandable that the most important variable is *Natural Light*, given the very short periods of daylight in the wintertime and the long wintry season in Scandinavia. However, despite the high frequency of this variable, staff do not place much emphasis on it, suggesting that the need for *Natural light* is something self-evident for them.

11.3.1.1.2.- Perception of evolution

In addition, staff are very conscious about the evolution of their prison design and its regime, which has changed from the old solitary-confinement based Philadelphia prison system (see 5.2.5.2), through separation by classification, to the current system of integration, in which inmates are taught to live in community and within an atmosphere of *Normality*:

"We are going to shut them down one now or, in about a year, but that was one of the old Philadelphia... architectural... prisons. So, that was, at that time, [seen as] what should be the best treatment of prisoners. Now we think that prisoners should have a possibility to meet other prisoners, to feel well within the prisons" HLS-R-01

11.3.1.1.3.- Indoor air quality

Indoor air quality is also important for staff. As mentioned by interviewees, prisons have to comply with very strict Scandinavian rules in Air Changes per Hour rate (ACPH) (Yoshino *et al.*, 2004) so this is not be seen as a problem but is still considered important. Staff commented that smell used to be a problem at times when smoking inside was allowed. However, today, the presence of a bad smell is immediately understood as a serious problem that must be corrected as soon as possible as observed in one of the HLS's comments:

"If [smell] is coming from dirt or if it comes from piping, then there is maintenance people that are coming to see If the smell is because there is something wrong with the pipes because might be a security issue... because we try to keep places clean because it is healthier." HLS-R-02 As mentioned by the interviewees, Scandinavian prisons use heating, ventilation, and air conditioning systems to provide sophisticated climate-controlled buildings. However, it is also a requirement to provide them with the possibility to enjoy the fresh air. The underlying theme emerging from the data here is: *Connection with the natural environment*.

11.3.1.1.4.- Financial obstacles

Scandinavian prisons use building materials which combine safety and security requirements with a normal-like appearance of domesticity. Despite Scandinavian countries typically ranking among the fifteen highest Gross Domestic Product (GDP) in the world (Statistics Times, 2018), *Financial obstacles* still appear important (4th ranking) with cost reductions demanded in Norway at least:

"...in Norway buildings, in this new [prison design philosophy], we have to make more standards on the buildings to reduce the cost. I guess, for architects, that's not the best. But everything should be the same, but we have the pressure from the political side, from the Minister of Justice, and everything should not cost too much, and it should be very fast." HLS-R-01

This is in line with the other two prison models, and economic restrictions are perceived by staff as affecting the low standard of prison design and building, in comparison with the average quality of Scandinavian buildings. However, unlike the previous two prison models, the high cost of prison infrastructure is defended by staff as the necessary expense to reduce recidivism rather than improve security and control:

> "...in most of the Scandinavian countries we have small units, we have fewer prisoners within one unit than in Europe. So, that that's one of the big differences, and I guess, the prison services in the Scandinavian Countries are more expensive than would be if [we] come to England or the Netherlands. But, it is quite expensive the way of running the prison, but what do you think is the right way to prevent recidivism? And that's the important cost for humanity" HLS-R-01

Although the initial cost of prisons is of high importance, it seems that in the Rehabilitation model, at least, the reduction of recidivism has greater priority. The theme emerging here is *Recidivism reduction outcomes justify the initial cost*.

11.3.1.1.5.- Sense of coherence

This humanistic perspective is consistent with the importance placed on inmates' privacy and on the *Sense of coherence*. The right of prisoners to have privacy is seen as one of the most important factors in promoting inmates' health and well-being as mentioned by one staff interviewee:

> "I think one important thing is that inside prison there has to be privacy. Privacy is somehow that even there might be a couple of other prisoners in the same cell but [there must be] some privacy. If the privacy is Space or if the privacy is something which does not belong to the others, but somehow, even if that is nobody's' home, there has to be some privacy." HLS-R-03

The underlying theme emerging from the data here is: *Privacy*

This need for privacy is related by staff to the need for avoiding negative emotions triggered by the feelings of fear due to the loss of control over their environment. One of the mechanisms that staff see as a useful measure to reduce this fear is to give the inmates a key to their cell door, allowing them to have personal control over access to their private spaces:

"It should be built so that if there is no other security risk like an escape, they would have their own key. And it must be this kind of standard that they have some control even though the staff has the final control. The staff can every time open the door, but the prisoners have still their own key, and they (inmates) can close the door when they are going to their courses or studies. But that's somehow a way to give [inmates] a little bit more open spaces. And they are responsible for their own cell." HLS-R-03

The theme emerging from above is: Minimising fear.

11.3.1.1.6.- Space

Along with the need for privacy and control of personal space, having enough *Space* in the cell is also seen as an essential contributor to the promotion of health and well-being:

"We think [health and well-being] is very important. They are kept in there. They are kept in custody. They are kept away from society and it's important that they have enough room. And, in a way, it's okay to stay within the cells, but obviously, it's not okay to be put into prison. That's the way it is. They're kept away from society ... they should not have to have an extra-punishment in any way." HLS-R-01

11.3.1.1.7.- Rehabilitation, Layout, Design standards and Indoor bathrooms

The emphasis placed by staff on *Rehabilitation*, *Layout*, *Design standards* and *Indoor bathrooms* shows a strong interrelationship between purpose and design as a tool to help to reach well-being and rehabilitation. These elements work together in the layout developed by Scandinavian prison services to create an improved sense of *Normality*:

"I think it's important to try to encourage them, and that's part of the rehabilitation, it's to try to help. Some people are kind of helpless. When they come, [to prison], they can't cook, and that's why we have these cooking lessons, where they are taught to bake. So, they [can] take care of their own feeding, to make healthy food, and learn to make food. And also, the money, you are supposed to take care of your own finances, so they are encouraged to do that. In bigger prisons, they have cantina shops. ...And clothing, you have washing machines, even in a closed prison you have washing machines where you can wash your clothes." HLS-R-02

The underlying theme emerging from the data here is: Recreating outside Normal life.

11.3.1.1.8.- Unmentioned variables

Only ten variables were not mentioned by staff in this case (see table 11-2). Interestingly, both Communicable diseases and Non-communicable diseases were rated as zero,

being the only two variables from the sub-area health and safety not mentioned during the interviews. This can be understood in the context of a prison system where diseases are not seen as an issue to be concerned about. This does not mean that prison inmates in Rehabilitation prison model face no health problems (Berg Nesset et al., 2011), or that they face fewer problems than Hybrid (Osses-Paredes and Riquelme-Pereira, 2013), or Safety Prison Models (Wilper et al., 2009). Substantial evidence shows that prison inmates still have higher rates of mental and physical illness and a higher risk of suicide than the general population (Watson, Stimpson and Hostick, 2004; Pratt et al., 2006; Suto and Arnaut, 2010).

Nevertheless, in Norway and Finland, prison healthcare is under the responsibility of the Ministry of Health rather than the prison services authorities, which perhaps explains the greater emphasis on health and well-being more generally. On principle, prisons do not have their own staff delivering medical, educational, or library services. Instead, these have been deliberately imported from the community since 1988 to ensure that prisoners receive the same health service as the general population, by providing full-time health care service inside large prisons. However, smaller prisons still only have a part-time service (Berg Nesset et al., 2011). Similarly, the local counties have pedagogical and administrative responsibility for prison education. Their focus is on the general subjects at upper secondary school, like mathematics, English, Norwegian, social science, science, history and physics. They also have a music therapy where teaching guitar, piano or bass. Other courses are German, Norwegian as a second language, and English courses at different levels. They also have general computer courses. Vocational courses are provided for inmates to learn how to work (Vattedal-Helgesen, 2017). The underlying emerging theme here is: Joint working.

Interestingly, the Rehabilitation Staff group is the only professional group within any prison model that does not report any *Social pressure* from a community demanding a more punitive approach, through the media and politicians, according to its staff. Two key counterforces that interact to prevent this Actualisation are the Scandinavian cultural approach to offenders— who are seen as 'insiders'— and their focus on evidence-based and purpose-led decisions (See 5.2.6.2.1). This justifies and provides a social purpose to recover inmates as part of the community. Additionally, another particularity in Scandinavia is the level of integration of different services within the prison delivered through local and community organisations and service providers under the 'import'

principle (Langelid *et al.*, 1999). This makes the carceral geography more visible to the community, placing additional pressure on the prison services coherence in terms of doing what they say It also makes the community accountable to an extent for inmates prior to release (Dunn, 2017). The underlying theme emerging from the data here is: Operational coherence.

HLS-R					
Family of Variables	Area	Sub-area	Variables	Importance %	
	Architectural variables	PHYSICAL	12. Floor features	0.0	
Eudemonic		FEATURES	15. Walls features	0.0	
	health and well-being variables	HEALTH AND SAFETY	20. Communicable diseases	0.0	
			22. Non-communicable diseases	0.0	
		WELL-BEING	29. Self-esteem	0.0	
Institutional and Professional	Prison factors or issues	SECURITY	33. Emergency in prison	0.0	
		PRISON PURPOSE	35. Inmates education	0.0	
		PRISON PURPOSE	38. Inmates' work	0.0	
	Interviewee personal view	POINTS OF VIEW	54. Social pressure	0.0	
			57. It must be a punishment	0.0	

Table 11-2: Group of variables not mentioned by HLS in Rehabilitation model

11.3.1.2.- Methodological triangulation between manifest emerging themes and LCA among Rehabilitation models' high-level staff

The four manifest themes emerging from the previous section are *Connection with the natural environment; Privacy; Minimising fear*, and *Normality*, and they are linked with several Latent themes from the LCA (table 11-3). The most prominent category within the sub-theme 'designing for mental health' is views and daylight as essential variables to promote mental well-being (See Appendix 13). Crucially, daylight is seen as an important requirement to give inmates the feeling of time passing and reduce the feeling of being imprisoned. In that sense, window design has a big influence on the well-being not only by promoting the raising of positive emotions among the users of the buildings —such as calmness, pleasure, or inspiration— but also creating adequate conditions within which to find meaning and engagement.

Manifest Latent theme		Latent sub-	Latent area	
emerging theme		area		
Connection with the natural environment	 Views and daylight are essential for mental well-being 	Designing for mental health	What we design and	
Privacy	 Privacy and respect for their belongings 	Normality through design	why	
Minimising fear	 People must feel safety Psych. Effect of the environment must be considered People must feel safety 	Designing for mental health		
Recreating outside	normality through design	What design must consider		
Normal life	 Prisons as training facilities for teaching to live a normal life 	Our way of thinking	The Scandinavian	
Joint working	Working for improvement	Consolidating a Nordic model	way and the future	
Operational coherence	Reducing quantity but never			
Recidivism reduction outcomes justify the initial cost	 Training inmates to live a normal life Inmates' well-being and health as a state priority 	Our way of thinking		

Table 11-3: Links b	etween Manifest	Content Analysis	s and LCA o	of Rehabilitation	model l	High-
		level staff				

Daylight and sunlight are both of high importance in Scandinavian prison design. Overhead lighting has been used for many years with different design solutions and materials while still maintaining the concept of obtaining as much *Natural light* as possible. Using architecture to bring daylight through not just windows but through the floor (Figure 11-2), the roof (Figures 11-3 and 11-4), or the walls (Figures 11-5 and 11-6) is also considered and appreciated by staff.



Figure 11-2: Helsinki prison, Finland. Overhead lighting with daylight using skylight and lighting of the lower floor through the glazed floor.



Figure 11-5: Soft daylight through walls (Inside view of prison chapel). Halden Prison, Norway



Figure 11-6: Soft daylight through walls. (Outside view). Halden Prison, Norway

The old-style prison architecture is clearly a challenge for staff when talking about daylight and views (Figure11-7), but although there are still prisons with barred windows, many of them have generous daylight (Figure 11-8).



Whether the windows are located in a lower or upper level of the wall, with or without the possibility of looking outside, they result in a considerably different effect on the mental well-being of the users of the building (see Figures 11-7 and 11-8). The narrower the openings of doors and windows, the more the feeling of confinement according to one staff participant:

"I think it is quite important and where the window is located. Is it high, or is it low? Or and that has to do also to what is the effect that you give to the prisoner. If you want to give the effect on the prisoner that you are really now in high security, at the surveillance, that you are surveyed, you put windows typically very high. Even in Finland in the prisons, you can see this in cells, and more you give the feeling that you belong to this society, you make windows down, and make them bigger. So, it with also that the light is better" HLS-R02

Although interviewees highlight the need for visual contact, this is not just about security and surveillance, as in the previous two prison models analysed. It is also about providing inmates with privacy and dignity. These concepts can be seen in the inclusion of normal-like furniture inside the cell as shown in the Figures 11-7 and 11-8 —in which inmates can have their belongings, or in the normal-like bathroom environments —in which inmates are not exposed to the view of other inmates or prison guards.

The concept of privacy is not only found in the design but also observable in the way in which staff relate with inmates. A clear example is the anecdotal experience of the author when visiting Helsinki prison, where guards politely requested permission from the inmate to allow the author to go inside his cells (room) or to take pictures of the inside.

From the interviewees' point of view, the rehabilitation philosophy rules the design, and that is why they agree that it is both the cell and the whole prison concept, that is important. They feel that the layout must recreate a sense of normal life, and it must have *Space* for all the activities needed. Having small living units with eight to twelve inmates and the guards interacting with thems is part of the prison concept. The staff want to avoid feelings of fear and uncertainty. Staff want inmates to feel safe and to have staff watching inmates and interacting with them as well as inmates having the chance to talk with staff at any time if they want. The possibility of visual contact among staff and inmates is

therefore highly important, and for guards to be easily reached by inmates in an environment of *Normality* is a key requirement of prison design in this model:

"We talk about safe. It has to be safe for prisoners and for staff, but what mean safe? I think that It doesn't mean that you are on holidays when you are in your own cell. You are out of your home, but the prisoners have to feel that they are safe inside their cell. But where that kind of feelings might come? Have they control in that area? They can see if somebody is out there. It should be a place where it is nice to go even if it's a cell." HLS-R03

The principle of *Normality* in Nordic countries is not simply a strategy for improving rehabilitation rates or decrease recidivism, even though these are positive side effects of this principle (Engbo, 2017). It is a strict application of the law which states that the only right that the prisoners have temporarily lost is the right of free movement in the outside society. This is a fundamental Scandinavian cultural difference compared to the previous two prison models and Hans Jørgen Engbo, a former Chief Executive of the Correctional Service of Greenland in Denmark states that "We ...emphasise that it is not legitimate to create an abnormal framework, except for the (perceptible) framework put in place by the incarceration itself" (Engbo, 2017, pg. 341).

The above explains why there is a common understanding among the Scandinavian staff interviewed, that the principle of *Normality* must rule the whole prison system. This includes the prison regime, how staff treat people in prison, the opportunities that inmates must have inside the prison, access to the welfare system, and indeed, the built environment. However, this architectural solution means the cell must have no less than the normal condition of life outside prison but also no more. As mentioned by interviewee HLS-R02, if the conditions are too good, they could be dealing with homeless people rather than criminals.

"But it has to be good enough that you manage there, but not so inviting that you would love to come back because of the cell. So, because this is one big problem is that there are a lot of homeless people among prisoners, and especially among those who are coming back" HLS-R02 There are also different views in terms of whether the cell design should be similar to a hostel room or a student residential area or even a hospital. However, visiting a high-security prison in Norway and two open and two closed prisons in Finland, the final perception of the author is that in both countries the architecture, even in old prisons, is trying to imitate normal home-like conditions. As seen in Figures 11-9 to 11-14, despite the differences in terms of the age of the buildings, the quality of materials related with their differences in security level, there are not really so many differences in the prisoner accommodation provided in both countries and the planning could be easily compared with shared student flats in the UK such as the one shows in Figure 11-15



Figure 11-9: Inmate room in Vanaja Female open prison, Finland



Figure 11-10: Inmates' room at Vanaja Male open prison Finland





Figure 11-13:Inmate single cell, Helsinki closed prison, Finland



Figure 11-14: Inmate double cell, Helsinki closed prison, Finland



The difference between student accommodation and prisons is that the Nordic prison has a 24-hour staff presence, and intensive interaction with inmates daily, as explained by the Halden Fengsel governor during the visit to this prison.

Within the rehabilitation prison model, security is still one of the most important issues and main concerns when designing. However, staff and designers prefer not to have bars in windows. Instead, windows are often designed to be strong enough with security glass, and even if inmates could break them, they will still be held within a secured area. Fresh air comes into the cell by a specially designed steel-made element aside from the window in a way that inmates can take a fresh air at any time(see Figures 11-16, 11-17 and 11-18).



What is noticeable in the LCA analysis is the significance attached by staff in this prison model to mental health, which is different from the findings from the previous two prison models. Research suggests that typically, about one in seven prisoners in western countries have psychotic illnesses or major *Depression,* which might be risk factors for suicide. Additionally, about 50% of male prisoners and about 20% of female prisoners have antisocial personality disorders (Fazel and Danesh, 2002). However, this still seems

an insufficient explanation for the particular level of importance attached to mental health and mental well-being among Scandinavian staff, which is explored next.

Given that the principle of *Normality* underpins the whole Scandinavian system as a *sine qua non* of the rehabilitation of people in prison providing adequate physical conditions of *Space* (proxemic) and a favourable psychological environment becomes more relevant. The provision of *Normality* ensures that rehabilitation occurs in a safe environment, providing security for inmates and prison staff. In this sense, the considerable concern over mental health and mental well-being also becomes a concern about prison security and the safety of all the people who live and work inside one.

The need to have a safe environment to prevent attempts of self-harm is also reinforced by the fact that Scandinavian countries show one of the highest levels of suicide in prison in Europe (Aebi, Tiago and Burkhardt, 2017). This is why, although each room (cell) has a bathroom, there is a crucial requirement that each room/cell must have an intercom system (lifeline) that allow inmates 24 hrs instant communication with staff (see Figures 11-19 and 11-20).





11.3.2.- Governmental Designers

11.3.2.1.- Manifest content analysis and Pareto analysis

The distribution of the importance of variables concerning health and well-being among Governmental designers in the rehabilitation prison model has a low level of concentration (Gini=0.52) in keeping with the staff in this model as discussed previously (Figure 11-21).



Figure 11-21: Pareto analysis of importance among GD- Rehabilitation prison model

The five most important variables are: Decision-making process (8.2%), Preventing isolation (5.9%), Sense of coherence (5.7%), Natural light (4.4%), Normality (4.3%), and Financial obstacles (4.0%), accumulating 32.5% of the total importance (see Table 11-4).

GD-R						
				Importance %		
Family of Variables	Area	Sub-area	Variables	individual	accumulated	
Institutional and Professional	Prison factors or issues	DECISION PROCESS	46. Decision making process	8.2	8.2	
Eudemonic	health and well-being variables	WELL-BEING	25. Preventing isolation	5.9	14.1	
Eudemonic	health and well-being variables	WELL-BEING	24. Sense of coherence	5.7	19.8	
Eudemonic	Architectural variables	SENSORIAL	07. Natural light	4.4	24.2	
Eudemonic	health and well-being variables	WELL-BEING	28. Normality	4.3	28.5	
Institutional and Professional	Prison factors or issues	DECISION PROCESS	47. Financial obstacles	4.0	32.5	

11.3.2.1.1.- Decision-making process

The most important variable by far for the Rehabilitation model designers is the *Decision-making process*. However, contrary to the previous two prison models, the comments here show positive outcomes. Scandinavian prison services across different countries work together, developing a standardised philosophy of prison design. When interviewees talk about the current state of consideration of health and well-being of inmates in Scandinavian prisons, they inevitably and proudly highlight the process of how decisions are made, how the Scandinavian countries interact, and where there may still be room for improvements in these processes. This interaction involves knowledge transference among professional groups²⁴, and regular meetings of coordination and knowledge transference among prison services and prison designers, as mentioned by interviewees:

"I have not obtained knowledge, not in the early stages, but we also do, have had to do some travels, travel to look at other prisons around the world. I've been in a few different ones but not extensively. And, also there is a meeting point between all the Nordic countries and on a regular base. That's Sweden, Denmark, Norway, Finland and Iceland. And they meet up. Kriminalomsorgen is the main driver of that, and we part take in that. And that gives us some platform for sharing knowledge between the countries as well at that level. That's very interesting" GD-R 01

Additionally, depending on the country, this *Decision-making process* can include additional actors such as prisoners and their victims. Interviewees explained that a constant debate about prison had fed this *Decision-making process* in Norway for almost fifty years, in a yearly seminar in the mountains, chaired by KROM (See section 3.4.5), and "where prison policy is worked through and determined by all interested parties" (Pratt, 2008b, p. 120). These meetings, which include academia, practitioners, politicians,

²⁴ Such as the Nordic Symposium on Forensic Psychiatry yearly organised by a scientific committee from Norway, Finland, Denmark and Sweden (Danish Psychiatric Society, 2018), or the regular publications of statistics of the Scandinavian correctional services (University College of Norwegian Correctional Service, 2016)

prison authorities, prison staff and inmates have successfully influenced some key policy decisions, such as the cancellation of a 1.000-bed prison project for Oslo as a result of a seminar participants opposition in 2006 (Ibid). As one interviewee expressed it:

"... you had these yearly seminars and many other activities in were [participated] politicians, you've had law people from the academic side but also practitioners. There were also prisoners taking part in the discussion. And you still have these seminars yearly. So, I think this is an ongoing debate and with really strong voices and really high profiled politicians, high profiled lawyers, high profiled academics" GD-R-03

However, it is also recognised that even in these yearly seminars, designers have not yet been considered in this discussion, and therefore, a more comprehensive discussion and more design research is still needed:

> "I told about these seminars starting like in the late sixties... but architects have not been present there. I think architects should have been more present there because I think architecture is a very potent [tool] for discussing complex things like that." GD-R-03

The underlying theme emerging from the data is: Involving the community.

These kinds of regular interdisciplinary seminars which confront social, professional, political and judicial perspectives do not seem to exist in other prison models. This is probably one of the underlying elements that have helped to include other social actors in the discussion of the aims of prisons, spreading awareness of the need for rehabilitation rather than punishment. It also shows an evolutionary breakthrough in the conceptualisation and consolidation of the prison as a social service that must produce social benefits rather than just satisfy the need for social retribution and deterrence.

This evolution of the rehabilitation model could also have been reinforced by an increase in the level of specialisation in prison work. Prison officers and prison services workers in both Norway and Finland have a high level of education. In Finland, for example, in a conversation during a visit to the Vantaa prison, one staff participant mentioned that the position of governor in a Finnish prison is held by the prison staff member with the highest educational degree. In Norway, the prison officers' role has been developed through research and with the support of unions with a long-term perspective. Norwegian prison officer training is aimed towards obtaining a University degree (Bruhn and Nylander, 2013), which is seen by governmental designers as one of the key elements that enable good design outcomes:

"We have a ... Norwegian prison workers have a very long education. They now are working to make it up to the bachelor level. There is a research institution related which share facilities with the college for their training, so there is a lot of knowledge about what is working and what is not working in the prison systems. So, I think all that information comes into when we sit down with the Norwegian prison warden. They have all the experience of what is working or what is not working." GD-R-02

The underlying emerging theme here is: Highly educated staff.

However, one of the negative aspects of *Decision-making process* mentioned by interviewees that directly affect the design outcomes, and therefore the well-being of users, is that some decisions are delegated directly to the construction firms, with designers losing some degree of control over the project outcomes. The fact that these firms have won the contract on competitive cost grounds suggests that, in the case of incorrectly specified materials, the selection will have been made based on cost rather than quality. However, it is, equally the case that the qualities and features of prison construction are not always carefully specified, according to one designer:

"A lot is left to the entrepreneur, and especially when it comes to light the balancing of colour in the interior, and – and so, [in the technical specifications] you have described the qualities, but you have fragmented it. So, it's up to them [construction companies], and sometimes you have a lot of care in the design of what's done in the early phases but sometimes, especially [because] you have some entrepreneur that does it all in the end, and they have the focus on ... they have this incentive to push the price done to get the contract, and then they are also forced to stick with that in the fulfilling" GD-R 03

11.3.2.1.2.- Preventing isolation and sense of coherence

Preventing isolation and providing *Sense of coherence* are also important variables for this group of designers, who highlight the important role of design to generate spaces capable of emphasising human contact, face to face interaction between inmates, and also between inmates and prison staff. Good design can promote positive relationships and the avoidance of negative emotions that can quickly emerge through the combination of imprisonment and loneliness which in turn, lead inmates to lose the meaning of their lives, fall into *Depression* and attempt suicide:

"... the important[thing] is that they should not be left alone in the cell any more than they should, and so that is the design and nothing but the design that leads to that. [In] all new prisons they have their private bathroom I think, and someone would say "oh that's a luxury", and some would say that's necessary for different reasons, and some would say that not- that's not wanted from the inmate point of view because it generates more isolation. Of course, it's nice to have a bathroom, but my experience is that the stories from the prisoner side of view, is that isolation is an enemy." GD-R 03

In this case, the theme emerging is: Design spaces that encourage human contact.

However, *Preventing isolation* also paradoxically competes with the need for coherence. The design of the prison and specifically the living areas and inmates rooms has to be done in a way that provides all the required security conditions that remove isolation while taking away as little as possible of inmate's coherent control over their lives, as mentioned by one designer:

> "When you have a toilet in your cell, and you have a shower in your cell, you could live your life as you want it. If you have to call somebody to go to the toilet or to have a shower, you've less control." GD-R 02

11.3.2.1.3.- Normality

The Sense of coherence is also interconnected with Normality as another important variable and prison services have to provide the same amount and quality of social services that citizens can enjoy outside and respect individual choices, within the voluntary rehabilitation programs (Anderson and Gröning, 2016). However, this principle of *Normality* also extends to designing the physical environment, which should be as normal as possible compared to outside the prison, without jeopardising safety. Thus, normal-like fixtures and materials are provided, such as porcelain toilets, wooden beds and tiled showers walls. This design approach protects the inmate's mental well-being, reducing negative emotions, and the loss of meaning-in-life related to any traumatic experience such as the loss of freedom, by balancing it with the *Normality* of 'home':

"... if we come to - like - ordinary dimensions of designing a room it's a small home ...and I think Norwegian designers and myself would regard - as you know, you design somebody's home for many many years, and there are qualities that should be there. Like you have your own bathroom, that is easy to clean, it's not – it cannot be harmful in any way that-... like the detailing- [we] have to take into consideration that dimension." GD-R 02

The underlying theme emerging from the manifest data here is: Recreating as much as possible normal outside life.

Nevertheless, new closed prisons such as Halden prison in Norway, do not necessarily eliminate the feeling of being in prison (Fransson, Giofrè and Johnsen, 2018). These material entities are relatively meaningless and incapable of providing well-being with a lasting effect for inmates unless there is also meaningful staff/inmate interactions in a framework of mutual respect, in which staff makes inmates feel that they are beings of equal value (K. John, 2018). The establishment of positive and meaningful relationships between staff and inmates in prison settings seems to be a key component for improving inmates' well-being, as highlighted by governmental designers when comparing Halden prison with Bastøy, an open minimum-security prison which is run as a farm in an island near to Oslo:

"But my example is like in Bastøy, I told you about the... this island prison and, the quality of the buildings there is lousy and is like lack of renovation, and these houses....or... in Norwegian standards is lousy compared to Halden, ... but any inmate would prefer that because they are more free,... and spending the evening in the living room with the group." GD-R 03

The underlying theme emerging from the data here is: positive and meaningful relationships between staff and inmates.

11.3.2.1.4.- Natural light

Natural light is again seen by this group as an important determinant of health and wellbeing. However, this is related by designers to the frequency of inmates' exposure to daylight and *Natural light* outside buildings rather than to any specific emphasis on design interventions beyond layout and building orientation. This is because the provision of *Natural light* in new prison designs is seen as an issue simply solved by using big doublelaminated-glass non-barred windows.

11.3.2.1.5.- Financial obstacles

Although the variable *Financial obstacles* are again included among the most important ones, unlikely all the groups in the previous cases, it is the least important one in the group for governmental designers of the Rehabilitation Prison Model. This is because, although they have to deal with economic restrictions, with the prison service perceived as being the last governmental priority in financial terms, the variables related with health and well-being of inmates are inseparable from prison projects as a matter of design policy. When a project cost exceeds the available budget, it usually requires budget cuts, and designers must anticipate them. This is achieved by ensuring the design matches the available budget, and through a mandatory administrative rule that each project has to contains a pre-defined and prioritised list of items that could be removed from the design in case of such budgetary cuts. This list does not affect particular elements or the qualities of materials but is related to prison areas as a whole— such as a removing a whole living unit, a whole workshop, classroom, etc.— making possible to maintain the level of quality and operational performance of buildings. One interviewee even argued that health and well-being variables are never part of the debate because they are the very basis of the budget as they are part of what a cell must have:

"I've never experienced that being excluded intentionally in my experience. they are all part of the design at the very bottom of it. I mean, the cell needs to be like this because — and it is not really a discussion toward reduction. You can't save one square metre by cutting the health. It has never really been a discussion. So, I just think it is a natural part of it. It's not really a separate thing." GD-R01

It seems that designers are strongly aware of the prison system aims at all times, and would not reduce cost through the removal of these health and well-being design elements that have been included as a result of the implementation of the Nordic rehabilitation philosophy and that this is not up for discussion:

> "But there are some topics that are not up to discussion, and that could well be the cell layout and the number of cells on each floor."GD-R02

Nevertheless, the design of prisons has to minimise the cost of maintenance and replacement of elements as well as maximise the effective use of personnel, which is the most expensive long-term resource in prison. This is because Scandinavian prisons systems have the highest inmate/staff ratio in the world (Norway 1.0, Finland 1.4, Sweden 1.2, Iceland 1.7, and Denmark 1.2, with the average ratio in Europe 2.1) (Fulton, 2016). As one designer put it:

"One of the really scarce resources is the personnel. And, if where the prisoners are placed leads to more need of personnel, or in other- the distance to walk to get them to the activities, or to get them out, or whatever - that should [be] part of the discussion so that you can use your personnel effectively." GD-R 03

The underlying theme emerging from the data here is: Design must maximise the use of personnel, *minimising running cost.*

11.3.2.1.6.- Unmentioned variables

The group of variables that were not mentioned at all consist of nine variables (Table 11-5), which are mostly already well managed in Scandinavian prisons, and do not represent an issue for interviewees. However, the variables *Thermal comfort* and *Noncommunicable diseases*, appear to be two striking absences among Governmental designers in the Rehabilitation model. *Thermal comfort* is considered non-essential because it is generally well-controlled, according to one interviewee:

> "...with Norwegian cell windows in Halden, or a very modern building, there is actually no need to open the window. Cos you have a balanced ventilation system, so there is no need to open the window." GD-R-02

Non-communicable diseases as an issue are relatively neglected by all the case groups in the case except International health advisors. In the Rehabilitation model, this is because of the joint working strategy that allows the Health Ministry to work as an insider in the prison service and to positively attend to this issue.

GD-R					
Family of Variables	Area	Sub-area	Variables	Importance %	
	Architectural variables	Comfort	05. Thermal comfort	0.0	
Eudemonic		Physical features	12. Floor features	0.0	
		Physical features	15. Walls features	0.0	
	health and well- being variables	Health and safety	22. Non-communicable diseases	0.0	
		Well-being	23. Negative distractors	0.0	
		Well-being	26. Human senses	0.0	
Institutional and Professional	Prison factors or issues	Security	34. Traffic and drugs	0.0	
		Prison purpose	38. Inmates' work	0.0	
	Interviewee personal view	Points of view	55. Improvements	0.0	
		Points of view	57. It must be a punishment	0.0	

Table 11-5: Variables not mentioned by Governmental Designers in Rehabilitation model

11.3.2.2.- Methodological triangulation between manifest emerging themes and LCA among Rehabilitation models' governmental designers

The LCA of governmental designers revealed two areas of concern: Scandinavian prison design and the problems and obstacles designers face (See Appendix 13).

The six Manifest Emerging Themes extracted from the previous section are linked with the themes that emerged from the LCA (See Table 11-6).

'How we work' —one of the two most important latent sub-areas among governmental designers in this case—is related to the statement from designers that all the actors related to the prison buildings have something to say and they must be listened to. This includes not only prison staff and experts, but also inmates, ex-inmates, the inmate's relatives and the community. Meetings are organised to obtain a particular point of view of each group of stakeholders in specific areas, producing concepts based on research coming out of the discussion. As one Norwegian interviewee stated, when talking about one of the prison services' working meeting:

"They [the Finnish prison service] are focused on building selfconfidence and self-supply and to have confidence in others. And they involve the offenders and victims in the design process of new prisons, so they have a panel, and they also want to do new open prisons." GD-R02

Manifest	Latent theme	Latent sub-	Latent area	
emerging theme		area		
Involving community	All the actors are listened to			
Highly educated staff	Purpose-based design as a rule in Scandinavian prison architecture The client is the prison service, and they know what they want	How we work		
Design spaces that	Preventing isolation			
encourage human contact	Versatile design for mental health			
Recreating as much as possible normal outside life	The principle of normality as a cornerstone	The purpose is	The Scandinavian prison design as constant improvement	
Positive and meaningful relationships between staff and inmates	Teaching inmates to make good decisions not to obeying orders Improve human well-being through de-stressing design Interaction with inmates as normal people is key	Tenabilitation		
	Highly discreet, non-intrusive but efficient security elements	Our view on		
Minimising running cost	Staff must always have the upper hand on prison control Safety and health of staff is key to improve outcomes	safety and security		
	We need optimisation rather than cost-cutting in the project	Financial cuts can put the goal at risk	Our problems and obstacles	

Table 11-6: Links between Manifest Content Analysis and LCA of Rehabilitation modelgovernmental designers

11.3.2.2.1.- The Scandinavian prison design as constant improvement

According to interviewees, Scandinavian design is focused on meeting the inmates' needs. Therefore, the design focuses on what the prison service needs to reach its goals and what the inmate requires in order to get the most out of the prison pathway offered. Thus, the prison design project seems to consider the point of view of all the users, including inmates, about what is essential in good prison design.

Researchers have also linked the high level of prison design evolution in comparison with other models to the long and high level of training of prison staff and the evidence-based and purpose-based decision-making that characterises them (Pratt, 2008a). Unlike previous prison models, decisions are based on research, which shows what works in preventing reoffending, and one key element in this successful development is that the Norwegian prison service has its own research institution.

The Norwegian governmental designers are thus provided with real evidence about what works and what does not, supporting another latent theme which states that the current Scandinavian prison design is a concept involving constant improvement. Even so, all the interviewees mentioned that Scandinavian design is very standardised, having just two or three different kinds of cells for different specific requirements and generally the same cell design within the prison:

"It is actually one-design-fit-all. There are very few custom-built you know - we will never design different cells for different groups. You have one or two cells that are universally designed or like the percentage of cells that are universally designed." GD-R02

However, the reason that all the new prison projects have the same cell design is as a result of several research studies into the design of cells. The current stage of development of prison design is the result of the constant development through research by the prison service and then developed as a set of architectural solutions, in order to achieve the desired solution, according to one designer:

"It has been a constant of development really if you want, towards the, ... I mean, to get the perfect cell." GD-R01

However, although designers are aware that Norwegian prisons have a reasonably good quality of design, they are also clear that there is still room for improvement.

The second most important sub-area in the latent themes among governmental designers —**The purpose is rehabilitation**— is closely related to the PERMA theory of well-being, as evidenced across three emergent Manifest Themes: *Design spaces that encourage human contact; Recreating as much as possible normal outside life; and Positive and meaningful relationships between staff and inmates.*

The importance of *encouraging human contact* refers to the design concerning the mental health and well-being of the people in prison. The main concern is how to avoid the effect of isolation, evidenced as part of the health and well-being sub-theme.

Although all the references about isolation and its effects were made by only one of the interviewees (GD-R03), the remarkable importance conferred to mental health and wellbeing during the design process represents an essential portion of this latent sub-area and is also supported by the literature (Johnsen, Granheim and Helgesen, 2011; Pratt and Eriksson, 2011; Dullum and Ugelvik, 2012; Smith and Ugelvik, 2017). This significant concern is also aligned with the high rates of suicide in prison within Scandinavia²⁵ (Fazel et al., 2011, 2017).

The concern of designers about the feelings and psychological state of inmates can be seen in their design decisions concerning materiality and layout. Rehabilitation prisons are designed to promote social contact rather than prevent it—as is more usual in the other two prison models— which creates opportunities for meaningful relationships and engagement. However, the system is also based on the right to make personal choices and there is always the possibility of inmates being alone if they desire to be.

The Manifest theme '*Recreating as much as possible normal outside life*' refers again to the principle of *Normality* where governmental designer responses show a conceptual alignment in both the meaning of the principle and the importance of its application through the design. This design principle is present at all levels from the prison layout down to the most intimate details such as door handles, to avoid creating a

²⁵ Northern Europe generally shows higher rates of suicide in prison and this is consistent with the comparison with general population (GP). The suicide rate in general population in the first study is between 3.1 and 7.9 times the suicide rate in prison population (PP) within Scandinavian countries. In the second study the same indicator varies between 4.9 and 14 times. In both studies the lower ratio PP/GP is in Finland and the highest in Norway. The high level of suicide in prison shown by those studies explains the high level of concern among governmental designers about the aspects of design which affect mental health and well-being.
counterproductive environment. The principle of *Normality* is applied to the prison layout to promote an environment of normal social life and also into the detailed design as a way to create and maintain a relaxed environment among inmates, ensuring a low level of aggressiveness, even in high-security prisons according to one designer:

"It's a little bit about design. Of course, is about daylight, is about how should the prison be placed, how should be related with the outside world and these things, but what I think it is a major factor in this organisation of the social life, and how to lower their shoulders, how to make both those who work and those who live or stay there feel safe and to be safe" GD-R03

The design challenge is always how to create a homely environment without compromising the security of the facility. According to the interviewees, this is accomplished by creating small units that carefully resemble a normal shared flat, with no more than twelve inmates per unit as can be seen in the architectural proposition of Figure 11-22 for new prisons in Finland, which is similar to the Norwegian layout.



Figure 11-22: Finnish layout of the standard house unit

The whole unit is inside a wider strong security perimeter so that there is no need to use bars in windows. The rooms are carefully designed, including the furniture. Even though it is designed to be extremely hard to be destroyed or taken apart, the furnishings are homely and visually non-aggressive.

In Norway, such vandal-proof elements use metallic wooden-covered doors or unbreakable glass in windows or even wooden purpose-built vandal-proof furniture in a cell, to provide a homely feeling. The underlying concept here is that when inmates exposed to good quality, home-like environment they are less likely to cause a disturbance. Figures 11-23 to 11-25 illustrate what is understood as a 'home-like' cell for governmental designers. First, the 'cell' room is a generous 12 sqm, including a bathroom. The room contains not only a bed and a night table but also a desk, a wardrobe and cupboard with a mini-fridge, a TV set, a blackboard, and an internal call system.





Figure 11-25: Halden prison, Norway - Interior of a typical inmate room (Cell)

Secondly, the whole prison is designed to imitate how inmates would normally travel from home (unit) to work or to school on a daily basis, by providing exterior walking through 'normal' outdoor pathways (Figure 11-26), without the heavily barred gates that are the norm in Safety and Hybrid model. There are restricted areas, but they are demarcated by ordinary fences (Figure 11-27), because everything is inside the very strong perimeter, permanently monitored using CCTV, and sensors (Figure 11-28 and 11-29).



Figure 11-26: Halden prison, Norway. Inmates' pathway to work. The building on the background is a module of inmate living units. The windows in its façade are inmate's rooms (cells) windows.



Figure 11-27: Halden prison, Norway, delimitation of restricted areas.



Figure 11-28: Halden prison, Norway, Perimeter wall



Figure 11-29: Vantaa Prison, Finland. Perimeter wall. View from an inmate windows room (cell)

The concern for promoting *Positive and meaningful relationships between staff and inmates* is expressed by interviewees through another sub-theme: teaching inmates to make good decisions rather than obey orders. The second pillar of the rehabilitation approach, mentioned as the sub-theme *Interaction with inmates as normal people*, is to ensure a high interaction between inmates and staff. These two principles effectively transform a group of guards into personal coaches, who stay among the group of inmates in a specific area as much as possible in order to teach and support them. This vision is a prison service demand that has been present for a long time, according to one designer:

"... and it has always been a focus in Norwegian prisons, from my experience, on the guards being among the inmates. They don't want to sit secluded in a guardroom behind safety glass. They want to be among them, among the inmates and be part of it and that's of... again, treating them with respect." GD-R01

Treating inmates as normal human beings seem to be a constant theme in Scandinavia as well as ensuring staff spend enough time in direct contact with prisoners to increase the rehabilitation programme efficacy. This strategy also provides a higher level of support to inmates as a result of a more fluid interaction with staff (EuroPris Expert Group Real Estate and Logistic, 2017).

11.3.2.2.2.- Our problems and obstacles

Coming to the last Manifest Theme from governmental designers— *Design must maximise the use of personnel and minimise running cost*— reveals an important level of awareness about the need to maintain a properly controlled level of running costs. Governmental designers work for the governmental agency which owns the facilities and is responsible for their maintenance. This explains why such a high level of significance is attached to operational optimisation, and reducing running costs rather than just the capital costs. Many design decisions that could be seen at first sight as simply providing good architecture or aesthetics have actually been made to reduce the running cost of a project, providing a win-win situation in terms of cost and quality overall. This is part of the argument of having bathrooms in every inmate's room, for example:

"...cos running the prison is very important, I mean toilet and bathrooms in the eh ...in the cell... eh is important for- from that factor... cos then obviously, you do not have to have guards to come at night to take them to toilets." GD-R01

or selecting high-quality fixtures which will last a long time:

"the materials that will be used are chosen because of durability or because of life cycle cost considerations. You want something that's durable. And then it also looks nice. You know it looks like good quality products." GD-R02

However, one of the interviewees was more explicit concerning the issue of costs of maintenance and personnel, saying that:

"In Norway, we have a lot of money, so we could not really say that. In the building project, we have a lot of money, but you have less money in like running the prison." GD-R03

Adding later:

"You have to really ask for, OK, if this is our limitation when it comes to money, so how can we use it the best." GD-R03

11.3.3.- Independent Designers

11.3.3.1.- Manifest content analysis and Pareto analysis

Consolidating a clear pattern within Rehabilitation prison model, the Independent designers interviewed also show a relatively low level of concentration in the distribution of importance of variables (Gini=0.55). This concentration is higher within this particular prison model though, possibly as a result of the attention these designers give to the design brief. Five variables are clustered as the most important variables for the independent designers in Rehabilitation Model (ID-R): *Financial obstacles* (7.7%), and *Non-Financial obstacles* (7.2%) head the group (see Figure 11-30), meaning that 'Obstacles' overall are clearly the most important variables for this group (14.9%).



Figure 11-30: Pareto analysis of importance among ID- Rehabilitation prison model

The rest of the variables considered by this group are *Layout regarding program* (6.1%), *Normality* (6.0%), and *Staff Issues* (5.5%), accumulating total importance of 32.6% among the most important variables (see Table 11-7).

ID-R							
				Importance %			
Family of Variables	Area	Sub-area	Variables	individual	accumulated		
Institutional and Professional	Prison factors or issues	DECISION PROCESS	47. Financial obstacles	7.7	7.7		
Institutional and Professional	Prison factors or issues	DECISION PROCESS	50. Non-financial obstacles	7.2	15.0		
Institutional and Professional	Prison factors or issues	PRISON ARCHITECTURE	44. Layout regarding program	6.1	21.1		
Eudemonic	health and well-being variables	WELL-BEING	28. Normality	6.0	27.1		
Institutional and Professional	Prison factors or issues	DECISION PROCESS	45. Staff issues	5.5	32.6		

Table 11-7: Most important variables among Independent Designers Rehabilitation (ID-R)

11.3.3.1.1.- Financial obstacles, non-financial obstacles and staff issues

Interestingly, the high level of impact that independent designers attach to *Staff issues* in relation to design outcomes can be added to *Financial obstacles* and *Non-Financial obstacles* as the three main issue areas reported by this professional group. Although independent designers recognise the outstanding position of Scandinavian countries in terms of adequate financial resources, they also state that the traditional way of thinking about prisons by prison staff is a big obstacle for evolution and innovation. They see the cost of human resources to run the prisons as the main factor that constrains their design projects which could eventually prevent health and well-being promotion measures from being incorporated. For independent designers, improving inmate's health and well-being through design usually requires additional staff, which means higher costs. They are very aware that Scandinavian prison philosophy is highly demanding of human resources, and therefore, the authorities' concern is not to increase the already high number of employees:

"We also went to see Bergen and Ilseng fengsel [prison], which were new at that time. But, and then also this was a big aim for the authorities, to make a prison with a bit less people employed. Because Bergen and Ilseng fengsel turn out to be very expensive to run because there were more people working there than inmates. So, the main goal for Ringerike [prison] was to have not more employees than inmates." ID-R 02

The underlying theme emerging from the data here is: Prisons' staff restriction prevents

innovation.

11.3.3.1.2.- Layout and the principle of normality

In design terms, the layout and the principle of *Normality* are emphasised by these professionals as critical factors in promoting health and well-being among inmates and staff. There is a shared opinion that the layout is the most important architectural feature of a good prison. The interior distribution of the housing areas should resemble a housing development layout. For the independent designers, attention should be focused on the maximum number of cells (rooms) allowed around the common areas, and the exterior disposition of buildings, which should be spread out in a campus-like area so that inmates can walk from one activity to another in a normal-like daily routine. These principles are at the core of the new Scandinavian prison design philosophy as set out by one designer:

"How the cells are, the layout of the prison, how they [the cells] are organised, how they [inmates] can move inside. Is it possible to walk alone? from building to building? Then, [do] you have some freedom? [can] you move, or just you can't move?, and then can you walk from your cell to your working place by yourself, not being [supervised by guards]?... Those elements, I think, are more, much more important for well-being than the cell, if the cell is OK. [when cells have] at least the minimum size and with a bathroom and daylight. If it's green or red inside or wood or iron bed, I don't think that's so important." ID-R 03

The underlying theme emerging here is: Normality through layout

The primary requirement here is to provide a normal-like experience, in which inmates can be trained to acquire the fundamental generic competencies that are necessary for them to function in, and benefit from, modern society as highlighted by one independent designer:

> "It is the principle of normality. It's trying to make it what we call 'as normal as possible'. So, they should go to school; they should go to the shop in prison buying their own food, make their own food, doing

the cleaning of their own clothes and the floors and everything, that's the main goal." ID-R-02

11.3.3.1.3.- Unmentioned variables

Twelve variables were not mentioned by the independent designers interviewed (see Table 11-8). Here again —and probably for the same reasons as in the previous groups—*Thermal comfort* and *Non-communicable diseases* are eye-catching for not being mentioned as variables. However, it is also striking to note the independent designers' apparent silence on themes related to the variable *Mental health care*. In this regard, there are no obvious reasons why independent designers do not pay attention to this subject at all. The only plausible explanation for the non-Actualisation of this variable seems to be a lack of awareness among independent designers about mental health issues in prison.

ID-R						
Family of Variables	Area	Sub-area	Variables	Importance %		
	Architectural variables	Comfort	05. Thermal comfort	0.0		
		Physical features	11. Doors features	0.0		
		Physical features	12. Floor features	0.0		
Eudomonic	health and well-being variables	Health and safety	17. Health in prison	0.0		
Ludemonic		Health and safety	21. Mental health care	0.0		
		Health and safety	22. Non-communicable diseases	0.0		
		Well-being	26. Human senses	0.0		
		Well-being	30. Universal design	0.0		
	Prison factors or	Security	33. Emergency in prison	0.0		
Institutional and		Prison architecture	40. Policy (in or about prison)	0.0		
Professional		Decision process	49. Inmate status	0.0		
	Personal view	Points of view	57. It must be a punishment	0.0		

Table 11-8: Variables not mentioned by Independent Designers- Rehabilitation model

11.3.3.2.- Methodological triangulation between manifest emerging themes and latent content analysis among Rehabilitation models' independent designers

Although the manifest analysis from the previous section revealed only two manifest emerging themes, these are directly linked with several underlying Latent themes, as shown in table 11-9:

Table 11-9: Links	s between Manife	est Content	Analysis a	nd Latent	Content .	Analysis of
	Rehabilitation	model Gov	vernmental	designers		

Manifest emerging theme	Latent theme	Latent sub- area	Latent area
Prisons' staff restriction prevent innovation	Prison service look for modular design and standardisation to save time and money New prisons are focused on reducing the staff needed to run them	Not everything is nice and good	Our problems and obstacles
Normality through layout	Staff and inmates must be and feel safe through design It does not need to look like a fortress Pleasant and normal environments as an investment for prison safety and future community security when released Changing or creating habits to live a normal life Normal like architecture to teach to live and behave in society	Improve safety, security and behaviour through the principle of normality	Our way of designing prisons

11.3.3.2.1.- Our problems and obstacles

The first manifest emerging theme — Prisons' staff restriction prevent innovation— and the underlying themes linked with it, reveals a conflict between the Independent Designers ideas about prison design and the perspectives of the prison service concerning the new model of designing prisons, called "Model 2015" (see 5.2.6.2.2). The fact that Halden prison took too long to complete as a building project and was very expensive seems to have impelled the government and prison authorities to develop a faster process, based on what they have learned from Halden, according to one independent designer:

"Halden Is a very designed prison, and it took ten years to develop. Ten years and billions. So, they have sort of "No, not that money again. We have to rationalise it". They want to build faster and less expensive, so the new model is some prefabricated kind of prison, that is the new model." ID-R03

In other words, the fact that most of the construction process is pre-designed and prefabricated offsite is highlighted by two out of four interviewees as a serious obstacle to creativity preventing new ideas in rehabilitation, as revealed by one designer:

"They made this model they want to implement in all prisons, and I think why? Why we cannot design all the different prison individually?" ID-R04

11.3.3.2.2.- Our way of designing prisons

Independent designers contribute to the rehabilitation process by ensuring the satisfaction of basic physiological and safety needs through the layout design. The prison layout in Scandinavian prisons is seen for them as the core of their success, creating a homely and normal-like experience, in order to foster a favourable state of mind that improve human relationships, and lessening, as much as possible, aggressive reactions. This enables the inmates to potentially reach the highest levels of both psychological and self-fulfilment needs:

"The cell in this kind of prison is more like a bedroom. Because you have your own living room, just outside, and a kitchen and a washing room. You are supposed to go and find the vacuum cleaner at the washing room and do it yourself. You are supposed to learn to live." ID-R01

The architectural design is assembled in such a way that is not possible to see security and rehabilitation as separate subjects. Independent designers aim to re-create a secure and normal daily routine to follow, set by the schedule to wake up, prepare breakfast, go to school, go to work, and so on. One of the designers was even more ambitious when describing the possibilities of *Normality* as a principle, arguing that prison must be seen as a scale replica of the society where inmates go to study and go to work, and they are paid for their work. One independent design thought it should even be possible for inmates to be taught to pay for their accommodation and their bills and manage their budget like a normal person outside (ID-R 04).

11.3.4.- Comparative analysis within the Rehabilitation model

11.3.4.1.- Comparative analysis: governmental designers v/s independent designers

In the scatter plot comparison between designers in Rehabilitation Model (Figure 11-31), both Governmental designers (GD-R) and Independent designers (ID-R) consider the variables *Financial obstacles (#47)* and *Normality (#28)* highly significant, showing the agreement of designers in both the economic nature of obstacles and the rehabilitation strategy of *Normality* as the most important determinant variables of inmates' health and well-being. Interestingly, although *Financial obstacles* are the most important variable for Independent designers, it is the least important among the group of the most important variables for Governmental designers. A similar situation occurs with *Normality*. This contrast is showing that both *Financial obstacles* and *Normality* are important but not urgent for GD-R because the concepts of health and well-being are embedded into the bases of the design projects, while for ID-R the economics constraints are seen as limiting their room for manoeuvring on how to translate the concept of *Normality* into an architectural design.

Seven contradictions are apparent between both professional groups. On the one hand, the governmental designers consider the variables *Decision-making process (#46), Preventing isolation (#25), Sense of coherence (#24),* and *Natural light (#7)* to be highly important when these are less important for the independent designers. On the other hand, independent designers place a high level of importance on *Non-Financial obstacles* (#50), *Staff issues (#45),* and *Layout regarding program (#44),* while those variables have only a moderate level of importance among Governmental designers. Moreover, the variables *Decision-making process (#46)* represent the highest contradiction between these two groups. These contradictions show that for governmental designers, the focus of the design is on the inmate's needs and well-being, and the design *Decision-making process* to improve their design outcomes continually. This perspective, however, is clearly missing from independent designers, who are more focused on fulfilling the operational requirements of the prison service.



Figure 11-31: Comparison of the level of importance of variables between GD-R and ID-R

Indeed, independent designers are not a continuous entity. They chop and change, which disrupts continuous improvement. However, for the government designers in Rehabilitation prison model, two conditions allow them to improve continuously. First, although governmental designers work in continuous interaction with the prison service, they actually work for the owner of the buildings they design, and they are not subordinated to the prison authority. This allows them to work towards the optimal fulfilment of institutional aim, to prevent recidivism (Kriminalomsorgen, no date) but also toward the individual strategic goals of the building owners. For instance, Statsbygg goals state that "Valuable maintenance, long-term management and development will characterise our properties." and "The premises shall enable the customer to perform their tasks in the best possible way. We will create the greatest possible value for the customer at the lowest possible cost" (Statsbygg, no date).

Similarly, Senate Properties, the Finnish counterpart of Statsbygg, state that "Senate Properties has an important role in helping the civil service not just to make savings, but also in providing new kinds of work environments that are pleasant and promote productivity" (Senate Properties, no date).

Secondly, because governmental designers work has continuity, they can create a stable institutionalised memory of their decision-making process and the evaluation of the effectiveness of their design solutions. This difference between governmental and independent designers is highly significant when it comes to different models of prison and the way they approach improvement.

The importance that each professional group places on each variable seems to vary based on their scope of competence, and the processes each group adopts, rather than being universally shared. Governmental designers are the ones that have to deal with High-level staff in taking strategic design decisions and principles within an institutionalised framework. They also have to ensure that the brief sent to independent designers will ensure the accomplishment of those strategic design principles, such as the importance of *Natural light*, providing inmate's *Sense of coherence*, and consider *preventing Isolation* through the layout and the spacial interior design. In turn, the independent designers emphasise the prison guards resistance towards innovation as a *Non-financial obstacle*. They see the amount of staff required for prison as their most pressing creativity constraint, and the prison layout as their main creative input in the prison project.

11.3.4.2.- Comparative analysis governmental designers v/s high-level staff

When the Governmental Designer's group is compared with the High-level Staff, three shared variables emerge (See Figure 11-32). *Natural light* (#7), *Sense of coherence* (#24), and *Financial obstacles* (#47) as their greatest priorities. However, among the rest of the important variables for each of these three groups, ten potential contradictions can be seen. While the two designer groups consider *Decision-making process* (#46), *Preventing isolation* (#25) and *Normality* (#28) highly significant, for the staff group they are far less important. Conversely, variables highly important among staff such as *Rehabilitation* (#36), *Perception of evolution* (#43), *Indoor air quality* (#3), *Layout regarding program* (#44), *Design standards* (#41), *Indoor bathroom*(#4), and *Space* (#10), are much less important for the designers

Nevertheless, a closer observation reveals no incongruences but rather contrasts as a result of the different scope of competencies in each group. Governmental designers emphasise the *interactive process* of defining priorities and institutional goals (Decision-making process), which are not simply set out as written prison *Design standards*, as the case of the Safety prison model. Additionally, Governmental designers see the prevention of isolation and the creation of a normal-like experience as design challenges. However, the variables prioritised by designers are compatible with Staff priorities. The difference is that the Staff perspective— as prison administrators— is broader in scope, emphasising both aspects habitability and manageability. This means that designers do not see habitability variables as problems but as design inputs.

The variable *Decision-making process* represents the highest contrast between these two professional groups. It is rated highly by designers, who are the ones that have to learn and to understand their clients in order to transform staff requirements into a design brief. In other words, the *Decision-making process* impacts them strongly. Conversely, it is rated more lowly among High-level staff, because this group simply let designers know their requirements and passes on their decisions.



Figure 11-32:Comparison of the level of importance of variables between HLS and governmental designers of Rehabilitation prison model

11.3.4.3.- Comparative analysis independent designers v/s high-level staff

The Scatter plot (Figure 11-33) shows that in this case, both Independent designers (ID-R) and High-level Staff (HLS-R) agree that *Financial obstacles* and *Layout regarding the program* are highly important. However, there is a significant contradiction among other variables. *Non-Financial obstacles, Normality, and Staff issues* have a high level of importance among the Independent designers' group, but show a low ranking among the High-level Staff group.

This difference is consistent with the particular professional scope of action of independent designers. The three mentioned important variables for them represent their main constraints. In a counter-intuitive result, these independent designers attach a low level of importance for variables such as *Natural light, Indoor air quality, Indoor bathrooms, Space, Sence of coherence, Rehabilitation, Design standards, or Perception of evolution* which are highly rated by the staff. This could be seen as the need for independent designers to emphasise the variables they have more struggles with and which are related to institutional and administrative matters, rather than design issues with which they are familiar and which play to their professional strengths. *Financial obstacles* is the only variable considered highly important for all the three professional groups in the Rehabilitation prison model, constituting itself a particularly key theme.

Normality represents the highest contradiction in this pair of groups since High-level staff rated at a very low level while it was included among the most important variables for Independent designers. However, as expressed by Engbo (2017), the idea of *Normality* is so firmly present in Norwegian prison service that HLS-R group do not make much reference to it directly.



Figure 11-33:Comparison of the level of importance of variables between HLS and Independent Designers of Rehabilitation prison model

11.4.- General comparison of Rehabilitation prison model

In a general comparison of how each professional group address health and well-being, table 11-10 shows that there is a low level of agreement between professional groups. Most of the variables are considered important only by one out of three groups. The only variable that all three groups consider as important is *Financial obstacles*, although there is no agreement to consider it the most relevant of them all.

Intern Advi	ational isors	Variables	Rehabilitation Model				
PPA-I	PHA-I		HLS-R	GD-R	ID-R	#	Σ
6.4		47. Financial obstacles	4.6	4.0	7.7	3	16.3
	4.5	07. Natural light	6.4	4.4		2	10.8
		24. Sense of coherence	4.3	5.7		2	9.9
		44. Layout regarding program	3.7		6.1	2	9.8
		28. Normality		4.3	6.0	1	10.3
7.5		46. Decision making process		8.2		1	8.2
15.5	8.0	50. Non-financial obstacles			7.2	1	7.2
		25. Preventing isolation		5.9		1	5.9
		45. Staff issues			5.5	1	5.5
		43. Perception of evolution	4.8			1	4.8
6.1	5.8	03. Indoor air quality	4.7			1	4.7
5.6	4.4	10. Space	4.2			1	4.2
		36. Rehabilitation	3.7			1	3.7
		41. Design standards	3.7			1	3.7
		04. Indoor bathroom	3.4			1	3.4
	5.3	40. Policy (in or about prison)				0	0.0
	6.0	20. Communicable diseases				0	0.0
6.4		56. Cultural and social context				0	0.0
47.5	33.9	Accumulated importance (%)	43.4	32.5	32.6		

Table 11-10: General comparison of the most important variables between groups within the Rehabilitation model

11.5.- Key themes emerging from the Rehabilitation prison model

As shown in table 11-11, fourteen key themes emerged from the discussion of the manifest content analysis in combination with the Pareto analysis for each of the three professional groups of Rehabilitation prison model. All the themes were then grouped into five Meta-themes — *Creating normality through design, Financial optimisation, Operational transparency, Education,* and *Operational coherence*.

Emerging Themes Meta Theme Connection with the natural environment > Privacy Minimising fear Recreating outside normal life Creating Normality through design > Human contact Normality through layout Positive relationships Staff restrictions Financial optimisation Minimising running cost Involving community Operational transparency > Joint working Highly educated staff Education Recidivism reduction justify the initial cost **Operational Coherence** Operational coherence

Table 11-11: Meta themes emerging among Rehabilitation prison model

Additionally, based on the above table and additional information discussed during this Chapter, a Rehabilitation prison model scenario diagram was developed (See Figure 11-34).



Figure 11-34: Rehabilitation prison model scenario

The first meta-theme, *Creating Normality through design*, shows a prison model design focused on creating healing, useful and safe prison experience, using the layout as a tool and *Normality* as a driving principle, in clear opposition to any deterrence approach as seen in other prison models. This meta-theme highlights that the whole process of imprisonment, which includes the design of the prison as part of the mechanism of rehabilitation, is underpinned —deliberately or not— by the promotion of all five components of the well-being theory PERMA: positive emotions, engagement and flow, positive relationships, meaning or purpose in life, and accomplishment.

The evolution from the old perspectives of imprisonment and punishment to the current rehabilitative focus in this prison model promotes a treatment based on respect and equality of human value as the key elements for delivering behavioural change. These values include the promotion of health and well-being of inmates as a goal in the process.

The second meta-theme— *Financial optimisation*—shows that the cost of staff and the cost of running the prison are what the majority of interviewees consider the most critical constraints with which they have to deal with in each project.

The third meta-theme — *Operational transparency*— exposes the high level of communal integration in the Scandinavian prison services, in which several actors from unrelated communal services have to take responsibility in the rehabilitation process while providing transparency and external surveillance over the actions of the prison service.

The last two meta-themes — *Education* and *Operational Coherence* — shows the Scandinavian prison system as having socially and culturally evolved prison services, in which the effectiveness is the result of a very well-educated staff that is discussed with and overseen by the civil, political, academic and professional community.

Again, as in the previous Chapters, a Critical Realist analysis of the prison scenario in Figure 11-34 in addition to the overall discussion in this chapter, was developed into a systemic representation of the Rehabilitation prison model, by using a cause-effect loop diagram (See Appendix 14). This diagram shows which are the mechanisms in the domain of the Actual, in which the main entities interact, and how this interaction results in the current scenario of a Rehabilitation model.

11.6.- Sub-conclusion

This chapter has discussed the findings related to High-level Staff, Governmental and Independent designers within the Rehabilitation Prison Model. The High-level Staff group perceive a broad range of ten variables to be important in relation to designing for health and well-being in prisons: Natural light, Perception of evolution, Indoor air quality, Financial obstacles, Sense of coherence, Space, Rehabilitation, Layout regarding program, Design standards, and Indoor bathroom. The Governmental designers' group focused their attention on Decision-making process, Preventing isolation, Sense of coherence, Natural light, Normality, and Financial obstacles. Both High-level staff and Governmental designers show the most significant concern in comparison with any previous case for eudemonic variables. In turn, the Independent designers emphasise the importance of Financial obstacles, Non-Financial obstacles, Layout regarding program, Normality, and Staff issues, including only one out of five variables belonging to the eudemonic family—the lowest consideration among all the cases. This could be the result of a well-elaborated design brief —made by the Governmental designers in the Statsbygg, who place great importance on the eudemonic variables mentioned previously. However, the approach of Independent Designers is also affected by the efforts of optimisation of prison projects, made by the Norwegian government through the implementation of the 'Model 2015', leading Independent Designers to be more aware of budget constraints, and focusing their attention on 'Institutional and professional' variables rather than on the 'Eudemonic' ones. Indeed, although the only variable that all three professional groups coincide on is Financial obstacles, it is only considered the most critical issue for Independent Designers.

The themes and meta-themes that emerge from the discussion also show some of the underlying forces that exist in the realm of the Actual in the Rehabilitation prison model. The approach in this model is radically different from the previous two models and is primarily focused on creating rehabilitative and normal-like external and internal environments that provide inmates with useful and safe prison experience. In this regard, the improvement of the inmates' health and well-being in this model is paramount. From the meta-themes grounded in the data —Creating normality through design, Operational transparency, Education, and Operational coherence— it can be inferred that the particular evolution of the Rehabilitation model prison service is based on a deep connection with the community and high level of specialisation of staff. The most critical

challenge facing staff in this model is financial optimisation, due to the highly demanding need for qualified human resources, but helpfully underpinned by the view of prison authorities that the results achieved in reducing recidivism justify the costs.

Having discussed all four cases individually in this thesis in each of the last four Chapters (International Advisors, Hybrid model, Safety model and Rehabilitation model), the next and penultimate Chapter brings the main findings together, in order to develop a new framework for designing prisons that promote health and well-being. Finally, the next chapter will also propose a suitable explanation for the patterns revealed in this study and the possible steps to bring health and well-being in prison design more into play.

Chapter 12: Comparison across the prison models

12.1.- Introduction

The previous four chapters combined Manifest Content Analysis, Pareto Analysis, and Latent Content Analysis to reveal critical themes related to prison management and design processes in each case, and across the cases. This Chapter will develop a broader and deeper perspective to bring together the main findings of the thesis, through cross-case synthesis. The chapter is divided into four sections. The first section presents the final dimensions from the overall study and clusters of overall meta-themes that compose these dimensions. The following section explains, step by step, how these overall meta-themes and dimensions were extracted. By drawing on the final clusters of meta-themes and dimensions, an overall proposition of a new framework of prison design for health and well-being is synthesised, addressing the fourth objective of this study. The final section of this chapter will draw on Critical Realism, and organisational theory -as additional theoretical lens alongside PERMA theory- to discuss the patterns that characterise each prison model, offering a plausible underlying explanation of why these patterns occur, how they work, and what can be done to overcome the current actualised barriers to bring health and well-being variables into play in the design of prisons for all three models.

12.2.- The rationale for developing cross-case meta-themes and dimensions

12.2.1.- Summarising individual case findings

The Actualisation —or non-actualisation— of health and well-being in the different prison models during the decision-making processes of prison design, is the result of the interaction of underlying causes and mechanisms. In order to extract the underlying dimensions which tie the Prison model themes together, the Manifest emerged themes were compared in previous chapters with their correspondent LCA and photographs from the field across the three prison model cases. The international advisor group case was not analysed in this way. This was because although international advisors play an important role in supervising governments and putting pressure on their decisions to ensure compliance with international agreements, they do not directly participate in the decision-making processes associated with their prison services.

12.2.1.1.- An overview of case-based themes and meta-themes

The four previous Chapters have extracted themes from data of individual cases, developing case-based meta-themes to reveal the interaction between them. This resulted in one process diagram for each prison model showing the interaction between these themes and the case-based meta themes. A compilation of all the themes and case-based meta-themes extracted from all the four cases is presented in Appendix 1. Among the three prison models, the Rehabilitation model shows the highest degree of alignment with PERMA theory. The case meta-theme 'Creating normality through design' and the case meta-theme 'Operational transparency' have multiple points of convergence with the five PERMA components ---positive emotions, engagement/flow, relationships, meaning/purpose, and accomplishment. Interviewees perceive the current evolution of the Rehabilitation model as the result of its 'operational coherence' through the engagement of the community, including a broad range of actors involved in the process of administrating justice, as well as consolidating a high level of prison service 'education' with a staff training standard that produces highly qualified personnel. This formula is also seen as the right way to further improve the model and includes joint work between prison services and external governmental entities such as the Health and the Education Ministries.

In the Safety prison model, adequate space, natural light, and noise control are considered as specific and essential elements to help avoid critical events taking place. inmates' well-being is not an aim for the Safety prison model. However, designers diminish the internal pressure of the prison environment through the use of environmental psychology's evidence in prison design (Bierie, 2012b; Wener, 2012). By 'using design to *lower stress', prisons address* three components of PERMA: *Positive emotions* among inmates and staff, positive *Relationships*, and the maintaining of *Meaning* in life. However, imprisonment is still seen as the consequence of inmates' wrong decisions, and they are deemed fully responsible for the acts that have led them to prison. Therefore, inmates have to learn discipline by being rewarded for their good behaviour and punished for their misconduct. The prize for good behaviour is a better quality of life. Thus, inmates' wellbeing —when it is not related to security— is a commodity. While important elements such as natural light (no windows to the outside), sense of coherence (overuse of artificial light) or contact with nature (nature through daylight), are used to lower inmates' stress and maintain control of the prison, these can always be withdrawn in case of the need for

punishment. Accordingly, the inclusion of elements that provide an increase in inmates' well-being is evaluated in terms of the benefits to security and staff well-being. For interviewees in the Safety prison model, what is precluding the improvement of prison design are the '*uneducated decisions*', requiring the increase of awareness on the need for health and well-being in prison design. This requires more research in the field, to show supporting evidence for this approach. Nevertheless, the '*slow evolution*' of the Safety model aims to bring more respect for human dignity, but within the contemporary prison philosophy.

In the Hybrid prison model, prison design is heavily influenced by certain aspects of the Safety model such as control of movement, escape and the use of security elements, but without the regime and staff/inmate minimum ratio characteristic of the Safety model prisons. The result is a prison system in which health is only understood as a lack of illness. Focussing on the inmates' well-being is considered as a luxury. Unlike the Safety prison model, the purpose of the Hybrid model is dealing with critical events when they occur. However, the Hybrid prison model does not provide even the minimum conditions necessary to enhance positive emotions or engagement, cultivate positive relationships, provide or help to find meaning in life or accomplishing goals according to PERMA theory. There is no mention of what is needed for evolution apart from the call for a change of mindset.

Finally, The International Advisors group highlight a series of essential issues that must be addressed and solved as a prerequisite to allow a breakthrough in prison design and management, such as the 'operational incoherence' which result in incongruence between purposes and actions, the overuse of imprisonment resulting in massively overcrowded prisons, the lack of awareness of prison consequences, lack of technical knowledge, and acknowledgement of cultural differences. The connecting thread here is operational incongruence in prison services. The connection between a lack of awareness concerning consequences, and the need for authorities to be educated, is again identified as the critical element for evolution.

12.2.1.2.- Positive transformation and revealed dimensions

The construction of a new prison design framework for promoting health and well-being needs to be based on the underlying design dimensions for health and well-being. These dimensions must be expressed in positive terms in order to reach these goals. Thus, all

the themes and case-based meta-themes expressed in negative terms in Appendix 10 were transformed and presented in positive terms for actioning (See Appendix 11). After the transformation from each case analysis, a total of eighteen case-based meta-themes were identified, which include sixteen individual cases and two shared cross-case meta-themes — 'operational coherence' and 'operational transparency'—highlighted in Figure 12-1 below.



Figure 12-1: Individual meta-themes and cross-case meta-themes extracted after the positive transformation from cases in chapters 8 to 11

However, to reveal the deeper dimensions, new cross-case meta-themes were extracted from a comparative cross-case analysis— first between High-level Staff and then between Designers. The next section will explain how these new cross-case metathemes were revealed

12.2.2.- Cross-case comparison by professional groups

12.2.2.1.- High-level Staff in prison services

The three prison models present quite different approaches in relation to the findings. Therefore, the following sections will expose the process of comparison between cases, which resulted in the extraction of new cross-case meta-themes.

12.2.2.1.1.- Different prison models, different perspectives

Among high-level staff from the Rehabilitation prison model, at a meta- thematic level, there appears to be a balance between the need for taking care of inmate's well-being; the importance of ensuring the safety and security of staff; and the accomplishment of the inmate's rehabilitation goal as a prison-process outcome. The staff focus is on the broader process of taking care and trying to transform the offender into a valuable member of the community. They talk about a broader range of variables compared to the other groups. Unlike the High-level staff from the Safety and the Hybrid prison models, the Rehabilitation model staff is the only high-level staff group that talked about '*creating normality through design*', for normal people rather than fortresses and avoiding any unnecessary difference between the life inside the prison and normality outside. This perspective includes the need for design guiding principles based on health and well-being considerations to accomplish the rehabilitation goal of the penal system.

By contrast, staff interviewees in the Safety prison model seem to focus primarily on how to design to retain the control of the prison. Although there is a genuine interest in the improvement of inmates' physical environment, their perspective is utilitarian, 'using design to lower stress', inmates' anxiety and violent responses in order to lower risks to the staff. The implementation of the third-generation direct-supervision prisons design has brought in a new approach that emphasises well-designed building features and socio-psychological elements that could reduce the risk of violence between the inmate-inmate and inmate-staff in their daily interaction (Wener, 2012). However, rather than reducing risk to improve well-being, the design guiding principle here is to improve well-

being in order to reduce risk. The former is an inmate-centred approach while the latter —'Safety through well-being'—is a staff-centred one. For the Safety model staff, lack of education is preventing improvements in design for health and well-being at two levels. Firstly, the need for 'Educated financial allocation decisions', ensuring that financers and politicians involved in the decision-making process are aware of how prisons work and what is essential when designing them. Secondly, designers have to learn in the field about how prisons really work. However, this will not necessarily result in an aim to improve inmates' health and well-being, but more probably the instrumental use of health and well-being to control inmate behaviour and ensure staff safety.

Conversely, for the Hybrid prison model High-level Staff interviewees, the most critical issues all refer to the permanent conflict between punishment and rehabilitation perspectives during the process of decision-making. The traditional punitive perspective is characterised by the beliefs that inmates are dangerous and violent by nature; that inmates have to abide by the prison rules and accept the carceral conditions, even though this could affect their health and well-being. Those supporting a rehabilitation approach appear very small in number, poorly resourced and, incapable of showing evidence that rehabilitative efforts pay off. In this scenario, health and well-being appear to be understood only as a lack of illness. Interviewees celebrate any local action that improves inmates' well-being, but there are few financial resources available and no political interest for embedding these actions more generally in prison policies.

These essential differences in the approaches towards imprisonment in each model mean that a more careful analysis is needed of the apparent similarities between the models concerning staff views on health and well-being in design, which is the purpose of the next section.

12.2.2.1.2.- Thematic similarities in staff perception

Financial obstacles, a sense of coherence and *space* are considered among the most critical issues when designing for health and well-being by High-level Staff in all the three prison models (see Table 12-1). However, the approach in each prison model places a different emphasis on these issues.

	PR		ELS	Across Prison Models	Across Cases
Critical issues	Hybrid Model	Safety Model	Rehabilitation Model	Number of Models	Number of cases
	HLS-H	LS-H HLS-S HLS-R important		variable as important	
47. Financial obstacles	5.8	10.0	4.6	3	4
10. Space	4.2	8.0	4.2	3	4
24. Sense of coherence	4.9	5.4	4.3	3	3
07. Natural light		9.0	6.4	2	3
46. Decision making process	4.9	5.9		2	3
41. Design standards	4.7		3.7	2	2
50. Non-financial obstacles	8.4			1	2
03. Indoor air quality			4.7	1	2
40. Policy (in or about prison)	4.7			1	2
25. Preventing isolation	4.8			1	1
43. Perception of evolution			4.8	1	1
44. Layout regarding program	ı		3.7	1	1
04. Indoor bathroom			3.4	1	1
36. Rehabilitation			3.7	1	1
Accumulated importance (%)	42.3	38.3	43.4		

Table 12-1: Comparison of the most important issues considering only High-level staff and international advisors

12.2.2.1.2.1.-Financial obstacles

Financial obstacles are considered important by staff in all three prison models. However, the focus is placed on different concerns. For Hybrid model interviewees, it is about the low level of priority of health and well-being during the Decision-making process. For Safety model interviewees it is about the need for Education of financiers in prison matters. For Rehabilitation model interviewees, it is a matter of '*Operational Coherence*' because their positives outcomes in reducing recidivism justify their high operational cost.

Paradoxically, there seems to be no relationship between the wealth of the country and the financial concerns expressed by prison staff. Indeed, the High-level Staff from the Safety model and the Rehabilitation model, both belonging to the wealthiest countries, still consider financial obstacles as a critical issue. Moreover, for the Safety Model interviewees, it is the most important of them all. These phenomena also have different causes, however. In the USA Safety Model, the financial obstacles are closely related to pressures for budget cuts and *'Financial Optimisation*²⁶.

As the USA has by far the largest prison population in the world, the budget that local and federal governments must divert to the prison systems is high. This increases the needs for economic efficiency in prison projects, to reduce as much as possible the running cost of the prisons, and turns them in attractive candidates for budget-cutting to maximise local government resources. As mentioned by one interviewee:

"Every government is struggling to find the money for corrections. The cost of running correctional facilities in this country is going up and up and up." HLS-S-01

However, the staff interviewee's main concern is the lack of '*educated financial allocation decisions*' made by politicians and financiers, and an obstacle best removed by educating them to eliminate false beliefs about what a prison should be. In the Rehabilitation model, the concern is more about the high cost associated with the exceptionally low Staff/Inmate ratio, which is nearly one prison officer per inmate. Again, the need for '*Financial Optimisation*' within prison projects is a significant constraint.

For the Hybrid model interviewees, the lack of financial resources is patent and endemic. The budget that Governmental authorities allocate for prison operation and development is insufficient for all the needs generated by existent old and overpopulated prisons. This budget, therefore, has to be optimised and distributed across all the prisons in the country, leaving a small portion for emergencies and unavoidable critical events. These concerns are shared by International advisors, who see the lack of financial support as a common issue across all the countries and all three prison models.

Although the nature of the concerns related to financial issues varies among prison

²⁶ In this research the term **Financial optimisation** refers to the actions of making the best or most effective use of the natural, material, human, and financial resources needed during the entire life cycle of a prison project. This means minimising the total cost of the project —including design, financing, building, and operating the project during its lifetime— without affecting its efficacy and effectiveness in complying with its legal mandate and providing the safety environments and reducing recidivism.

models, the common cross-case theme across all the models is this need for *Financial optimisation,* which can affect the health and well-being of prisons' users. Prison project costs are significantly higher than in traditional buildings, and as they are not considered a financial priority, they often face budget cuts. When those cuts are made without considering their impact on the outcomes of the system, they often create dangerous places, as well as inefficiency in rehabilitating inmates.



12.2.2.1.2.2.-Different approaches to space

There is unanimity across all the prison staff in considering both physical and interpersonal *space* as important, which justify spatial considerations as part of the *DESIGN PRIORITY* dimension. However, when the data is carefully examined, again, some significant differences appear in the apparently congruent views of the staff. This is because each group again has different objectives and interests. International advisers must ensure that prison models comply with international conventions, while the staff, as prison administrators, place more emphasis on fulfilling their prison model objectives.

For the Rehabilitation model staff interviewees, inmates enjoying enough personal space in cells reduces the psychological pressure that their interaction with other inmates produces in prison. Therefore, having enough *space* is seen as a prerequisite for providing the right mental and emotional state of inmates for rehabilitation. For the Safety model staff interviewees, the importance of having enough *space* to separate inmates is the reduction of the odds of violent events and risk situations.

In turn, the Hybrid model interviewees recognise that overcrowding in the current prison environment is damaging the mental health of inmates related to the failure of public policies to provide the minimum space necessary to treat inmates with dignity. However, they have no clear policies or evidence-based design guidance on this matter. For the International Advisors group, the *space* issue is different again, linked to preventing the spread of communicable diseases and protecting mental health (See Table 12-2).
Variable	Case study	Importance	
	Rehabilitation Model	Providing positive mental and emotional state for rehabilitation.	
Space	Safety Model	Reduction of the odds of violent events	
	Hybrid Model	Recognition of importance for mental health but no actions	
	International Advisors	Communicable diseases control and mental health protection	

Although International Advisors recognise the different cultural perspectives in spacial needs, they highlight the common misunderstanding about what a minimum space is, and why it is needed. Therefore, although the focus varies according to the interests of each group, *Space* is a cross-case theme within the *DESIGN PRIORITIES* dimension.



12.2.2.1.2.3.-Sense of coherence

The notion of coherence in design allows inmates to manage everyday situations —such as controlling their own light or having a key of their cell— and trying to avoid uncertainty. Although International advisors do not include it among their important variables, a sense of coherence is valued among staff across all three prison models as a *design priority*. It is in the Rehabilitation model, where a sense of coherence is most strongly linked with the purpose of rehabilitation, meaning, and promotion of well-being.

In the Safety model, although coherence is seen as a practical tool to promote trust toward the staff and minimise uncertainty, giving inmates control over their personal environment is also seen as a benefit, and therefore used as a reward to incentivising good behaviour. However, in the Hybrid model, concessions in this direction are seen by High-level Staff as an ideal situation, but unthinkable as a solution in countries such as Chile because of the inmates' tendency to destroy everything. As one interviewee comments:

> "... but also the material that is used. You have to design it, thinking that they will destroy it. That at some point they will want to do something harmful" HLS-H-02

Although the image of inmates as dangerous and unpredictable is present in comments of many Chilean staff interviewees, there is little awareness in this case about the possible link between the carceral conditions and the level of aggressiveness and unpredictability of inmates (See table 12-3).

Variable	Case	Importance		
	Rehabilitation Model	Rehabilitation, meaning and well-being promotion		
Sense of coherence	Safety Model	Reward for good behaviour		
	Hybrid Model	Ideal but not feasible		
	International Advisors			

Table 12-3: Importance of Sense of Coherence by case study

Therefore, its presence in the three prison models —although with different approaches can confirm that a **Sense of coherence** is another cross-case meta-theme, located within the *DESIGN PRIORITIES* dimension.



12.2.2.1.2.4.-Neglected issues

Attending to those areas not mentioned at all by any interviewees is as important as extracting the cross-case meta themes. Their omission can be understood as Unactualised events which result from the activation of more powerful counter-forces and this can help to understand the interviewees' priorities from a broader perspective. The issues neglected by Staff in all the prison models are *Inmates education, self-esteem, non-communicable diseases*, and *it must be a punishment* (See part 2 of Appendix 6). Other issues neglected by two out of three prison models' staff include the need for an indoor bathroom, awareness of the presence of negative distractors, communicable diseases, inmates' work, appropriate floor and walls features, and elements to prevent and control people stress.

Comparing views between the prison authorities and the International Health Advisors reveals another dichotomy. Indeed, *non-communicable diseases* are neglected by staff interviewees in all the prison models, and only the Safety staff included *communicable diseases* but with a low ranking. Additionally, Safety model is the only group that talked about *indoor air quality* among the critical issues. This suggests that health, including airborne diseases, is not a priority for prison staff while it is for international health advisors, who are trained to be more focussed on health issues.

In the Rehabilitation model, the low priority of these issues is probably because inmates' health is the responsibility of the Ministry of health and operationalised by public healthcare centres, meaning that the staff interviewees do not have to focus on this issue. The same rationale can be applied in this model for education matters. However, this is not the case for the Safety or The Hybrid prison models where prison services have to provide the health services as well. The most worrying concern from all these findings is the lack of importance placed by High-level Staff interviewees in the Hybrid prison model on *communicable diseases* and *indoor air quality*. Even when their prisons show high TB and HIV rates (Osses-Paredes and Riquelme-Pereira, 2013; Aguilera *et al.*, 2016) and there is no mechanical management of air quality in any inmate areas, these issues are not seen as relevant.

This failure to focus on creating healthy conditions seems to occur because of the lack of adequate economic resources, and the prison authorities apathy toward inmates' basic needs because they are offenders —which in turn, is worsened during the prioritisation

of resources. This suggests a need to share responsibilities with the health sector and have transparent and comparable assessments of compliance with international agreements to satisfy basic human needs in prisons.

In addition to the above, the neglect of negative distractors, floor features, walls features, stress control, or self-esteem, reveals the need for dissemination of knowledge regarding the interaction between design and health and well-being. High-level Staff across the prison models appear to have an interest in providing better conditions, but a low level of knowledge concerning the impact of the built and natural environment on people in prison. Therefore, the cross-case meta-theme that emerges is the **need for knowledge on the effects of design on well-being**, located within the newly revealed EDUCATION dimension here.



Along with the high-level Staff cross-case comparison, four new cross-case meta-themes —*financial optimisation, space, sense of coherence,* and *need of knowledge on the effects of design on well-being*— were obtained from the cross-case comparison of High-level Staff here. The next section will show how additional cross-case meta-themes were extracted from the cross-case comparison of designers views.

12.2.2.- Designers

To unearth the underlying patterns emerging from the findings related to the designers across the cases, a cross-comparison is undertaken separately between governmental designers, and then between independent designers groups, due to their different characteristics (see Table 12-4).

			PRISON MODELS			Across Prison Models	Across Cases		
International Advisors		Critical issues	Hybrid Model	Safety Model	Rehabilitation Model Models that consider		Cases that consider	Profess. Groups within all	
PPA-I	PHA-I		GD-H	ID-S	GD-R	ID-R	this variable as important	this variable as important	cases that consider it important
15.5	8.0	50. Non-financial obstacles	13.7	8.7		7.2	3	4	5
	4.5	07. Natural light	6.1	9.8	4.4		3	4	4
6.4		47. Financial obstacles	5.8		4.0	7.7	2	3	4
7.5		46. Decision making process	6.1		8.2		2	3	3
		24. Sense of coherence		6.3	5.7		2	2	2
		06. Colours	3.9	5.2			2	2	2
6.1	5.8	03. Indoor air quality	5.2				1	2	3
		28. Normality			4.3	6.0	1	1	2
		41. Design standards	5.8				1	1	1
		25. Preventing isolation			5.9		1	1	1
		43. Perception of evolution		5.7			1	1	1
		44. Layout regarding program				6.1	1	1	1
		45. Staff issues			·	5.5	1	1	1
5.6	4.4	10. Space					0	1	2
	5.3	40. Policy (in or about prison)					0	1	1
	6.0	20. Communicable diseases					0	1	1
6.4		56. Cultural and social context					0		1
		04. Indoor bathroom					0	U	0
		36. Rehabilitation					U	U	U
47.5	33.9	Accumulated importance (%)	46.5	35.8	32.5	32.6			

Table 12-4: Comparison of critical issues considering only Designers and International Advisors

12.2.2.2.1.- Governmental designers

When comparing the governmental designers' groups, both Scandinavian and Chilean groups agree on a high level of importance for the same three issues: *decision-making process, natural light,* and *financial obstacles.* However, on a closer examination, there are actually no commonalities in what interviewees are saying about this. The reasons why and how these particular issues are essential for each group are significantly different. When the Scandinavian governmental designer interviewees talk about the decision-making process, they talk from the deeper OPERATIONAL TRANSPARENCY and DECISION-MAKING dimensions. They show pride in the constructive and inclusive way in which decisions are made and how knowledge is acquired and shared. The Scandinavian decision-making process appears to have a precise aim, and multiple external actors participate by working alongside the prison service in harmony with this aim. In Critical Realist terms, although voices are asking for a more punitive approach in

the domain of the Empirical, and some politicians are willing to gain their appreciation by populist campaigns, their views seem to be countered in the Real domain. Indeed, the respectable place that knowledge and scientific evidence have in those countries has played an essential role since the late 1960s in transforming their previous safety approach into what today is the Rehabilitation model. As mentioned by one interviewee:

"You have some voices, but you do not have strong voices that would ask for a prison climate that is not a nice place, [saying that] it should not be a place for well-being ... And that could come from politicians; I guess you can find people arguing a bit like that. ... In my experience, those voices are fewer and less strong than the voices from different actors that are trying to fulfil the Rehabilitation goal by making it nice for those who work and nice for those who stay there. So, it is not strong, but you find those arguments as well in all the groups." GD-R03

The shared objective seems to bring into play several forces such as the evidence provided by research (from the prison service research institution or academia) the opinion and experience of a highly educated prison staff and the voice of the community which is included in the discussion. Although Scandinavian governmental designers seem to be proud of their prison systems, they also believe there is still room for improvement, proposing implementing actions such as adding more research, and including designers in the discussion. They also mention the need for encouraging designers to see the built and natural environment through the eyes of the inmates in order to understand their particular psychological states and needs.

By contrast, the Chilean governmental designers interviewed highlight the flaws and weaknesses of the decision-making dimension characterised by lack of planning, lack of rehabilitative institutional objectives, and the emphasis on quantity rather than quality. For them, however, there are no clear prison aims concerning rehabilitation, and decisions are based on political considerations rather than scientific evidence. This situation results in reactive short-term policies, usually modified with every change of government. Although in theory prison projects must abide by national general design standards, in practice this is not always achievable, leading to a relaxation of architectural requirements whenever 'security reasons' or the need for financial savings are put forward.

The play of forces in the domain of the Real in the Hybrid model seems to be characterised by two underlying factors. First, the weak influence and participation, if any, of external technical and social actors —such as academia, research institutions, local communities, judicial actors or international bodies, or even internal actors such as the rehabilitation area of the prison service. Second, the strong presence of both the populist political pressure and the fear of the security staff from the prison service of modifying the status quo.

What seems to be an aggregated cross-case meta-theme here is the level of **External influence and participation**, which affect the newly revealed underlying dimension of OPERATIONAL TRANSPARENCY. This participation is extensive in the Rehabilitation model today, narrower in the Safety model, due to judicial and economic pressure, and almost non-existent in the Hybrid model.



In turn, the consideration of **Natural Light** is another critical cross-case meta-theme within the DESIGN PRIORITIES dimension, considered important not only by both Scandinavian and Chilean designer interviewees but also by Independent designers in the Safety model. However, its Actualisation varies depending on the geographic location and the nature of the prison model.

The Scandinavians take advantage as much as possible of daylight and sunlight, by designing large security windows, contextualised within a layout and a prison regime that make unnecessary the use of bars, while Chilean designers give in to the pressure of security staff to reducing as much as possible any probability of escape. As mentioned by one Chilean designer:

"The light is a difficult subject to handle. It is difficult to manage for two reasons: Since we do not have new prisons, and they are prisons that are quite old, with existing windows that do not allow sufficient luminosity, and the buildings extensions that have been made— sometimes because of the need to supply cells or have spaces for dormitories— makes them truly caves of mice, so there is no greater concern in the subject of light. On the other hand, our closest referents are the concession [PPP] prisons and some other complex prisons that were built in the 1990s, and for security issues [enough natural light] is not allowed either. Perhaps it is because of the materials of the time, but it is also not allowed to have big windows for a matter of security, for a possible escape." GD-H-01

Designer interviewees from the Hybrid model are eager to emphasise the importance of *Natural light, Indoor air quality, Colours* and *Design standards* as a way to highlight the elements that should be considered but complain that these factors are neglected by inadequate budget allocation and a lack of commitment of prison authorities to request adequate funding from the government.



The agreement around financial obstacles is that there is a need for *Financial optimisation*, arguing that prison services are the last priority of governmental funding. The Scandinavian designers see *financial obstacles* as the boundaries that challenge them to maximise the efficiency of human resources use and the efficacy of the architectural layout. Moreover, the Hybrid designers —who lack financial resources daily— argue that the scarcity is usually used as an excuse to justify bad political decisions in the allocation of resources. These findings are summed up in the cross-model meta-theme *Financial optimisation* mentioned in *12.2.2.1.2.1*, consolidating it as cross-case meta-theme, and elevating it to the level of an underlying dimension also.

12.2.2.2.- Independent designers

Among independent designers from both the Safety and the Rehabilitation models, there is even less agreement on the key issues. Only *non-financial obstacles* are considered important for both of them. In this regard, the fear of authorities of being seen as weak on crime constitutes an obstacle for evolution. It makes politicians and decision-makers feel insecure for fear of being accused of not doing the right thing. This insecurity is enhanced by lack of knowledge. Indeed, the lack of evidence that could guide them toward obtaining optimum outcomes and justify their decisions in front of the public lead them to avoid controversial situations. However, uneducated decisions made by financiers and politicians can result in inadequate financial allocations, increasing the risk of loss of prison control by staff and jeopardising rehabilitation.

One way to address this fear is to promote prison research that, in turn, can provide evidence to guide decision-makers toward *Evidence-based decisions*. Evidence provided by research can help to contain both community pressure on decision-makers —often driven by emotions— and the populist use of those emotions by some politicians. This is possible because research can show that there are justifications for prison design that helps to reduce re-offending when the entire prison system is geared toward rehabilitation.



However, the evolution of the Rehabilitation model is not because of benevolent and humanitarian penal institutions but rather the accountability of prison services due to the constant observation and intensive actions of non-governmental pressure groups of criminologists, lawyers and social workers among others (See section 3.4.4). Similarly, many of the improvements in the carceral conditions related with the health and safety of inmates in the Safety model have been fueled and characterised by legal fights in which the existence of discretionary design norms developed by independent designers organisations have played a fundamental role in their accountability. In the Hybrid model, however, neither external monitoring nor external regulation has been present. The within **OPERATIONAL** underlying model theme emerging here, the cross TRANSPARENCY dimension, is *Accountability*.



12.2.2.3.- Cross-comparison of independent and governmental designers

As observed above, the commonly shared feature between Independent designers from both the Rehabilitation and the Safety prison model groups is their concern about the needs of DESIGN GUIDING PRINCIPLES as a dimension that highlights the human dignity and value of inmates in prison. Governmental Designers from The Rehabilitation model group also share this concern.

This is, perhaps, the most significant difference compared with Governmental Designers from the Hybrid prison model, where this need for human dignity is not highlighted so much. Indeed, the Hybrid designers are the only professional group in the whole study that made comments about the need to use design as a tool for punishment (see 9.3.2.1.7). Expressions such as: *"they should not forget the condition they are in" GD-H 01*, are indicators of their prejudices, or at least a degree of disregard of the dignity of people in prison, which is not seen among their peers in other groups and models this study.

12.2.2.4.- Comparison between designers and international Advisors

There is a clear agreement between the international advisors and Governmental designers from the Hybrid model groups about the importance of *indoor air quality* within the **Space** cross-case meta-theme as a critical factor of the DESIGN PRIORITIES dimension. Indeed, the Hybrid prison model has a clear disadvantage here in comparison with the Safety and the Rehabilitation models. While the former is characterised by overcrowded old prison buildings with inadequate maintenance, the latter have mandatory rules to comply with standards of minimum air change rates and minimum space per person.

This agreement shows that both international advisors and Hybrid model designers are concerned about prevalent health issues as a result of inadequate space, the difficulties presented, and resistance to the Actualisation of the changes needed.

In a counterintuitive and important finding, *space, communicable diseases* and the *need for design for human beings*—which are related with the cross-case meta-themes **Space**, and **Needs for adequate built environment**— were not mentioned as critical issues for designers to take account of in any prison model. The explanation for this unexpected behaviour among designers, given their professional training, must be further considered in a broader context. The low priority of *space*—within the **Space** meta-theme and DESIGN PRIORITIES dimension— is understandable in both the Rehabilitation and the Safety prison models for two reasons. In the former, prison cells already have a considerably high square footage allowance, while in the latter, square footage is heavily standardised, and thus relatively unmodifiable.

However, the low importance placed on *space* by some Hybrid model designer interviewees appears particularly incongruent with a system characterised by overcrowding. A plausible explanation for this apparent incongruence is that there is nothing that architects can do about overcrowding if the real capacity limits are not respected, and the politicians insist on overpopulating prisons without increasing the prison service budget proportionately. In this case, what the government and the prison service are deciding and saying— in terms of spending money in rehabilitation programs and advertising them as successful— is incongruent with what they are doing when they place inmates in incompatible carceral conditions. This hypocritical behaviour in politicians and prison services is examined later on in this chapter.

However, there is a degree of fatalism about this issue in the designers' comments because the level of urgency to deal with critical situations in which designers can have a direct influence on the quality of life in prisons is so overwhelming, that solving the overcrowding is not even considered as a design priority for them.

12.2.2.3.- The key shared issues related to prison design for health and well-being Interviewees from all the four cases consider that *financial obstacles, presence of natural light, the process of decision-making* and *space* are key issues for health and well-being. Moreover, when comparing only prison models, *a sense of coherence* is also added to these needs. However, to identify cross-case meta-themes, it was again necessary to look closely to what these similarities mean at a deeper level.

12.2.2.3.1.- Financial obstacles as the most critical general issue

Financial obstacles is the most commonly included issue in this case study overall, and all the interviewees agree that access to more financial resources could help to provide better conditions for health and well-being. This illustrates both the high financial cost of imprisonment and the continuous under-resourcing issue faced in every country represented in this study, confirming the cross-case meta-theme '*Financial optimisation*' as the single most critical factor to be considered when designing for health and well-being in prisons.

12.2.2.3.2.- Natural Light as the critical architectural issue

Natural light is recognised in all the prison models considered in this case study, as the most significant architectural determinant of health and well-being around the DESIGN PRIORITIES dimension. However, as mentioned in 12.2.2.2.1, the approaches are different. In the Rehabilitation model, there is a natural concern about maximising the access to sunlight and natural light through design, bearing in mind the long and dark winter season in Nordic countries and the well-known link between lack of daylight and depression such as Seasonal Affective Disorders (SAD) (Even *et al.*, 2008).

For interviewees from the Safety model, however, natural light is primarily a security requirement. It is seen as a crucial design resource to avoid risks and to prevent critical events which in turn can provide positive emotions and meaning, improving relationships among inmates and between inmates and staff.

Additionally, in the Hybrid prison model, only the Designers consider natural light as necessary, but more specifically with a focus on sunlight due to the antibacterial and antigerm propertied of the ultraviolet spectrum of daylight. Indeed, the importance of sunlight as a natural and free resource is understandable, considering that in Chile, almost all the prison buildings have poor sanitary conditions. Usually, there are leaks in water or sewage pipes as a result of inmate's misuse or vandalism, and without mechanical ventilation system that could help to dehumidify the rooms.

Therefore, under the right conditions of ventilation, the heating effect of direct sunlight can help the process of dehumidifying prison buildings. However, the concerns of designers working under the Hybrid model are rarely actualised in their designs, due to the confrontation with permanent counterforces such as the security staff requirements of minimising the odds of disturbances and escape, or the lack of financial resources.

12.2.2.3.3.- Sense of coherence

As mentioned in *12.2.2.1.2.3*, a **sense of coherence** —as part of the DESIGN PRIORITIES dimension— is a cross-case meta-theme present in all the case studies except the International advisors. As with natural light, coherence is strongly linked with the inmate's rehabilitation, meaning, and promotion of well-being in the Rehabilitation model. In the Safety model, it is also used as a reward for promoting good behaviour, although it is seen as a practical tool to promote trust and minimise uncertainty. In the Hybrid model, a sense of coherence is seen as ideal, but not applied because of the Chilean inmate culture. In the Rehabilitation model, however, it is present as a cornerstone of the design. Therefore, *a sense of coherence* is consolidated as a cross-case meta-theme within the DESIGN PRIORITIES dimension, but its presence varies depending on the model.

12.2.2.3.4.- Decision-making process

The interviewees' approach to decision-making from the Rehabilitation model works as a plural process, which considers a wide range of stakeholders, with a focus on the rehabilitation of inmates and the safety of the prison staff. In this case, the well-being of the prison stakeholders is considered a priority. In the Safety model, the approach to decision-making is linked with the High-level Staff concerns about their diminished power over the project decisions, which are usually taken by people unrelated to the prison service. However, the focus of design in this model —and the institutional priority— is the safety of the staff and control of inmates. In the Hybrid model, the focus is not placed on rehabilitation, or on the health and well-being of inmates either.

The interviewees' concerns here are that external and internal design decisions are made without evidence, feedback, technical information, or even planning. All these concerns are aligned with the views of international advisors, who highlight the need for prison authorities to understand what humane conditions mean. Therefore, the general comparison confirms the cross-case meta-theme of the need for establishing *Health & well-being as institutional priority* within the overall dimension of DECISION-MAKING.



12.2.2.3.5.- Space:

Space is included in all four cases as an essential determinant for health and well-being in prison design and as a key architectural dimension. However, the underlying reasons are different for each case. *Space* was considered important only by the High-level Staff in relation to the three prison models. In the Rehabilitation model, the interviewees have a purpose-centred and inmate-centred approach in which *Space* is primarily a condition for rehabilitation and increase security as a result. The interviewees in the Safety model have a staff- centred control approach, in which space is a tool used only to improve security. The underlying situation for the interviewees from the Hybrid model sits in between the other two models. They have a Safety model-oriented structure but include Rehabilitation model principles among their mission statements. However, they lack economic and human resources to implement any of them successfully.

12.2.2.3.6.- How and why are some issues ignored?

The Rehabilitation prison model interviewees show the lowest percentage of nonmentioned issues in any professional group (see Appendix 8), suggesting a more holistic approach. The issues omitted by at least two of the three professional groups concern the architectural factors tacitly addressed as part of the meta-theme *Creating Normality through design* within this model. The fact that factors such as thermal comfort, floor and walls features, or non-communicable diseases, or rare events such as emergency in prison are already addressed, is acting as a counter-force, preventing them from being seen as necessary.

The neglected issues among the Safety prison model reinforce **Operational Transparency** as a crucial cross-case meta-theme. This model shows the highest percentage of unmentioned issues of the three prison model cases. Unlike the Rehabilitation model, many of the neglected issues are absent in their prison design, such as *indoor bathroom* (other than a toilet in the middle of the cell); *preventing isolation;*

positive distractors; normality (as recreating outside normal life); or promoting selfesteem. In this case, the Unactualisation of these issues evidences the presence of powerful counter-forces. Indeed, it seems to be a shared principle among Safety prison model interviewees that the prison must transmit a message to the inmates along the lines of: 'This is not home, this is not a place of vacations. This is a prison. You are under the control of, and being permanently monitored by prison officers'. Therefore, to weaken the effect of those counter-forces, it seems that increasing the **Level of external** *influence and participation* as a cross-case meta-theme— also related to the higher dimension of OPERATIONAL TRANSPARENCY— is needed. The Actualisation of this dimension requires the engagement of social actors and academic entities that can improve the visualisation and transparency of what happens inside the prison.

The Hybrid prison model shows a moderate percentage of unmentioned issues. However, compared with the other prison models, it has the lowest number of these shared between its professional groups (only six coincidences). This highlights the different priorities between High-level Staff and Governmental Designers, as discussed in section 9.7.1. In other words, there are counter-forces among the staff that is different from the counter-forces present among the designers, resulting in a disagreement about which issues are essential and which are not important at all. Therefore, the first and most urgent task in this model, in order to promote the evolution towards a rehabilitation model approach is to establish Health and well-being as Institutional priority, as an aim shared by all the levels of the prison services, within the DECISION-MAKING dimension.

The International Advisors also evidence different sets of priorities. Prison Policy Advisors ignore nearly half of all the issues covered in this thesis, showing their urgent need to deal with just a few critical economic, administrative and political issues that prevent the Actualisation of health and well-being policies. On the other hand, the Health Advisors seem to have a more comprehensive diagnosis of the situation of health and well-being in prison—leaving aside only nine issues six of which are shared as being absent from Prison Policy Advisors consideration also. Despite the above, the efforts of International Advisors seem to have little impact on prison services. The fact that International advisors act through recommendations (see section 9.3.2.2.1)seems not to be enough to promote real changes and provides only cosmetic interventions. Therefore, a more coordinated effort is needed, to get governments to commit to allocating financial resources for cost-optimal solutions in the dimension of FINANCIAL OPTIMISATION, as well as to creating

and supporting — in both dimensions OPERATIONAL TRANSPARENCY and EDUCATION— the conditions for establishing a local and powerful critical mass.

Maybe the most significant cross-case finding here is that all the professional groups in this study—except the International Health Advisors— excluded *non-communicable diseases* as an essential variable which in turn informs the case-based meta-theme of *'Need for adequate infection control'* (see Appendix 8). The international health advisors are more likely to recognise the link between the design of the built environment and *non-communicable diseases* due to their medical background; for example, by considering the effect that noise pollution or feelings of fear and insecurity can produce on the health of inmates with particular health conditions during sleeping hours:

"If somebody is deprived of sleep, it then has a knock-on effect on a lot of other health issues. You know, somebody with diabetes, if they are not getting enough sleep and rest, it can have a physical impact." PHA-01

The above findings show the need to include a broader range of professional backgrounds in the DECISION-MAKING dimension of the design process, or at least in the DESIGN GUIDING PRINCIPLES dimension, during the drafting of the technical requirements that prison design must abide by. This would help to avoid the omission of critical issues that need to be collectively addressed as part of health and well-being in prison design but which designers see as apparently unrelated variables at the moment.

Negative distractors and self-esteem are only considered as issues by some of the Rehabilitation prison model and international advisor interviewees as part of the DESIGN GUIDING PRINCIPLES dimension. Despite their immediate impact on inmates in terms of their health and well-being, there is a striking omission of aspects related to walls and floor features by many groups, including designers in all three prison models. This could be partly explained by the minimalist trend in prison design underpinned by security and economic constraints, in which the need for robust, durable walls and floors is so self-evident it does not even need to be mentioned. However, the findings could also be showing that these issues are not seen as a determinant of health and well-being by interviewees. This again supports the findings in this thesis that there is a need for knowledge of the effects of design on well-being within the dimension EDUCATION, highlighting the needs for more research dissemination in the area.

12.2.2.3.7.- Emerging cross-model meta-themes and dimensions

Two meta-themes initially defined as single-case in Figure 12-1 —*Health & well-being as an institutional priority* and *Financial optimisation*— have been demonstrated above to actually be cross-case meta-themes. Additionally, seven new cross-case metathemes— *Evidence-based decisions, Need of knowledge on the effect of design on well-being, Sense of coherence, space, Natural light, External influence and participation,* and *Accountability*— emerged from the above a cross-examination (see Figure 12-2).



Figure 12-2: Meta-themes and dimensions extracted from the cross-case comparison

The previous sections have shown how single-case and cross-case meta-themes were extracted to build the clusters and dimensions now illustrated collectively in figure12-3 below. The next section will draw on all these dimensions as well as all meta-themes to develop a new outline framework for designing health and well-being promoting prisons.



Figure 12-3: Dimensions resulting from clustering single-case and cross-case meta-themes

12.3.- Towards a new outline framework to design prisons that promote health and well-being

The empirical findings of this study as discussed above have revealed six dimensions involved in the process of designing prisons that promote health and well-being — DESIGN PRIORITIES, DESIGN PRINCIPLES, FINANCIAL OPTIMISATION, DECISION-MAKING, OPERATIONAL TRANSPARENCY, and EDUCATION. These dimensions are interrelated because, in order to establish the DESIGN PRIORITIES, it is necessary to have DESIGN GUIDING PRINCIPLES that support those priorities. However, these guiding principles are always financially constrained, requiring FINANCIAL OPTIMISATION, which in turn are the result of the organisational policies and practices in DECISION-MAKING. Those policies and practices are, in turn, always influenced by the level of OPERATIONAL TRANSPARENCY of the organisation, and this transparency is modulated by the level of knowledge and education of all the related entities.

Figure 12-4 shows how these interrelated dimensions and their components — as evidenced in the findings of this thesis — form an initial outline framework for prison design for health and well-being. This framework shows how these six dimensions are interrelated through a process of interaction and feedback, and the scope of action of each entity involved in the process.



The central core of the framework— DESIGN PRIORITIES— is of prime concern for designers and represents the three main DESIGN PRIORITIES identified in this comparative case study —*a sense of coherence, natural light*, and *space*. Designers have to be aware of these three crucial components when designing for health and wellbeing in prisons. These components are meta-themes that also cover all the seventeen individual factors initially extracted from the literature review that can affect health and well-being in prison design (See Table 12-5).

Area	Factor	Meta-theme related		
COMFORT	Acoustic Levels			
	Artificial Light			
	Indoor air quality	Sense of coherence		
	Indoor bathrooms			
	Thermal comfort			
SENSORIAL	Natural light and sunlight	Natural Light		
	Colours	Natural Light / Sense of coherence		
	Contact with nature and sunlight			
	Quality of views			
	Space	Space		
PHYSICAL FEATURES	Quality of materials and environment	Sense of coherence		
HEALTH AND SAFETY	Stress control	Space / Sense of coherence / Natural light		
	Depression/suicide			
	Mental healthcare			
	Sense of coherence	Conce of echeronics		
WELL-DEING	Universal design			
SECURITY	Antisocial behaviour	Space / Sense of coherence / Natura light		

Table 12-5: Relation between Factors and Meta-themes

However, the approach of the priorities in this dimension has to be aligned with five basic DESIGN PRINCIPLES, established as being paramount for promoting health and wellbeing in prison design in this thesis. This means that the design —both as a process and a product— has to fulfil five basic principles:

- 1. To foster interaction between users and both the natural and the built environment.
- 2. Focusing on decreasing users' stress by using friendly and relaxing design elements, materials, and layout.
- 3. Using colours, forms, and architectural elements, full of positive meanings, regarding social, cultural and geographic local particularities.
- 4. Recreating 'normality' layouts, allowing users to maintain daily routines that mimic the typical normal daily life of any local citizen.
- 5. Generating a safe and secure environment by ensuring a positive mental and emotional state of inmates and staff.

These design principles have to be agreed by both designers and prison service authorities to align the design and operation of prisons as planned. Nevertheless, both design priorities and principles are financially constrained by the economic capacity of each Country or State. This requires a design capable of balancing initial and running costs, optimising the use of personnel, energy, and other resources. Designers and Prison Service authorities have to initially work together to optimise financial resources in order to maximise the benefits sought by the design priorities and principles. Therefore, FINANCIAL OPTIMISATION as a dimension, conditions the design principles and priorities.

DECISION-MAKING then conditions the financial optimisation, which in turn condition the design principles and priorities. This level of decision-making by the prison service authorities is related to the principles that underpin the prison service and its objectives as an institution to provide a valuable service to society. None of the previous dimensions will produce a successful result if the whole prison service is not aligned in its decision-making to provide a constructive prison pathway for inmates. This means that the health and well-being of inmates and staff have to be an institutional priority and the prison services have to ensure that decisions made in this direction are supported by available evidence and made by experienced design professionals. Similarly, design decisions have to seek the right balance between the psychological state of inmates and staff concerning their well-being, which conditions the financial optimisation by maximising the positive output of the investment on programs and personnel.

Governments also have a key role in decision-making. Among the decisions that have to be taken, based on the prison system purposes, are the budget allocation for both the initial cost of building new prisons and financial support for running them. Additionally, Governments are responsible for ensuring adequate staffing of the prison service in terms of numbers and in quality. The desired outcomes of health and well-being will be possible only by providing the correct amount of sources needed— financial and human— which should not be compromised during the planning process of a new prison. Otherwise, a prison risks losing control over the daily routine, worsening the mental well-being and physical integrity of their users - drastically decreasing the odds of producing a positive social outcome. One example of this can be seen in the failure of HMP Berwyn, a £220M Category C prison in the UK, opened in 2017 and promoted as "the flagship for the rest of the country [and] England to emulate" (O'Connor and O'Murchu, 2019, p. 1). A decision to make a series of budget cuts from the very beginning of its operation have resulted in fewer rehabilitation programs than planned, lack of person opened, 338 ambulances have been sent there; the police have been called 135 times and the fire service 27 times" (O'Connor and O'Murchu, 2019, p. 1).

TRANSPARENCY conditions this decision-making by establishing that the appropriate external entities have to interact with prison services inside the prison in order to avoid a hegemony in the administration of punishment and prevents the adverse outcomes that can result from overly secretive and restrictive access to prison operations. Governments, through external public services, prison services, non-governmental organisations and groups of pressure such as inmates' organisations, have a primary role in ensuring this dimension of transparency.

Finally, EDUCATION as the need for specialisation and access of the different entities to knowledge is the most crucial dimension of all, and conditions all the other dimensions in this initial framework. Through the interconnected work of the academy, international organisations, national bodies of critical-mass and the work of the government, the dissemination of research and empirical evidence can help to maintain the focus on the aim of improving health and well-being in prison through design among all the entities involved —included the community. Moreover, the six dimensions of this framework — *DESIGN PRIORITIES, DESIGN PRINCIPLES, FINANCIAL OPTIMISATION, DECISION-MAKING, TRANSPARENCY AND EDUCATION*— have to interact continuously to encourage the feedback along the process, in a permanent process of revision and correction of actions based on the evidence from the feedback.

This initial outline framework shows the six main dimensions involved in the process of prison design for health and well-being. However, the objective of designing prisons which promote inmates *and* staff health and well-being also requires organisational coherence. This means eliminating the visible lack of coherence between the official institutional discourse of prison systems — such as their published missions or their publicised approach to rehabilitation— and the real actions of the prison services — their DECISION-MAKING processes. Therefore, to identify recommendations for evolving toward health and well-being promotion in prison design, it is necessary to explore and understand the nature and extent of this gap. Because the more extensive this gap is, the less likely the consideration of health and well-being in the design of prisons. The next and last sections of this chapter offer a plausible explanation of why this incoherence occurs. This can help to understand the key elements that are necessary to add or modify in the dynamic of each prison model in order to increase the consideration of health and well-being in prison design, and how this gap could be better understood.

12.4.- Organised hypocrisy in prison services

Three dimensions— *decision-making, transparency* and *education*—define which prison model the prison service is aligned to. Indeed, the less educated the community, the higher the apathy toward prison inmates and the higher the power of the prison services to control inmates' bodies and minds. Similarly, the less operational transparency there is, the more significant the gap between *what the prison service says, what decisions it makes, and what its daily actions are.* One example of this incongruence is exposed by the comments of one HLS interviewee when asked to what extent the architectural factors that can affect the health and well-being of inmates have been considered in the design of their prisons, by saying:

"I think those factors have definitely been weighed in the construction of prisons here in Kentucky, ... and they're in our 3 newest constructions. They're all built very similar, they provide for a lot of interaction with inmates, a lot of natural light, lot of open space. It's secure at the same time." HLS-S 03

Although this statement creates the feeling that inmates' health and well-being is a design goal by naming the more visible factors present in their designs that contribute to wellbeing, the reality is that these are present because they are necessary to the control of the prison and the safety of the staff, while other crucial well-being factors, such as *preventing isolation, depression/suicide, Normality*, or *stress control*, are absent, or at least severely diminished in the design.

Because decision-making was revealed by the findings as a crucial dimension in prison design, the theory of decision-making is now used here to find a plausible explanation of why this phenomenon of incongruence between apparent aims and actual aims occurs. However, the analysis of the decision-making process of prison services cannot be restricted to what researchers refer to as 'Architectural assembly' (Moran, Turner and Jewkes, 2016), which involves all the processes between the decision of building a new prison and the beginning of the construction. —This analysis has to also include the whole institutional approach toward the prison services objectives.

In traditional decision theory (White, 1969), a decision is taken to indicate a future action, or at least the decision will increase the probability of such an action. Talks are expected to have the same effect as decisions, with a planned trajectory. Talks can be management presenting visions, business concepts, objectives, policies, or political programmes with no decisions regarding specific actions but simply aimed at convincing members of the organisation to act by management talk. Decisions can be seen as a particular type of talking that indicates a will to act and a choice of action. There is also talking without decisions. (Brunsson, 2007, p. 111). However, there are not always strong connections between talks, decisions, and actions for individuals and organisations. Nevertheless, a more realistic and plausible explanation of the apparent incongruences identified in this study can be found in Nils Brunsson's decision theory called 'organised hypocrisy' (Brunsson, 1989, 2002, 2007, 2017). For Brunsson: "Hypocrisy is not an accident. It has even been argued that organisations sometimes make decisions in order to avoid action, that decisions may relieve people of the burden of acting, and that decisions may obstruct action." (Brunsson, 2002, p. 176). Organised hypocrisy — as the capacity of an organisation to talk independently of decisions or actions— can thus satisfy a variety of different interests (Brunsson, 2007, p. 112).

Hypocrisy is likely to appear when institutions are exposed to conflictive and divergent interests from different external entities and when the actors of the institution have a special interest in a particular type of outcome – the status quo. Hypocrisy is thus a response to a world in which values, ideas, or people conflict. It is a way for individuals

and organisations to handle such conflicts. People have different and often contradictory ideas about how an organisation should work and what it should achieve, and to satisfy one demand fully may be to poorly satisfy, or even fail to satisfy, another (Brunsson, 2007, p. 113). For example, to the tension between keeping inmates away from the society during the time stipulated by the sentence, and rehabilitating them (Hudson, 1996), reducing recidivism (Latessa, Listwan and Koetzle, 2014), or increasing desistance (United Nations Ofice on Drugs and Crime, 2012). They should also be highly secure to keep the community safe. Some literature suggests that prisons should provide employment in a good and safe environment, creating opportunities for both staff and inmates' personal development (Haney, 2006), or providing their employees with decent wages (Bennett, Crewe and Wahidin, 2008). Yet for some people, prisons should be a place of punishment, capable of inducing repentance or inflicting a pain proportional to that caused by the offenders to the victims (Ward and Salmon, 2009). However, as legitimate as these demands may be, it is not easy for a Prison Service or the state to satisfy them all. Success in one dimension, such as financial optimisation, often decreases success in another, such as design principles or design priorities, or both.

Prison services are therefore subject to strongly conflicting demands. They have to interact with inmates and other entities such as the Judicial system, politicians, the media, social organisations, and the community in general. They are also accountable to all these entities, to some extent, in a democracy. Therefore, for the prison services talking and decision-making are of great importance - their visions, programmes, and important decisions are often published today. Modern prison services have communication departments that specialise in explaining to the community and their personnel the *what* and *why* of current strategies and decision have value as a kind of output created by organisations" (Brunsson, 2007, p. 115). Therefore, it seems that for prison services, what they say and the decisions they make are often as important as their actions, as illustrated in the findings of this thesis (See Figure 12-4).

If the different entities who place demands on a prison service, were to attach importance not only to the actions routinely carried out by the prison service but also to what is said or decided, the prison service could meet some demands through talk, others through its decisions, and yet others through action—and thus to some extent satisfy three conflicting demands. For example, as shown in the cause-effect loop diagram in Appendix 14,

dealing with both keeping staff morale high and fulfilling the governmental needs for avoiding communal pressure or disapproval over their management of security matters, creates conflicting demands in the Chilean prison service. Factors such as the inadequate physical conditions in which prison employees have to work, the stressful psychological environment, and the excessive work burden because of the understaffing, affect their morale and the designers' sense of helplessness as a negatively expressed meta-theme and in the Hybrid prison model. This creates conditions for depression —a possible cause of the alarmingly high rates of sick leave - and generates significant indifference to the situation of the inmates and the acts of violence (Zúñiga, 2010). On the other hand, the government's political interest can be profoundly impacted by sensationalist news about escapes and prison riots, and they do not want such critical events. Accordingly, the Chilean prison service states in its Prison Organic Law that they aim to take care, monitor, and contribute to the social reintegration of people in prison (Gendarmeria de Chile, 2019). They also speak of the commitment to rehabilitation and social reinsertion of inmates as a decision-making policy, through webpages and distributing information leaflets, showing examples of the organisations' positive interventions in rehabilitation (decisions), to satisfy the staff need for meaningful work. However, rehabilitation is far from being a strategic goal in this instance. This thesis demonstrates that, in reality, the thematic fear of legal and political consequences is more critical for the Chilean Prison service than inmate's rehabilitation, and therefore, the dimension of Design guiding principles is focused on security, control of movements, and avoiding escape rather than the health and well-being of inmates. Additionally, because the prison organisation has insufficient financial resources, and critical events have adverse political effects, the allocation of most of its annual budget is into security, surveillance and control equipment, with a semi-militarised prison guard structure (what is done) (Saavedra-Olivares, 2018) satisfies the government needs for control of community reactions.

This heterogeneous approach, however, makes it challenging to act consistently with what is said, what is decided, and what is acted on. Talk and decisions in one direction can compensate for actions in the opposite direction and vice versa (Brunsson, 2007, p. 115). In the hypocrisy model talk, decisions, and actions are causally related, but talk or decisions in one direction actually decrease the likelihood of corresponding actions, and actions in one directions in one directions (Brunsson, 2007, p. 116). In the previous example of Chilean prisons, trying to fulfil the

organisational goal of rehabilitation effectively produces a decrease in the available resources for security purposes and vice versa. As expressed by one interviewee:

"I feel that there is a predetermined approach to privilege security in any situation, and as long as we are not able to modify that approach from the perspective of social reintegration to modify the designs are not possible" HLS-H-01

For Brunsson (2007,2002), in conflicted scenarios, such as in prison management and design, hypocrisy can be seen as a solution. Hypocrisy makes it easier to act forcefully in one direction, even with several opponents, such as the policy of using harsh solitary confinement in the USA (Gendreau and Labrecque, 2018), or in the case of the UK, the implementation of government policies to reduce overall public spending that has resulted in a reduction of nearly a quarter the National Offender Management Service budget since 2010 (Shaw, 2018).

The act of hypocrisy also makes it easier to maintain the legitimacy of organisations, even when they are subjected to conflicting demands. Without hypocrisy, one party or interest would be completely satisfied, and all others completely dissatisfied. However, with hypocrisy, in situations such as the personnel versus governments needs described above, neither party has their needs fully met, but neither is anyone left completely unsatisfied.

12.4.1.- How hypocrisy works in prison design:

Talk and decisions generally reach wider audiences than actions. Typically, those who are directly affected by prison service's actions are a very small group of entities such as the inmates, the inmate's family and friends, Judicial actors such as lawyers or judges, and the prison staff. Usually, only these entities actually experience the actions of the prison service. The rest of society is an outside spectator, with no first-hand knowledge of the actions; at most, their 'knowledge' is hearsay (Brunsson, 2007, p. 119). Indeed, the higher the secrecy of the prison service, the more challenging to gain knowledge about those actions, which in turn, facilitate hypocritical organisational behaviour, because it is not easy to compare public talks and decisions with actions hidden from collective knowledge. Therefore, prison services which speak of high morals even in the face of a harsh reality — such as Hybrid model prison services publicly stating their commitment

to rehabilitation but without political or financial support— will be open to using hypocrisy because they consider their interests and values to be at least partially satisfied through what is said and decided (Brunsson, 2007, p. 117). However, Security model prison services such as the Kentucky correctional department can also be susceptible to hypocrisy due to lack of external public services in prison daily work, which results in low levels of operational transparency.

Due to the limited possibilities for external entities to be transparently involved in observing the prisons daily routine in the Hybrid and the Safety prison model facilities, the level of tolerance to hypocrisy is high. For example, in the Hybrid prison model, due to the lack of financial resources, the need to reduce the chances of escape but without eliminating some access to daylight was 'satisfied' by reducing as much as possible the width of the windows, despite the psychological effect of confinement and the resulting reduction in natural light. This situation is worse in old prisons, where windows are heavily reinforced with obstructive bars or metal mesh. Again, the highly secretive operation of prisons, in addition to the lack of mechanisms for inmates to counteract the prison system actions, turn the Hybrid model into the most hypocritical of them all. In both Safety and Hybrid prison models, interviewees acknowledge the need to improving access to natural light but argue that a change in mindset is needed (education), to prioritise an adequate allocation of budget. In the Rehabilitation model, however, prison cells are designed with large laminated double-glassed windows, and without bars. This is only possible because the whole prison design concept, including the layout, the staffing and the prison regime, although expensive, generates a guite and safe environment for both inmates and staff, based on the principle of designing for normality.

In relation to prisons, the Governments, the victims, the community, the political parties, and relevant NGO organisations are all spectators, and each one has their specifics interests. The interest of governmental entities is usually related to political and financial accountability, as critical factors revealed in this thesis that affects both dimensions of operational transparency and financial optimisation. The victim's interest is focused on retribution and the execution of the judicial sentence. The community interest—uneducated in the cause-effect chains concerning punishment and human behaviour—is usually placed on retributive punishment, incapacitation as a measure to prevent an increase in delinquency and deterrence as a measure to prevent new people from starting to offend. These are also linked to Prison service's actions through the meta-theme 'fear

of being seen to be weak on crime' discussed earlier in this chapter. Politicians in power are interested in minimising the media effect and political costs of major critical events, while politicians in the opposition are interested in the opposite effect. Most international spectators place their interest in promoting the health and well-being of inmates, in all three elements- talks, decisions and actions. However, how they operate is through sporadic visits to prisons and, as spectators, their interaction with prison services is merely through recommendations (talks), debilitating the efficacy of these organisations in improving the prison services' actions. Thus, an effective increase in their efficacy will require the detection of shortfalls, issuing the recommendations, and promoting joint work with as many government services as possible to create operational and decision-making transparency. As independent entities, these international organisations can and should help in creating the conditions for the growth of a critical mass of social scientists in prisons matters in those countries.

Based on Brunsson's model, when a prison service faces a scenario with multiple entities interested in their particular and competitive demands, the result is hypocrisy. The prison service can satisfy the government financial interests through a financially optimised budget focused on security, and maintaining enough lack of operational transparency to avoid community reactions against abuse of power.

Increasing the level of education of the community and decision-makers in prison matters would engender educated pressure groups, strengthen evidence-based decisions, and monitoring of the prison *actions* against *talks* and *decisions*, which, in turn, could lead to a more socio-technical managerial approach, weakening the political control of governments over the prison services. Conversely, the lack of external monitoring helps maintain the public image of an effective and safe organisation, thus satisfying the victims and community needs for security (talks).

Politicians, as a third decision-making entity, benefit from both sides. They receive public support from the image of professionalism and efficacy of the prisons as security institutions, underpinned by communicational strategies and operational opacity, and they receive support from the pro-rehabilitation- community by partially including some of the design principles and design priorities in their prison projects. Similarly, staff demands of security and working conditions can be addressed by investing in security elements and providing them with good salaries and additional benefits. Finally, due to the limited impact of the actions of NGOs and international inspectors on the prison services and

government policy, it is in the interest of the prison service to create and support—through a lack of operational transparency— the spectator's impression that talk and decisions are accurate descriptions of actions. In Brunsson's words, if they are 'successful' as projected through talking and publicity, everyone is happy — except perhaps, in this case, the inmates— and thus the status quo can continue.

A scenario of conflicting demands implies that there are always entities questioning what the prison *organisation* is doing in a particular matter. Therefore, it is not unusual for a prison organisation to set goals —by talking and taking decisions— in areas where the organisation is weak, or in which it has not succeeded in satisfying a particular interest through action. For example, within the dimension of design priorities, although the Hybrid prison services may have neither the critical minimum conditions of Space and Natural *Light* in their infrastructure to promote health and well-being, nor sufficient personnel to bringing a sense of coherence to inmates and provide rehabilitation, they seem to be willing to include some rehabilitation of inmates. This requires the organisation to provide inmates with minimum levels of health and well-being— as part of their institutional mission. Countries such as Chile, Mexico or Peru (see Section 3.4), publicise their limited rehabilitation programs as having a high social impact. This publicity has the effect of satisfying both external spectator entities such as NGOs and the need for internal actors such as the prison personnel to feel they are doing socially meaningful work. This can be observed in the Chilean case when they say in their mission statement sentences such as "... contributing to the social reinsertion of inmates...". Such goals are, by definition, examples of hypocrisy, for they express what is not being done (Brunsson, 2007, p. 121).

A further factor that leads to hypocrisy in prison services is the tension in the decisionmaking dimension between ideology and practice. Talk and decisions follow the rules for what can be said within the service. Actions follow the rules for what can be done. These rules are not always consistent. The official truth about institutions can deviate substantially from how these institutions operate (Brunsson, 2007, p. 123). For example, the Kentucky Department of Corrections in the USA include as part of its mission "... to provide a safe, secure and humane environment for staff and offenders...", while their prisons have some units with barred cages and solitary confinement in cells with no windows.

12.4.2.- Stability and destabilisation of Hypocrisy

The idea that talk, decisions, and actions should be consistent is a widespread norm in society, and organisations are not supposed to engage in hypocrisy. Therefore, what they say, what they decide, and what they do should be congruent. If prison authorities can be proven to be hypocrites, they can be censured according to this norm (Brunsson, 2007, p. 124). This gives a strong incentive towards secrecy surrounding their empirical actions.

The stability and level of hypocrisy in prison services is directly proportional to the visibility of their actions and the social level of tolerance to hypocrisy. The more visible the actions of prison service, the lower the level of tolerance to hypocrisy, and the more unstable the hypocritical style of management. Scandinavian prison systems show deep penetration of external communal services in the daily work inside prisons and the constant pressure of academic and practitioner organisations (Pratt, 2008a; Smith and Ugelvik, 2017). In the USA, prison services —which work with lower daily interaction with other governmental services, if any - show a considerably higher tolerance to hypocrisy and therefore higher stability of hypocritical management style. In this case, the counterforces are created by the existence of independent norms of design and management of prisons and the existence of organised groups of inmates' families which through the judicial system put pressure on the prison services. As mentioned by Riveland in his article of prison management trends in the USA, "the very positive changes that we have seen occur in our prisons over the past fifteen years never would have occurred without the involvement or at least the threat of involvement of the courts." (Riveland, 1999, p. 184). In turn, the Chilean prison system shows the highest level of hypocrisy of the three prison systems considered in this study due to its highly secretive operation mode, the superficial level of external intervention and the almost inexistent organised pressure over their procedures and results.

Time is one of the key stabilisers of hypocrisy. By adding a time dimension to the critical dimensions of decision-making and financial optimisation — often regarding actions in the distant future— it becomes easier to create tolerance for the incongruences between talk, decisions, and actions. Decisions affecting the financial optimisation dimension for the long-term such as 10- or 20-years development planning for a 10- 20-year future period can create the hope that one day what is said will be consistent which what is done. However, changes in the political arena or the economic conditions can easily perpetuate the hypocrisy within prison services. One example can be found in the Chilean

prison service. In the 1990s, following a considerable increase in the prison population, the Chilean government decided to build ten new prisons, by a private Public Partnership Program (PPP) during the first decade of the new century (Ministerio de Obras Publicas Chile, 1990). The initial promise of the concession system was the creation of a strategic alliance between the public and private sectors to generate flexible, profitable, efficient prison systems, of higher quality and lower cost than traditional prisons- thus being financially optimal. What this aimed to achieve was, higher quality standards, to tackle the problems of overpopulation, optimising security in the enclosures and improve reintegration programs (Sanhueza, Brander and Fuenzalida, 2017). Ten years after the end of the initial seven-year deadline, only seven prisons were built and the cost of imprisonment was three times higher than the original prison system (Arriagada Gajewski, 2013). There is also no significant difference in the perception of inmates between the habitability of the old traditional prisons and the new PPP prisons (Sanhueza, Brander and Fuenzalida, 2017). The level of overcrowding has been diminished, but this has been mainly as a result of legal modification that decreased the prison population, rather than the original prison service planning. Today the Chilean prison service still has a high level of overcrowding, the inadequate number of personnel in rehabilitation, deplorable physical conditions in traditional prisons affecting the health of inmates, and harsh environments in both these systems which affect the well-being of both inmates and prison staff. However, the prison service still maintains in its mission statement that the institution must contribute to the social reintegration of inmates. At the end of the longterm planning periods, when critical events cause a shock in the public opinion, prison services and governments react with new talks-repeated in cycles- about the crisis of the prison system. This can partly explain why the prison —as an institution— is in permanent crisis and has been the object of penal reform since its very birth (Foucault, 1975).

Another factor that makes hypocrisy more intolerable is the extent to which the prison service is perceived as a single actor rather than a group of different entities with different interests. In this regard, the more unstable and subject to rotation the head of the prison services is, the higher the level of tolerance for hypocrisy. The service becomes an arena for different interests, in which the new prison head inherits the old administration incoherencies, and it does not seem reasonable to expect that much consistency as a result of these factors. This is illustrated in the Chilean case, where the heads of the

prison service only remain in office 1.7 years on average, often for political reasons (Gendarmeria de Chile, 2019). If tolerance of hypocrisy is high because the head of the prison service is seen separately from the institution, and therefore there are doubts as to whether the prison service is really an actor, the prison service does not pay much attention to the incongruencies. Internal actors such as high-level staff and designers, accept the current conditions as inevitable, reproducing old and ineffective decisions, solutions and designs. External observers "tend to think that a new actor has been created, and interpret what has happened as an inconsistency between actors rather than the hypocrisy of one actor" (Brunsson, 2007, p. 130).

There are two ways to destabilise such hypocrisy in prison services and improve the situation for prison design and management: Justification and Consistency. Justification means ensuring that talks and decisions match what the prison service is really doing — their actions. However, when actions have a negative connotation or are morally unacceptable, this is not a socially acceptable option. For example, a prison service in the Hybrid prison model may decide to justify their actions of placing inmates in overcrowded and unhealthy places by eliminating any mention of healthy prisons, spatial requirements, social reintegration or rehabilitation from its aims, and deciding not to have rehabilitation programs or health improvements. Although this prison system would now be classified as Repressive, there is no longer any hypocrisy because their actions — although morally unacceptable— have become consistent with their talk and decisions. The way to destabilise this situation would be to expose the missing elements from the prison service narrative to the public and disrupt the self-serving justification here, demanding a more inclusive form of justification.

The second way to destabilise hypocrisy is by applying the norm of consistency —the norm that actors should not be hypocrites. However, this requires two additional elements. First, the hypocritical prison service must be exposed as such. To make organisational hypocrisy visible requires monitoring and reporting of the organisational behaviour. It is easy to forget what was once said and what was once decided upon, and it is not always easy for one individual to know about all the talk, decisions, and actions of an organisation (Brunsson, 2002). These monitoring entities could be the media, but they also could be interrelated NGOs or unrelated government organisations that interact with the monitored prison service. Among prison services, in addition to the media, these entities can be a formally organised association of families of inmates, or interrelated

organisations working inside the prison service— and therefore, aware of the prison service actions— such as governmental institutions hierarchically independent from the prison service and even from the Ministry of Justice. Second, for monitoring to be effective as an action to destabilise hypocrisy, there must be an associated sanction. Once hypocrisy has been discovered, its stability is dependent on the extent to which it is tolerated and sanctioned. If there is a superordinate hierarchical level that can sanction hypocrisy, as discussed next, instability increases (Brunsson, 2002, 2007).

Sometimes the legal system of a country allows a court system to be a powerful destabiliser of hypocrisy in the prison service. The visibility of the incongruences can result in legal actions that force prison services to align their actions to the legal norms by economic or criminal sanctions. This is the case in the USA, where most of the improvements in physical conditions and treatment about the health and well-being of inmates have been as a result of losing costly lawsuits (see the first quote of section 10.3.3). In other cases, the sanction can be moral, as in the case of the prison services from the Rehabilitation model, in which there is a constant and deep interaction between the prison service and several other organisations which act as secondary monitoring entities. For instance, in both Norway and Finland, the Ministry of Health is in charge of the health of inmates inside and outside the prison. The education and training of inmates are under the responsibility of the Education Ministry. The buildings of the prison service are owned by a third party²⁷, which is in charge of their design and construction —and in the case of Norway, this party is also responsible for their maintenance. Under this multilateral monitoring, any incongruence --such as the mentioned presence of barred cages in the Kentucky prison service (see photo 10-8 in section 10.3.1.2.1) — becomes visible to the rest of the actors, and therefore, easily exposed as hypocritical. This could create operational frictions, destabilising the hypocritical situation, and creating pressure for actualising the re-alignment between the goals of the prison, the prison regimes and the associated design of the buildings.

²⁷ Statsbygg is the Norwegian government's key advisor in construction and property affairs, building commissioner, property manager and property developer. In Finland, Senate Properties is a governmental agency responsible for managing State properties as well as rental of premises and is a government partner in work environment and premises matters.

12.4.3.- Prison models and hypocrisy

When Brunsson's model of hypocrisy is considered in relation to the themes and dimensions identified in section 12.4.1, it could be argued that the three prison models in this study represent three different scenarios of organised hypocrisy, in relation to these identified themes and dimensions. In the Hybrid prison model, the tolerance to hypocrisy is high in relation to themes such as preventing suicide because, although there is an official discourse about the importance of preventing suicide attempts, there is no consideration about the conditions in which inmates are being kept, justifying in some cases the deterrence and retribution through design (See table 12-1 in section 12.2.1). It is also possible to observe a high level of tolerance to hypocrisy when the mission of the prison service talks about rehabilitation and social reinsertion, but the revealed reality is lack of priority of health and well-being, the deplorable state of prisons, or lack of design regulations. Here no entities are interacting with the prison service to monitor these areas related to health and well-being in design and no organised or powerful entities are acting in the best interest of inmates, such as inmates' family organisations. The judicial norms make it difficult and expensive to sue the State for their actions. Most of the prison service staff have a low level of education and are organised in a militarized hierarchical structure. They are thus relatively unaware of some of the critical health and well-being issues, as shown in section 9.3. The position of head of the prison service is always temporary and highly politicised. The result, in Critical Realist terms, is that the consideration of health and well-being in the Hybrid prison design is a non-event. It is an event that has not yet been actualised.

In the Safety model, the level of tolerance to hypocrisy is lower than the Hybrid but still high. This is reflected in table 12-1 (see section 12.2.1), in the presence of themes such as no windows to outside, natural light without views, and well-being only if benefits are evidenced, while their mission talks about providing a humane environment. In this model society justifies a punitive approach to inmates' treatment, with a low level of internal monitoring from external institutions, there are nevertheless independent entities that create norms and guidance for prison design and prison regimes as shown in Section 4.2.1. These norms, together with the laws of protection of human rights, have been used in court by inmates and civil rights defender organisations against prison services and state governments (Riveland, 1999) to destabilise the organised hypocrisy and promote greater alignment between prison service aims and actions. This can generate a higher
coherence between talks, decisions and actions of these prison services compared to the Hybrid model. However the Safety model utilitarian approach —which allows the use of elements that could promote health and well-being as a reward for good behaviour— still results in health and well-being in the design of prisons being a semi-actualised event which is not fully considered according to the restricted norms in this model.

The Rehabilitation prison model, in turn, has an even lower level of tolerance, if any, to hypocrisy. In this case study, no visible incongruences between talks, decisions and actions concerning design in this model were found. This is due to years of permanent action by monitoring entities concerning inmates rights, and an increasing governmental policy of involving external entities, who in turn, act as monitors. Here, the community is systematically involved in the analysis and discussion of the strategic development of the prison service. This interaction is the core of the Scandinavian model, which, together with a highly trained staff, helps to prevent the onset of organised hypocrisy. Moreover, the fact that the prison service is oriented towards the principle of normality and focused on the rehabilitation of inmates as an institutional aim in itself means the consideration of health and well-being in prison design in this model is a relatively Actualised event.

12.4.4.- Recommendations for promoting health and well-being in prison design.

The previous section has identified the possible mechanisms underlying the interaction between different entities, creating what is recognised— in the realm of the Empirical — as the different prison models. This section has provided a set of targeted guidelines for both Hybrid and Safety prison models. It discussed the conditions that have to be created and possible recommendations to be followed in order to overcome the barriers that are preventing the consideration of health and well-being in prison design.

No evolutionary movement will be possible if the health and well-being of inmates is not an institutional strategic goal of the prison service, and subject to be measurement and monitoring to guide the organisation toward operational transparency and purposecentred decision-making processes. However, as the history of the Rehabilitation prison model has shown (See sections 7.3.2 and 7.4.4), such an evolution does not come from the prison services. Indeed, history shows that prison services will try to maintain the status quo because it is less conflicted provides them with more extensive space for manoeuvring —even ignoring internationally accepted norms. Therefore, positive change requires the simultaneous Actualisation of three core dimensions: education, operational transparency, and decision-making.

In light of the above findings, the following are a set of key recommendations considered as essential to creating the conditions that will move the Hybrid and Safety models towards a Rehabilitation model.

First, it is necessary to promote *operational transparency*, with the participation of other governmental, communal or non-profit entities, in the daily work inside prisons. This would help to permanently monitor whether the public discourse of prison services is aligned with their actions, concerning prison operating procedures and their design and maintenance.

Second, Specialised services to the prison service such as health, education, rehabilitation, treatments work training, or psychological follow-up should be provided and subject prisons to external monitoring.

Third, The UN and WHO play a crucial role here in promoting the conditions for governmental support. The more transparent the actions of the prison service, the higher the chances to resolve incongruences and increasing the transference of technical information to facilitate the specialisation of designers. Additionally, such transparency would help to establish organisations that can encourage the education of other entities based on scientific evidence.

Fourth, it is necessary to invest in *education* concerning health and well-being in prison design to create critical mass in each country. This should have a broad scope, including the education of politicians, other key decision-makers and the wider community, producing, providing and disseminating scientific evidence and knowledge in the field.

Fifth, Highly educated academic, social scientist, and professional groups should be promoted and supported to produce and disseminate the needed evidence.

Sixth, Non-profit organisations should be promoted and supported to disseminate the knowledge in criminology, carceral geography, and prison design, which is crucial to educating politicians, financiers and other decision-makers. This would improve the odds for external influence and participation in prison operations and would increase pressure to prioritise health and well-being.

Seventh, Educated group of entities should lead the prison organisation toward financial optimisation, based on criteria of maximisation of outputs of health, well-being and rehabilitation. Increasing education should produce an increase in the general level of control of prisons due to the greater dissemination of knowledge informing design and operational decisions. International bodies need to play an important role here also in creating the right conditions for such education to flourish.

Eighth: It is particularly necessary to promote the improvement of the level of education of prison officers who need to be trained as coaches rather than as armed guards. At the same time, it is crucial to demilitarise and professionalise their prison officers careers. Operational transparency and better education of prison officers will reduce the chances of politicians and prison officers making inadequate decisions due to being afraid of being seen as weak on crime, which is a critical factor underlying decision-making process in the design of prisons.

Ninth, the specialisation of prison designers needs to be promoted through education in terms of security, combined with carceral human interaction, spatial organisation, prison operation, environmental psychology, rehabilitation, and environmental factors of health and well-being in prison. This should aim to improve the quality and quantity of both physical and interpersonal *Space, Natural light*, and *sense of coherence* as design priorities, helping to improve the general control of the prison and to improve the design of built environments.

None of the above recommendations by themselves or even a combination of a few of them can generate the long-term effect needed for a change in mindset. All six dimensions underlying these recommendations are necessary as a combined contribution to the process of evolution of prison systems toward a Rehabilitation prison model.

12.5.- Sub conclusion

This penultimate Chapter has compiled the individual case findings from all four cases in this case study to develop a cross-modal comparison. As a result, thirteen individual meta-themes and ten cross-model meta-themes were extracted and grouped together, revealing six underlying key dimensions — education, operational transparency, decision-making, financial optimisation, design principles, and design priorities. These dimensions were developed into a new outline framework for prison design to prioritise the health and well-being of prison users. The core design priorities contain the three critical key components identified in this study that are necessary for designing well-being promoting prison —*Interpersonal space, Natural light* and *Sence of coherence*. The simultaneous presence of these three components can help address all the issues related to health and well-being obtained from the literature review in Chapter 4 and need to be simultaneously present in order to effectively promote health and well-being through the design of a prison.

The omission of *non-communicable diseases* by all the groups across the three prison models crucially suggests that this aspect of inmates' health is not considered as part of their concerns, evidencing the need for more interdisciplinary work during the design process. Indeed, although the primary responsibility of the design lies with the architects, the design process requires the active and timely participation of all the stakeholders: prison staff, personnel from health, education, rehabilitation, community services, and inmates, among others.

To create a health and well-being promoting environment, any prison design has to also fulfil the five basic principles put forward in this thesis (see section 12.3), by fostering environmental interaction, decreasing stress, increasing meaning, recreating normal layouts and generating a safe and secure environment by ensuring a positive mental and emotional state of inmates and staff. Additionally, any architectural solution must adapt to local needs, and maximise the available human and non-human resources, for financial optimisation.

The three central dimensions of the proposed outline framework for promoting health and well being through prison design— design priorities, design principles, and financial

optimisation— should be the result of a continuous interaction between designers and High-level Staff from the prison services, based on evidence and aiming for rehabilitation, health and well-being as strategic objectives of the organisation. The current imbalance between security and rehabilitation priorities is more evident in the Hybrid prison model than the other two, with an apparent disconnection between the theoretical purpose of rehabilitation— and care for the health and well-being of inmates— and the actual controloriented structure and operation of the prison service. To overcome this situation, the health and well-being of inmates must be considered as an institutional strategic goal which can also be assessed.

The need for greater transparency and education have been established in this thesis as critical issues which are conditioning the design and the decision-making in prisons. This research found that across all the case studies lies the need to develop understanding among key actors —prison and governmental authorities, prison staff and the community— concerning the role of the penal system in rehabilitating a community member into society rather than preventing recidivism through retribution and deterrence. However, and probably the most important finding, is that although all the interviewees talked about health and well-being of inmates as something desirable and even necessary, the perceptions and views of each professional group are ultimately still coherent only within their own prison model. The findings show that this requires intensive educational efforts as the primary strategy for moving the entities involved in the Hybrid and Safety model prisons, towards a more significant consideration of health and well-being in prison design.

It is also clear that the Hybrid and Safety model, the interviewees do not believe that the Rehabilitation model approach could work in their countries, arguing either that 'Nordic countries are wealthier than us' or that they have a different culture. However, the framework shown in Figure 12-4 in section 12.3, is grounded in data and suggests that the possibility of an evolutionary process from one prison model to another does exist, but only with the simultaneous actualisation of at least three previous conditions: education, operational transparency, and decision-making processes focused on health, well-being and rehabilitation of inmates as a goal. The UN and the WHO, as international

bodies, have a crucial role to play in the creation of the conditions that could allow for the actualisation of these conditions between models.

By using the administrative theory of Organised Hypocrisy, the level of hypocrisy involved in each prison model in relation to health and well-being in prison design was revealed, developing a plausible explanation of why and how the entities involved in the process interact in this way. This led to suggest a further set of recommendations to overcome the barriers precluding the Actualisation of health and well-being in prison design. These are based on the promotion of operational transparency in prison services; investment to improve the level of education of prison officers, financiers and politicians, which, in turn, will improve the outcomes of the decision-making process and the promotion of specialisation to empower prison designers.

Finally, an entirely Rehabilitation model approach would require a considerable increase in the governmental financial contribution, in the case of the Hybrid model and a profound cultural change in both the Hybrid and the Safety models, as demonstrated by the findings in this thesis. In conclusion, it seems that in order to be effective in improving the health and well-being of inmates—and therefore their chances of rehabilitation— there have to be continual monitoring of daily prison procedures by external entities, as well as the greater development of learned societies to help ensure evidence-based decisions are made and humane treatment of inmates in each country actually takes place. This also creates continuous pressure on governments and prison services to increase the transparency of their prison operations by including these external agents in the processes and creating academic opportunities for the specialisation of designers in the design of human-centred prisons. Having set out the key findings from the thesis in this Chapter, the final chapter sets out the overall Conclusions.

Chapter 13: Conclusions

13.1.- Research summary

This research began by identifying the different approaches to the design of prisons in different countries, concerning incarceration and how inmates are treated. The initial aim of the researcher— who has fifteen years of experience in the Chilean prison service was to understand why the design of prisons in this particular service seems not to consider the promotion of the health and well-being of inmates as a goal, and how to turn this situation around. It was subsequently observed that many prison services around the world state a purpose of the rehabilitation, preparing inmates for their future life in the community after release. However, this intention seems opposite to how many prisons are designed and therefore, how inmates are treated. In the preliminary literature review setting up the thesis, two critical links were found between prison design and well-being. Firstly, that encouraging the health and well-being of inmates is crucial to success in rehabilitation and desistance, and secondly, that the quality of life of prison inmates is higher in prisons that enable positive personal change, as a result of the promotion of well-being. These findings led to the conclusion that in order to promote such rehabilitation and desistance, there must be coherence between the objectives of the prison system; the staff approach to the goals and the physical context in which these processes take place. Therefore, the decision was taken to investigate how health and well-being are addressed in prison design globally, in order to understand why prison services in different countries have different perspectives toward health and well-being.

In the Introduction (Chapter 1) the challenge was summarised, and the research gap presented leading to the key research questions, aim and objectives set out within a clear research design proposal.

Four prison models—the Repressive, the Rehabilitation, the Safety, and the Hybrid were identified as internationally representative of four different approaches to the administration of punishment in particular social and cultural contexts. Nevertheless, the Repressive prison model was excluded from the research due to the incongruence between the research aim of promoting health and well-being, and the Repressive model definition— which intentionally infringes human rights and thus impacts fundamentally and negatively on health and well-being. In Chapter Two, the theoretical basis of the research was established, through an investigation of the differences between both the Hedonic and the Eudemonic perspectives toward health and well-being, finally selecting PERMA theory as the appropriate theoretical lenses to be used. The more common approaches to punishment through history were also reviewed, laying the ground for the ethical principles of this thesis. Critical Realism was embraced as an appropriate ontological research paradigm for this study. This states that reality is the result of the co-existence of three ontological domains: The Empirical, characterised by what is perceivable by human sensory and experiences; the Actual, where the interaction of causal structures responsible for the observable events in the 'Empirical' takes place, and the Real, where the underlying potential but Unactualized causal structures are located.

Chapter Three consisted of a further literature review of the history of prison design in each prison model with specific attention paid to the countries selected as cases to be studied. The chapter provided the necessary historical context underlying the different perspectives in the current approach to punishment.

In Chapter Four, another literature review of the concepts of health and well-being in the context of imprisonment examined different current approaches to punishment. It was established that the designs and operation of prisons for health and well-being must be based on three key principles:

i.- Prisons must have a useful purpose; not only for society but also for the person imprisoned, therefore, prison design must promote each of the five components of PERMA well-being theory—Positive emotions, Engagement or flow, positive Relationships, Meaning or purpose, and Accomplishment.

ii.- Prisons must promote rehabilitation, taking care of the physical and mental health of people in prison, and

iii.- Working towards the previous two principles must be a matter of public policy.

This chapter reviewed the latest international efforts made by the United Nations to bring health and well-being in prison into play. Similarly, the latest developments in prison

architecture research were also reviewed, exposing the current gaps in research. These were identified as: understanding how the different powers involved in the interplay of actualised forces in the process of prison design interact; why this interaction produces a different outcome in different prison models; and what is necessary to be added or modified in the dynamics of each prison model in order to design a prison that supports health and well-being. These gaps, in turn, led to the establishment of three research questions (RQs) as follows:

RQ1:Which design factors should be considered in the promotion of optimal health and well-being in prison design, and why?

RQ2:Which factors of design are actually considered important by decision-makers in the promotion of health and well-being in prison services of the Rehabilitation, the Safety and the Hybrid model, and why?

RQ3:What are the key elements necessary to add or modify in the dynamic of each of the mentioned prison models as part of a wider framework to improve and/or prevent the decrease in the consideration of health and well-being in the design of the prison?

Chapter Five addressed RQ1 by reviewing the physical and psychological stressors of health and well-being, extracting evidence from research regarding prison and also from related areas such as healthcare, mental care, education, elderly, or environmental psychology. As a result, sixteen harmful agents were identified.

At this point, representatives from each of the three prison models were selected in countries exemplifying these models, to investigate how the latest empirical knowledge is actualised in the field of prison work. Designers and High-level staff were interviewed to provide a more in-depth approach to RQ1 and to provide sufficient information to address RQ2. This revealed the perspectives and obstacles that each group faced in the design process regarding health and well-being. A fourth case study from the United Nations, considering prison policy advisors and prison health advisors were included to provide a broader international vision unconstrained by national agendas.

RQ3 was previously addressed in the review of the history of prison design in Chapter Three.

Chapter Six set out the methodology for the thesis using a multi-method qualitative research approach (See Figure 13-1). A case study research strategy using four cases included 28 interviewees from four different professional groups —International Advisors, Designers (both independent and governmental), and High-Level Staff of prison services— across the three prison models. Additionally, prison visits, observations, photographs, architectural drawings and archival documents were reviewed and contributed to the findings in Chapters eight to twelve.



Diagram of research questions, objectives data and methods in relation to Chapters.

Manifest Content Analysis (MCA) analysed frequencies of the pre-codes —developed deductively and inductively—to identify new possible variables and underlying causes

emerging from the data. The relative level of importance attached by interviewees to each of these codes was evaluated using an Index of importance (5.8.4.2.2) illustrated as a Pareto chart for each professional group and case. Further analysis using Latent Content Analysis (LCA) obtained the latent meaning under the surface of the text. Chapters 8, 9, 10, and 11 then interrogated the data of each case separately by triangulating the findings. This revealed differences in what the interviewees consider important and their approaches to imprisonment in each case. The International Advisors struggled to make State Members fulfil the international agreements on human rights and basic principles of treatment of prisoners, as well as to provide adequate access to healthcare. In the Hybrid prison model, case staff and designers focused on security-driven decisions over rehabilitation, and the unstable control as a result of inadequate budget allocation, deplorable conditions and lack of planning. The efforts for rehabilitating inmates are based on education and work. However, in practice, the rehabilitation sub-directorate is seen as an institutional appendix of the main goal of security. In the Safety prison model, the interviewees' concerns are focused on avoiding risk situations and preventing violent events by using evidence from behavioural psychology, which in turn, promote positive inmates' responses by improving their health and well-being in specific areas of the design. As in the case of the Hybrid model, the rehabilitation of inmates was seen to be through work and education programs, with the operation and design of prisons more aligned with the aim of safety and security. Finally, in the Rehabilitation prison model, staff and designers focused on an alignment of security, operation and design toward achieving the goal of rehabilitation, with the physical mental and emotional conditions of inmates seen as the primary concern.

Using abductive analysis, deeper themes emerged in each case, which was then grouped into meta-themes in final sections of chapters 8 to 11. In Chapter 12, the findings from both designers and high-level staff were then compared across all three prison models, revealing cross model meta-themes and six key dimensions underlying these themes across the models. These dimensions formed a new initial outline framework for prison design in order to ensure the promotion of health and well-being of inmates, (see Figure 12-4) as a precondition for rehabilitation and desistance.

Finally, in a retroductive approach to the findings, this thesis attempted to identify the conditions preventing the evolution of prison systems toward a Rehabilitation prison

model and what elements must be added or changed in their dynamics to help them evolve towards a more rehabilitative approach.

13.2.- Summary of key design findings

This study has identified a number of critical design factors for the promotion of health and well-being of people in prison (see Table 5-1). It was shown that the absence of these factors could create or foster adverse outcomes such as stress, depression, violent reactions, or the loss of physical or mental health, which in turn, would affect the wellbeing of all prison users.

The analysis and discussion show that staff in the Rehabilitation prison model consider the promotion of the health and well-being of inmates as a core design principle, while staff in the other models do not. The Rehabilitation staff perspective is that, for inmates to become valuable members of the community when released, they have to be taught how to live a normal life. The Safety prison model staff only focus their attention on counteracting the negative psychological and emotional effects of the severe conditions of imprisonment in order to minimise the risk of losing control over the prison population. The Hybrid prison model staff do not perceive health and well-being to be an organisational goal. The lack of design guidelines and policies in this model led the interviewees to talk about prison flaws and needs rather than what should positively be considered for design purposes.

The International policy advisors are also heavily focused on the barriers that prison systems face. These relate to the lack of commitment of the authority to providing the necessary conditions for inmates. The two main concerns of these advisors are on the control of communicable diseases and the right for inmates to have timely access to healthcare, which none of the prison staff interviewed mentioned.

Although staff in each prison model attach different levels of importance to each of the variables that van affect health and well-being, there is general agreement about the highest level of importance for just five—*Financial obstacles, Decision-making, Natural light, Space,* and *Sense of coherence.*

Additionally, based on the evidence of this study, it is suggested that the process of designing prisons to maximise the health and well-being of their users requires the Actualisation of all of the six dimensions identified —**Design priorities, Design principles, Financial optimisation, Decision-making, Transparency**, and **Education**— to produce a change in mindset toward a rehabilitative prison approach. Finally, the study provides a list of recommendations to help promote the actualisation of these mechanisms and therefore, provide fertile ground for a change of mindset from retribution to rehabilitation.

13.3.- Contribution to knowledge

The contribution of this research to knowledge has implications in the theory and practice, as explained in the following paragraphs.

13.3.1.- Academic contribution

Unlike previous work visualising the need for design to promote health and wellbeing(Gleeds Head Office, 2016), and gathering some evidence to justify designing decisions (Karthaus et al., 2017), this research has provided an extensive and updated review of the literature. It investigated the current discourse and research on concepts of health and well-being in prison, identifying the main harmful agents that can affect prison inmates and staff in prison design.

Additionally, by exploring the history of prison design in each of the countries introduced as cases this research has provided the contextual ground for investigating the different approaches of designers and prison authorities from countries of the three prison models towards health and well-being in prison design. Unlike previous studies, such as Jewkes (2018), Moran and Jewkes (2015), and Grant and Jewkes (2015), it recognises differences in the model's priorities (what is seen as more important) and perspectives (How to address the shortcomings) and includes a study of the Hybrid model in a developing country. It also used Critical Realism and Organised Hypocrisy theory to reveal the different powers involved in the interplay of forces during the process of prison design in each prison model, identifying what considerations are needed to reposition critical prison design factors and promoting health and well-being in prison projects. These academic and theoretical contributions can be further summarised in three key

aspects:

1. The analysis of prison design in context This study shows the existence of crucial differences in the constraints that shape the decisions and actions of those involved in the process of prison design in each prison model. It demonstrates that the decisions made by staff are constrained by the local dominant approaches to marginality, criminality and punishment which defines the governmental policies of budget allocation. They are also shown to be constrained — and by other factors such as: the clarity of the purpose of imprisonment; the level of importance placed on evidence, and its alignment with the defined purpose of imprisonment; the degree of transparency and accountability of the prison services; and the level of management of knowledge of the staff involved in relation to the purpose.

2. An outline framework for promoting health and well-being in prison design. By synthesising the findings, and drawing on PERMA theory, this study provides an outline framework for promoting health and well-being in prison design, based on six dimensions: Financial Optimisation, Design Priorities, Design Principles, Decision-Making, Operational Transparency, and Education (see Figure 12-4). This framework shows that, in order to design environments that support the health and well-being of their users in prison, designers have to focus on three essential Design Priorities as the central dimension of the framework. These are: providing enough space, maximising access to natural light, and providing a design in which the user perceives a profound sense of coherence between the environment, their possibilities and the goal of health and wellbeing. The findings of this study show that this alone, however, is not sufficient. Achieving the design priorities requires the actualisation of the other five dimensions in a particular order. First, during the design process, designers and prison services have to embrace the design Principles (creating safety through design, creating normality through design, promoting environmental interaction, providing designs that bring meaning to users' life, and using design to lower stress). These principles are, in turn, conditioned by the financial optimisation of the whole system, due to the financial constraints that are peculiar to highly resource-demanding organisations. However, the financial dimension itself is restricted by the policies and priorities established in the decision-making processes in prison services and governments. Moreover, those decisions are highly constrained by the degree of operational transparency in prison services as determined

by governments. The findings reveal that it is the presence of an educated community and learned pressure groups which can produce the social and political pressure for *transparency*.

3. The observation of prison systems through the lens of the Organised Hypocrisy theory. By using Brunsson's theory of Organised Hypocrisy, this study provides new insights in relation to prison design by revealing the causal mechanisms that allow or prevent the evolution of prison services toward a rehabilitative approach. Indeed, this study shows that the level of transparency and accountability of the prison services, together with the effectiveness and persistence of the actions of independent pressure groups, has a significant effect on the degree of coherence between prison service talks, decisions and design. Therefore, this degree of coherence has to be considered first as a contextual condition, when assessing and evaluating any prison service and the prison designs it produces.

13.3.2.- Contribution to practice

This study has deeply explored the views of prison staff and designers from four countries and three Prison model as well as key international advisors. In doing so, it provides a significant and original narrative explaining how and why these views differ and cohere across three prison models according to different factors. This, in turn, shows what is held in common by staff across these models and advisors that can potentially provide a shared international platform for prison evolution.

What makes prisons different from other settings is the legal duty to enforce the judicial mandate of keeping a person in custody. However, this study shows that to improve desistance in a given Prison Model — as a paramount aim— requires the establishment of 'Rehabilitation' as the key purpose of any national prison service, alongside setting the promotion of inmates' health and well-being as a strategic goal. The recommendations developed in the previous Chapter (see 12.5.4.) are a contribution to practice in terms of developing prison design for health and well-being. They also identify mechanisms to help ensure that prison services actions generate a positive impact. They can help authorities to meet their punishment aims while providing the conditions and delivering the actions for an inmate to recover as a human being and become a useful member of

the community through rehabilitation. This is an original contribution as the literature does not reveal any targeted guidelines that are based on contextualised data.

13.4.- Strengths and Limitations of Research

A key strength of this study is the global character of its research, which considered different countries using different prison models and in different geographical and cultural contexts. This enabled the evaluation and synthesis of a wider range of perspectives from designers, high-level staff, and international advisors from different countries and prison models. The in-depth analysis of the 28 interviews conducted in association with live prison visits and carried out within a carefully designed case study with multiple cases using multi-methods, is another strength. From this international case study, it is possible to generalise from the findings in terms of what is required to drive forward prison design in terms of health and well-being and identify an outline framework for considering this approach for the three prison models studied.

The experience of the researcher is both a strength and a limitation. His experience of working in one of the prison models enabled him to quickly build trust with the prison authorities and interviewees. The conversation was more fluent, rich in detail and more profound as a result. However, the researcher had to ask for clarification of concepts and information, where the interviewee assumed that these were known by the researcher. Thus, being a fellow 'insider' can sometimes inadvertently 'hide' information, if the researcher is not rigorous in clarifying points.

The other main limitations of this study are an insufficient number of High-level staff interviewees representing the Norwegian prison service, and the practical difficulties of organising the fieldwork and interviews across multiple countries within a limited time frame. The latter factor constrained the size of the participating population. Although the PERMA theory of well-being was shown to be the most appropriate theory to interrogate prison design, among the existing theories of well-being, it has limitations for evaluating and comparing consideration of its components at a detailed level. Finally, it must be acknowledged that this study does not deal with the fourth of Moldan's prison models – the Repressive model – which makes up many prison services around the world today.

This is because the basic philosophy of this model is incompatible with the aims of this thesis.

13.5.- Further research

By answering the research questions, this study has revealed the main physical and psychological stressors that can affect the promotion of health and well-being in prison settings. Additionally, it has revealed the differences and commonalities in the approach to health and well-being in prison design among the three Moldan's prison models, evidencing in each model the areas in which there is room for improvement, which in turn provided the researcher with the elements to develop a framework for evolution. These results could have important impacts on the preparation and facilitation of an evolutionary process for prison design globally. However, they do not yet address the question of what is the ideal custodial environment that designers and prison services should be inspired by and how this should be evidenced.

There is an increasing body of knowledge in other fields that can be applied in prison settings to evaluate the current efficacy of design decisions, such as Post Occupancy Evaluation (POE) (Leaman, Stevenson and Bordass, 2010; Stevenson, 2019), or the development of guidelines to implementation of programs and strategies to encourage healthy and more active lifestyles, reducing occupant exposure to harmful agents, to provide acceptable habitable conditions (U.K. Green Building Council, 2016; International WELL Building Institute, 2019). However, there is still room for research which actually evidences the performance of prisons in relation to health and well-being design intentions.

The overwhelming variety of architectonical styles, combining many different penal philosophies, security standards, and socio-political approaches to punishment and social life shows that there is still a gap in research which evidentially identifies which prisons are the most effective custodial environments in delivering predicted health and well-being outcomes and which are the most appropriate tools to assess these.

Therefore, there are a number of areas where further research is required. These areas include:

- Identifying the elements in carceral design in the Rehabilitation model in which inmates and ex-inmates place the greater importance as the factors that enable or preclude their well-being, and evaluate how is perceived their effects on achieving desistance and resettlement
- 2) Identifying to what extent the differences in physical carceral conditions —between the newest and the oldest Rehabilitation model prisons— can be linked-to prison outcomes such as violent events, suicidal attempts, depression levels, recidivism, or well-being; why such differences occur; and what happens as a result of them.
- Identifying and understanding the elements of prison design that prison personnel —who work directly with inmates— consider fundamental in the improvement of both the well-being and the odds of desistance of inmates and why.
- 4) To determine to what extent the main harmful agents highlighted in this study (See Table 5-1) are present in each of the prisons in the UK, how they can be mapped, and how they correlate with both personnel and inmates' well-being and behaviour.
- 5) To understand the underlying forces that are preventing the UK prison system and the UK government, from evolving from a Safety prison model toward a Rehabilitation model, and how those forces can be overcome.
- 6) Further development of the initial outline framework proposed in this thesis for designing prisons for health and well-being, by trialling this in various studies in different countries.

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Appendix

Appendix 1: Summary of findings of well-being factors

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
		Noise	Decrease in well-being and health	Positive Emotions	Veitch, 1990; Hygge and Knez, 2001; Stansfeld and Matheson, 2003
		Noise	One of the most important contributors to tension or stress within prison staff	Positive Emotions	Rostad and Witke, 1997
		Noise	Violence is significantly lower in prisons with less noise	Relationsh ips	Bierie, 2012a
			The American Jail Asociation (AJA) through the "The Acoustical Design of Day- rooms" sets the maximum noise level during daytime at 65 dbA		Krasnow and Parker, 1998
coustic Levels			The American Correctional Asociation (ACA), also in the USA, sets the maximum level in 70 dbA during the day and 45dbA at night		ACA, 2003
	Positive Emotions	Positive Emotions	"In an effort to reduce noise, consideration should be given to the use of materials and panels that dampen the acoustics of a Space, especially in large communal areas. Cells that connect to open communal spaces should have a closed frontage rather than open bars. This allows prisoners the opportunity to withdraw from a noisy environment into a quieter Space ."		UNOPS, 2016
		Noise	Cognitive impact, annoyance, sleep disturbance and cardiovascular health	Positive Emotions	Stansfeld and Matheson, 2003
		Noise	Increase arousal.	Relationsh ips	Loewen and Suedfeld , 1992
		Noise	Positive Emotions and life satisfaction	Positive Emotions	Van Praag, Van Praag and Baarsma, 2005
		Noise	Can result in annoyance and might be accompanied by negative responses, such as anger, displeasure, exhaustion, and stress-related symptoms	Engagem ent/Flow	Basner et al., 2014
		Noise	Noise level explains a significant proportion of the variance in annoyance, which is associated with psychological and physical symptoms, psychiatric disorder and use of health services, and may be a risk factor for psychiatric morbidity	Engagem ent/Flow	Stansfeld, 1992

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
		Noise	Cardiovascular system and causes manifest diseases including hypertension, ischaemic heart diseases, and stroke	Positive Emotions	Basner et al., 2014; Jarup et al., 2005
		Noise	Systolic and diastolic blood pressure increase with noise exposure, producing changes in heart rate and causing the release of stress hormones such as catecholamines and glucocorticoids	Engagem ent/Flow	Babisch, 2003
		Noise	The decrease in environmental satisfaction and job satisfaction	Positive Emotions	Sundstrom et al., 1994
		Noise	Sleep quality	Positive Emotions	Basner et al., 2014; Levy- Leboyer and Naturel 1991; Basner, Samel and Isermann, 2006
			In inmate rooms/cells it must be at least 20 fc (215 lx) at desk level and in personal grooming areas		ACA, 2003, p. 41
	Positive Emotions		National Institute of Corrections (NIC)'s Jail guide design suggest that artificial light levels should preferably reach 50 to 70 footcandle (238 to 753 lx) at 30 inches above the floor surface		Kimme, Bowker and Deichman, 2011
			Artificial light shall satisfy recognised technical standards		Council of Europe, 2006, p. 9
		Inadequate exposure	Exposition to the bluish wavelength light spectrum during night time leads to melatonin suppression	Positive Emotions	Thapan et al. 2014
Artificial Light		Inadequate exposure	Lack of exposure to light results in alteration of the biological clock while exposure to LED light as little as 136 lux during night hours can produce the immediate melatonin suppression and cortisol secretion	Positive Emotions	West et al., 2011
		Inadequate exposure	Mood variations as a result of inadequate lighting features	Relationsh ips	McCloughan, Aspinall and Webb, 1999; Knez, 1995; Knez, 1995
		Inadequate exposure	Behavioural and Psychological Symptoms of Dementia (BPSD) problems had been experienced when the light was dim or at dusk among patients with dementia, showing symptoms such as dysphoria, wandering, emotional disorders, and insomnia	Positive Emotions	Wong et al., 2014
		Inadequate exposure	Bright-light treatment led to a more than 50% decrease in the	Positive Emotions	Rao et al., 1992

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
			Hamilton Rating Scale for Depression (HRSD)		
		Inadequate exposure	Bright light produces an increase in subjective mood and subjective alertness	Positive Emotions	Leichtfried et al., 2015
		Inadequate exposure	Intermittent nocturnal exposure to bright light has a favourable effect on subjective mood and well-being	Relationsh ips	Hoffmann et al., 2008; Wessolowski et al., 2014
		Inadequate exposure	lighting intervention significantly reduced depression scores and agitation scores	Positive Emotions	Plitnick et al., 2014
		Inadequate exposure	High correlated colour temperature fluorescent lights (17000K) could provide a useful intervention to improve well-being and productivity	Accomplis hment	Tomkins and Schlangen, 2007
		Inadequate exposure	Using LED and Fluorescent light (which has no blueish wavelengths), show increased fatigue ratings	Accomplis hment	Hawes et al.,2012
		Inadequate exposure	A significant, medium-sized effect on aggressive behaviour among students and a greater increase in prosocial behaviour compared with the pupils in a control group, who were exposed to standard lighting during the nine-month measurement periods	Relationsh ips	Wessolowski et al., 2014
Light	lotions	Inadequate exposure	An adequate combination of illuminance 350-1000 Lux and CCT 3000-12000K has shown a positive influence on student concentration	Accomplis hment	Sleegers et al., 2012
Artificial L	Positive Em	Inadequate exposure	An increase of 16.8% in the average number of words read for a class, and 20.8% fewer errors of omission in a 'concentrate' light setting, compared with the control group	Accomplis hment	Barkmann, Wessolowski and Schulte-Markwort, 2012
ir quality	nships	Airborn diseases	Prisoners typically have a high prevalence of tuberculosis (TB) related to the normal population, and the difference is even higher in many low- income countries	Relationsh ips	Fazel and Baillargeon, 2011
Indoor air	Relation	Airborn diseases	Facilities such as prisons that house a large number of people who do not want to be there and come with a variety of medical conditions are high- risk places of contagion	Relationsh ips	Lehmann, 2012; Aguilera et al., 2016

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		Airborn diseases	Prisons and hospitals are both complex facilities often containing occupants that are "predisposed or possibly more sensitive to problems associated with Indoor air quality."	Relationsh ips	Voelker, 1994, p. 1886
		Discomfort	lons reduced the complaint rate for a headache by 50% and also significantly reduced the number of complaints of nausea and dizziness.	Relationsh ips	Hawkins, 1981
		Discomfort	Smoking is highly correlated with low well-being as measured by both emotional and life evaluation	Relationsh ips	Kahneman and Deaton, 2010
		Lack of privacy	Lack of privacy not only affect positive emotions by exposition to degrading situations and loss of dignity but also can negatively affect human relationships and producing a loss of meaning in life through dehumanisation	Meaning	Fairweather, 2000b
		Lack of privacy	The lack of privacy in prison in basic acts such as using the toilet, prevent inmates of the sensation of having a normal life and conduct them to a state of dehumanisation	Meaning	Fairweather, 2000b
smoo.		Lack of privacy	In prisons, the lack of privacy affects well-being and certainly increases the probabilities of affecting physical health	Meaning	Fairweather, 2000b; Evans, 2003; Evans, Wells and Moch, 2003
door bathr		Lack of privacy	The feeling of unsafety is even higher for those with mental disorders and recent prison- based victimisation	Positive Emotions	Blitz, Wolff and Shi, 2008
Ē		Fear	Fear of crime, theft victimisation, and physical assault, negatively influences inmates and staff's well-being	Engagem ent/Flow	Lelkes, 2006a; Cornaglia, Feldman and Leigh, 2014; Sulemana, 2015
		Fear	Feelings of vulnerability and fear of crime have a major impact on positive emotions and indirectly in life satisfaction by decreasing people's sense of control over their lives	Engagem ent/Flow	Adams and Serpe, 2000
		Fear	Victims of crime systematically report lower levels of well- being, and, to some extent, higher levels of fear than non- victims	Engagem ent/Flow	Denkers and Winkel, 1998

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
		Fear	However, the effects of fear on non-victims' well-being are also affected. This effect has been shown by Australian research in which revealed a strong negative relationship between rates of violent crime in an area and the well-being of non- victims	Engagem ent/Flow	Cornaglia, Feldman and Leigh, 2014
		Fear	Architecture can affect the security	Engagem ent/Flow	Sundstrom et al., 1996; Wortley, 2002
		Fear	A correlation has been found between the adverse reactions among inmates and the number of inmates per housing unit; fewer adverse reactions occurred in subdivided than unsubdivided dormitories	Engagem ent/Flow	Ellis and Paulus, 1989
		Fear	Social trust, measured by trust in 'most other people' has been associated with higher life satisfaction and happiness, and a lower probability of suicide	Relationsh ip	Helliwell, 2003; Helliwell and Putnam, 2004; Hudson, 2006
		Lack of Safety	The physical environment can affect actual rates of crime as well as fear of crime	Engagem ent/Flow	Holahan, 1986; Evans, Wells and Moch, 2003; Wener, 2012
		Lack of Safety	In prison, the area that was considered most dangerous was showers and segregation units, followed by travel to and from prison wings, with 23% of the prison population perceive danger in these places	Engagem ent/Flow	O'Donnell and Edgar, 1999
		Temperature	Thermal comfort has been associated with well-being and health	Relationsh ips	Rehdanz and Maddison, 2005; Hawkins, 1981
		Temperature	High seasonal temperatures have been consistently associated with violence	Relationsh ips	Megargee, 1977; Rotton and Cohn, 2000; Landis, 2014
Thermal comfort	Emotions	Temperature	Although higher mean temperatures in the coldest month can increase happiness, higher mean temperatures in the hottest month have a counter effect	Positive Emotions	Rehdanz and Maddison, 2005
	Positive	Temperature	In a controlled environment, the increasing operative temperature can have a slight but significant negative effect on general Sick Building Syndrome (SBS) symptoms, such as the intensity of a headache, well-feeling or fatigue. Similarly for self- evaluated concentration ability and performance	Accomplis hment	Kolarik et al., 2007

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
nal comfort	ve ons	Temperature	A lack of control of temperature and humidity will contribute to the day-to-day variation in complaints of illness and discomfort	Positive Emotions	Hawkins, 1981
Thern	Positi Emoti	Temperature	Increase in temperature are positively correlated with suicide rates	Positive Emotions	Akkaya-Kalayci et al., 2017; Burke et al., 2018; Gao et al., 2019
		No natural patterns	Studies on visual discomfort measured through neural responses demonstrated that visual discomfort is associated with colour combinations and patterns that are rare in nature – conditions that are not necessarily rare in the modern urban environment	Positive Emotions/ Meaning	Wilkins, 2015
Colours	Meaning	Colours	Specifying colours on the basis of spaces being 'active', "contemplative', 'restful' or whatever, to be congruent with the mental or behavioural activities they enclose is simply unjustified [However] There are demonstrable perceptual impressions of colour applications that in turn can affect the experiences and performances of people in settings	Meaning	Wise and Wise, 1988, p. 110
ight and	Emotions		dayrooms -minimum 12 sq.ft. transparent glazing + view to the outside, + 2 sq. ft of glazing per inmate without an external view.		ACA, 2003, pp. 41–42
Natural I	Positive F		inmates confined in cells for more than 10 hrs must have access to <i>Natural light</i> via the opening of at least 3 sq.ft with a view to outside REDUCE TEXT BELOW AS SHOWN ABOVE		ACA, 2003, pp. 41–42
Natural light and sunlight	Positive Emotions		NIC's Jail design guide: the need or desire for <i>Natural light</i> in housing areas should be balanced against security concerns. However, it and warns that providing <i>Natural</i> <i>light</i> , however, also poses a potential security or management problems such as escape; passage of contraband; vandalism; view conflicts with persons outside the facility; or view conflicts between housing units		Kimme, Bowker and Deichman, 2011, p. 256 and p.158

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
			"the windows shall be large enough to enable the prisoners to read or work by <i>Natural light</i> in normal conditions and shall allow the entrance of fresh air except where there is an adequate air conditioning system."		Council of Europe, 2006, p. 9
			NIC's Jail design guide only mention it in exercise areas, although it recognises that direct exposure to sunlight is especially beneficial to both emotional and physical well- being		Kimme, Bowker and Deichman, 2011
		Lack of sunlight	vitamin D deficiency	Positive Emotions	Boyce, Hunter and Howlett, 2003; Webb, 2006; Nwosu et al., 2014
		Lack of sunlight	melatonin production, body temperature, cortisol production and alertness	Positive Emotions	van Bommel 2006
		Lack of sunlight	circadian (daily) and circannual (seasonal) rhythms	Positive Emotions	Braun et al. 2009
		Lack of light	health and well-being	Positive Emotions	Kreitzer and Koithan, (2014
		Lack of full light spectrum	circadian rhythm of hormone secretions and body temperature with implications for sleep/wake states, alertness, mood and behaviour	Relationsh	Hawes et al., (2012
		Lack of exposure	serotonin by the brain was directly related to the prevailing duration of bright sunlight and rose rapidly with increased luminosity	Positive Emotions	Lambert et al., 2002
		Lack of exposure	Serotonin abnormalities appear to be related to anxiety, depressed mood, impulsivity and aggression dysregulation	Positive Emotions	Apter et al., 1990
		Lack of exposure	Institutional settings, such as prisons, may offer far less lighting than the minimum required.	Positive Emotions	Bernhofer et al., 2014
e and		Lack of Nature	Natural landscapes provide a stronger positive health effect compared to urban landscapes	Positive Emotions	Velarde, Fry and Tveit, 2007
vith nature	ltionships	Lack of Nature	Living surrounded by vegetation reported significantly lower feelings of aggression	Relationsh ips	Frances E Kuo and Sullivan, 2001
Contact witl	Rela	Lack of Nature	Incidences of both violent behaviour and violent crimes committed by residents of relatively "greener" buildings were greatly reduced	Relationsh ips	Frances E Kuo and Sullivan, 2002

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
			compared to the incidences in buildings with less vegetation in surrounding areas		
		Lack of Nature	Actual and pictorial nature contact benefits moods, but actual nature is more effective	Positive Emotions/ Relationsh ips	Brooks et al., 2017
		Lack of Nature	Positive emotions were associated with paintings of natural content while ambivalent and even negative emotions were elicited upon seeing paintings whose content was abstract or ambiguous	Positive Emotions	Ulrich, 1991
		Lack of Nature	Well-designed hospital gardens can reduce stress and improve clinical outcomes not only through mechanisms such as increasing access to social support and providing opportunities for positive escape from stressful clinical settings but provide at the same time restorative and pleasant nature views	Meaning	Ulrich, 2002
		lack or views	Positive 'green' and outwardly viewed urban landscapes were found to have a positive effect on health	Positive Emotions/ Meaning	Velarde, Fry and Tveit, 2007
		lack or views	The number of visits to the infirmary for legitimate health reasons was significantly less for patients with an "outward" natural view ($p \le 0.05$)	Positive Emotions/ Meaning	Moore, 1981
Quality of views	sitive Emotions	lack or views	Short-term recovery from stress or mental fatigue, faster physical recovery from illness and long-term overall improvement on people's health and well-being was identified as effects of exposure to natural landscapes	Positive Emotions	Velarde, Fry and Tveit, 2007
	-	lack or views	Simply viewing certain types of nature and garden scenes significantly decreased stress within only five minutes or less	Meaning	Ulrich, 2002
		lack or views	Patients who had a view of nature, the occurrence of delirium while in post-operative recovery was less than half of that found in the windowless recovery group	Positive Emotions	Wilson, 1972
Space	Relationships		The ICRC and the UN recommends a minimum Space of 5.4 m ² for individual cells and 3.4 m ² /person in multiple cells with single beds, reduced to 2.6 m ² /person when		UNOPS, 2016; ICRC, 2012

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
			using double bunks and 2.3 m ² /person with triple bunks		
			Single cells must have 3.25 m ² (35 square feet) of "unencumbered Space ". Unencumbered Space is defined as usable Space that is not encumbered by furnishing or fixtures. At least one dimension of the unencumbered Space (length or wide) must no be less than seven feet, and the cell must provide enough Space for a bed, plumbing fixtures, desk, and locker		ACA, 2003
			4 square metres for prisoners in shared accommodation and 6 square metres for an individual prison cell with at least 2m of Space between walls and 2.5m between floor and ceiling of the cell		Council of Europe, 2015
			A minimum area of 6 square meters per individual cells with a minimum radius of 2 meters		Ministério da Justiça do Brasil, 2011
		Lack of Space	"is the number [of people in the cell] that triggers the unhappiness rather than Space per person, even when it could be generous."	Positive Emotions	Fairweather, 2000b
		Lack of Space	The minimum time an inmate must be allowed to spend out of their cell will depend if they have shared cells and if they have the minimum per capita Space in the cell	Positive Emotions	Casale and Plotnikoff, 1989
		Lack of Space	Even short-term exposure to overcrowded prisons has revealed significant negative impacts on positive emotion and psychological distress	Positive Emotions	Evans, 2003
		Lack of Space	Crowding affects the ability to develop positive relationships, leading to social withdrawal, reduced pro-social or cooperative behaviours, and stress-related impacts on physical and mental health	Relationsh ips	Wener, 2012
		Lack of Space	Increasing the level of available Space in prison units was associated with a decrease in aggressive incidents	Relationsh ips	Rago, Parker and Cleland, 1978
		Lack of Space	lack of Space and privacy has been linked with increased aggression especially in men	Relationsh ips	Kinzel, 1970; Zimring, 1981

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
		Lack of Space	Higher rates of sick call were found among prisoners exposed previously to high- density conditions than among prisoners who not	Positive Emotions	Wener and Keys, 1988
		Lack of Space	Complaints, and perceived crowding increased as the number of inmates increased	Relationsh ips	Fairweather, 2000b
nment		Lack of Design	Design and quality of a home and surrounding built Environment is a key contributor to the health and well-being of the people who live there	Relationsh ips	U.K. Green Building Council, 2016
ind enviro	otions	Grime	Life satisfaction can also be reduced by living in a place which has pollution, grime, or other environmental problems	Positive Emotions	Ferrer-i-Carbonell and Gowdy, 2007 Turner, J and D Moran (2018)
of materials a	Positive Em	Deprivation	Living in deprived areas has been found detrimental to life satisfaction, affecting also additional dimensions of well- being	Positive Emotions	Stoll, Michaelson and Seaford, 2012
Quality o		Deprivation	Living in an area which people perceive as deprived reduces subjective well-being	Positive Emotions	Shields and Price, 2005; Guite, Clark and Ackrill, 2006; Ferrer-i- Carbonell and Gowdy, 2007; Dolan, Peasgood and White, 2008; Abraham, Sommerhalder and Abel, 2010
		Bad quality of sleep	Several studies have found a positive relationship between good quality of sleep and psychosocial functioning	Positive Emotions	Zohar et al., 2005; Hamilton et al., 2007; Hamilton, Catley and Karlson, 2007
ē	Positive Emotions	Positive perceptions	Positive perceptions of the surrounding physical environment are linked to stress reduction	Positive Emotions	Ulrich et al., 1991; Hartig et al., 2003
Stress conti		Burnout	burnout is a condition that is produced when stress is not mediated, or that can not be reduced by the individual, and including psychological symptoms, as well as physiological symptoms by some	Positive Emotions	Nucho, 1985
		Lack of Control	People who do not have control over their environments often suffer from various kinds of stresses	Positive Emotions	Dilani, 2001
sion/suicide	eaning	Sleep deprivation	Sleep problems have also been associated with a decrease in both positive emotion and a sense of purpose in life	Meaning	Kahneman et al., 2004; Steptoe et al., 2008
Depressi	Mea	Sleep deprivation	Sleep problems have also been associated with lower life satisfaction	Meaning	Ferrer-i-Carbonell and Gowdy, 2007

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
		Sleep deprivation	'Optimal sleepers' (those reporting an average of 6–8.5 hours of sleep per night) have reported fewer symptoms of depression and anxiety and higher levels of environmental mastery, personal growth, positive relations with others and self-acceptance	Positive Emotions/ Meaning	Hamilton et al., 2007
		Deprivation	Design and quality of the living area and the surrounding built environment is a key contributor to the health and well-being of the people who live there	Positive Emotions/ Meaning	U.K. Green Building Council, 2016
		Deprivation	Living in an area which people perceive as deprived reduces subjective well-being	Positive Emotions/ Meaning	Shields and Price, 2005; Guite, Clark and Ackrill, 2006; Ferrer-i- Carbonell and Gowdy, 2007; Dolan, Peasgood and White, 2008; Abraham, Sommerhalder and Abel, 2010
care	Positive Emotions	Sleep deprivation	Sleep problems have also been associated with deterioration of physical and mental health	Positive Emotions	Altevogt and Colten, 2006
Mental health		Control	Prison staff, present poorer physical conditions in the prisons they worked in was detrimental for their well-being, resulted in more sick-leave and were more likely to have increased levels of drinking and smoking	Positive Emotions	Bierie, 2012b
		Lack of Comprehensibi lity	Comprehensibility improve positive Relationships through social integration, social engagement, participation, and social support	Relationsh ip	Armstrong, 2000; Abraham, Sommerhalder and Abel, 2010
lerence	qihi	Lack of Control	Feeling in control of situations (manageability) is an important factor affecting stress levels and health conditions	Relationsh ip	Antonovsky, (1987
Sense of col	Relations	Lack of Control	finding refuge in the housing area of the prison is contributing to the sense of manageability and therefore, to the general well-being	Relationsh ip	Evans, 2003
0)		Lack of Control	Comprehensibility, manageability 'sense of control', and meaningfulness have been independently or collectively related to well- being	Positive Emotions	Dilani, 2001, 2008
Universal	Accomplis hment	Lack of control	Among individuals with disabilities, control over social aspects of the housing areas was more important than	Accomplis hment	Cooper and Rodman 1994

Factor	Main PERMA Component	Harmful agents	Findings, Possible Effects, or Recommendations	Individual PERMA Compone nts affected	References
			control over physical aspects in predicting satisfaction.		
		Sleep deprivation	Sleep deprivation in prison inmates can be related to aggressive behaviour, violence, and anger	Relationsh ips	Kamphuis et al., 2012; Vogler, Shared first authorship et al., 2014
		Sleep deprivation	Treatment of sleep disturbances reduces aggressiveness and problematic behaviour. Sleep deprivation increases aggressive behaviour in animals and angriness expression of aggressive impulses in humans	Relationsh ips	Kamphuis et al., 2012
Il behaviour	onships	Sleep deprivation	Vulnerable kind of population, such as forensic psychiatric patients, may be particularly vulnerable to the emotional dysregulating effects of sleep disturbances	Positive Emotions	Kamphuis et al., 2012
ntisocia	Relati	Sleep deprivation	There is a link between sleep difficulties and aggression and self-control in adolescents	Relationsh ips	Meldrum, Barnes and Hay, 2015
Ā		Sleep deprivation	Overall aggression was found to be predictive of sleep quantity and quality in a sample of incarcerated adolescent male	Relationsh ips	Ireland and Culpin, 2006
		Sleep deprivation	Sleep problems most likely contribute to loss of control over emotions, including loss of regulation of aggressive impulses to context-appropriate behaviour	Relationsh ips	Kamphuis et al., 2012
		Type of cell	Prisoners housed in older units and in units with more double cells were less positive about the officer–prisoner interactions	Relationsh ips	Beijersbergen et al., 2014





Appendix 3: Codebook Manifest Content Analysis

Nodes

1ARCHITECTURE FACTORS	ARCHITECTURAL FACTORS RELATED TO HEALTH AND WELL-BEING THAT CAN BE PRESENT IN THE ARCHITECTURAL DESIGN OF ANY TYPOLOGY OF BUILDING IN GENERAL.
ACOMFORT VARIABLES	Architectural Factors about Comfort
01. Acoustic Levels	Any mention that is important (or not) to consider acoustic control and to reduce the negative effect of noise
02. Artificial Light	Any mention of the importance of pay attention (or not) to the quality of artificial light
03. Indoor Air Quality	Any mention of the importance of paying attention (or not) to the quality of air inside the building (or cell). It also considers any mention of bad smells and its consequences.
04. Indoor Bathroom	Any mention of the existence or non-existence of indoor-cell bathroom. Including technical features but excluding statements about the reasons for considering them.
05. Thermal Comfort	Any mention of thermal conditions consideration. Include heating, cooling or the consideration of local temperatures or climates.
B SENSORIAL VARIABLES	AF that interact and work as an interface between the body and mind of the user and the external world.
06. Colours	Any mention of colours as a variable important (or not) to pay attention to promote health and well-being.
07. Daylight	Any mention of daylight as an important (or not) architectural variable in relation to well-being and or health.
08. Nature	Any mention of the relevance (or irrelevance) of pay attention to include nature as a variable that promotes health and well- being.
09.Quality of Views	Any mention of the relevance (or irrelevance) of pay attention to the quality of views from the windows cell to promote health and well-being. Consider the quality of views must be understood as the effort to bring to the observer the possibility to see more than walls, bars and security elements.
10. Space	any mention to square footage or surface in a cell. It includes mentions to geometry, number of occupants of the space, overpopulation or overcrowding.

C PHYSICAL FEATURES	Physical characteristics of architectural elements
11. Doors Features	Any mention to size, quantity or characteristics specifically related to
12. Floor Features	Any mention to size, quantity or characteristics specifically related to
13. Quality of Materials	Any general mention of physical, sensorial properties of materials (not specifically mentioned as a feature of windows, doors, walls, floor or ceiling)
14. Furniture and fixtures	Any mention of features, quality of textile elements like curtains or the need to consider any furniture in the cell. It also considers any mention to features, quality or the need to consider fixtures such as lamps, or affixed beds.
15. Walls Features	Any mention to size, quantity or characteristics specifically related to
16. Window cell Features	Any mention to size, quantity or characteristics specifically related to

2.-HEALTH AND WELL-BEING

HEALTH AND SAFETY	
17. Health in prison	Any mention of the health condition of inmates before, during or after being in prison as a particular aspect of imprisonment
18. Stress	Refers to any SITUATIONS that can promote stress. Promotors can be elements or situations that create non- desirable and stressful emotions like fear, angriness, lack of control. Do not confound with negative distractors in which are considered environmental elements rather than situations.
19. Depression_ Self-harm_ Suicide	Any mention of any issue related to inmate depression, self-harm or suicide
20. Communicable Diseases	Any mention of the needs to pay attention to the design process to prevent infections or transmission of diseases.

21. Mental Health Care	Any mention to consider the pre-prison, in-prison, or post- prison mental health condition of the inmate or the staff.
22. Non- communicable Diseases	any mention to the importance to consider how design affect (or not affect) in communicable diseases
WELL-BEING	
23. Avoiding Negative Distractors	Environmental elements that elicit negative feelings, stressing the individual and increasing worrisome thoughts
24. Sense of Coherence	three components: 1. The ability for people to understand what happens around them; 2. To what extent they were able to manage the situation on their own in their social network; 3. Ability to find meaning in the situation. These three elements, comprehensibility (cognitive), manageability 'sense of control' (instrumental/ behavioural), and meaningfulness (motivational), formed the concept: a sense of coherence. Include coherence for inmates and staff, between purpose and architecture.
25. Preventing Isolation	Refers to any consideration of the importance of social relationships for users in general and prisoners in particular. It includes any mention about if or how the built environment affects positively or negatively over the social relationship. Any mention of the presence of social support or social contact or lack of presence of social support as isolation
26. Human Senses	Any mention of any issue related to vision, hearing, olfaction and touch
27 Promoting Positive Distractors	Environmental elements that elicit positive feelings hold attention and interest without stressing the individual and reduce worrisome thoughts
28. Principle of Normality	Any mention or suggestion related with the Scandinavian "principle of normality" that says that "A day living in prison must be as normal as a day living outside prison."
29. Self-esteem promotion	Refers to any consideration of the importance of self- esteem for users in general and prisoners in particular. It includes any mention about if or how the built environment affects positively or negatively user's self- esteem
30. Universal Design	Any mention to design for disabilities or different ages, cultures or languages or gender

3.-PRISON FACTORS OR ISSUES

A. CONCERNS ABOUT SECURITY	
31. Antisocial behaviour	Any issue related to Inmate to inmate assault, Inmate to staff assault, aggressive behaviour, antisystem behaviour, angriness
32. Escape	Any mention of the possibility, method, or attempt to escape
33. Emergencies in prison	Any aspect related to the risk or experience of the fire in a prison
34. Traffic and drugs	Drug-related issues (Consumption or treatment) or Stop ragging, hiding or trading of Illegal or Unauthorised species.
B. PRISON PURPOSES	
35. Inmates Education	Any mention of the importance (or not) to providing education and training programs
36. Rehabilitation	Any mention of the rehabilitation as a purpose of the project or the system
37. It's Just Deprivation of Liberty	Any mention of the punishment as an only privation of liberty or being separated from the rest of society.
38. Work for Prisoners	Any mention about the need or the benefits of working programs into prison
C. PRISON ARCHITECTURE ISSUES	
39. Designing for humans	Any sentence that shows a high level of awareness on the respect of the humane dignity of the users
40. Policies (in or about prison)	Any mention of the presence or lack of any policy. It includes comments about any necessary policy.
41. Designing by Standards	Any mention of the presence or lack of standards
42. Heritage as a 'burden.'	Any mention or suggestion about the cultural or architectonical heritage of the old system or the older way to design prisons.
43. Perception of Evolution	How the way of thinking about prison design or prison regime or prison goals, has changed or is changing through the years from one model to another or within a model at the time.
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44. Layout in relation to Program	Any mention of special layout or distribution of prison facilities or architectural units in relation to the program. It includes the nominal capacity of cells,
D. DECISION PROCESS	
45. Staff Issues	Any issue related to the lack of staff, their necessities, risk or lack of risk for staff.
46. Decision- making process	Any mention of decisions that have to be taken or to the process of making decisions about any aspect except when the decision is transferred for hierarchical reasons or financial reasons.
47. Financial obstacles	Any mention to prison issues related to budget, cost or finance,
48. Hierarchies	Any sentence that shows that a decision or guidelines must be resolved at a higher level or from a more directly affected person, institution or authority.
49. Inmate Status	Any mention to the status of prisoners as: 1 LEGAL STATUS: condemned, pre-trial, detainee; 2 DEMOGRAPHIC STATUS: gender, ethnicity, age or ageing (juvenile adult); 3 SECURITY STATUS: level of security of prison, (open, closed minimum, closed medium, closed maximum); 4 Level of risk of prisoners.
50. Other Obstacles	Any mention of barrier or obstacle (other than financial) that prevents that something happens. It also includes the believes or facts about the undesirable effects of too much comfort and a good environment in prison.
51. Setting Priorities	Any mention of or suggestion of priorities in architectural factors
52. Inclusion from the beginning	Any mention that the decisions of including health and/or well-being are made from the beginning of the project
4INTERVIEWEE	·

PERSONAL VIEW

53. Assumptions	Any	sentence	that,	in	the	eyes	of	the	analyser,	the
	inter	viewee is c	learly	take	en so	methir	ng fo	or gu	aranteed.	

54. Awareness of Social Pressure	The interviewee reports about social beliefs or way of thinking related to how prison, prison purpose, prison treatment or prison conditions must be.
55. Awareness of Improvements	Any architectural solution, process or change that can be seen as an improvement
56. Cultural Differences and social context	Any mention of cultural aspects or differences and external social context
57. It must be a punishment	Any statement about that it is necessary to make the inmate feels that it is a punishment.
58. Learning about Prisons	Specific events, processes or solutions that are seen as learning about prison design
59. Personal Attitude	It considers two scenarios: FACTS: An interviewee personal statement about personal feelings, preferences, likes or dislikes in relation to something. It includes the interviewee view about what a prison should be and any personal proposition. INTERPRETATIONS: A sentence that can show the personal or professional motivations of the interviewee.
60. International Unfamiliarity	Expression or evidence of lack of awareness or lack of specific knowledge in some area

Appendix 4: Analysis of importance

Nodes\\Importance

Name	Description
1. Highly important	The interviewee made a clear statement about the high level of importance of the code. Expressions such as "Highly important", "Is very important", "is the goal", or any expression that the code is necessary to reach the goals of the system should be seen as indicators of pertinence to this level. Talking about daylight: "and outside on the immediate surrounding just outside the window so is also very important to get enough daylight in it."
2. Important	The interviewee made a clear statement about the importance of the code. Expressions such as "important", "relevant" or "necessary" should be seen as indicators of pertinence to this level. Talking about Views: "Our prisons are located in very different some of the prisons are in the centre of the town, they can see the train from the window. Sometimes even in the centre if you are located down you can see only the wall, the prison wall, or you can see the others. But they are like in have in a
3. Neutral expression	Even though the meaning unit refers to the code, there is no indication about if it is important or not. Expressions in which the code is mentioned in relation to another matter should be seen as indicators of pertinence to this level. Talking about light: "Yeah, of course, there are there are some key key emh emhI think to work with light as I said earlier how many employees can you have amh related to how many inmates there are this is a very important amh decision because of the
4. Less important	The interviewee manifests the lower importance of this code. Expressions like "less important", not relevant" or "It depends" should be seen as indicators of pertinence to this level Talking about colours: "Researcher: Do you think colours are important in terms of well-being? Interviewee: Yes, colours too, but I think mostly the daylight to see which time of the day is, yeah."
5. Not important	The interviewee clearly said that the correspondent code is not important. Talking about views: " I think that doesn't make any difference."

			Total Frequency		
	COMFORT	01. Acoustics levels4102. Artificial light3903. Indoor air quality6404. Indoor bathroom2005. Thermal comfort11			
	SENSORIAL	06. Colours4907. Natural light10208. Contact with nature2009. Quality of views4110. Sease62			
nic Variables	PHYSICAL FEATURES	 Doors features Floor features Quality of materials Furniture and fixtures Walls features Windows features 	12 3 22 12 4 39		
Eudemo	HEALTH AND SAFETY	 Health in prison Stress control Depression / suicide Communicable diseases Mental health care Non-communicable diseases 	9 8 19 27 18 2		
	WELL-BEING	 23. Negative distractors 24. Sense of coherence 25. Preventing isolation 26. Human senses 27. Positive distractors 28. Normality 29. Self-esteem 30. Universal design 	7 80 39 7 21 33 6 8		
	SECURITY	31. Antisocial behaviour32. Avoid escape33. Emergency in prison34. Traffic and drugs	43 12 11 13		
oles	PROSPN PURPOSE	35. Inmates education 36. Rehabilitation 37. Only lost of freedom 38. Inmates' work	12 79 31 13		
essional Variał	PRISON ARCHITECTURE	 39. Designing for humans 40. Policy (in or about prison) 41. Design standards 42. Heritage as a 'burden' 43. Perception of evolution 44. Layout regarding program 	55 56 71 18 46 78		
titutional and Prof	DECISION PROCESS	 45. Staff issues 46. Decision making process 47. Financial obstacles 48. Hierarchies 49. Inmate status 50. Non-financial obstacles 51. Setting priorities 52. Considering well-being 	54 116 139 24 22 197 60 37		
	POINTS OF VIEW	 53. Assumptions 54. Social pressure 55. Improvements 56. Cultural and social context 57. It must be a punishment 58. Learning about prisons 59. Positive attitude on well-being 60. Extranational unfamiliarity 	12 27 51 50 5 46 70 32		

Appendix 5: General table of Frequencies of codes

Appendix 6: Comparison of importance of variables for High-level Staff among prison models

(Part	l out	of	2)
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	Interna Advi	ational sors	Variables	Hybrid Model	Safety Model	Rehabilitati on Model	Number of HLS groups	Summ
a)	PPA-I	b) PHA-I	Variabies	a) HLS-H	a) HLS-S	a) HLS-R	mention this variable	HLS
	6.4	2.3	47. Financial obstacles	5.8	10.0	4.6	0	20.4
	4.9	4.5	07. Natural light	2.9	9.0	6.4	0	18.4
	5.6	4.4	10. Space	4.2	8.0	4.2	0	16.3
	15.5	8.0	50. Non-financial obstacles	8.4	4.6	2.3	0	15.3
	2.6	1.7	24. Sense of coherence	4.9	5.4	4.3	0	14.5
	7.5	2.8	46. Decision making process	4.9	5.9	1.1	0	11.9
	1.1	3.0	36. Rehabilitation	3.8	4.2	3.7	0	11.7
	1.1	0.3	43. Perception of evolution	2.5	4.4	4.8	0	11.6
	2.1	2.6	41. Design standards	4.7	2.0	3.7	0	10.5
	0.0	2.1	44. Layout regarding program	2.1	4.5	3.7	0	10.2
	3.2	2.5	59. Positive attitude on well-being	3.0	3.8	2.3	0	9.0
	6.1	5.8	03. Indoor air quality	2.7	1.5	4.7	0	8.8
	0.0	1.3	06. Colours	3.0	3.3	2.4	0	8.7
	1.1	1.2	51. Setting priorities	2.5	3.7	2.3	0	8.5
	1.6	2.5	02. Artificial light	1.5	3.5	1.5	0	6.5
	3.2	0.7	55. Improvements	2.7	1.7	1.1	0	5.4
	0.0	2.5	31. Antisocial behaviour	3.8	1.2	0.3	0	5.3
	1.1	1.5	45. Staff issues	1.6	1.7	1.8	0	5.2
	0.5	1.4	58. Learning about prisons	1.1	1.8	1.5	0	4.5
	1.0	2.4	01. Acoustics levels	1.4	1.2	1.8	0	4.4
	2.1	1.3	52. Considering well-being	0.5	2.2	1.5	0	4.2
	0.8	1.8	21. Mental health care	0.6	2.0	1.6	0	4.2
	0.0	2.0	60. Extranational unfamiliarity	0.6	1.3	1.8	0	3.8
	2.0	1.5	16. Windows features	0.7	1.0	2.0	0	3.8
	1.5	2.3	09. Quality of views	1.2	0.4	2.0	0	3.5
	0.0	0.0	48. Hierarchies	1.0	0.9	0.8	0	2.7
	0.8	0.0	13. Quality of materials	0.3	0.4	1.3	0	2.0
	0.0	0.1	14. Furniture and fixtures	0.7	0.5	0.2	0	1.5

(Part 2 out of 2) Comparison of importance of variables for High-level Staff among prison models

	Interna Advi	ational sors	Variables	Hybrid Model	Safety Model	Rehabilitati on Model	HLS groups that did not	Summ HLS
a)	PPA-I	b) PHA-I		a) HLS-H	a) HLS-S	a) HLS-R	mention this	
	0.0	2.0	25. Preventing isolation	4.8	0.0	1.7	1	6.5
	0.8	2.6	27. Positive distractors	3.3	0.0	2.8	1	6.0
	3.2	5.3	40. Policy (in or about prison)	4.7	0.0	0.8	1	5.5
	6.4	0.8	56. Cultural and social context	1.5	0.0	2.0	1	3.4
	0.0	2.0	54. Social pressure	0.8	2.6	0.0	1	3.4
	1.6	0.0	49. Inmate status	0.0	2.6	0.7	1	3.3
	4.3	1.6	39. Designing for humans	1.7	0.0	1.6	1	3.3
	0.0	2.1	28. Normality	2.1	0.0	1.1	1	3.1
	0.8	0.3	17. Health in prison	0.7	0.0	2.2	1	2.9
	0.0	1.9	19. Depression / suicide	0.9	0.0	1.7	1	2.6
	0.8	0.5	08. Contact with nature	0.0	0.7	1.7	1	2.4
	0.0	0.0	32. Avoid escape	1.6	0.0	0.7	1	2.4
	0.0	1.2	34. Traffic and drugs	0.0	1.5	0.7	1	2.2
	0.0	0.3	26. Human senses	0.7	0.0	1.2	1	1.9
	2.8	0.8	05. Thermal comfort	0.6	0.0	1.2	1	1.8
	0.0	0.7	11. Doors features	0.0	0.4	1.4	1	1.7
	1.1	1.0	37. Only lost of freedom	0.0	0.4	1.2	1	1.6
	1.1	0.2	33. Emergency in prison	1.0	0.4	0.0	1	1.3
	0.0	1.1	42. Heritage as a 'burden'	0.4	0.0	0.7	1	1.2
	0.0	0.7	30. Universal design	0.0	0.5	0.5	1	1.0
	0.0	1.7	04. Indoor bathroom	0.0	0.0	3.4	2	3.4
	0.0	0.0	23. Negative distractors	0.0	0.0	1.5	2	1.5
	0.0	0.2	53. Assumptions	0.0	0.0	1.2	2	1.2
	2.8	6.0	20. Communicable diseases	0.0	1.1	0.0	2	1.1
	0.0	1.6	38. Inmates' work	0.8	0.0	0.0	2	0.8
	0.0	0.0	12. Floor features	0.7	0.0	0.0	2	0.7
	0.0	0.0	15. Walls features	0.7	0.0	0.0	2	0.7
	2.8	0.0	18. Stress control	0.0	0.0	0.3	2	0.3
	0.0	1.3	35. Inmates education	0.0	0.0	0.0	3	0.0
	0.0	1.0	29. Self-esteem	0.0	0.0	0.0	3	0.0
	0.0	0.6	22. Non-communicable diseases	0.0	0.0	0.0	3	0.0
	0.0	0.0	57. It must be a punishment	0.0	0.0	0.0	3	0.0
	100.0	100.0	Grand Total	100.0	100.0	100.0		300.0

Appendix 7: Comparison of the importance of variables of designers among prison models: (Part 1 out of 2)

	1. Interr Advi	national sors	Variables	Hybrid Model	HybridRehabilitationModelModel		Safety Model	Number of designers	Summ	
a)	PPA-I	b) PHA-I	T analysis	b) GD-H	b) GD-R	c) ID-R	b) ID-S	not mention this variable	Designers	
	15.5	8.0	50. Non-financial obstacles	13.7	3.0	7.2	8.7	0	23.9	
	6.4	2.3	47. Financial obstacles	5.8	4.0	7.7	3.2	0	17.6	
	7.5	2.8	46. Decision making process	6.1	8.2	1.5	3.2	0	15.9	
	4.9	4.5	07. Natural light	6.1	4.4	2.3	9.8	0	12.7	
	2.6	1.7	24. Sense of coherence	1.9	5.7	3.7	6.3	0	11.3	
	6.1	5.8	03. Indoor air quality	5.2	2.5	1.6	0.8	0	9.4	
	0.0	2.1	44. Layout regarding program	0.8	2.5	6.1	3.3	0	9.4	
	1.1	3.0	36. Rehabilitation	2.4	3.3	3.6	3.6	0	9.3	
	2.1	2.6	41. Design standards	5.8	2.0	1.1	1.5	0	8.9	
	1.1	1.2	51. Setting priorities	3.1	3.7	1.2	2.9	0	7.9	
	1.0	2.4	01. Acoustics levels	2.7	1.1	3.5	3.3	0	7.3	
	2.0	1.5	16. Windows features	0.7	3.4	3.3	1.5	0	7.3	
	0.0	1.3	06. Colours	3.9	2.5	0.7	5.2	0	7.1	
	3.2	2.5	59. Positive attitude on well-being	2.0	1.9	2.9	3.0	0	6.9	
	0.5	1.4	58. Learning about prisons	2.4	2.3	1.8	2.4	0	6.5	
	1.1	0.3	43. Perception of evolution	2.1	2.7	1.5	5.7	0	6.3	
	1.5	2.3	09. Quality of views	1.8	1.9	2.4	3.0	0	6.0	
	4.3	1.6	39. Designing for humans	1.4	2.1	2.4	2.4	0	5.9	
	1.6	2.5	02. Artificial light	1.8	1.8	1.3	1.7	0	5.0	
	5.6	4.4	10. Space	2.8	0.2	1.9	1.3	0	4.9	
	2.1	1.3	52. Considering well-being	1.8	0.8	2.2	1.3	0	4.7	
	0.0	2.5	31. Antisocial behaviour	2.1	1.2	1.4	1.0	0	4.7	
	6.4	0.8	56. Cultural and social context	1.2	1.2	2.1	3.6	0	4.5	
	0.8	0.0	13. Quality of materials	1.7	1.5	0.8	0.5	0	3.9	
	0.8	0.5	08. Contact with nature	0.2	0.9	2.5	2.3	0	3.6	
	2.8	6.0	20. Communicable diseases	2.0	0.3	0.5	1.2	0	2.8	
	0.0	0.1	14. Furniture and fixtures	0.5	1.3	0.7	1.7	0	2.5	
	0.0	2.0	54. Social pressure	0.9	0.7	0.9	1.2	0	2.4	
	0.0	0.0	32. Avoid escape	0.7	0.4	0.5	0.3	0	1.6	

Comparison of the importance of variables of designers among prison models: (Part 2 out of 2)

1. Intern	ational	Variables	Hybrid	Rehabi	ilitation	Safety	aroups that did	Summ
Advis	SORS			MO			not mention this	Designers
a) PPA-III	D) PHA-I	AE Otafficance	D) GD-H	D) GD-R	C) ID-R	D) ID-S	variablo	70
1.1	1.5	45. Statt Issues	0.0	2.4	5.5	2.2	1	7.9
1.1	1.0	37. Unly lost of freedom	0.7	3.8	1.7	0.0	1	0.Z
3.2	0.0	40. Policy (In or about prison)	3.0	2.4	0.0	0.0	1	5.4 4.0
0.0	0.0	40. Futranctional unfamiliarity	0.0	2.4	2.2	0.0	1	4.9
0.0	2.0		0.0	2.0	Z.4	0.3	1	4.3
0.0	1.7	10 Depression / quiside	1.9	0.0	1.4	0.0	1	3.0
0.0	1.9	19. Deptession/ suicide	0.0	1.3	1.7	1.0	1	3.0
0.0	1.1	42. Heritaye as a burderi	0.1 0.2	0.2	0.9	0.0	1	2.0
0.0	0.2	55. Assumptions	0.3	0.0	1.2	0.0	1	2.1
3.2	0.7	33. Improvements	1.0	0.0	0.3	1.1	1	1.9
0.0	0.7	11. DUUIS reduires	0.4	1.5	0.0	0.0	1	1.9
1.0	1.0	49. Initiale status	1.4	0.4	0.0	2.1 1 7	1	1.0
0.0	1.0	27. Desitive distractors	0.0	0.4	0.0	1.7	1	0.9
0.0	2.0	27. FUSILIVE UISLIDUUIS	0.2	0.0	0.0	0.0	1	0.9
0.0	1.0	21 Montal basth care	0.5	0.0	0.0	0.0	1	0.0
0.0	1.0 2.1	21. Wernality	0.0	0.3	6.0	1.0	2	10.2
0.0	2.1	25. Dreventing isolation	0.0	4.5	2.0	0.0	2	8.8
1.1	0.2	23. Emergency in prison	0.0	0.8	2.9	0.0	2	1.5
2.8	0.2	18 Stress control	0.7	1.0	0.0	0.0	2	1.0
2.0	0.0	30 Universal design	0.0	1.0	0.4	0.0	2	1.4
0.0	1.0	20. Salf-actaom	0.2	0.6	0.0	0.0	2	1.2
0.0	0.0	15 Walls faaturas	0.0	0.0	0.0	0.0	2	0.4
0.0	0.0	23 Negative distractors	0.0	0.0	17	0.0	2	17
0.0	0.0	57 It must be a nunishment	1.6	0.0	0.0	0.0	3	1.7
2.8	0.0	05. Thermal comfort	1.0	0.0	0.0	0.0	3	1.0
0.0	1.2	34 Traffic and drugs	0.0	0.0	0.0	0.0	3	07
0.8	0.3	17. Health in prison	0.0	0.7	0.0	0.0	3	0.7
0.0	0.3	26. Human senses	0.5	0.0	0.0	0.0	3	0.5
0.0	0.0	12. Floor features	0.0	0.0	0.0	1.0	3	0.0
0.0	0.6	22. Non-communicable diseases	0.0	0.0	0.0	0.0	4	0.0
122.7	137.5	Grand Total	119.8	134.8	134.2	115.9		269.0

Appendix 8: Variables not mentioned in each case

	Internatior	al Advisors	Hybrid	l Model	Safety	Model	Rel	nabilitation M	odel	Number of professional groups
	a) PPA-I	b) PHA-I	a) HLS-H	b) GD-H	a) HLS-S	b) ID-S	a) HLS-R	b) GD-R	c) ID-R	that did not mention this
Variables										variable
Acoustics levels										0
Artificial light										0
Indoor air quality										0
Natural light										0
Quality of views										0
Space										0
										0
Sense of conerence										0
Reliabilitation										0
Design standards										0
Decision making process										0
Einancial obstacles										0
Non-financial obstacles										0
Setting priorities										0
Considering well-being										0
										0
Positive attitude on well-being										0
Colours										1
Contact with nature										1
			-							1
Furniture and fixtures										1
Mental health care										1
Antisocial behaviour										1
Designing for humans										1
Layout regarding program										1
Staff issues	—									1
Improvements										1
Cultural and social context										1
										2
Positive distractors										2
Only lost of freedom										2
Policy (in or about prison)										2
Folicy (III of about prison)										2
Social pressure										2
										2
Doors reatures			-						-	3
Depression / suicide										3
Avoid escape										3
Emergency in prison	~								<u> </u>	3
Heritage as a 'burden'										3
Hierarchies		0								3
Inmate status									0	3
Indoor bathroom						•				4
Thermal comfort										4
Health in prison										4
Preventing isolation										4
Normality										4
Universal design										4
Inmates' work								•		4
Assumptions										4
Stress control										5
Human senses										5
Traffic and drugs	Ŏ									5
Inmates education										5
Walls features										6
Self-esteem										6
Eloor features										
Negative distractors										
Non-communicable_diagaaga										
It must be a punishment										- 8
It must be a punishment				-						8
humber of variables do not mentioned by this professional group	26	9	15	14	23	19	10	10	12	1
% of variables not mentioned by each										1
professional group	43%	15%	25%	23%	38%	32%	17%	17%	20%	l
		Variable <u></u>	vas not mei	ntioned by	this profess	ional group				
	Variable mentioned by this professional group									

Appendix 9: Themes and Meta-themes according to each case

Rehabilitation prison model		Safe	ety prison model	Hyb	rid prison model	International Advisors		
Meta- Themes	Theme	Meta- Themes	Theme	Meta- Themes	Theme	Meta- Themes	Theme	
	Connection with natural environment	n ess	Interpersonal space	l & s	Importance of preventing suicide		Need of professional maturity of designers	
	Privacy	g desig ver str	Min. uncertainty and creating Trust		Tendency to retribution through design	or ution ters	Need of a compendium of design standards	
ality gn	Minimising fear	Usin; to low	Avoiding agitating colours	Fear c pol conse	Subordination of rehabilitation to security	Need fc ecialise f design	Need for understanding the concept of cell	
Creating Norme through desi	Recreating outside normal life	etain ol	Nature through daylight		Divergent views of security and rehabilitation	ds	Need for consideration of cultural differences	
	Human contact	ing to r on contr	No windows to outside	city of -being	Community's retributive views affect budget allocation	equate ilt onment	Deplorable conditions	
	Normality through layout	Design	Natural light without views	of prion & well	Incongruence between political and rehabilitation goals	Inade bu envir	Inadequate infection control	
	Positive relationships		Overuse of artificial light	vel (alth	Social apathy	of and	Unawareness of	
ation	sation		Utilitarian approach	Lev	Lack of priority of health and well-being	d for tion c ities	consequences	
Optimis	Staff restrictions	ward & ishment	Well-being only if benefits are evidenced		Deplorable state of prisons	Nee Educa author	Authorities must be educated	
Financial	Minimising running cost	Rev	Avoiding amenities that do not lead to increase security	Lack of commitment	Lack of prison authorities' commitment	onal ence	Prison services' incongruences	
ional trency	Involving community	al	Financers' lack of knowledge in prison matters	sense	Resignation in front of the size of the problem	peration ncohero		
Operat transpa	Joint working	financi ions	Importance of initial cost	signers helples	Designers resistance to punishment-approach		imprisonment	
tion		uted ecis		De	Lack of design regulations			
Educa	Highly educated staff	Uneduca	Lack of priority of authorities to health and		Lack of prison policy	tternal ce	Lack of power of UN	
ona l Ice	Recidivism reduction justify initial cost		well-being	ck of utrol	Lack of planning	of Ex nfluen		
Operation: coherence	Operational coherence	Indirect external participation		Lac cor	Lack of control	Level	Endeavours to equal access to healthcare	

NOTES:

TEXT IN BLACK: Positive theme or meta-theme

Rehabilitation model Safety model

TEXT IN RED: Negative theme or metatheme

COLOURS CODE:

Hybrid model International Advisors

Appendix 10: Themes and meta-themes transformed in positive terms

Reha	bilitation prison model	Safe	ety prison model	Hyb	rid prison model	Inter	national Advisors
Meta-	Theme	Meta-	Theme	Meta-	Theme	Meta-	Theme
memes	Connection with natural environment	u sse	Interpersonal space	LO LO	Importance of preventing suicide	memes	Need of professional maturity of designers
	Privacy	design r stre	Min. uncertainty and creating Trust	ning f	Meaning in life through design	r ttion ters	Need of a compendium of design standards
lity gn	Minimising fear	Using to lowe	Avoiding agitating colours	Design mea	Equal status of importance for security and rehabilitation	Need fo specialise of design	Need for understanding the concept of cell
h desi	Recreating outside normal life		Nature in addition to daylight	well-being as institutional priority	Health & well-being as operational cornerstone		Need for consideration of cultural differences
Creating throug	Human contact	onmental raction	Windows to outside		Educating community in benefits of well-being promoting prisons	r adequate nvironment	Need for eradicate deplorable carceral conditions
	Normality through layout	Envir inte	Views to outside as normal buildings		Timely availability of data to align political and rehabilitation goals	Needs fc built e	Need for adequate infection control
	Positive relationships		Avoiding bluish light wavelength of light		Dissemination of benefits to reduce social apathy	cation es and	Make designers aware of the consequences
			Healthy approach	th &	Priority of health and well-being	Need for Edu of authoriti society	Authorities must be educated
ial ition	Staff restrictions	ty 11-being	promote safety and security through Well- being	Heal	Investing in updating of prisons		
Financ Optimis	Minimising running cost	Safe through we	Avoiding elements that lead to increase of anxiety	Accountability	Accountable decision-makers	tional rence	Congruence between purposes and actions
rational Isparency	Involving community	11 ons	Teaching Financers the economic benefits of well-being promoting prisons	Empowering Designers	Empowerment of designers through mandatory standards	 ● Opera Cohe 	Preventing overbooking
Ope tran	Joint working	ancia cisio	Keening control of initial		Ensuring babitability		
lcation	Highly educated staff	bated fin Sation de	cost without undermine well-being		Mandatory use of existent design regulations	ith lents	Porporting international
Edı	Placing priority on health	ng w green	minimum norms of treatment of prisoners				
onal nce	Recidivism reduction justify initial cost	-	and well-being Planning for the long-term rt ion all a				
Operati Coherer	Operational coherence	Operational transparency	Maximise external participation	purpose-bas	increase staffing to fit the purpose	Design interna	Ensuring equal access of inmates to health than free population
	NOTES:	TEXT IN B positive	LACK: <u>No change</u> (Original theme or meta-theme)		TEXT IN RED: Transformed meta-theme from negative	<u>I</u> theme or to positive	
	COLOURS CODE:	Re	habilitation model		Hybrid model	ors	
			salety model	1	international Advis	0.0	I

Appendix 11: Description of prisons visited by country

Country	Name of the	Description
	prison visited	
Norway	Prison Visited Halden Fengsel (Halden Prison)	Halden prison is a high-security prison and one of the largest prisons in Norway with a capacity for 252 inmates (228 inmates inside the prison and 24 additional inmates in the halfway house located immediately outside the walled area). The prison is located 116km south of the Norwegian capital Oslo, in the northwest of the town of Halden. The level of security of Halden prison can be clearly observed from the outside of the prison. Its 30ha site is surrounded by a 1.3 km long and 6 meters tall concrete wall, in addition to a 30 m wide security zone containing an external ring road, a ring fence, and several metallic towers full of sensors and CCTV cameras. In the inside, however, there are no visible traditional security elements. The prison was designed and built following the principle of normality, meaning that for prisoners, one day in prison has to be felt and lived as normal as a day in the outside community. It is worth to mention that Scandinavian prison systems have the highest rates of successful prison rehabilitation outcomes in the world.
Finland	Vantaa Vankila (Vantaa prison)	Vantaa prison is a Finnish high-security pre-trial prison (jail). It was designed and built to contain the prison population of the Helsinki Katajanokka prison which closed in 2002. It is located 21 km northeast the capital Helsinki, outside the city of Vantaa. With an average prison population of 237 inmates, the prison employs 138 people.
Finland	Helsinki Vankila (Helsinki Prison)	Opened in 1881, Helsinki prison was designed as three stories plus basement building, using a typical telephone pole shape. It is located in the Kalasatama district of Helsinki, Finland. It is the only prison operating at the moment in Helsinki after the close of Katajanokka prison in 2002. Helsinki prison has a capacity of 284 inmates. The prison interiors have been under renovation works to fit the current prison standards.

Finland	Vanaja Vankila	Vanaja has two units. One in Vanaja for female inmates and one in
		Onojen for male inmates. Vanaja female open prison is located 128
		km north to Helsinki, outside Hämeenlinna city. It works as a farm in
		which inmates live and work. The capacity of Vanaja is 60 women
		who live in separated living units for 6 people each. The Vanaja male
		open unit is located in Ojoinen sector, north of Hämeenlinna city. It
		has a capacity for 40 inmates who live and work in different areas of
		the unit.
USA	Kentucky	Luther Luckett Correctional Complex is a high-security prison
	Luther Luckett	located 40 km northeast of Louisville city in Kentucky, USA. It started
	Correctional	operating in 1981 to housing 486 inmates, but in 1990 was upgraded
	Complex	to receive a total prison population of 1997 inmates in double-
		bunking cells.
USA	Louisiana State	Louisiana State Penitentiary is the largest maximum-security prisons
	Penitentiary	in the USA. The prison (which is a maximum-security prison farm) is
		also known as Angola prison after the former plantation that
		occupied this territory. It is comprised of several camps, located 90
		km northwest of Baton Rouge and 250 km northwest of New
		Orleans. The prison farm site is 7,300 ha and the total prison
		population of 6,300 inmates under the control of 1,800 prison staff
USA	Metropolitan	
	Correctional	The Metropolitan Correctional Center, Chicago (MCC Chicago) is a
	Center, Chicago	Federal prison, located in the heart of Chicago, Illinois. It was
	(MCC Chicago)	opened in 1975 as one of the first prison facilities designed as using
		podular design with direct supervision. The building has 28 triangular
		stories and a rooftop exercise yard.
Chile	CP Bio-Bio	CCP Bio Bio is a 1200 places capacity Maximum Security Prison. In
	(Bio-Bio	Chile, the official prison occupancy level was reduced during the first
	Penitentiary	decade of the current century to a current 110.9% by the
	Complex)	development of a Public-Private Partnership (PPP) program of
		construction, in which seven new prisons were designed and built
		between 2000 and 2010. The program provided an additional
		capacity of 13,530 beds. Although those prisons implied a big step
		forward in Chilean carceral conditions, the fact that they were
		designed in a typical rectangular layout of indirect supervision (A
		corridor with cells on the sides) perpetuate the punitive hedonic
		prison philosophy and the lack of interest for inmate's well-being.
1	1	· · · · · · · · · · · · · · · · · · ·

Chile	CDP Santiago	
	Sur	The ex-Santiago-Penitentiary (1843), Today called 'CDP Santiago
	(South Santiago	Sur' is the largest prison, yet the oldest prison in Chile. Although
	Detention	official data about prison overcrowding shows a significant decrease
	Centre)	due to the opening of new prisons, the reality in the old prisons did
		not show a dramatic change. A report issued in 2018 by the
		Supreme Court of Chile in relation to the carceral conditions
		established that the 'CDP Santiago Sur' (1843) —with an officially
		informed capacity of 2384 inmates — was housing 4,486 inmates
		equivalent to an occupancy level of 188%. The total prison
		population in Chile is 49.945 inmates -45.773 male and 4.172
		female (Gendarmería de Chile, 2019). The Chilean prison service
		(Gendarmería de Chile) manages one hundred and five detention
		and sentencing centres distributed in the 4,400 Km length of the
		country.

Appendix 12: Latent Content Analysis Sunbursts



















Appendix 13: Cause-effect loop diagrams



The above diagram shows how the allocation of financial resources in prisons rather than other services, such as public health and education, in countries with low income, produce an increase in the public level of disapproval over the prison administration. This result in higher governmental pressure to improve and to prioritise security, to decrease the relevance of design standards and the influence of designers, which in turn result in a lower objective quality of carceral conditions and lower health and well-being of inmates and staff. The deterioration over time of health and well-being of inmates and staff result in critical events and lack of control over the prison population, which become more recurrent as long as the adverse conditions persist, improving the public disapproval over the governmental management of security in prison. Conversely, the lack of success in rehabilitation is resulting in that any improvement in the objective quality of carceral conditions of low-income and high-inequality countries produce a social perception of having a government weak on crime, which, in turn, result in lower pressure for improving carceral conditions. The action of International advisors in those countries is delayed due to its sporadic inspections, and its effects are weak because they are not mandatory.



The above diagram shows that the high rate of imprisonment in countries within the Safety prison model, and the high cost associated to imprisonment, reduce the available budget for other services such as public health and education. The diversion of financial resources to prisons, in addition to mediatic events of violence, results in an increase in public disapproval and pressure for cutting costs while increasing security rather than rehabilitation. This situation leads to a decrease in the health and well-being of inmates. However, in the high probability that inmates will win a lawsuit for inadequate conditions or abuse if they are proven, alongside the fear of governments for losing financial resources— as a result of the sues— lead them to look for certification of the accomplishment of independent standards of good design. Although there are efforts for rehabilitation of inmates in this model, it is not a priority, and therefore, the promotion of positive mental and emotional state of inmates is sought only if it results in low risk of misconduct.



The above diagram is showing that the wealth of Scandinavian countries along with the low rates of imprisonment, and a shallow frequency of occurrence of critical events, allow them to ensure enough budget for the different public services resulting in a low level of pressure over the governmental management of public security. In this case, health and well-being are seen as crucial components for maintaining a positive mental and emotional state in both inmates and staff, which is a cornerstone in the rehabilitation process. The low rates of recidivism ensure keeping the priority placed on rehabilitation, as well as preventing populist calls for further punishment. However, the rehabilitation requires a large amount of personnel as well as a high level of training. This is resulting in high operational costs, in turn, put pressure over the optimisation of financial resources, although it does not affect the public approval over the model.

Appendix 14: Ethics approval documents.

1./ Letter of approval from University ethics reviewers



Page 1 of 2amendments of ethics application as a result of amendments suggested by

ethics

reviewers

Amendments to Application 009834

Chengzhi Peng Ethics Administrator School of Architecture

Dear Chengzhi,

This is in relation with the amendments in the application 009834 suggested in your letter of 03/08/16 in which the project "Designing to meet physical, psychological and social wellbeing needs in prison cells" was approved on ethics grounds. Due to the application has been approved I have no access to modified it but only attach new files. Consequently, please find below the clarifications to your comments in the same order that they were made.

(1) There is a concern about the proposed "prison visits" which is tentatively mentioned in 4.Analysis and Evaluation, and there is not sufficient clarification as why there will be no personal safety issues raised during the prison visits. Some description of how such visits have been or will be arranged taking into account personal safety issues will be very helpful.

Clarification and/or Amendment:

Prison visits are not needed in the research. It only consider interviewing Architects and high level prison service managers in each prison service and none interview will be made inside any prison. However, it is possible being invited to visit a prison, by prison authorities, due to my condition of Chilean prison service professional staff for 15 years and currently PhD student in Prison design. In that hypothetical case all the normal security protocol will be follow. This protocol can slightly change between countries but at least consider:

- a) Every visit must be preceded by security instructions by prison staff.
- b) The visit must be authorised and scheduled by a competent authority of the system
- c) As visitor I will be escorted during the whole visit with enough number of security staff.
- d) No critical (dangerous) places will be visited.
- e) There will be neither physical nor verbal contact with inmates.
- f) The visit can be aborted by staff at any time with no apparent reason.
- g) All local security measures must be followed.

(2) Whilst giving the participants this option is acceptable, all data should be anonymised in principle. For instance, if one participant wishes to be named but somebody from the same area does not, the participant that does not wish to be identified might be more easily traced by virtue of the participant that has been named being traceable. If participants being potentially named adds value to the data, feel free to include this; if this does not add value to the data, then surely there is no point to include this option?

Clarification and/or Amendment:

All data will be anonymized. Changes in the information sheet and consent form will be made to guarantee anonymity without exceptions.

Page 2 of 2 amendments of ethics application as a result of amendments suggested by ethics reviewers

(3) Elaborate more about where exactly the data will be stored, who has access to the data and if there are any passwords/locked doors keeping the data even more secure.

Clarification and/or Amendment:

Data will be stored in a personal Google Drive account, protected by password. Only the lead researcher will be allowed to have access to the database and to the account password. Interviewees will be asked to agree with this on cloud storage method. Only in case of any interviewee do not agree data of this specific participant will be storage in an encrypted External Hard Disc, which will be storage in a locked drawer unit at lead researcher's house. Changes in the consent form to clarify the above will be made.

(4) The consent form doesn't specifically mention that permission is given for data to be stored for six years - does this mean it may be kept longer? Can participants request that any data held is destroyed earlier?

Clarification and/or Amendment:

Data will be storage only for six years and then it will be destroyed. No participant can request for destroy data before the end of the sixth year. Changes in the consent form to clarify the above will be made.

Best regards,

Alberto Urrutia-Moldes PhD Candidate University of Sheffield, UK. Arts Tower S10 2TN mobile: (0)7710983034

3./ Letter of invitation to participate in the study





Information Sheet

Designing to meet physical, psychological and social wellbeing needs in prison cells

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you think you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

What is the purpose of the study?

To understand how and why concepts of well-being and healthy environments are addressed by prison designers and prison services in relation to the design process of cells in each prison model, and to what extent knowledge can be transferred across these models.

Why have I been invited to participate?

You have been chosen to participate in this study due to your experience as an expert in the field of prison design and prison policies. We are aiming to recruit twelve Architects, twelve non-Architect key decision makers and six international policy makers within three countries which represent different prison models and two international organizations of prison policies.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time, with it affecting any benefits you are entitled to, and without giving a reason.

What will happen to me if I take part?

You will be asked to participate in a semi-structured interview of approximately 45min. A specific day, time and place will be coordinated with you to conduct the interview. Questions will consider topics related with design factors in healthy environments and well-being promotion settings in the design of prison cells.

What do I have to do?

You must agree the schedule of the interview with the researcher and sign the consent form and a copy of this information sheet.

What are the possible disadvantages and risks of taking part?

there are no risks associated with your participation in this study.

What are the possible benefits of taking part?

By taking part in this study you will be helping in the effort to improve the design of prison cells and their effect on inmates and staff.

What if something goes wrong?

If you have any complaints, please contact the lead researcher (see contact information below). If you feel your complaint has not been handled to your satisfaction, please contact the University's Office of the Registrar and Secretary, telephone: 0114-2221100, e-mail: registrar@sheffield.ac.uk.

Will my taking part in this study be kept confidential?

All information collected about you will be kept strictly confidential (subject to legal limitations). Names will be anonymised and you will not be able to be identified in any reports or publications. Data generated by the study will be retained in accordance with the University's policy on Academic Integrity and kept securely in electronic form for a period of six years after the completion of a research project.

Will the interview be recorded?

The interview will be recorded by using video and/or voice recorder and comply with your request for confidentiality as stated in the completed and signed consent form mentioned above.

What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

We will ask you questions about prison design, cells design, health promotion environments and Well-being promotion in prison. Different points of view will be analysed in order to find commonalities and understand the reasons for differences in design decision making.

What will happen to the results of the research study?

The results of the research study will be given as a report to all the prison services invited to participate, as well as to the United Nations and World Health Organization. Research papers on particular aspects of the study will be published in reputable Academic Journals. If you would like further information on this please contact the lead researcher (details below). Data collected during the course of the project might be used for additional or subsequent research.

Who is organising and funding the research?

The lead researcher is a professional staff of Chilean prison service and his PhD study is funded by a scholarship of the Chilean government.

Who has reviewed the study?

This project has been ethically approved via the School of Architecture's ethics review procedure. The University's Research Ethics Committee monitors the application and delivery of the University's Ethics Review Procedure across the University.

Contact for Further Information:

Lead researcher: Alberto Urrutia-Moldes, School of Architecture, Arts Tower, University of Sheffield, Sheffield S10 2TN. Tel: 44-0-771 098 3034 E-mail: aeurrutia1@sheffield.ac.uk

Supervisor: Professor Fionn Stevenson, School of Architecture, Arts Tower, University of Sheffield, Sheffield S10 2TN. Tel: 0114 222 0399. E-mail: f.stevenson@sheffield.ac.uk

5./ Consent form

The University Of Sheffield	FOR OFFICIAL USE ONLY Participant Number/Initials
Snemeru.	
Title: Designing to meet physical, psy	cal and social wellbeing needs in prison cells
Consen	for Interviews:
hank you for reading the information sh omplete and sign the form below. Please atement:	ut the study. If you are happy to participate then pleas the boxes below to confirm that you agree with each Please Init
	box:
confirm that I have read and understood the opportunity to ask questions.	nation sheet dated [01/07/2016] and have had
I understand that my participation is volunta without giving any reason and without there should I not wish to answer any particular q	hat I am free to withdraw at any time ny negative consequences. In addition, or questions, I am free to decline.
I understand that my responses will be kept with the research materials, and will not be result from the research.	confidential and my name will not be linked d or identifiable in the report or reports that
I agree for this interview to be tape-recorded strikethrough line if you do not agree with o audio / video recording made of this intervie from the interview, from which I would not conference presentation, report or journal ar understand that no other use will be made of that no one outside the research team will be	video recorded (please mark by a e options of recording). I understand that the be used only for analysis and that extracts onally identified, may be used in any reloped as a result of the research. I ording without my written permission, and d access to the original recording.
I agree that my anonymised data will be kep related to this study after the completion of	ure research purposes such as publications y.
I agree that my anonymised data will remain account in electronic form for a period of siz case of disagree, your data will be storage in years after the completion of a research proj	in a password-protected Google Drive fter the completion of a research project (in ypted external Hard Disc for a period of six
I agree to take part in this interview.	
Name of participant Da	Signature
Principal Investigator Da	Signature
To be counter-signed and dated electronica participant for face to face interviews	lephone interviews or in the presence of the