

CHAPTER

3

SITE

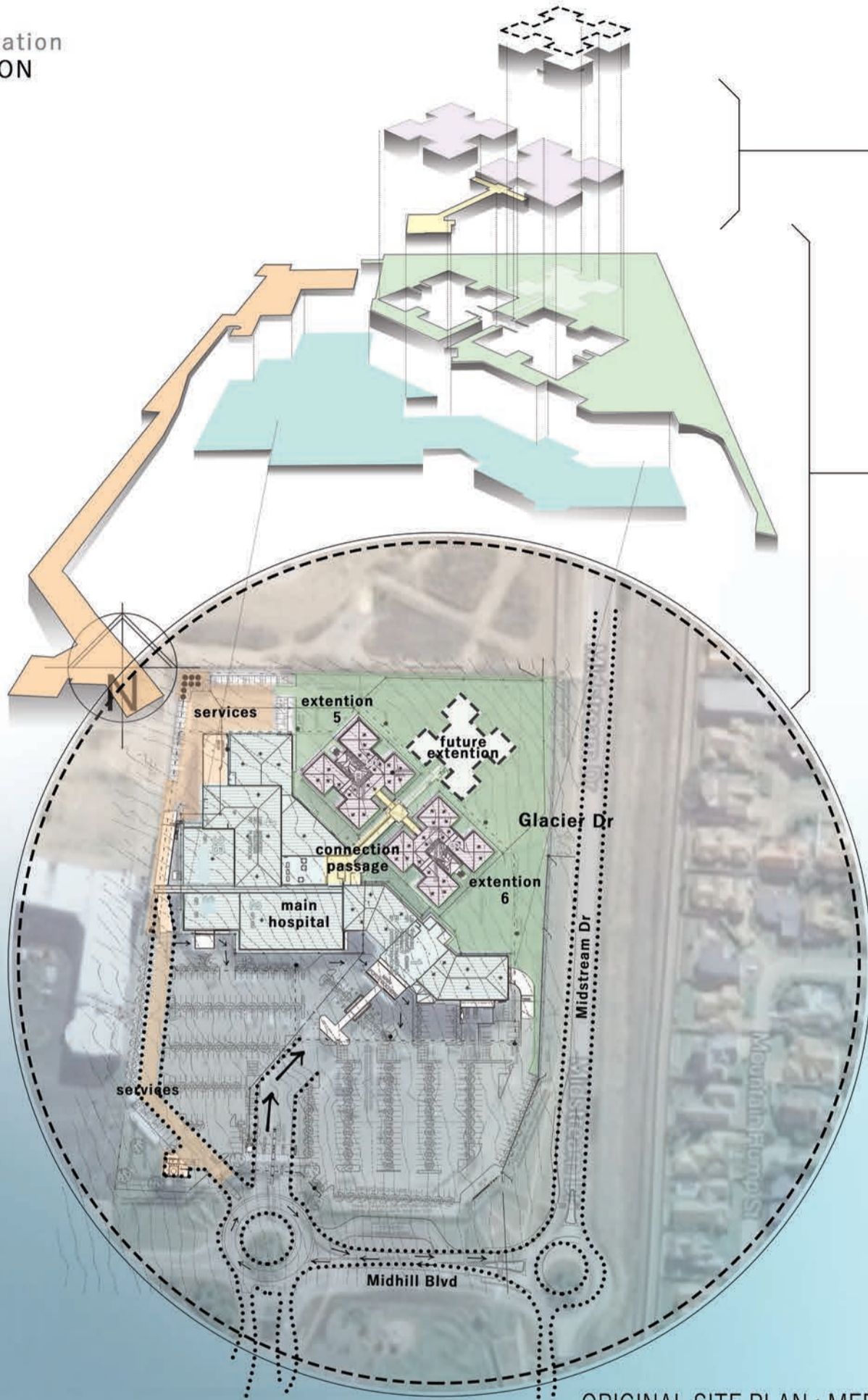
This chapter focuses on the site location - Mediclinic Midstream. It comprises of an initial macro-analysis of the broader context of the Mediclinic Midstream site. The chapter serves to analyse the circulation, lighting, ventilation, levels, site gradient, services, landscaping, etc. Due to the assumption that this project is to be implemented in a future extension, as a standard “ward block”(indicated on the plan), the identical neighbouring buildings, Extensions 5 and 6 (“ward blocks” themselves) are also analysed and assessed. This is followed by a micro-analysis of this future extension with reference to Precedents in Architecture(2012) by Clark and Pause. An annual sun-path analysis is completed, taking into consideration the surrounding buildings and their effect on the future extension and its orientation. The presence of red, grey and green dots throughout this chapter, reflects a constant analysis, and identification of strengths (indicated in green), not ideal design (indicated in grey) and weaknesses (indicated in red). This chapter then continues, with a study of the Mediclinic brand promise and concludes with comparison of mediclini and optimal healing environment’s principals and values.

3.1 LOCATION

Location
MEDICLINIC MIDSTREAM

Address
Midstream Dr & Midstream Hill Boulevard, Midstream, Centurion, 1692

Project implementation
FUTURE EXTENSION



ORIGINAL SITE PLAN : MEDICLINIC MIDSTREAM



3.1.1 MEDICLINIC MIDSTREAM

Mediclinic Midstream is situated within the Midstream Estate in the heart of Centurion. The hospital is centrally located; allowing easy access from major highways in the greater Tshwane Metropolitan area (Mediclinic, 2015). According to their own description, Mediclinic Midstream is the latest ultra-modern addition to Mediclinic Southern Africa's private hospital portfolio. Its design prioritises ecological considerations and various dynamic features are employed to minimise the environmental impact of this multidisciplinary hospital (Dr Hertzog et al., 2011).

3.1.2 FUTURE EXTENSION AS FOCUS

The original site plans of Mediclinic Midstream indicate the intention for a future extension that resembles its two neighbouring buildings. This space provides the ideal opportunity for the implementation of this study. This study to be implemented in the future extension which has not yet been built. This allows for the intervention of this project to take place during the design phase of the future extension's building process. Allowing for this study to have a significant design impact, through being part of the design phase of this building and therefore able to be to make alteration and design changes before the building is built. The implementation of this study in the future extension means that none of the hospital's existing infrastructure and programming would be compromised. The future extension can instead be se

3.1.3 PHASES OF IMPLEMENTATION

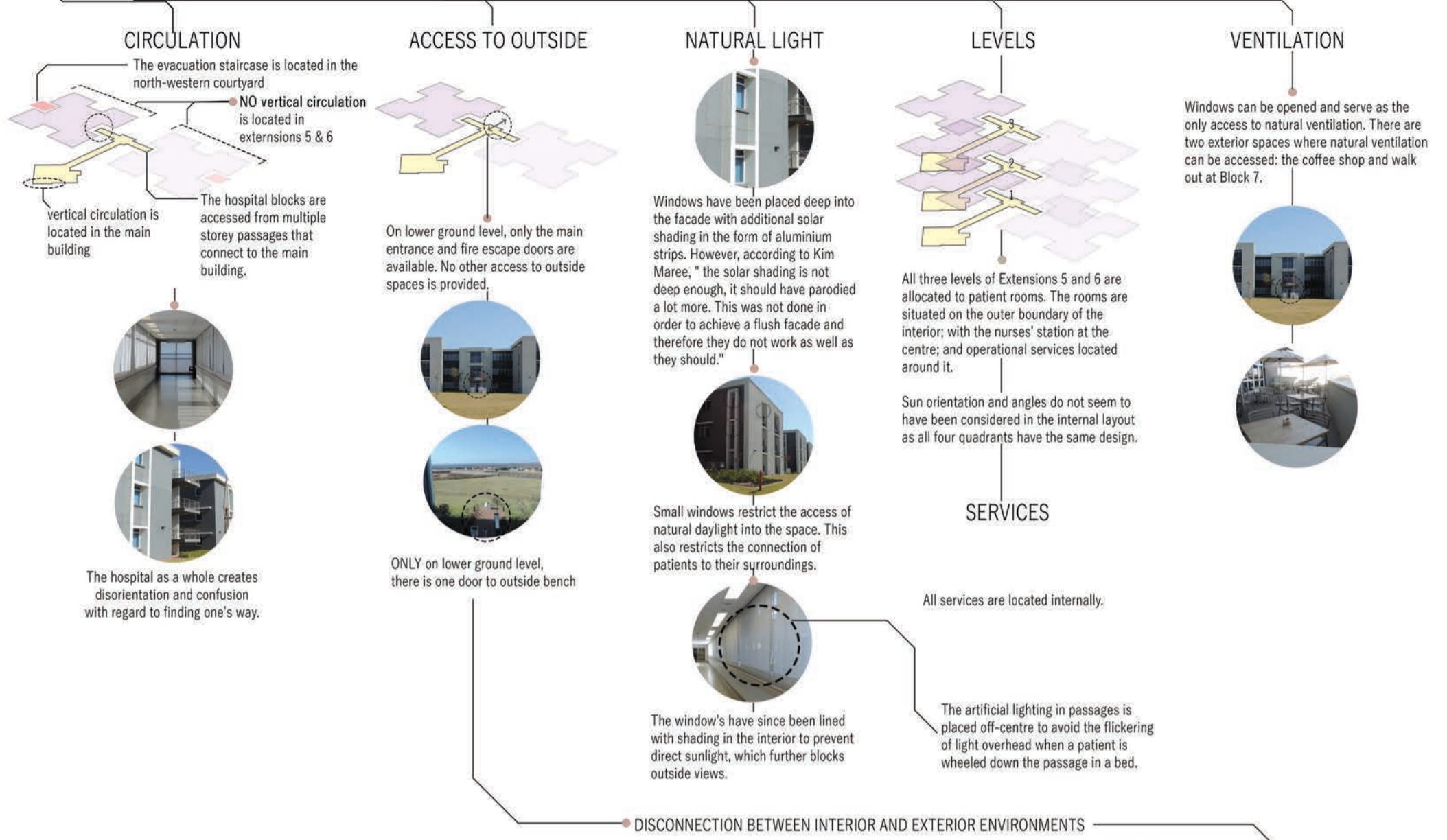
The design of the future extension should be seen as the first phase of design changes that are to be generated from evidence-based research and then implemented. This will hopefully lead to a second phase, where the successful design principles represented and experienced in the "future extension", would also be implemented in the neighbouring main hospital buildings.

3.2 SITE ANALYSIS



3.2.3 INTERIOR ENVIRONMENT OF EXTENSIONS 5 & 6

This project is to be implemented in the indicated future extension, which clearly intends to be a replica of its two identical neighbouring buildings (Extensions 5 and 6). Extension 5 is thus analysed and assessed for the design of the future extension and the implementation of this study.

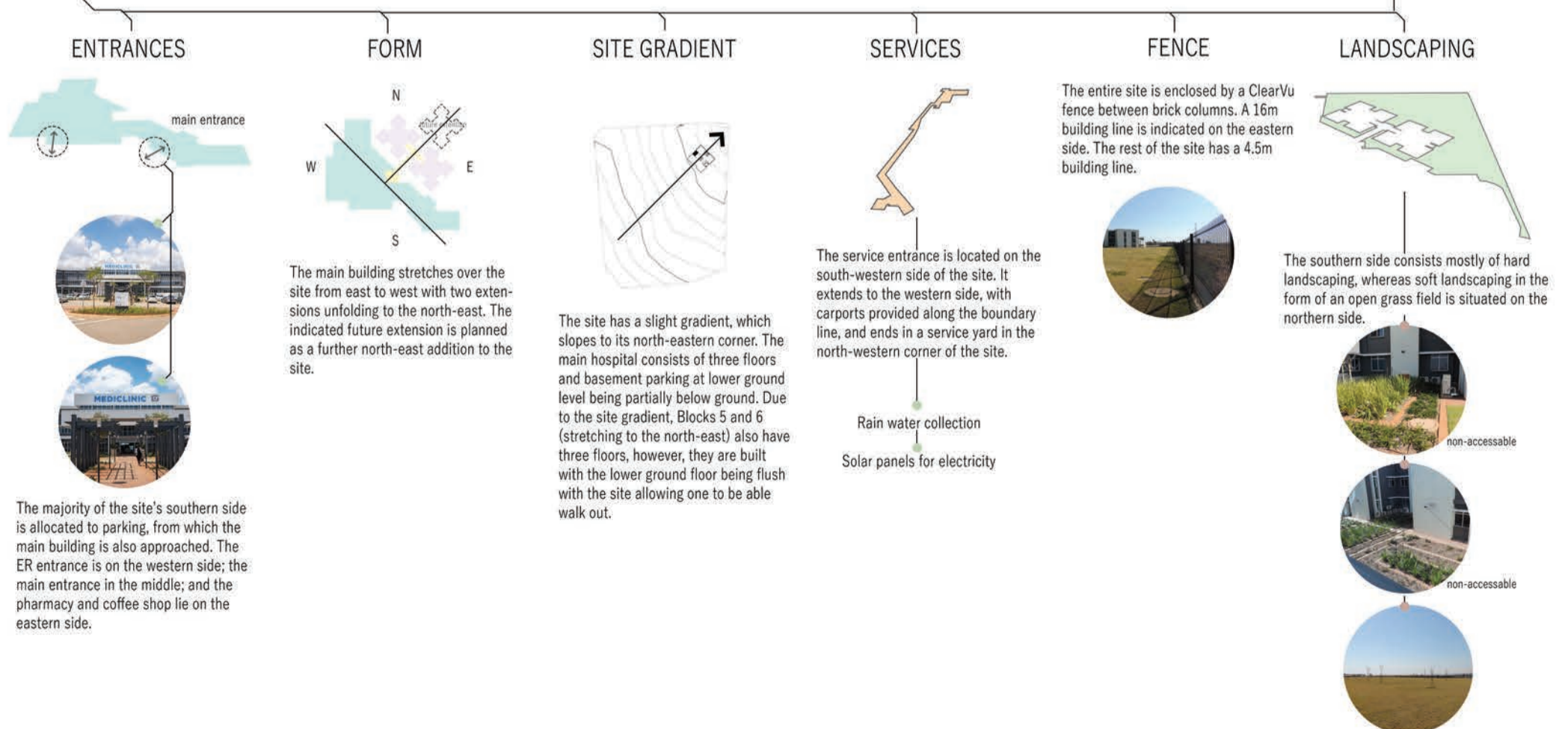


3.2.2 ARCHITECTURAL STYLE

CONVERSATION BETWEEN BUILDINGS



3.2.1 BROADER CONTEXT (MACRO)



3.3 STANDARD "WARD BLOCK"

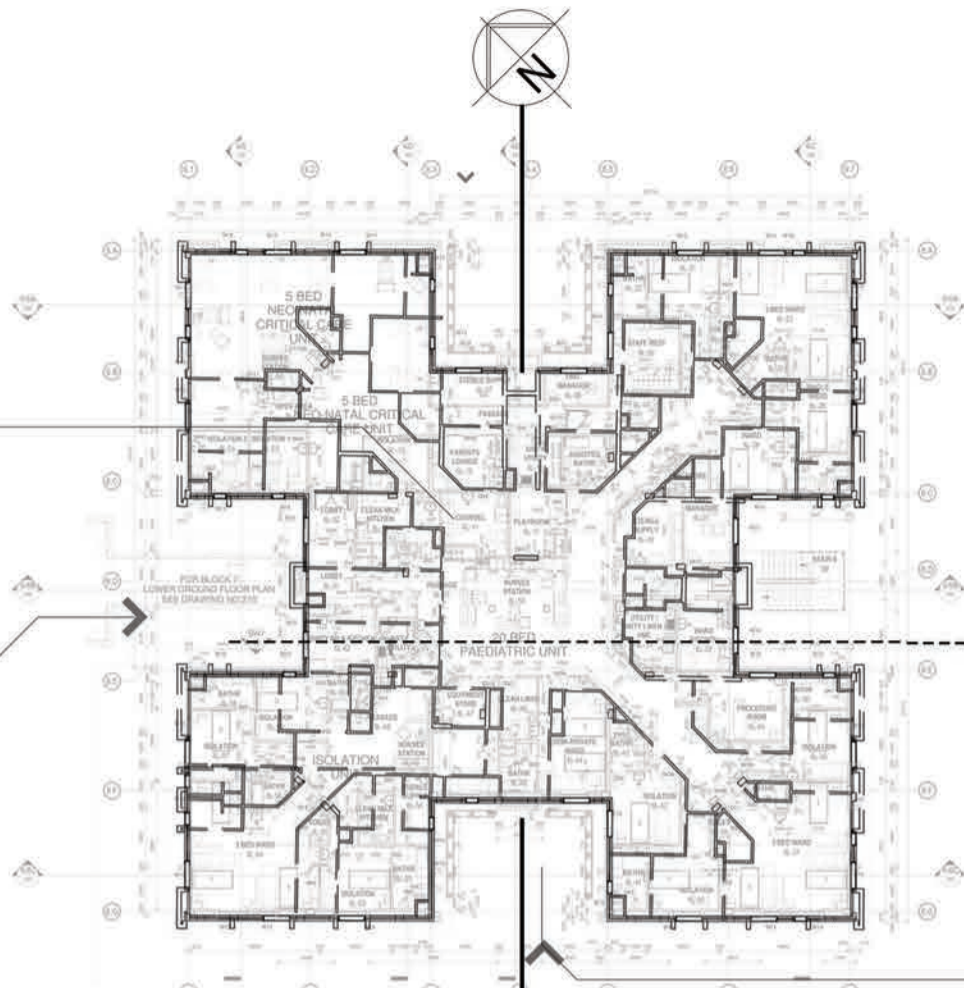


Mediclinic as a healthcare organisation has developed a standard design for what they call the "ward blocks", which is implemented at each hospital. The design of the exterior is given over to architects, but little further design is allowed. The ward blocks have a radiating effect: the nurses' station is at the core, around that are the services, such as, sluices, etc., which the nurses use, and finally the patient rooms that all face outward with "views". The belief is that a square form takes up less space on site than a more oblong structure. However, the square shape is not ideal - with cross circulation it has led to odd-shaped rooms with lost space.

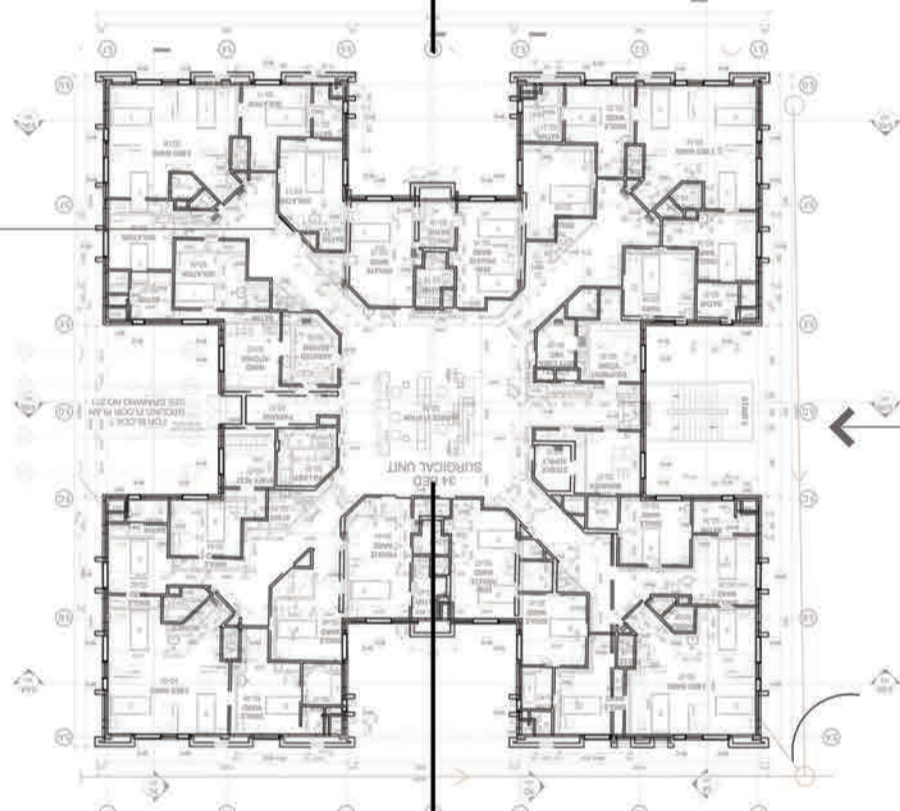
BREAK OUT SPACES



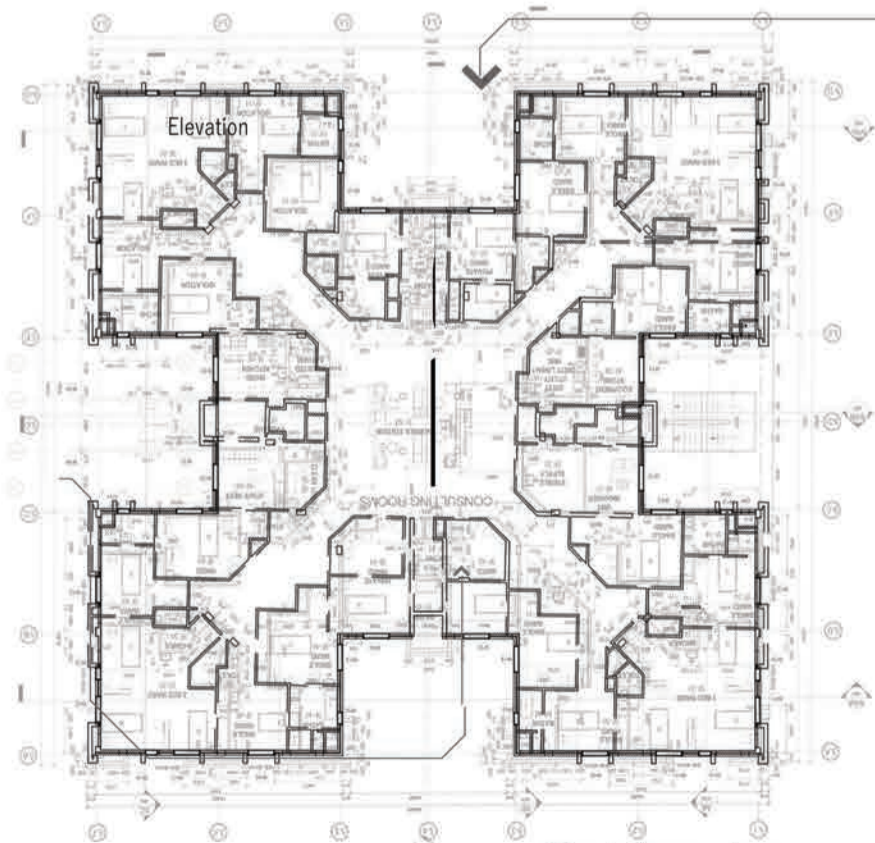
INTERIOR PASSAGES



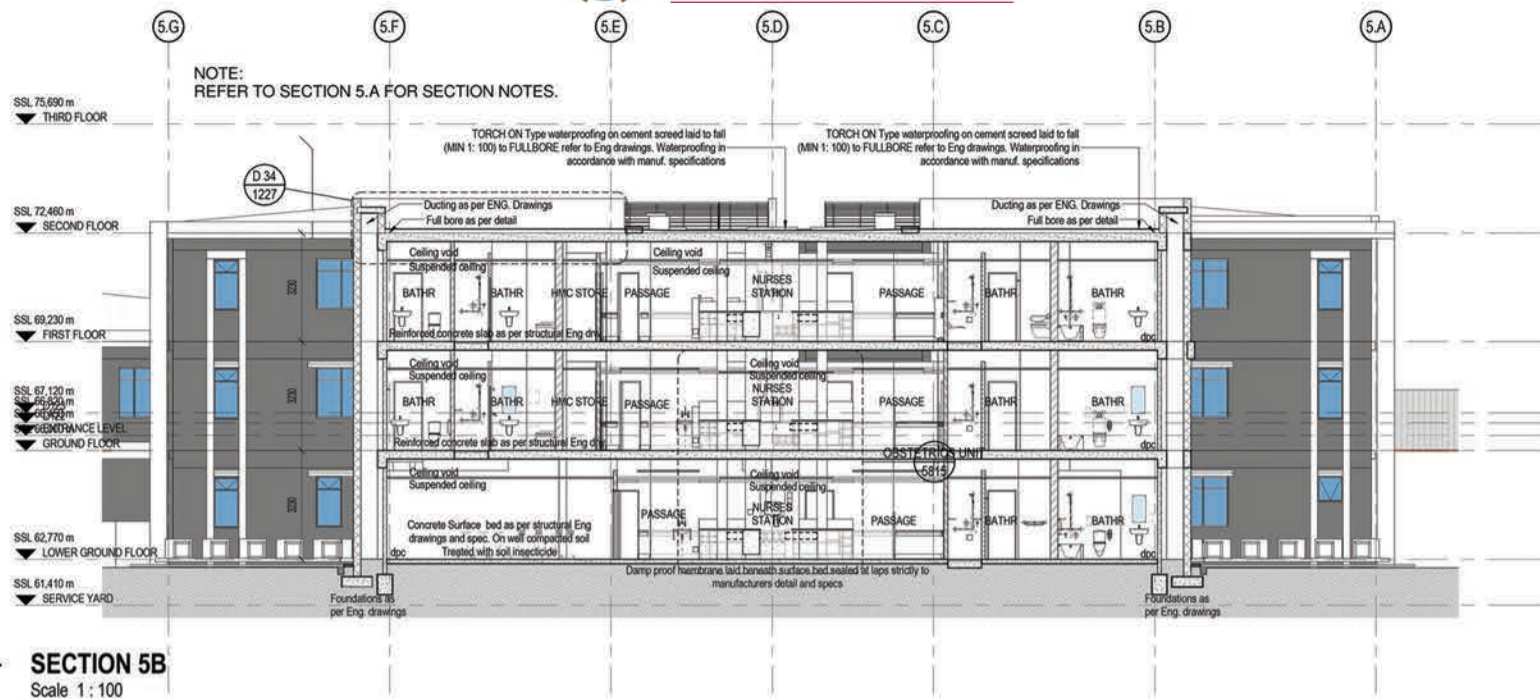
Lower ground floor plan



Ground floor plan



First floor plan



ELEVATIONS



OUTDOOR SPACES



VIEWS



3.4 FUTURE EXTENTION

(SITE FOR



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

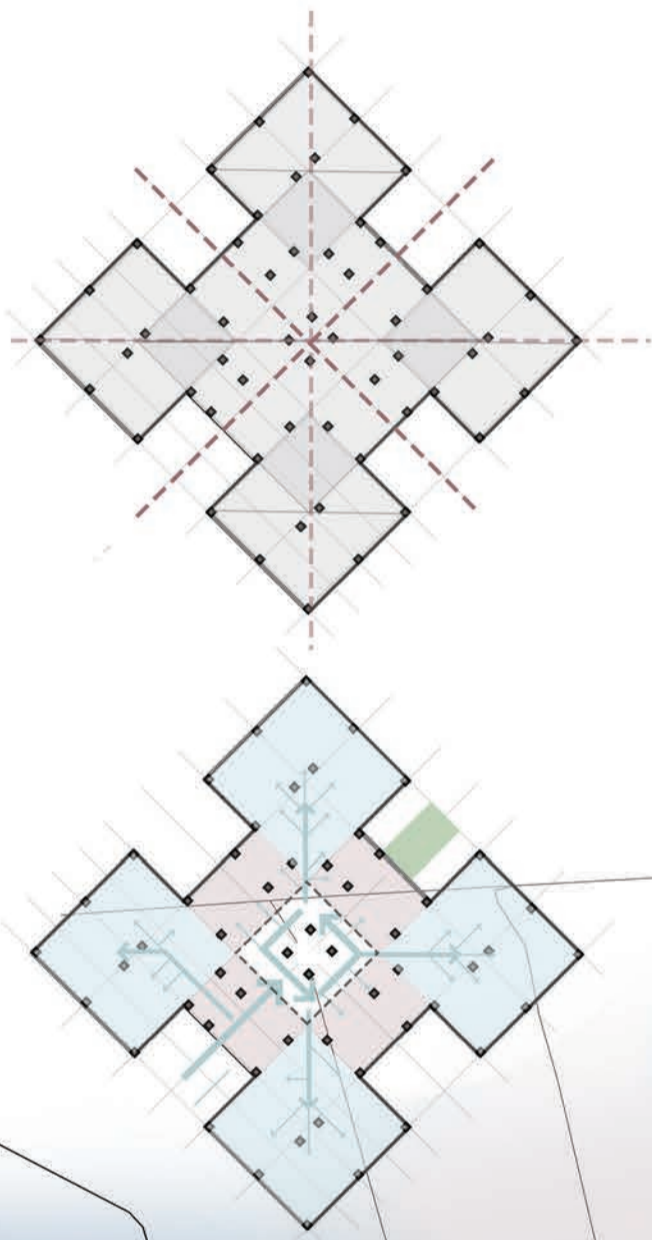
This study is based on a proposal for the future extension indicated on the site plan (below). Due to its outline, the assumption is made that it will be a replica of the neighbouring Extensions 5 and 6. This building is thus approached in the design phase, meaning it only has three floor slabs and columns and the interior design is then done according to this interior designer.

3.4.1 PRECEDENTS IN ARCHITECTURE by Clark, Rodger H & Pause, Michal(2012)

As this dissertation is done, during the design phase of the future extension, the three slabs and columns of the building are analysed using Precedents in Architecture by Clark and Pause (2012).

Clark and Pause (2012, p.5) presented methods to make conscious sense of a building through the identification of patterns and themes that might influence the generation of new forms. One of their main concerns was to make the past part of the present without repetition. According to Clark and Pause (2012, p.5), design ideas lie in the formal and spatial realm of architecture. It is thus this realm that is explored in the study.

The analysis (below) reveals symmetry. Squares are the only geometric shape used. Major horizontal circulation is located at the centre of the building and radiates outward. The essence of the building is thus revealed and used for further design.



- KEY**
- Walls
 - Columns
 - ▧ Geometry(square)
 - ▧ Grid lines
 - Symmetry
 - Major circulation
 - Secondary circulation
 - Vertical circulation
 - Repetitive
 - Unique

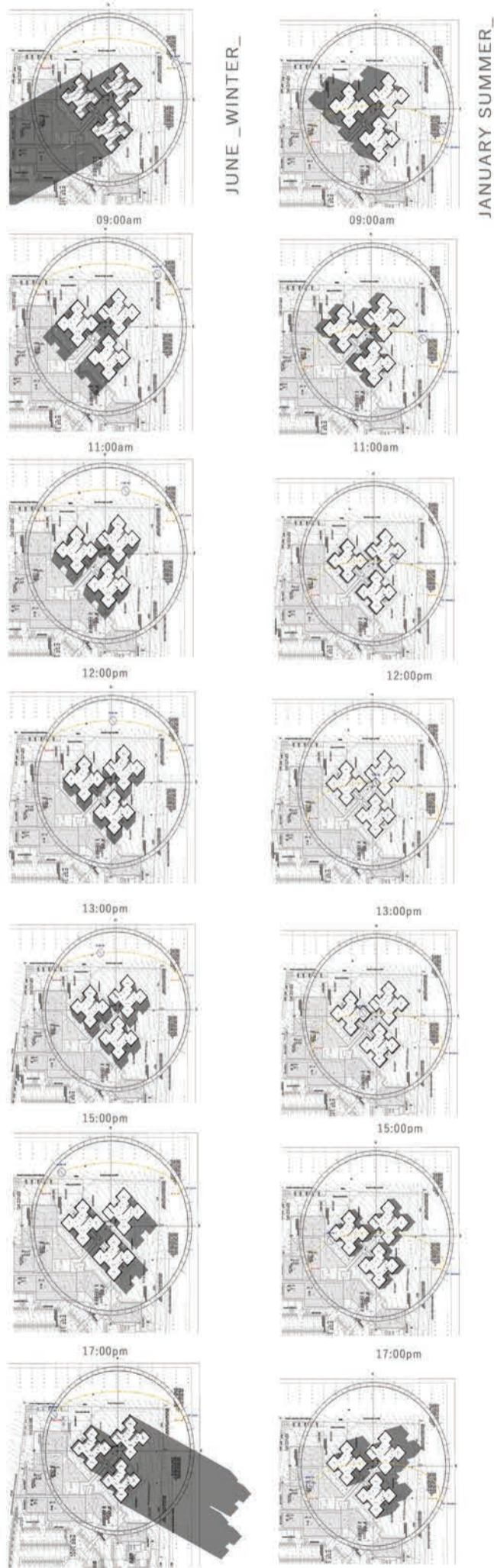


3.4.2 SUN ANGLES



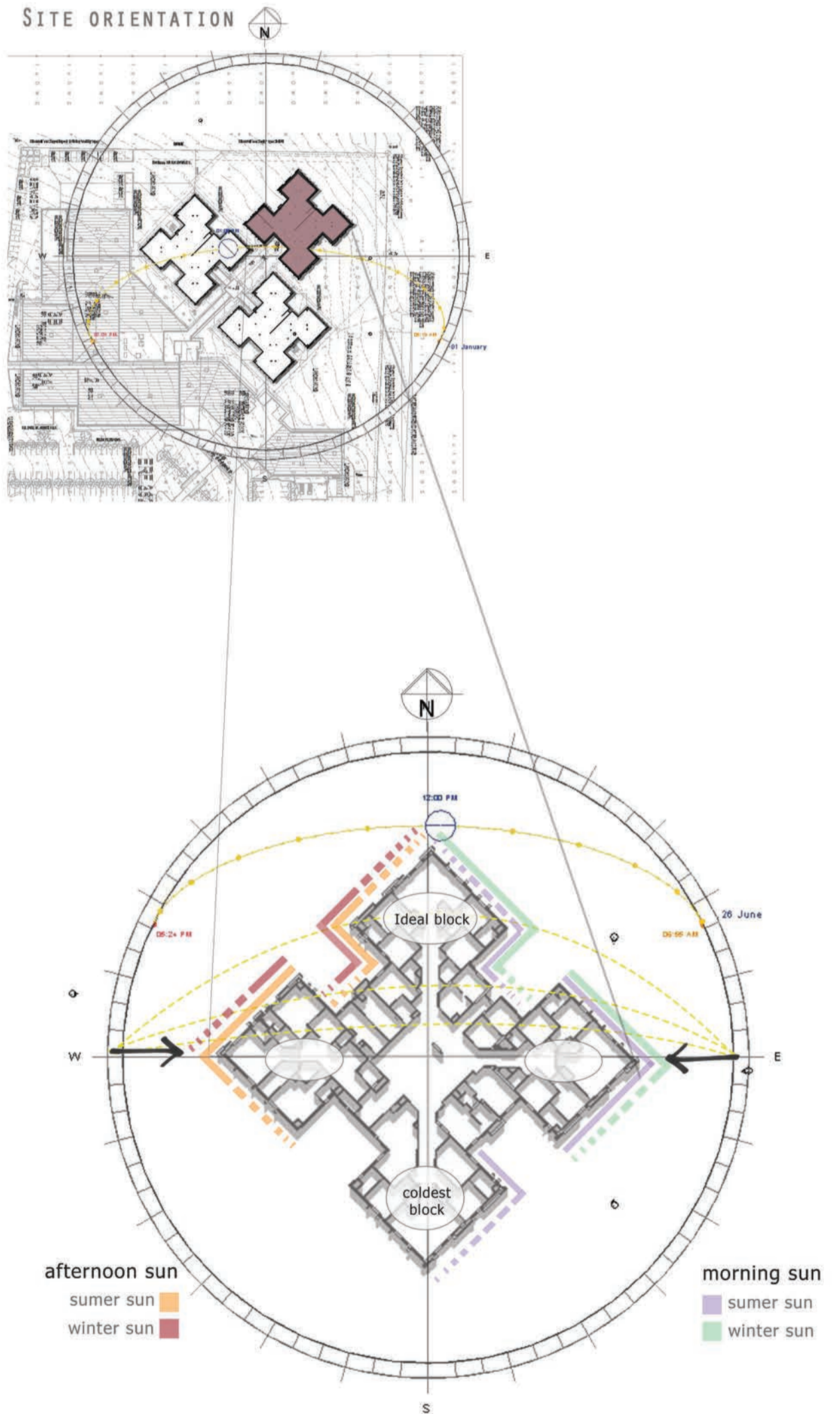
SURROUNDING BUILDINGS

Sun study was done to determine the impact of the future extension on the surrounding buildings and vice versa. Results show minimal impact, except for early morning sun that compromises the existing buildings and late afternoon sun that compromises the future extension.



SITE ORIENTATION & SUN ANALYSIS OF FUTURE EXTENSION

Shifting the focus to the future extension, which is a north-east oriented building, a more in-depth study of how the sun currently falls on it is done and the influence on design is determined.



Poster 3.3 Future Extension (Author, 2016)

3.5 MEDICLINIC_ BRAND

Mediclinic is the focus of this study, that being so, clarity is needed as to its brand values and ideal hospital structure, identity and message.

Identifying Brand Promises

Mediclinic experienced substantial growth in 2010. This boosted confidence in future opportunities over all platforms and Mediclinic had a brand launch on 20 June 2011. The provision of a carefully-controlled environment (not only for patients but also for the medical staff) became a priority. As this concept is essential to the group's future business plan, Mediclinic continues to invest significantly to maintain, upgrade and expand its hospitals to better the company's global offering.

“Our new brand rationale strengthens and supports our vision to help build a sustainable health future for South Africa,” stated Koert Pretorius, Chief Executive Officer of Mediclinic Southern Africa (Mediclinic, 2016).

The new Mediclinic International brand is focused on the accuracy of science used to enhance the lives of patients. It consists of five brand drivers: exacting, practical, orchestrated, deliberate and human. Mediclinic is therefore committed to using state-of-the-art treatment and technologies and care for patients in an evidence-based environment. Patients are at the core of the brand. Dr Edwin Hertzog, Non-Executive Chairman, Mediclinic International further stated that,

“At any of the Mediclinic hospitals around the world, we want patients to feel that the brand is lived by all. Our main objective is to introduce patients to a carefully controlled environment, fashioned by a team of world-class experts who can guide them through a customised treatment process orchestrated to specifically deliver better outcomes” (Mediclinic, 2016).

As patients value both authority and empathy, Mediclinic brand tries to balance a scientific, expert-dominated approach and a respectful human approach (Mediclinic, 2016). Biren Valodia, Chief Marketing Officer, Mediclinic Southern Africa, stated that,

“The new brand identity is underpinned by deliberate and efficient marketing positioning. Apply evidenced-based science to improve – very consciously – our care process to customers. No claim will ever be made, no fact ever stated without the provision of substantial and credible proof.” (Mediclinic, 2016).

This project makes use of evidence-based research to create an optimal healing environment that can achieve brand intentions. The creation of this optimal healing environment corresponds to, and could exceed, the representation and promises of the Mediclinic brand.

3.6 BRAND ANALYSIS

The physical changes made to the brand manifest in the exterior signage, which has been upgraded so that there is less clutter and intervention moments are clearly introduced. Mediclinic is confident that the new brand philology has the potential to inspire staff and delight patients (Mediclinic, 2016).

The study and interpretation of additional visual advertising and slogans led to the conclusion that Mediclinic stands for organisation, detailing and personalisation. However, the brand promise and the implementation and reality thereof are at this stage disparate. Improvements have been made, when one compares Mediclinic Kloof to Mediclinic Midstream, but Mediclinic is at present not living up to its own brand expectations.

3.7 COMPARING THE MEDICLINIC BRAND TO OPTIMAL HEALING ENVIRONMENTS

Table 3.1 to the right, displays and compares various sources that discuss optimal healing environments as well as their core values and the Mediclinic brand values, the reality thereof and finally what this study has implemented. Demonstrates that the implementation of the core values of optimal healing environments within this design will not only assist Mediclinic hospitals in reaching their vision but also lead them to exceed their brand values and promises.

Table 3.1 Comparing Mediclinic brand to OHE (Author,2016)

Optimal Healing Environments			Mediclinic		Project Implementation
Core values	Offering	Source Referencing	Brand Promises	Provision	
Evidence-based research			Consciously apply evidenced-based science to improve the environment .	Yes, this is implemented within the curing section, but is lacking in the healing section.	Where possible, evidence-based research (EBR) is implemented to create spaces with guaranteed outcomes of healing. EBR is, however, used in combination with free design.
Intention and Awareness	<ul style="list-style-type: none"> - Optimism - Hardiness - Self-efficacy - Coherence - Sense of control 	<ul style="list-style-type: none"> -Browall et al., 2013, p.3 -Devlin & Arneill, 2003, p.680 -Edelstein, 2005. p.3 -Larson & Kreitzer, 2004, p.3 -Schweiter et al., 2004, p.72 -Steelcase Health, 2015, p.61 and p.77 	Updated signage	Provision of single rooms.	<ul style="list-style-type: none"> - Garden- and other diverse spaces: give patients a choice and thus an increased sense of control, which leads to lower stress levels (Larson and Kreitzer, 2006, p.3). - Information zone: knowledge is connected to control. - Integrated care systems that encourage patients to take control of their treatment and health. This greater perceived control over recovery has been associated with shorter hospital stays (Schweiter et al., 2004, p.72). - Landmarks of orientation: prevent loss of control. - Mechanical louvers: individual control over ingress of natural sunlight. - Single rooms and the opportunity for patients to personalise their environments. -Single rooms that allow control of environmental stimuli, such as, noise or music, are a key component of "tolerance of and positive coping with environmental interference" (Devlin and Arneill, 2003, p.680). - Individual lighting and temperature adjustments: increase personal control and comfort (Steelcase, 2015, p.61; Edelstein, 2005, p.3). - Having choices of different levels of privacy or distraction and being able to move safely during infusion treatments: improve patients' sense of control (Steelcase, 2015, p.77). - Transition spaces with a variety of postures and activity options produce flexibility and control of the experience for patients and families. This decreases anxiety and makes transition spaces beneficial assets to healthcare organisations. (Steelcase, 2015, p.91). - Logical building design for way finding; using signage, artwork and other visual clues.
Wholeness and Energy	Spirituality and religion	Schweiter et al., 2004, p.72	Not promised	/	<ul style="list-style-type: none"> - Internal quiet spaces throughout the building enable one to connect with nature. - External gardens, because nature might be the most universal image of spirituality (Schweiter et al. 2004, p.72).
Healing Relationships	<ul style="list-style-type: none"> - Relationships between patients, families and medical staff -Support -Connectedness -Engagements and interaction 	<ul style="list-style-type: none"> - Fottler, et al., 2000, p.94 - Geffen, 2004, p.95 (Level 2 based on the understanding that connection with others lies at the heart of healing.) - Jonas & Chez, 2004, p.4 - Schweiter et al., 2004, p.73 - Steelcase Health, 2015, p.27 			<ul style="list-style-type: none"> - Decentralised nursing stations that provide the opportunity for patient/staff interactions (Schweiter et al., 2004, p.73). - Design that encourages positive interactions among staff, such as providing gardens and lounges, could increase job satisfaction. - Designated collaboration spaces with technologies for videoconferencing and sharing content from individual devices. - Effective support of the clinicians' spectrum of work through a variety of interconnected settings (Steelcase, 2015, p.45). - Private patient rooms, rather than semi-private ones, and adequate consultation rooms that provide spaces for confidential discussions (Schweiter et al., 2004, p.73). - Spaces designed for family during infusion treatment to ensure they are connected to the care process. - Spaces that accommodate and encourage social connectedness by providing opportunities for social contact and engagement throughout the healthcare journey (Jonas and Chez, 2004, p.4). - Carved-out, quiet sitting areas where clinicians can discuss patients' treatments and health status with their families. - Furniture arrangements that effect social interactions. This is applicable to waiting areas, day rooms and lounges within healthcare settings (Schweiter et al., 2004, p.73).
Health Promotion	<ul style="list-style-type: none"> - Knowledge - Learning - Opportunity - Sharing 	<ul style="list-style-type: none"> - Geffen, 2004, p.93(first level of healing) - Schweiter et al., 2004, p.73 - Steelcase Health, 2015, p.91 			<ul style="list-style-type: none"> - Cafeterias designed as restaurants that encourage community use. - Community meeting spaces; wellness centres; and indoor/outdoor walking paths. - Flexible spaces that accommodate after-hours learning sessions; health-related support groups, etc. - Leveraging technology to enhance interactions and mutual learning. - Libraries near each unit; internet access; and community health resource centres (Schweiter et al., 2004, p.73). - Multi-functional learning space that encourages conversations and the sharing of analogies and digital information. - Provision of learning opportunities for patients and families (Schweiter et al., 2004, p.73). - Support of two-way learning that is essential for effective healthcare (Steelcase, 2015:29) - Provision of multiple ways to share and display information. - Technology in transition spaces that connect people and information (Steelcase, 2015, p.91).
Collaborative Treatments	Alternative Opportunities	<ul style="list-style-type: none"> - Cancer Network, 1999 - Geffen, 2004, p.93 - Jonas & Chez, 2004, p.4 - Steelcase Health, 2015, p.61 - Vickers & Cassileth, 2001 	<ul style="list-style-type: none"> -Expert knowledge -Collaborative healthcare - Team of world-class experts who can guide patients through a customised treatment process orchestrated to specifically deliver better outcomes. iCollective: shared skills form Mediclinic hospitals around the world. 	<ul style="list-style-type: none"> Yes, but only with medicine. Not for supportive care. 	<ul style="list-style-type: none"> - Community rooms for tai chi, yoga, journaling, drumming, and other modalities. - Integrative care approach that allows individuals to take responsibility of their own healing and receive the help to do so. - Physical and chemical interventions that create strengths as do acupuncture, psychotherapy, homeopathy, chiropractic and osteopathic manipulation, prayer, and so on, spaces are provided for these programs to take place. - Rooms for massage, acupuncture and stress reduction. - Therapeutic settings for a variety of healing, prevention, and treatment modalities.



Personal Space	<ul style="list-style-type: none"> - Comfort - Privacy 	<ul style="list-style-type: none"> - Browall et al., 2013, p.4 - Fottler et al., 2009, p.94 - InformeDesign, 2010, p.22 - Larson & Kreitzer, 2004 - Steelcase Health, 2015, p.29 and p.45 	<ul style="list-style-type: none"> - Offer single rooms - Private spaces? 	<ul style="list-style-type: none"> - Single rooms on measures of perceived pleasantness of room decor. - Cleanliness. - Courtesy of housekeepers. - "How well things worked." - Noise. - Temperature. - Providing for medical staff needs: Moments of privacy through the inclusion of shielded and enclosed spaces in both work and respite areas. Moments of privacy for medical staff can improve staff performance and well-being. Noisy team stations without areas for individual focus, private conversation or moments of personal renewal increase the risk of errors and burnout (Steelcase, 2015, p.45). - Single rooms: Perception of perceived pleasantness of room decor. - Single rooms that allow for the demand of patients and family members for more personal, private and frequent communication. - Incorporation of individual lighting and temperature adjustment to increase personal control and comfort. - Preservation of information privacy through acoustic integrity. - Providing choices of different levels of privacy or distraction and being able to move safely within the environment improves the treatment experience and satisfies individual preferences. - Privacy within examination rooms. - Speech privacy accomplished in open and enclosed spaces through the provision of single-occupancy patient rooms; private discussion areas; effective space planning; appropriate partition placement; room finish specification; and a system for sound masking. 	
The Sensory Environment	<ul style="list-style-type: none"> - Smells - Sound/ noise - Temperature - Stimulation - Calming 	<ul style="list-style-type: none"> - Browall et al., 2013, .7 - Devlin & Arneill, 2003, p.677 - InformeDesign, 2010, p.22 - Schweiter et al., 2004, p.74 - Steelcase Health, 2015, p.61 		<ul style="list-style-type: none"> - Comfortable ambient temperature. - Natural sounds: The implementation of falling water as white noise has calming, relaxing effects that improve sleep quality. - Operable windows avail the occupant of ambient smells, breezes, and all the sensory stimuli of an "open" environment. - Pleasing aromas. - Calming environment that improves the care experience. - "Multiple sensory retreats" in a building are necessary for emotional and cognitive functioning and may affect functioning of the immune system. - Sensory variation in ambient conditions (such as light levels or temperature) between different spaces and over time is favoured by building occupants. (Schweiter, et al., 2004:74) - Sound-absorbing materials and/ or an acoustical masking system that prevents sensory overload due to hospital machinery, etc. 	
Environmental Complexity	<ul style="list-style-type: none"> - Greater cognitive functioning and beneficial physical activity - Emotional and cognitive functioning 	<ul style="list-style-type: none"> - Schweiter et al., 2004, p.74 - Davidson & Bar-Yam, n.d. 	<ul style="list-style-type: none"> - Getting rid of the clutter - Clean, organised environment - Detailing: Take care of every detail 	<ul style="list-style-type: none"> - Variation of spaces with different environmental complexity, as environmental complexity can quantify the notion of sensory stimulation/ deprivation and its effects on the maintenance of cognitive function. 	
Fresh air and Ventilation	Health benefits of fresh air	Schweiter et al., 2004, p.75	<ul style="list-style-type: none"> - Breath - Ventilation and fresh air - Helps the body recover more effectively and is critical to patient well-being. 	<ul style="list-style-type: none"> Yes Sansevieri a trifasciata, a plant that not only gives off oxygen but also absorbs toxins.. 	<ul style="list-style-type: none"> - Development of ventilation strategies that support operable windows, where appropriate. - Provision of both natural and mechanical ventilation. - Spaces such as balconies allow for ambient smells, breezes and the other sensory stimuli of an "open" environment.
Light (natural and artificial)	<ul style="list-style-type: none"> - Natural circadian rhythm of light exposure - Increased amount of melatonin produced in the brain. - Natural sunlight is beneficial to healing 	<ul style="list-style-type: none"> - Edelstein, 2005, p.3 - Devlin & Arneill, 2003, p.683 - Larson and Kreitzer, 2004, p.3 - Steelcase Health, 2015, p.61 			<ul style="list-style-type: none"> - Increased daytime light exposure in each space. - Sufficient exposure to natural daylight, through an atrium, glass facades and strategic skylights that stretch through the building. - Building programming and openings are designed to bring in controlled daylight where possible (Edelstein, 2005, p.3). - Control of lighting levels in private and semi-private spaces. - Incorporation of individual artificial lighting as well as individually controlled louvers to control natural light.
Colour	<ul style="list-style-type: none"> - Calming effects - Strong messages 	<ul style="list-style-type: none"> - Babin, 2013, p.1 - Devlin & Arneill, 2003, p.683 - Fottler et al., 2000, p.110 - Jonas & Chez, 2004, p.1 - Schweiter et al., 2004, p.75 - Steelcase Health, 2015, p.77 	<ul style="list-style-type: none"> - White is the main colour; creating what is perceived as a clean environment. 	<ul style="list-style-type: none"> - Colours were chosen to feel welcoming and relaxing, not overpowering. - Colours contribute to the sensory experience and environmental complexity. - Different colours affect moods and behaviours. 	



Viewing Nature	<ul style="list-style-type: none"> - Plants - Views - Positive distractions - Capacity to improve mood and effectively promote restoration from stress - Shorter post-operative hospital stays and higher satisfaction 	<ul style="list-style-type: none"> - Devlin & Arneill, 2003, p.680 - Larson & Kreitzer, 2006 - Schweiter et al., 2004, p.76 - Steelcase Health, 2015, p.91 	Plan and grow gardens	No, not seen except for pots at entrances.	<ul style="list-style-type: none"> - Artwork of nature scenes. - Both the attention restoration theory (Kaplan and Kaplan, 1989) and the stress reduction framework (Ulrich, 1983) have been implemented to create a relationship between restoration and nature. Environments are exposed to nature and create opportunities for reflective thought (reflection). - Facades are designed to blur the threshold separating interior from exterior, to thus harness nature (from exterior environments) to create healthier interior environments. - Indoor and outdoor gardens: views of nature through windows. - Lush gardens surround the cancer centre. - Nature provides a universal image of spirituality. - Patients and visitors are given opportunities to connect with nature through outside spaces, plants, indoor atriums and views from windows. - Trails or gardens to promote both attention recovery and for reflection benefits. - View of a natural setting. - Ulrich (1983) discusses the importance of positive distraction, the most effective of which are elements of nature such as trees, plants, and water. These were implemented. - Positive distraction with views to nature.
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3.8 COMPARISON

The conclusion can be made that in some areas Mediclinic is not keeping its brand promises. It can, however, also be seen that through the implementation of evidence-based theories to create optimal healing environments, Mediclinic will not only keep its brand promises but exceed them. This can be done by creating an environment for the patient that encourages healing. In conclusion, the use of evidence-based theories informed by research on optimal healing environments is more than sufficient to meet the needs of this project.

CONCLUSION

This chapter highlighted the strengths and weaknesses of the Mediclinic Midstream site, building and future extension (standard ward block). The strengths (indicated in green) were kept and amplified and the weaknesses (indicated in red) were seen as having the potential for design change and improvement. These identified opportunities are taken further in Chapter 8, which deals specifically with site potential. The opportunities are then visualised in the spatial conceptualisation.

