CREATING COMFORT
IN THE ABSENCE OF MEMORY

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FIG. 01 TUSOCK GRASSES | CENTRAL OTAGO
SOURCE: AUTHORS OWN

FIG. 02 SITE VISIT 02 | 29 AUGUST 2020
SOURCE: AUTHORS OWN

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ABSTRACT

As New Zealand's population ages, so does the risk of developing age-related cognitive diseases such as dementia. Whilst most associate dementia with memory loss alone, the progressive nature of the disease can affect and create problems with thinking and behaviour, as well as memory. To date, there is no known cure.

Increasingly, rural areas such as Alexandra, located in the Central Otago region, find that aged-care services cannot meet the growing demand. This issue has had a negative impact on the local community, causing stress for individuals who must move far from their home - losing their sense of 'place-identity' and, therefore, 'self' in the process.

Stemming from the notion of 'difference', people living with dementia are equally at risk of being stigmatised due to the misunderstanding of behaviours and historical representation of aged-care architecture, which cut off individuals from the wider society. As a result, the unfamiliar and often unhome-like quality of these environments, alongside the stigma associated with cognitive diseases, can lead to a faster deterioration of a person's condition.

Through a design-led research approach, this thesis explores the design of a 'normative aged-care environment' – one that can allow an individual to live well with dementia. An independent review of literature and a case study analysis established that integrating an intergenerational programme can promote a sense of community and remove the stigma of 'difference' through architectural intervention. By designing for community engagement, this thesis aims to suggest an architecture that can provide support and comfort to an individual in the absence of memory.

FIG. 03 ALEXANDRA, CENTRAL OTAGO, NZ
SOURCE: AUTHORS OWN

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INTRODUCTION

FIG. 04 DUNSTAN ROAD
SOURCE: AUTHORS OWN

INTRODUCTION

What makes us, as humans who we are in the world, is not dependent on just one component. Rather, an assemblage of qualities, beliefs and values formed by preconceptions of the physical world around us. But then, what if these preconceptions begin to disappear? Who are we now?

An issue arising close to home is the rapid increase in New Zealand's ageing population, causing significant implications in the availability of existing aged care facilities. Although the increase in life expectancy reflects the improvement of healthcare systems and general living conditions - triggering a lifespan that now surpasses our ancestors - the prosperity does not necessarily correlate to added years of good health. Instead, in reality, the increase in the length of life expectancy has equally amplified the risk of age-related diseases such as dementia or frailty, as many of us face living with mental or physical impairments in our later stages of life (Brown, 2015). More specifically, in New Zealand, the number of people living with dementia is expected to almost triple to over 170,000 people by the year 2050 (Alzheimer's New Zealand, n.d.). Before COVID-19, dementia was set to be the most significant healthcare crisis of our time. This rapid diagnosis growth has led to immense pressure on our healthcare system, which is currently struggling to keep up with the demand for the availability of existing aged care services within our local and wider communities (Gullery, 2020).

For most, the term dementia is commonly associated with Alzheimer's disease and its effect on memory loss. However, in its entirety, dementia is caused by structural changes occurring in the brain and is a progressive disease affecting and creating problems with memory, thinking and behaviour (University of Tasmania, n.d.). Surprisingly, current research suggests that a dementia diagnosis is far more feared than cancer due to the perceived loss of identity, control, dignity and independence (Corner & Bond, 2004). During the early stages of diagnosis, symptoms of dementia can be almost unnoticeable, but as time goes on, these symptoms in an individual increase and become more pronounced, whereby both physical and mental capabilities begin to worsen over time. To date, dementia is a terminal diagnosis with no known cure.

"Memory alone... 'tis to be considered... as the source of personal identity" - (Hume, 1739)

FIG. 05 ALEXANDRA TOWNSHIP
SOURCE: AUTHORS OWN

At the foundation, the fear of dementia lies within the fear of losing ones 'self' whereby the 'self' or ones 'identity' can therefore be defined as who or what an individual is (Twigger-Ross et al., 2003). 'Identity' is a complex assemblage of conscious and unconscious ideas, beliefs, preferences, feelings, values, goals and behavioural tendencies and skills relevant to our environment (Proshansky, 1978). These components equally contribute to a sense of belonging, to which the term 'identity' is intrinsically linked with that of 'place'. 'Place-identity', concerning the environment in both natural and built form, has the ability to anchor us, influencing how we relate to ourselves, others and the space around us, based on our experience of our environmental past. For those living with dementia, their identity is stolen from them, removing them from all things that once were familiar – family members, friends, hobbies and even one of the most special places, their home as the need for specialised care increases. The way in which one relates to the home is especially tested, during which time an individual living with dementia is placed into an unfamiliar environment such as an aged care facility. Although we mostly associate the notion of home with an 'image' of what it may look like, it can equally be embedded in routines, rituals, patterns and even seasons stemming from both the natural environment and sociocultural norms. The impact of this transition can be felt in a range of ways, but typically increased levels of stress, confusion, and anxiety are common, as another layer of one's 'identity' is stripped from them, eventually only leaving the shell of its victims behind.

Alongside the natural environment, architecture in its built sense can express, communicate and extract values held by society. It holds the power to change how we perceive space, objects and people. Previously, expressions of architecture centred around providing care for people living with cognitive diseases, such as dementia, have been designed to address the functional needs of the architectural programme. These expressions often resemble places of residence that are perceived to be both institutional and therefore 'sterile', 'containing' many like situated individuals who are in a sense, removed or have little engagement and interaction with the wider society. This institutional, architectural model has contributed to the fear of diseases such as dementia, as society perceives this 'sad' reality as something they never want to experience themselves, heightening the stigma associated with dementia and its ability to essentially rob

individuals of life as they know it. This level of separation between 'them' and 'us' or the 'other' is compelling in the sense that the environment can become a means to amplify this experience, creating a layer between what society deems to be 'normal'. The challenge for architecture in this instance then hangs in the balance of the architectural programme and the design of normative environments integrated within the community with the aim to mitigate stigma.

To address these issues, this research focuses on the notion of 'stigma' and its direct link to 'identity' and, therefore, how this translates to the notion of 'place' within the wider context of this thesis. The research aims to address a deeper understanding of how the 'self'; and therefore ones 'being in the world' may be nurtured and strengthened in the eyes of society using an empathetic, architectural approach.

Therefore, the outcome for this thesis proposes an architectural intervention to be integrated within New Zealand's local context, aiming to suggest a means to allow people in our society living with dementia to comfortably age in place. Ultimately, the intervention's role aims to enable these individuals to live in the best way possible using a medium of design to support the absence of memory.

The research question that this thesis, therefore, aims to address is;

“How can architecture honour the identity of a person living with dementia, and re-establish community to challenge the current stigma associated with the disease?”

STAGES OF DEMENTIA

STAGE

CARE TYPE SYMPTOMS

FIG. 06 STAGES OF DEMENTIA
SOURCE: ADAPTED FROM (WALK-IN-LAB, 2018)

SCOPE

The scope of this research aims to follow the seven stages of dementia (Fig. 6) whereby the research specifically will consider stages 4-6 (early to mid stage dementia). In terms of the architecture, the main focus therefore, will be on the main dementia unit, and the relationship that individuals have with their immediate surroundings. The architectural program, as well as focusing on the main dementia unit, will equally consider the outdoor environment through a community-based approach.

AIMS + OBJECTIVES

Aims:

To examine how notions of 'identity' and 'place' can be used to honour and retain a sense of self for people who have been diagnosed with dementia, through the medium of an architectural intervention. The proposal also aims to create an inviting intervention to encourage an increased sense of community awareness regarding dementia, to challenge the current stigmas associated with the disease.

Objectives:

- ✦ To investigate the complex relationship between dementia and the associated ideas of existing stigmas present within our society, with a critical focus on the role and features of the previous institutional aged care architectural model.
- ✦ To explore the complex relationships regarding 'people' and 'place' and understand how these notions can positively contribute to an individual with dementia's sense of self within an architectural environment.
- ✦ To address the current stigmas associated with dementia by suggesting an ancillary function that is inviting, to break down existing preconceptions by encouraging the wider community into the space.

To test and produce an outcome that addresses therapeutic, person-centred care and suggests a solution that recognises the importance of improving the quality of life of individuals diagnosed with dementia and their families, friends and caregivers.

RESEARCH PHASE NOTES

PHASE	STAGE
ONGOING RESEARCH	01-04
'DESIGN-LED' PHASE	02-04
DOCUMENTATION	01-05
FORMATING+CONCLUSION	05

FIG. 07 THESIS METHODOLOGY DIAGRAM

SOURCE: AUTHORS OWN

METHODOLOGY

In the beginning, the research approach began by undertaking an interdisciplinary analysis to understand the nature of New Zealand's healthcare system, particularly considering the role of aged care and what it means within the realm of architecture. During preliminary research, the findings identified that historically, people living with cognitive diseases such as dementia typically obtained care within an architectural environment that resembled a sterile institution - designed in a way to support the architectures programme, rather than considering the individual residing within it. As a result of this, today's person-centred care model allowed the research to consider 'the body in architecture' shifting the research approach to one that was more phenomenological. This approach identified three key themes; 'place', 'identity' and 'stigma', that hold a key relationship to both the theory of individuals living with dementia and what it means within the context of the selected site. Key areas that have been focused on during the research phase include; relationships with the environment, therapeutic and empathetic design, community engagement, the arrangement of space, privacy, safety, aesthetic and functional design techniques - aiming to identify appropriate design strategies for the Central Otago regional context. In response to the region's lack of aged care facilities the reviewed literature also informed the development of a performance criteria, to assess existing models of architecture (through a local and international case study analysis), using this to both inform and assess the success of an initial architectural intervention at the conceptual design level.

Using a method of research through design, the initial design proposal was then further explored and developed through a range of iterations, followed by a series of reviews by academics, architects and researchers with expertise in this area. Feedback was then reflected upon and used to inform new iterations and develop the design. This has been documented at the end of each design phase to strengthen the design, as it responds to the question set out at the beginning of this thesis. Essentially, the process aims to suggest a final developed architectural design through the application of design techniques identified during the research phase, which ensures people living with dementia in the Central Otago region can live well, and age comfortably in place in an environment of which they call home.

THEORETICAL STRUCTURE

THE INTIMATE, PERSON CENTRIC

- + WHAT IS DEMENTIA?
- + DEMENTIA, WELL-BEING & STIGMA
- + THE SOCIETAL CONTEXT

EXTERNAL ENVIRONMENT

- + DEMENTIA, ARCHITECTURE & STIGMA
- + INSTILLING 'PLACE'/'PLACE-IDENTITY'
- + NATURE, PATTERNS & RHYTHMS IN THE CONTINUUM OF THE 'SELF'

THE SOCIETAL CONTEXT

- + CONNECTEDNESS ACROSS MULTI-GENERATIONAL COMMUNITIES
- + PLAY, DEMENTIA AND THE BUILT ENVIRONMENT

FIG. 09 LITERATURE SCOPE
SOURCE: AUTHORS OWN

INTRODUCTION

The following chapter uses a phenomenological approach to review a range of literature exploring the condition of dementia for the purpose of establishing a relationship to architectural discourse. The review found that individuals living with dementia can often be exposed to the harmful effects of 'stigma', and its ability to create a negative perception of people due to 'difference' - where ideas and behaviours caused by the disease are perceived as undesirable and oppose widely accepted socio-cultural norms. As the notion of stigma is multifaceted, the literature review has used three different lenses to better understand how stigma may arise through internal and external factors, leading to the detrimental effects it can have on the well-being of the person living with the disease. These lenses being; the intimate, person-centric sphere, the wider environmental context and the societal context, whereby the breadth of themes (outlined in the infographic) aim to explore and highlight design opportunities for architecture within aged care environments.

FIG. 10 LITERATURE REVIEW LENSES

SOURCE: AUTHORS OWN

Content on this page has been redacted.

FIG. 11 WHAT IS DEMENTIA
SOURCE: (PSYCHOLOGY TODAY, N.D.)

THE INTIMATE, PERSON-CENTRIC SPHERE

The first lense; the intimate, person-centric sphere aims to better understand the definition of dementia and the key behaviours affecting an individual, as well as the implications of stigma on ones sense of identity and well-being.

‘Dementia’ is the term used when a person experiences a gradual loss of brain function due to physical changes in their brain structure (Ministry of Health, 2018). The disease itself is classified as a syndrome, a similar collection of signals and signs that people with the condition share. Although most people associate dementia as being closely linked with Alzheimer’s, this is only one of the many ‘causes’ of dementia, as other conditions such as Huntington’s disease and Parkinson’s also fall under this definition. However, Alzheimer’s disease is the most common cause - typically associated with symptoms such as memory loss. Dementia in its entirety can present differently amongst individuals - whereby symptoms can range from cognitive decline, mood swings, confusion and orientation, loss of mobility and movement through to changes in sleeping patterns, often due to disruptions of the biological clock (Alzheimer’s Association Australia, n.d.). The rate at which the disease progresses is purely dependent on the individual, though currently, the disease itself has no known cure (Schwarz & Rodiek, 2007). Whilst antipsychotic medications (a treatment derived from the 1990s) are used to mitigate the symptoms of the condition, international and local experts are now looking to other factors which may be used to improve the living conditions of those with dementia - through using a ‘person-centric’ care model (Wallace, 2020). This not only considers the person at the heart of the condition – i.e. their whole being, but also how they relate to both the natural and built environment. The intent is to improve the quality of life by redesigning environmental conditions to provide a means for living ‘well’ with dementia.

LAWTON'S FOUR SECTIONS OF 'THE
GOOD LIFE'

Content redacted.

FIG. 12 WELL-BEING (LAWTON)
SOURCE: (LAWTON, 1983)

THE BARTON AND GRANT MODEL OF THE
DETERMINANTS OF HEALTH AND
WELL-BEING IN OUR CITIES

Content redacted.

FIG. 13 HEALTH & WELL-BEING MODEL
SOURCE: (BARTON AND GRANT, 2006)

THE INTIMATE, PERSON-CENTRIC SPHERE

1.2_DEMENTIA, WELL-BEING & STIGMA

The notion of ‘stigma’ affects a number of things when considering dementia, including a person’s willingness to seek diagnosis (Swaffer, 2014, p709). Defined as the “assignment of negative [self] worth on the basis of a devalued group or individual characteristics” stigma is an “ever-present yet often ignored component of life for older adults”. Formed on the basis of myths and stereotypes associated with signs of disease and discredit related to aging, i.e. memory loss, wrinkled skin and functional impairment, these assumptions contribute to the negative evaluations that may become the core of personal identity. In this sense, as an effect that is particularly relevant to individuals living with cognitive impairment from diseases such as dementia, stigma begins to infuse the body and soul of an individual so that a person accepts being ‘devalued’ by the wider society (Dobbs et al., 2008). Kate Swaffer of Dementia Alliance International highlights two main types of stigma; “one as external, that is stigma towards the person, and the other as internal stigma, where the person feels shame about themselves; that they are less of a person because of the symptoms of dementia” (Swaffer, 2014). Research amongst institutionalised adults also suggests that older adults who are labelled and stigmatised as ‘incompetent’, are likely to accept others’ definitions of them as being incompetent (Dobbs et al., 2008).

Equally, the act of diagnosing dementia is able to ‘exacerbate’ issues, such as social inequity, stigma, isolation, loss of identity and discrimination. It disempowers, devalues, demeans and lowers self-esteem and very negatively impacts well-being and quality of life. This specific act can be referred to as what is known as “prescribed disengagement” which essentially describes the disconnect from an individual’s past life before dementia; their ability to work, play and take an active role in society, to which transitions the individual to a life that is now ‘limited’ in the sense their previous mental and physical abilities are ‘seemingly’ reduced. In turn, this prescribed dis-engagement sets up a “chain reaction of defeat and fear, which negatively impacts a person’s ability to be positive, resilient and proactive” (Swaffer, 2015, p.3). Therefore, it is important that after diagnosis, there is an emphasis placed on enhancing an individual’s quality of life and well-being. Whilst many existing models explore these fundamental components, three key sources have been selected for analysis below, aiming to identify the many attributes that contribute to an optimal state of well-being and quality of life.

FIG. 14 SUMMARY OF THE EDEN ALTERNATIVE
SOURCE: (ADAPTED FROM THE EDEN ALTERNATIVE, 1991)

An earlier model of well-being derived from Lawton (1983), extracted by Schwarz and Rodiek identifies four main components of quality of life, including elements such as; perceived quality of life, behavioural competence, objective environment and psychological well-being. They argue that whilst of course there are some additional needs, people living with dementia have the same psychosocial needs as other individuals. In a more recent model (2006), Barton and Grant explore how individual determinants of health; i.e. a persons age, sex and hereditary factors are linked to elements within the global ecosystem, including lifestyle, community, local economy, activities, built environment and the natural environment.

Whilst the first two models (Fig 12 -13) are more general representation of well-being, the third model; titled 'The Seven Domains of Well-being', derived from 'The Eden Alternative' directly resonates with conditions desired in that of aged care environments. In terms of the seven elements, while Growth, Security and Joy are essential in the maintenance of the 'self', when specifically considering the implications that 'stigma' may have on an individual living with dementia, the remaining four key elements particularly stand out. These being; Identity, Autonomy, Connectedness and Meaning to which each can be facilitated and linked back to determinants derived from Barton and Grants model of health and well-being.

Unlike the previous, generalised models of health, the third model directly corresponds to the desired conditions in response to long term care facilities. This model, titled "The Seven Domains of Well-being" derived from the 'Eden Alternative' outlines elements of which aim to improve the quality of life of those living with cognitive impairments, such as dementia (The Eden Alternative, Inc., n.d.). These elements consider the following points; identity, growth, autonomy, security, connectedness, meaning and finally joy, and are defined in more precise detail below.

THE INTIMATE, PERSON-CENTRIC SPHERE

1.3_IDENTITY AND A SENSE OF 'SELF'

As the notion of dehumanisation due to stigma correlates to that of a disruption to how one views ones 'self' through an assumed 'incompetence', it is important in the context of dementia to consider the fundamental elements of which make up ones identity. Psychologist Rom Harre describes the idea of the self from three different perspectives (Sodo & Winters, 2019, p.8).

Considering these three perspectives, it is clear that the notion of the 'self' is largely influenced by dementia and the symptoms that are associated with the disease. Specifically, responding to relationships with others both historically and presently as well as internally and externally with consideration and acknowledgement of ones being in both space and time. It then becomes clear that the maintenance of the 'self' particularly is an important component of dementia care within an individuals personal environment. This may not be specifically in an individual's home (during mild to advanced dementia when specialised care is required) but may be considered through other means to meet the same needs as the home to maintain and reaffirm the sense of self.

◀ FIG. 15 THE THREE CONCEPTS OF THE 'SELF'
SOURCE: (APDATPED FROM SODO. J, 2019)

POSTIVE CONTRIBUTIONS	NEGATIVE CONTRIBUTIONS
<ul style="list-style-type: none">• Garden avaiability/space• Colour distinction between housing typologies• Natural materiality used for building claddings and garden decorations• Accessibility between indoor and outdoor environment• Seating located in nooks around buildings to allow for 'pause'• Views to inside and wider exterior environment• Emits a sense of 'being in nature'• Intergrated with the wider community through amenity• Stimulating environment ~ contains things to look at, things to do; water features, wandering garden, participatory• Porosity in and out of space	<ul style="list-style-type: none">• Institutional/mass parking• Medium density scale that is not reflective of country like surroundings. Catering for a large number of 'like-situated' people• Similar forms used with little variation ~ less personality• Fences are more like barriers ~ clear seperatuon between private and public space. A clear threshold distinction of what occurs in what space. Style of fence a contributing factor i.e. metal/black• Outdoor pathways but little elements included i.e. vegetation to stimulate and provide a memorable/intriguing experience• Materials of concrete evoke harsh qualities within space• Scale of buildings ~ too large, feels like a large complex/institution due to height and size of building scale• Distinct public and private space ~ 'no entry' to space inside the development/home• Size of windows ~ too large and materiality not reflective of time frame of residents age/ background

EXTERIOR ENVIRONMENT

FIG. 16 DEMENTIA UNIT EXTERIOR
SOURCE: (WEB SEARCH, ACCESSED NOV. 2020)

INTERIOR ENVIRONMENT

FIG. 17 DEMENTIA UNIT INTERIOR
SOURCE: (WEB SEARCH, ACCESSED NOV. 2020)

Source/Methodology Note: The images sampled above have been extracted from a Google Image search, using the key words 'Dementia Unit Exterior/Interior' or similar. The purpose of a generalised search by public domain – using international and national architectural examples - was to explore and compare a vast variety of design features and how these may contribute the publics perception of aged-care architecture.

POSTIVE CONTRIBUTIONS	NEGATIVE CONTRIBUTIONS
<ul style="list-style-type: none">• Common space ~ enough space for activities• Signs located to assist with wayfinding• Domestic scale in shared and private spaces including features such as; fireplaces, carpet/home like furnishings, curtains, personalised & cosy finishes, artwork• View to outside• Width of hallways are generous/ accessibility• Grab rails for access• Stimulating environment representing the home opposing sterile hospital-like space• Views to the outdoors	<ul style="list-style-type: none">• Obvious reception areas ~ creating a seperation between carers and residents. Height and size = creates a distinct barrier• Beds hospital like• Surfaces reflective = glare issues• Windows are large in scale• Dated furnishings/colours• Floor finishes are commercialised compared to carpet in typical home• No personality or character of space (no pictures on walls or personal belongings)• Width of hallways may be almost too wide• Lighting ~ industrial fluorescence/commercial• Ceiling/acoustic tiles• Kitchens - scale too big, too big compared to a domestic kitchen associated with typical home• Blinds instead of curtains• Window to wall ratio disproportionate of time/ age of residents who are more familiar with smaller more decorative windows• Furniture is uniform/standardised and size of space is too large and does not promote intimate engagements

THE EXTERNAL ENVIRONMENT

The second lense seeks to link the factors from the previous section to that of the wider natural and built environmental context, i.e. how architecture can contribute to a positive or negative perception of dementia. This section explores the link dementia has with pre-existing models of architecture and how these have been stigmatised. Notions of 'place' and 'place-identity' are also discussed for their role in further understanding the sense of the 'self' in space.

2.1_DEMENTIA, ARCHITECTURE & STIGMA

Whilst it has been established that behaviours associated with dementia may not always align with sociocultural norms, it is important within the context of this thesis to consider architecture, and how it contributes to the perception of individuals living with cognitive impairments from the point of view of the wider community. By considering architecture as an external factor, the aim of the research seeks to better understand how the notion of 'fear' in relation to dementia can be mitigated using design techniques in both a social and environmental context.

In terms of the history of architecture for mentally impaired individuals, the 'asylum' or what is now considered as an institution, was used as the main form of care for people with severe mental illness. Contributing to the negative connotations of such architecture, the distinct architectural typology of the hospital-like aesthetic has since forged a separation between people living with cognitive impairments and the wider community. As a result of this, individuals are perceived to be 'cut off' from society, as the purpose of the architecture aims to serve 'a large number of like situated individuals' (Goffman, 1968) who have differing needs to that of the wider community. Findings from a recent study using focus groups and interviews found the impact of this could be perceived as "the community at large either has an interest in keeping them [individuals with dementia] locked up or out of sight, or [they] were simply not aware or

PROF. MARY MARSHALL - RECOMMENDATIONS -	FLEMMING + BENNETT - RECOMMENDATIONS -
<ul style="list-style-type: none"> + Be small + Be domestic and home-like + Feature facilities to enable ordinary household activities (clotheslines, garden sheds, kitchens) + Have unnoticeable safety features + Have the ability to control stimuli - especially noise + Have good visual access - so people can see what they need (e.g. toilet/bathroom) + Have rooms with different furniture themes/styles, appropriate for residents' varying age/generation + Provide a safe outside space + Provide good signage and sight, small and sound cues, and use objects rather than colour for orientation 	<ul style="list-style-type: none"> + Provide a human scale (e.g. 'family-sized' clusters and a low number of people per care home) + Create a familiar place + Respond to a vision for the values and goals of care (e.g. domestic and home-like) + Unobtrusively reduce risks (be safe and secure) + Manage levels of stimulation - reduce unhelpful stimulation and optimise helpful stimulation + Allow people to see and be seen (be simple and provide good visual access) + Provide a variety of spaces that provide opportunities to be alone, or with others from the community + Support movement and engagement (provide for planned wandering)

FIG. 18 RECOMMENDATIONS FOR ARCHITECTURE*
SOURCE: (NEW ZEALAND MINISTRY OF HEALTH, 2018)

- 1) Provide human scale i.e. be small in size. Participants in the Moh NZ based study noted that the ideal number of people living together was between 5-12.
- 2) Unobtrusively reduce risks (safe and secure) in the environment by providing safe outdoor spaces as well as the inclusion of un-noticeable safety features
- 3) Allow for visual access – for people to see and to be seen
- 4) Provide and have the ability to manage levels of stimuli
- 5) Create a familiar place; i.e. through use of familiar furnishings and styles that are age/generation appropriate as well as allowing for space for personal belongings.
- 6) Use of signage and environmental cues i.e. sight, smell and sound to aid in wandering behaviours
- 7) Provide a variety of spaces people can be alone, or be engaged with others (choice). This may include a petand/or child friendly environment, gardens, space to accommodate guests, spaces to show and create art
- 8) Design that facilitates people's independent domestic ability i.e using the kitchen, for the ability of undertaking

FIG. 19 RECOMMENDATIONS FROM MOH
SOURCE: (NEW ZEALAND MINISTRY OF HEALTH, 2018)

did not care about their circumstances”. One care partner stated; “People without dementia don’t want the people with dementia coming out [into the community]. Another participant explained the stigma as being associated with the fear of dementia, stating; “ Many people with dementia can experience the stigma of having a condition that causes behaviours to be different to what people are accustomed to or what people expect... and they [people without dementia] become, understandably, fearful of what they don’t understand” (Steele et al., 2020, p.10).

In addition to the impact the previous architectural healthcare model has had on the perception of individuals living with dementia by the wider community, it is also true that the design of the physical surroundings have a significant impact on the cognitive, emotional and physical functioning on people living with dementia in aged care settings (Calkins, 2009). Whilst in most instances the intent is to keep a person at home as long as possible, symptoms such as sundowning; whereby individuals may become more confused, agitated, restless or insecure in the late afternoon or early evening, can often accelerate the need for a heightened level of care. Unfortunately whilst the primary objective is to offer greater comfort to an individual, more often that not the move to an unfamiliar environment with no resemblance to a familiar ideal of ‘home’ begins to limit the ability to maintain a sense of ‘self,’ through a reduction in the level of choice, autonomy and privacy afforded naturally in one’s own home. Only during the 1980s did research begin to focus on the role that the built environment plays in the expression of “anxiety, agitation, wandering or other challenging behaviours in individuals with dementia”. The acquired solution saw a move from the ‘efficient’ architectural model with a focus on the service provider to a person-centric model replicating a ‘home-like’ environment, as findings suggest people with dementia tend to cope better with physical and mental effects in the familiar surroundings of home and the local neighbourhood. Some design features found to promote positive mental health results include (Evans, 2003);

- Smaller (9-20) resident units
- Reduction in noise levels
- Landmarks and good signage
- Accommodation of wandering
- Provision of home like features i.e. domestic style furnishings and fittings (Mitchell & Burton, 2006).

The New Zealand Ministry of Health’s (MOH) ‘Secure Dementia Care Home Design’ resource elaborates on these design features with reference to two key sources (Prof. Mary Marshall (1990/98/-2006) and Flemming and Bennett (2015)). Due to the overlapping nature of these sources the design considerations have been combined and added to an independent review of literature (Fig.18);

Whilst these design considerations highlighted provide a good general, practical means to improve well-being and quality of life in aged care environments, it is fundamental to equally consider the power of architecture - as everyone has a personalised ideal of what ‘home’ looks/smells/feels like, whilst equally considering that of stigma and how the wider community may perceive a particular environment. Phenomenologist Juhani Pallasmaa argues that it is essential to consider the way in which people interpret the built environment through all senses - not just sight. He states that “the diminishment of the four other senses effects the spatial experience of the buildings ability to inspire, engage and be wholly life enhancing”.

FIG. 20 ALEXANDRA IN AUTUMN
SOURCE: AUTHORS OWN

THE EXTERNAL ENVIRONMENT

2.2_INSTILLING PLACE/PLACE-IDENTITY

The notion of place, and place-identity – how one relates to their surrounding environment is a crucial component in the transition of an individual moving from their home - their sanctuary to somewhere foreign and unfamiliar, such as an aged care facility. The idea that there is a relationship between that of 'place' and 'identity', namely, 'place-identity', became popular among geographers in the 1970s, who focused on the affective bonds people had to different places (Easthope, 2009). Hazel Easthope recognises theorist of space; Martin Heidegger, who proposed a philosophy of "being-in-the-world". Heidegger acknowledged that who we are is influenced by our relationship, through our bodies, to the outside world - to which 'place-attachment' is realised. In his words; "[the body] goes out to meet the place- world" and it "bears the traces of the places it has known" (Casey, 2001, p. 414; Heidegger et al., 2010). Easthope also highlights the work of Soja (1996) who explains that "places are doubttable constructed: most are built or in some way physically carved out. They are also interpreted, narrated, perceived, felt, understood and imagined". Massey and Jess (1995:219) similarly state "The physical environment is an essential part of place, but it is always an interpreted element", to which we can associate with social constructs influenced by 'physical, economic and social realities".

It is therefore true that the 'self' is fundamentally linked with that of place. It embodies the idea as summarised by Edward Casey, that 'place' involves "intrinsically an awareness of one's place, an awareness that "there is no place without self; and no self without place" (Casey, 2001, p. 406). Dovey, identifies that 'place' is tied to 'identity' in two different respects (Tuan 1974 in Dovey 1935:42). First, that one's spatial identity is related to ideas of attachment to places and particularly ideas surrounding a special kind of place: 'the home'. Second, 'place' affects temporal identity as the emotion of human beings finds 'expression and anchorage' in things and places and the physical environment enables us to concretised memory through association. The term memory, as it can be applied to the understanding of dementia related symptoms, refers to images, thoughts, feelings, which, when we experience them, have the quality of coming back to us from the past and can contribute to a special sense of place in particular settings (F. Steele, 1981, p. 125).

In the words of Juhani Pallasmaa, “we have an innate capacity for remembering and imagining places. Perception, memory and imagination are in constant interaction; the domain of presence fuses into images of memory and fantasy. We keep constructing an immense city of evocation and remembrance, and all the cities we have visited are precincts in this metropolis of the mind”(Pallasmaa, 2012, p. 72). Five functions outlined by Proshansky contribute to these conclusions, highlighting that ‘recognition, meaning, expressive-requirement, mediating change and anxiety/defence all focus on the importance of maintaining continuity of ‘place’ in order to maintain continuity of ‘self’(Proshansky, 1983, pp. 215–216).

As the findings suggest, maintaining the essence and relationship that the body shares with the home through the familiarity of ‘place’ ultimately can improve well-being through the feeling of belonging. Jacobson identifies that “to be at home is a sanctuary of sorts – one categorised by familiar and localisable ways of being – through which the outside world can be temporarily set aside. It is a place of where one feels sheltered from outside instructions and considerations, and given a place to recollect oneself in a place of familiarity”. Jacobson also states that “our home is like a second body for us”, it is a “place of initial stability and a foundation for the self”. She extends this theory of the home in relation identity and to that of place, explaining that “home can be a situation of regular rhythms that match or respond to the demands for the body for sleep and rest, nourishment, and so forth. In these ways, our home acts as an extension for our body and its functional needs and interests” (Jacobson, 2009). Relating these concepts back to dementia within the architectural realm, the research has highlighted the significance of the ‘home’ being referred to as an ‘anchor’, of sorts, as well as the importance in the creation of ‘normative’- home-like environments. The task of architecture then becomes one of the creation of this ‘anchor’ for individuals who are losing their familiar associations to the home, which is challenged in the physical transition of home to an institutional facility. The benefit, being ultimately for the purpose to strengthen and regain a sense of self in the context of one’s new and unfamiliar environment.

Content on this page has been redacted.

THE EXTERNAL ENVIRONMENT

2.3_NATURE, PATTERNS AND RHYTHMS IN THE CONTINUUM OF THE 'SELF'

In response to the notion of nature's rhythms in architecture, architect Ralph Knowles begs the question; "do our buildings have to hide us from every small variation in the environment that might repeatedly summon us to action?" He explores this theory further, stating;

"Rather, something deeply assuring comes when our actions are consonant with nature. It is a reaffirmation of our existence – a continuous call for choices that define who we are as individuals. Our need for this call should not be underestimated nor trivialised by design" (Knowles, 2006).

Along with this, Knowles challenges designers to "acknowledge and celebrate the rhythmic nature of nature". One needs to only consider these transitions in nature in terms of seasonality i.e. the climatic changes during the year; hot to cold, wet to dry, calm to breezy (Knowles, 2006, p.5-6). The basic fundamentals of human existence are based on the expectations of the sun to rise and set, spring to follow winter and the rains to come in their seasons. By working in sympathy with the rhythms of nature, Knowles suggests that profound changes can occur in the way in which people identify with their environment. In relation to the notion of well-being in dementia within the context of the research, this sense of continuity derived from both nature and even the awareness of a familiar space, such as the home can be seen to provide an opportunity in the aim to mitigate feelings of distress and confusion in the built environment. In return, this sense of maintaining a continuity with nature as previously highlighted, offers fundamental feelings of stability and has the ability to provide an anchorage in a new environment such as an aged care facility.

Considering the essence of 'rituals', Knowles points out - "We all have rituals, small ones and large ones, personal and communal. From the way we make coffee every morning to the way we celebrate the coming of spring, our rituals are often a celebration of nature's rhythms". This is true of patterns of life on family farms and rural villages which reinforce how people are able to both seek opportunity from their surrounding environments, as well as to identify with the natural cycle of nature (Knowles, 2006, p.89). We can also associate the fluctuations with physical, daily movements or migrations. "We may move to a shady porch, descend to a cool lower floor, or leave the house entirely and go out under the trees on a warm summer afternoon. In winter we may go upstairs for the rising heat or gather close to a fireplace". These rituals, as outlined by Knowles have the ability to "impart special meaning to alternatives of time and seasons, setting up rhythms in our own lives that attach us to places we occupy (Knowles, 2006). Therefore, in the context of this research, the routines and rhythms of a person with dementia may aid in the sense of creating 'place-identity' in response to the natural rhythms identified within the selected site context.

FIG. 22 SØLUND RETIREMENT COMMUNITY IN COPENHAGEN - HENNING LARSEN
SOURCE: (ARCHDAILY, 2012)

THE SOCIETAL CONTEXT

Following the research discussed in the previous sections, the third lense considers the societal context in terms of the engagement people living with dementia in aged care environments have with the wider society. This lense explores the benefits of community engagement; specifically intergenerationally, and considers the notion of 'play' and how it can be further considered in the design of aged care environments.

3.1_CONNECTEDNESS ACROSS MULTIGENERATIONAL COMMUNITIES

As the previous sections have highlighted, institutional architecture has the power to create barriers between people living with dementia and the wider community, resulting in a negative stigma and ultimately creating a 'fear' of difference. As a result, internationally there has been a focus on the need to design innovative approaches for the aging population particularly in Scandinavian countries such as Denmark, Norway and Sweden. The Danish Architectural Policy argues that designers have an 'architectural duty' to ensure all users (even those mobility-impaired) can participate in society, particularly having a key focus on reducing the 'stigma' of old age and promoting social inclusion. Another key concept, which aligns with the New Zealand MOH's 'Secure Dementia Care Home Design' guide is the idea of creating environments with domestic spaces that feel like and remind the users of their own homes, aiming to break down the preconception of the institutional 'nursing home' stereotype.

The Sølund Retirement Community in Copenhagen, designed by architects Henning Larsen is a key example that sort to create a facility which is both private and calm, as well as being integrated into the community. The design aims to encourage engagement with a variety of age groups within the wider community through a unique and varied program; a particular stand out being the inclusion of a children's day-care centre, intending to bring a mix of local people and create a more normal and diverse community feeling, as opposed to an 'elderly-only zone'. By creating buildings that are permeable, easy to navigate and connected to nature, the design aims to give residents a feeling of 'connected-ness' and 'home' rather than feeling like they have moved into an institution.

Creating feelings of connected-ness by encouraging members of the community into aged care environments is an area of which is much less explored in New Zealand, as opposed to other places in the world. There is sound opportunity for intergenerational programs to provide meaningful engagement between generations within dementia specific settings. For these programmes to be meaningful, activities must encourage a sense of pleasure and enjoyment to establish connection and help to retain a sense of autonomy. Evidence suggests that intergenerational programs are important for both individual self-esteem and the ability to participate fully in society. 'Social connectedness' in this instance, reflects the self in relation to others, as it is the internal sense of belonging and is defined "as the subjective awareness of being in close relationships with the world". It is no surprise that older adults and children involved in intergenerational programs thrive in the benefits of cross generational exchanges. In fact, older adults state that they receive more than what they give when involved in an intergenerational activity – it can be seen to be a way to invest in the future, as time and patience, often in short supply in a families daily routine are not issues for an older adult or child in an intergenerational program setting. Playing with a child offers older adults the occasion to reminisce about their own childhood, while children can gain an enriched learning experience from interacting with positive role models. Together, they share a special time which only intergenerational play can bestow.

“The desire for playful activities is **universal**,
and in the human species **it transcends age**”.

- Moya, 2014 |Referenced by Alison Tonkin and Julia
Whitaker in 'Play in Healthcare for Adults' (2016) -

THE SOCIETAL CONTEXT

3.2_PLAY, DEMENTIA AND THE BUILT ENVIRONMENT

Play is what we do when we are human. It is a way of engaging and expressing our being in the world and therefore contributes to a fundamental part of our moral well-being, and a healthy, mature and complete human life. It is through the act of play, that ‘we are in the world’. Context comprises the environment in which we play, the technologies with which we play, and the potential companions of play, whereby context is the network of things, people and places needed for play to take place. A playground is a prime example of a play context, though it is also true that almost any space, anywhere can become a playground. One of the most unique aspects regarding the idea of play is the fundamental experience that it affords, rather than to be a means to fulfil a practical task. It can also be seen to temporarily invert the ‘norms’ of society, to which Sicart confirms by stating, “we need play precisely because we need occasional freedom and distance from our conventional understanding of the moral fabric of society” (p5).

Play can be a way to connect to past generations and past versions of the self, as well as being a path to present and future fulfilment. It is through the extension (or revisiting) of the imaginative, creative, spirited play of early childhood that the individual can achieve the realisation of the self in adulthood. In terms of the role that ‘play’ has as a concept in relation to individuals living with dementia, (Smith etc. al 2015) there are six key benefits described to aid in Alzheimer’s prevention, being; regular exercise, healthy diet, mental stimulation, quality of sleep, stress management as well as the development or maintenance of a healthy lifestyle (Fig 23). NHS Choices suggest that perhaps play’s greatest contribution to positive health is through developing and maintaining positive mental wellbeing, which enables us to feel good about ourselves and engage with the opportunity’s life has to offer. Supporting the notion of mental wellbeing, NHS Choices suggest there are five key steps (Fig. 24) in which all can be promoted through play-based activities.

It may therefore be concluded that play within the realm of aged care, specifically dementia care offers individuals both the opportunity to improve their mental well-being, but also has the ability to connect the current self with memories of the past through engaging with the act

FIG. 23 SIX KEY BENEFITS FOR ALZHEIMERS PREVENTION
SOURCE: (ADAPTED FROM TONKIN, 2016, P89)

CONNECTEDNESS

- play provides opportunities to connect and develop deeper relationships amongst individuals as well as in communities.

BEING ACTIVE

- not just in physical activity but in participation in activities that enjoyed by the individuals i.e. the expressive arts

LEARNING

- the acquisition of new tasks is easier when an element of play is involved

GIVING TO OTHERS

- finding time to play with others

TAKING NOTICE

- of surrounding environments, particularly in nature. 'Playscapes' that incorporate natural features are known to promote a 'sense of self and well-being'.

FIG. 24 PLAY & MENTAL WELL-BEING

SOURCE: (ADAPTED FROM TONKIN, 2016, P12)

of play and the experiences it affords. It is in this level of deep connection that true well-being may be found within an individual experiencing dementia, as it is common for people to regress into the past (to a younger self) as symptoms develop. By allowing play to be encouraged in the environment, particularly in a multigenerational setting it therefore can act to support individuals, allowing for them to live comfortably in the time that they are in, during the various stages of the progressive disease.

IDENTITY

- Domestic, residential scale units
- Familiar design elements/form
- Promotes multigenerational engagement
- Playful and engaging atmosphere

AUTONOMY

- Allows for choice within the built and natural environment
- Ability to maintain and manage stimuli (residents)
- Ensures dignity by offering private space (indoor +outdoors)
- Accommodates for wayfinding using sensory cues & landmarks
- Uses passive/unnoticeable safety features i.e. sightlines & vegetation

CONNECTEDNESS

- Permeable architecture for sight and access in and around building
- Close in proximity to and establishes clear community links
- Connection to nature through sensory experience
- The ability to acknowledge nature's natural rhythms and cycles

MEANING

- Sense of normality i.e. makes individuals really feel at home
- Welcoming for individuals and the wider community
- Promotes movement through lively activities and memorable experiences

FIG. 25 PERFORMANCE CRITERIA
SOURCE: AUTHORS OWN

CRITICAL REFLECTION

Considering the breadth of research discussed, this literature review has demonstrated how the notion of stigma is present across each lens: person-centric, the wider environment, and the societal context. It aims to outline the contributing factors; i.e. the diagnosis of dementia, historical architectural typologies and separation due to distance in proximity to nearby community – with reference to architectural design and discourse, and identifies that it is from these contributing factors that a fear of dementia has been developed, resulting in a negative perception of people living with the disease, as well as environments such as aged care facilities.

Whilst past models of architecture have equally tainted the perception of aged care environments, the literature indicates that a person-centric approach to designing for people with dementia using models of well-being is essential in the aim to provide a better quality of life. Thus, as a result of the research findings, particularly by means of material derived from the 'Eden Alternative', a performance criteria has been created (Fig. 25) which aims to guide the following design process in the aim to design an innovative, 'normative environment', for the purpose of mitigating the negative effects of stigma still seen in the wider community today.

By combining these practical and phenomenological strategies with a comprehensive architectural programme, the criteria aims to offer the architecture (within the context of this thesis) a newfound opportunity in the design of healthcare environments, specifically considering users with cognitive impairments.

CASE STUDY ANALYSIS

“Architecture is about the understanding of the world, and turning it into a more meaningful and humane place”

-JUHANI PALLASMAA

METHOD OF ANALYSIS

The following New Zealand and international case studies documented in this section seek to support the literature findings, highlighting key design and social elements respective of aged care environments. The notion of community engagement is key across the range of projects, aiming to identify architectural solutions which can positively contribute to the well-being of users and enhance their experience of 'place' in the built environment.

PART 01: NEW ZEALAND PROJECTS

Aspiring Enliven Care Centre

Cheviot Rest Home

Queenstown Country Club

Golf Rise - Retirement Village

PART 02: INTERNATIONAL PROJECTS

De Hogeweyk

Dementia Nursing Home

New Frogner Nursing Home

Alzheimer's Village

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ASPIRING ENLIVEN CARE CENTRE WANAKA, CENTRAL OTAGO

Architects: Unknown | 2016

As a purpose-built facility located in Wanaka, the Aspiring Enliven Care Centre demonstrates a sympathetic approach to providing care within a rural, small-town, environment. The architectural design of the centre ensures a connection is established between both residents and Wanaka's natural surroundings by capturing external views, reaffirming the regions iconic climate. As one of newest facilities within the Central Otago Region it is conveniently positioned amongst both a retirement community as well as key medical services. The rugged landscape is a key inspiration for the architectural form, specifically the gable roof and use of timber and shist materials - familiar to the exisiting regions residential typology.

KEY FEATURES:

- A familiar, small, residential typology i.e. recognisable to occupants by form, materiality and scale
- Loop floor plan allowing for ease of internal navigation
Utilises passive measures for safety and privacy (i.e. screens, rural style wooden gates)
- Indoor/outdoor flow between architecture and the natural environment. Includes places to sit and areas to enjoy the outdoors both in internal courtyards and outdoor spaces.

IMPROVEMENTS:

- Allowance for intergenerational engagement; providing spaces to welcome the wider community into the facility
- More consideration for wandering tendencies, i.e. using sensory cues and landmarks to allow for safer navigation both indoors and outdoors.

FIG. 27 ASPIRING ENLIVEN CARE | WANAKA
SOURCE: (ELDERNET, 2021) & AUTHORS OWN

Content on this page has been redacted.

CHEVIOT REST HOME

CHEVIOT, HURUNUI

Architects: Unknown | No date recorded

Also located in a small-town environment is Cheviot Rest Home, a five-time winner for the ‘Best South Island Small Aged Care Facility’. Nested amongst the town’s residential community, the building reflects an architectural typology familiar to locals due to its brick materiality and gable roof form. Its domestic scale and ability to provide both individual and group activities, support a sense of autonomy and connectedness in regards to occupants sense of ‘home’, reinforcing their ‘identity’. Access to services i.e physiotherapy, allows a sense of both independence as well as dignity, whilst the buildings floor plan provides opportunity to connect with nature, utilising clear sight lines as a passive safety measure.

KEY FEATURES:

- Domestic scale, familiar architectural typology resembling that of the wider, local area
- Design is welcoming
- Passive safety measures through use of sightlines and inclusion of specific vegetation

IMPROVEMENTS:

- Incorporate a more playful, engaging, outdoor atmosphere
- Promote intergenerational activity to establish a link between the occupants and wider community
- Some private, outdoor spaces for autonomy and dignity
Inclusion of spaces respective of wandering tendencies

◀ FIG. 28 CHEVIOT REST HOME | CHEVIOT
SOURCE: (CHEVIOT REST HOME, 2020)

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QUEENSTOWN COUNTRY CLUB

QUEENSTOWN, CENTRAL OTAGO

Architects: Warren and Mahoney | 2020

As part of a wider aged care development, the Queenstown Country club's design of a civic community space is a good example of a facility that is well integrated within an existing local environment. Described as creating a 'lively heart', the design plans to incorporate retail, medical and even childcare services, aiming to encourage a sense of connectedness amongst both residents and the wider community, having a strong desire to oppose the standard practice of segregating the retirement community by age/generation.

Architects Warren and Mahoney had a key focus on relating the design with the surrounding landscape, achieved through the design of the buildings gable roof form and integration of natural materials such as stone and timber - responding to the surrounding dramatic alpine environment, and equally the design of neighbouring properties.

KEY FEATURES:

- Familiar design elements i.e. architectural typology
- Community/social focus
- Lively and engaging environment through purpose built facilities

IMPROVEMENTS:

- Scale of buildings i.e. higher density could be perceived as commercialised and therefore feel unwelcome
- More features in relation to the rest home community i.e. accommodating for wandering
- Proximity between rest home and community spaces (i.e. sight lines and walkability)

◀ FIG. 29 QUEENSTOWN COUNTRY CLUB | QUEENSTOWN
SOURCE: (WARREN AND MAHONEY, 2020)

Content on this page has been redacted.

GOLF RISE - RETIREMENT VILLAGE

RED BEACH, AUCKLAND

Architects: Warren and Mahoney | 2019

Though intended as a retirement community, Gulf Rise offers the research plentiful opportunity in terms of its residential scale and the ability to connect residents to the outdoor environment. 'Security', 'Socialisation' and 'Connection' are of particular importance to the scheme, which set out to redefine what retirement living can look like in a modern, New Zealand based context. The Gulf Rise development opposes the typical 'gated' community approach, breaking down preconceptions of community stigma, by applying unique urban design principles into the design as a passive approach for safety and security. The design encourages both residents and the wider community into the environment specifically through bird, butterfly and bee sanctuaries to foster intergenerational engagement, whilst integration of the existing street network aims to establish connection with the wider community.

KEY FEATURES:

- Passive security features
- Connection to the natural environment
- A strong sense of community and intergenerational interaction
- Playful architectural components creating a welcoming and lively atmosphere

IMPROVEMENTS:

- Consideration for residents with impairment through use of sensory cues and wayfinding techniques

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DE HOGWEYK WEESP, NETHERLANDS

Architects: Molenaar & Bol & Van Dillen | 2009

Designed in 2009, de Hogeweyk is one of the most modern and influential examples of a dementia care facility. The idea behind the village came about in 1992, when it was decided that the notion of 'normality' should prevail in all kinds of aspects of nursing home care. The vision, called "normalised small scale living for people with dementia", identified the idea that people generally tend to/prefer to surround and interact with like-minded people of similar backgrounds and experiences. This idea has shaped the design of the village, inclusive of services, such as a supermarket, retail and healthcare as well as differentiating outdoor spaces allowing for wandering in a more natural and purposeful manner. In terms of housing, it is organised into a series of seven different settings or 'types', whereby each dwelling is styled in a way that is familiar for the 6-7 people who live in there. Styles include; urban settings, career backgrounds i.e. trades, and religion as a central aspect to life.

KEY FEATURES:

- Familiar and small-scale residential setting
- Allowance for personalisation
- Security and safety measures due to a controlled design environment
- Ability to interact with the natural outdoor environment

IMPROVEMENTS:

- Integration with the wider community, specifically in the promotion of intergenerational engagement

◀ FIG. 31 DE HOGWEYK | NETHERLANDS
SOURCE: (DEMENTIA VILLAGE ASSOCIATES, 2009)

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DEMENTIA NURSING HOME

RANDERS, DENMARK

Architects: Friis & Moltke Architects | 2016

In “Huset Nyvang”, the nursing home for dementia patients in Randers consists of four differently designed residential units with the aim of creating familiarity and special connection for occupants. Inspired by the surrounding residential areas, the units are of small scale creating a vibrant village environment. Similar to De Hogeweyk the development is inclusive of a range of amenities, i.e. a café and retail spaces, however also includes a childcare centre – a component far less integrated in the design of aged care in New Zealand. Situated amongst the nursing home complex, the intergenerational component aims to provide opportunities for a rewarding interaction between generations and therefore the wider community. By encouraging community engagement, the nursing home normalises concepts of ageing and impairment, breaking down the stigmas associated with traditional nursing home environments. Internal courtyards are another key design feature, improving with the well-being of residents through close proximity to nature.

KEY FEATURES:

- Small scale, residential units
- Close proximity to nature
- Consideration of the wider community through childcare centre

IMPROVEMENTS:

- Increase in the level of natural vegetation, potential to use varying types for privacy and safety/security purposes

OTHER CONSIDERATIONS:

- The clean, minimalist aesthetic design of ‘home’ is very different to the New Zealand image of ‘home’. Considerations to how this level of design thinking could be integrated within a NZ local context.

FIG. 32 DEMENTIA NURSING HOME | DENMARK

SOURCE: (FRIIS & MOLTKE ARCHITECTS, 2016)

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NEW FROGNER NURSING HOME

LIER KOMMUNE, NORWAY

Architects: C. F. Møller Architects | 2013

Known as ‘The Five Gardens’, the new Frogner nursing home is specifically designed to accommodate people with dementia. The home considers the four phases of dementia across the three floors of the interconnected building, and includes five green ‘atriums’ designed to encourage connection with the natural environment through inclusion of native planting. As wandering is a common tendency with regards to dementia, one of the aims the nursing home design is to make this wandering a positive experience, whereby circular flows ensure that residents never feel trapped in long corridors that abruptly come to an end.

KEY FEATURES:

- Building design accommodates wandering through loop floor plan design
- Residents able to connect with nature through close proximity and arrangement of green space layout

IMPROVEMENTS:

- Ability to connect with the wider community
- Smaller scale dwellings as opposed to multi-level development for the purpose of accommodating for accessibility

◀ FIG. 33 NEW FROGNER NURSING HOME | NORWAY
SOURCE: (C. F. MØLLER ARCHITECTS, 2013)

Content on this page has been redacted.

ALZHEIMER'S VILLAGE

DAX, FRANCE

Architects: *NORD Architects* | 2020

Inspired by nearby medieval villages within the Landes region, Alzheimer Village in France also aims to oppose the traditional nursing home typology. By incorporating specific, familiar elements from local building tradition, residents are able to feel more at home which is important in being able to maintain a relatively normal, everyday life, in the transition to an aged care facility. At the centre of the design the village contains retail amenities, surrounded by smaller houses spread amongst the landscape. These are arranged into four corners, each with four separate homes surrounding a series of outdoor courtyards which allow residents a connection with the natural environment. Looped paths allow for a variety of sensory experiences, aiming to support various wandering tendencies.

KEY FEATURES:

- Small scale building design
- Includes familiar design elements allowing residents to feel more at home within a new environment
- Connection to the natural environment to support well-being

IMPROVEMENTS:

- Connection with the wider community

◀ FIG. 34 ALZHEIMER'S VILLAGE | FRANCE
SOURCE: (NORD ARCHITECTS, 2016)

PART 1 | NEW ZEALAND CASE STUDIES

PART 2 | INTERNATIONAL CASE STUDIES

FIG. 35 SUMMARY OF CASE STUDY PROJECTS

SOURCE: AUTHORS OWN (BASED FROM THIS CHAPTER)

SUMMARY & REFLECTION

The analysis of both New Zealand based, and international precedents highlighted important considerations across a range of project types, from specific dementia related care, to retirement and community-based projects. Across the range of schemes, community engagement and intergenerational consideration for the architectural programme highlighted opportunity to create meaningful interaction in the challenge to overcome stigma within aged care environments.

Other key design components that were identified in helping to determine the success of each project include, though are not limited to;

- Size and scale of residential housing developments
- Inclusion of familiar design components
- Ease of navigation of floor plan + outdoor wandering affordability
- Access to private space (indoors + outdoors)
- Security and safety, especially through the use of passive, non-invasive measures
- Inclusion of green space and resident's accessibility to it

Overall, maintaining a sense of normalcy is one of the most important ideas in determining the success of each precedent by which the role of design considerations (as above) become essential to consider and implement. It should be noted that in terms of the international precedents selected, the ideals from both European/Scandinavian projects are quite different in terms of design vision, aesthetic and how 'home' is portrayed compared to that of a New Zealand based context. These new ideals however have the ability to present new opportunities for the future of aged care living environments in terms of architectural innovation and improving the well-being of users within that of New Zealand's ageing population.

45.2464° S, 169.3894° E

CONTEXT & ENVIRONMENT

FIG. 37 ALEXANDRA BRIDGE & LOCATION
SOURCE: AUTHORS OWN

NEW ZEALAND'S PROVISION FOR AGED CARE

As this research is centred on and embedded within the context of New Zealand's aging population, it was key that the site chosen to respond to this issue demonstrated the seriousness of this impact of which our local and wider communities are currently facing.

A research inquiry found that the small town of Alexandra, located in the region of Central Otago, is facing this very issue – as the existing, sole dementia care – Ranui Court – is unable to meet the increase in demand for care. Currently, Ranui Court includes both retirement village living and the option for rest-home or hospital-level care (38 beds) as well as a 10-bedroom dementia unit. This shortage means that members of the community who require additional care, specifically those living with dementia, have been forced to seek services elsewhere, often far from the place they once called home. These services can be up to a three-hour drive to places such as Invercargill, causing an immense strain on both the individual requiring this type of care and their spouse and extended family members. Although a new retirement village with provisions for dementia-specific care - Leaning Rock has currently been proposed for a new site within Alexandra, land ownership negotiations over the past five years between The Crown and Ngai Tahu, have slowed down the process of the proposed development (Jones, 2019).

In light of this situation, the research in this thesis aims to build upon this genuine and pertinent issue by formulating a design specific to providing care for people living with dementia within the existing context of Alexandra and its surrounding community.

FIG. 38 TOWN AERIAL
SOURCE: (OTAGO DAILY TIMES, 2020)

FIG. 39 SEASONALITY
SOURCE: (MCCARROLL, 2015)

FIG. 40 RAIL TRAIL
SOURCE: (DEPARTMENT OF CONSERVATION, N.D.)

“These people don’t want to leave, but they have to”.

- Peter Hishon

“It will mean leaving their home of four decades, their much loved garden, and the ability to walk their grandchild to school in Clyde and pick her up at the end of the day”

- Pam Jones (Journalist)

“Hospital level and secure dementia level beds throughout Central Otago and the Queenstown Lakes district were ‘generally full’ and it was ‘difficult to place patients locally’

- Sharon Adler and Kathryn de Luc

FIG. 41 REGIONAL CATCHMENT
SOURCE: AUTHORS OWN

ALEXANDRA & THE CENTRAL OTAGO REGION

In terms of ‘place’, the region of Central Otago holds a particularly special meaning for the people who reside in the associated townships. Located centrally between Queenstown, Wanaka and Cromwell, there is an opportunity for Alexandra to contribute to the aged care community within the wider region due to its ‘catchment’ nature. Founded in the 1860s, Alexandra was originally associated with the Central Otago goldrush; however, nowadays, the region is known mainly for its growing of wine and stone fruit. Although it is more reserved in terms of tourism than Queenstown and Wanaka, the fundamental uniqueness of the rugged and seemingly untouched natural environment is a significant contributor to what makes the town and wider region unique to both visitors and locals. The lifestyle, therefore, attributed to the local community is based upon the prospects of recreation and outdoor adventure. While not directly associated with the abundance of tourists typical of towns such as Queenstown and Wanaka, the town experiences a range of visitors due to the proximity of the Central Otago Rail Trail. The trail encourages a wide variety of cyclists and walkers through the township, along the old railway lines running towards the final destination of Clyde, 7km away.

Compared to the rest of the region, Alexandra’s population accounts for one-quarter of the total population within Central Otago – which is reasonably significant when considering the percentage of people who reside in the region as opposed to its high level of tourism (Stats NZ, 2018). Observing the proportion of the population by age, it is also apparent that both Alexandra and the wider Central Otago region is made up of mainly middle to older age groups by roughly 25-30% - highlighting the rate of increase of the ageing population in this location.

In terms of the surrounding facilities within the region that offer aged care, hospital level and secure dementia level beds are “generally full”, whereby it is “difficult to place patients locally”. This is often unsettling to residents who have moved to Alexandra to retire, but then after 10-15 years have no choice but to move again to seek specialised care (Jones, 2019).

FIG. 42 POPULATION ANALYSIS
SOURCE: (STATS NZ, 2018)

LOCATION ANALYSIS/PLAN

Considering the selected site planned to be used for the new aged care development in Alexandra (Leaning Rock Village), a location study was undertaken to analyse if the same site would be suitable in terms of the scope of this research project. Situated along Dunstan Road beside the existing golf course, the site was found to be too large (25 hectares ~ 250,000m²) and therefore unsuitable in terms of scale and the allocated timeframe of the research project.

The site however was noted to have plentiful benefits, particularly due to its close proximity to community facilities such as the tennis and netball courts, local swimming pool, soccer grounds, bowling and swash club; therefore, it seemed only fitting that the newly proposed site be located around this area in order to establish community engagement - highlighted as an essential component in the design scheme. For this reason the new, proposed site for the research project is now situated to the right of the proposed Leaning Rock Village site but at a lesser scale of 9 hectares, beside a new residential development of a multigenerational demographic. The site still retains the connection of the Rail Trail along the Dunstan Road edge, and the site position intends to support future growth in Alexandra in terms of population whilst still being located close to current amenities and services - vital in encouraging community engagement.

ALEXANDRA /
CLUTHA RIVER

ALEXANDRA
TOWNSHIP

RANUI COURT -
EXISTING AGED CARE

FIG. 44 CONTEXTUAL IMAGES OF ALEXANDRA
SOURCE: AUTHORS OWN

FIG. 45 SITE ANALYSIS | SITE PLAN
SOURCE: AUTHORS OWN

SITE PLAN

Upon a physical site observation, a series of notes were made considering the external surroundings. The site itself is surrounded in between two dense plantations of pine trees which have the ability to shade the northern end of the site, where a series of electrical pylons are also located. The land the proposed site is situated on is soft, dry, sandy soil which represents the climatic conditions specific to the region resulting in such a 'barren' landscape.

The site has three opportunities in terms of access points. The first from the west, through the existing residential development, the second from the south where the activity 'hub' is located and the first from Dunstan road which is much busier and has a higher speed limited than both other options.

A notable aspect which was identified during the visit was the informal accessibility around the site, as there is an abundance of dirt trails around the northern and southern site edges which is used recreationally for walking by locals living nearby. This aspect demonstrates that although these edges are bounded by the dense pine tree plantation, that there is still a sense of permeability, encouraging people in and around the existing site.

Site lines are particularly important for this scheme, highlighting the importance of the Rail Trail located to the eastern edge of the site. The trail itself is only metres from the site bringing a sense of vibrant activity and noise, creating a lively atmosphere at this edge. Another key element is the man-made ponds located in the existing development, contributing to the relaxed atmosphere as users have the opportunity to move their chairs outside and sit by the water on a nice day.

In terms of the sites programme, it is therefore concluded impertinent that the design is able to contribute to the existing, surrounding context, as well as add to the environment as a whole.

FIG. 46 NEARBY RESIDENTIAL DEVELOPMENT
SOURCE: AUTHORS OWN

FIG. 47 SITE VISIT IMAGE OVERLAY
SOURCE: AUTHORS OWN

EXISTING SITE OPPORTUNITIES | NATURAL SURROUNDINGS

A

B

C

D

E

F

G

H

I

J

K

L

M

N

FIG. 48 SITE IMAGES 16.05.20
SOURCE: AUTHORS OWN

FIG. 49 ALEXANDRA | AUGUST SITE VISIT
SOURCE: AUTHORS OWN

Content has been redacted.

FIG. 50 ALEXANDRA THROUGH THE SEASONS
SOURCE: (BUTEL. S, 2016)

SEASONALITY + CLIMATIC VARIATION

Alexandra is particularly distinct compared to many other small towns within New Zealand, specifically in regards to its climate as it is often referred to as being 'semi-arid'. This is due to the township being located far from the coastline of New Zealand, where it is prone to extremely cold winters and very hot summers. It is this level of seasonal diversity that contributes to creating a very vivid sense of 'place' in relation to the towns unique, temporal environment. This and the plentiful abundance of deciduous trees across the wider Central Otago region largely contribute to the small towns sense of character, particularly in the autumn months, through emphasis of vibrant orange, red, yellow, and green colours. Maintenance of this unique part of the sites natural character is therefore essential to consider in the architectural proposal, due to research pointing to a 'sense of place' aiding the maintenance of a person living with dementias sense of self.

Another unique quality in terms of the sites natural foliage is the abundance of the herb thyme, which in itself contributes to the sensual experience of Alexandra. In the summer months, the scent can be quite distinct across the region as temperatures increase, adding to the unique sense of place and relationship that people share with their home town of Alexandra.

FIG. 51 SEASONALITY DURING SITE VISITS
SOURCE: AUTHORS OWN

FIG. 52 SEASONAL PLANTING DIAGRAM
SOURCE: AUTHORS OWN

SEASONAL PLANTING FOR A SENSE OF PLACE

The seasonal planting diagram documents the regional foliage typical of Central Otago, which reinforces the climatic conditions of which it experiences. The purpose of this study was to further understand qualities of the surrounding natural environment, in terms of the relationship that locals have established to the sense of 'place' that Alexandra offers. Key findings of the study showed that stone fruit trees are in abundance in the summer months whilst deciduous trees brighten the season of autumn/fall. Native vegetation and pine trees also surround the site at all times of year, with plants such as Manuka flowering in spring. These aspects, though sometimes overlooked, are fundamental in how one may relate to their surrounding environment due the simple idea that human nature is grounded in the rhythms of nature – in this case the regional seasonality playing a large part.

SAFETY
FEATURE

CHILDREN
INDIVIDUALS LIVING
WITH DEMENTIA

PODOCARPUS
TOTARA - >8M

NATIVE
TREES

MANUKA
- 2M

MINGIMINGI
- 2M

AKE AKE
- UP TO 7M

DECIDUOUS
TREES

MAKOMAKO
- 4M

KOWHAI
(SOUTH ISLAND)

MANATU /
RIBBONWOOD

FIG. 53 PLANTING TYPE
SOURCE: (SOUTHERN WOODS, 2021)

FIG. 54 EMOTIVE PASTEL DRAWINGS | MAY 2020
SOURCE: AUTHORS OWN

INITIAL EXPLORATION

DEMENTIA
CARE

FEAR OF
DEMENTIA

COMMUNITY

DESIGN INTENT

As the project is grounded in the context of the lack of aged care facilities in the Alexandra and wider Central Otago region, the first design phase began by determining an architectural programme of elements suitable for the selected site. A study of nearby aged care facilities within the wider region highlighted a trend: that typically, dementia care homes are paired with retirement villages. Considering the suitability of this programme combination in the small, rural town of Alexandra, the design of both a retirement village and dementia care home seemed appropriate as currently the closest retirement village to Alexandra is located in Cromwell (33km away). Therefore, by introducing this programme combination into the town of Alexandra, the design intervention aims to allow for the existing elderly population to have the option to reside closer to home (maintaining a local sense of 'place'), with others that are familiar and of similar age, as well as be convenient for heightened needs (due to aging) through access and close proximity to local amenities.

The notion of 'stigma' was key in deciding the rest of the programme, as the design aimed to promote a sense of community awareness to mitigate/reduce the 'fear' of cognitive diseases such as dementia.

The decision to locate the site within close proximity of existing community amenities provided the design with an opportunity to connect with others in the community and equally brought forward the idea that the design programme could be used as a means to encourage others into the site to promote interaction with people who do not reside in the development -reducing feelings of isolation and segregation.

FIG. 55 FEAR OF DEMENTIA

SOURCE: AUTHORS OWN

FIG. 56 PROGRAMMING COMMUNITY
SOURCE: AUTHORS OWN

PROGRAMME ESTABLISHMENT

In terms of deciding specific programme elements, designing for community engagement was considered in two separate ways – by close community and wider community relationships. As the observation of surrounding aged-care facilities highlighted, maintaining close proximity between a dementia care home and retirement community was beneficial as it allows people, such as spouses and family, to reside close to their loved ones.

In terms of designing for the wider community - who may not have any existing links to aged-care facilities - findings from the literature review and case study analysis identified that implementing an intergenerational programme can provide opportunity for engagement within the elderly community. By integrating a childcare or pre-school component within the design of the dementia care home the new design scheme not only encourages the interaction between younger children and people living with dementia, but also considers interactions between parents and caregivers who can also start to become part of the community through frequent interaction. As earlier research identified there are many significant benefits of a shared design programme specifically between the young and elderly – one being the special liveliness that children can bring into a space. It also allows residents of the dementia care home to share skills they still retain with children - reinforcing feelings of dignity - as well as benefiting children who can develop a healthy and positive view of aging.

Assessing a design of a similar programme, the Dementia Nursing Home in Randers, Denmark (Fig. 32) demonstrated the embodiment of another key principle that contributed to the success of its dementia care home and preschool scheme, being the connection the development has to the natural environment – providing further opportunity for the design to focus on the sensory experience, creating a stimulating environment.

SCOPE

As the site selected was large in terms of size, understanding the scale of the design programme and how it would fit in terms of the scope of the project was important. Fig. 57 demonstrates how the design programme has been separated into three main parts – the dementia home, preschool and retirement/community space.

Previous research identified key benefits in separating the dementia home according to the different stages of dementia (Fig. 06) , regarding the level of care required. At the early stages (1-4) the programme proposes short term facilities such as a respite and day care centre, whilst stages 4-6 a more permanent, residential environment, finally progressing to the later stages of 6-7 when hospital-level care is typically required. Elements involving the wider community; i.e. the pre-school and retirement at this stage planned to provide both living and social amenity for the benefit of the wider development.

In terms of the more specific programme metrics, the 'Metric Handbook' and 'neufert Architects Data' was used to inform the many elements and their corresponding areas which make up the entirety of the design programme. Once the programme types and metrics had then been decided, a brief design criteria for each section of the programme was created, alongside the completion of an adjacency analysis – assessing how each programme would interact with one another. The assessment of adjacencies between each building component ranged between from a scale of 'most desirable' which interacted with one another to 'may be desirable', and finally 'not desirable'. The purpose of further considering the design programme in this way aimed to guide the next stages of design in terms of the arrangement and positioning of each component on the Alexandra site.

◀ FIG. 57 INITIAL PROGRAMME SCOPE
SOURCE: AUTHORS OWN

FIG. 58 SCOPE FOR MASTERPLANNING
SOURCE: AUTHORS OWN

MASTER PLAN OF SITE

Due to the size of the site and the design programme, assessment of the research scope found that the design needed to be refined in order to ensure that both community engagement and personal experience remained a key focus in the outcome of the design. The design therefore, was thought of in three main phases.

- ✦ The first phase was through an overall masterplan, due to the scale of the selected site. This was primarily to give context to the scheme and situate the programme within a community-based environment.
- ✦ The second stage of the design considers the immediate site context, specifically the memory home for dementia and preschool components – further developing each component on site from the previous phase.
- ✦ The third phase will finally focus is on the memory home for dementia, alongside the shared garden space proposed for intergenerational engagement between preschool children and residents.

0.1

0.2

0.3

0.4

EXPLORING 'DEMENTIA' AS CREATIVE EXPRESSION

As the research findings regarding dementia were about creating a place where individuals feel they can retain their sense of personhood, without the fear of being judged by society, the first phase of the design process looked to further understand how emotional qualities associated with the disease may start to influence the master plan at a macro scale.

The following section therefore is an exploration through drawing (using pastels in Autumn colours - inspired by the sites unique qualities) whereby shapes and forms were created by considering connections, relationships, fragments of memory and care.

As the main intention of the drawings was to create an emotive response at the master plan scale whilst equally considering the programmatic requirements of the design, the drawings were then overlaid on the site, for the purpose of considering access around the site and the placement or location of the proposed architectural components. Selecting four of these drawings each with their unique quality, combined with site sketches further considered how the master plan could work, whereby adding scale to each of the programme elements gave more of an indication of what space was built and what was not.

◀ FIG. 59 EMOTIVE DRAWINGS | MAY 2020
SOURCE: AUTHORS OWN

0.5

0.6

0.7

0.8

FIG. 60 EMOTIVE DRAWINGS | MAY 2020
SOURCE: AUTHORS OWN

A

B

C

DRAWING OVERLAY 0.2

A

B

C

DRAWING OVERLAY 10.0

A

B

C

DRAWING OVERLAY 12.0

A

B

C

DRAWING OVERLAY 0.9

FIG. 61 DRAWING OVERLAY ON SITE
SOURCE: AUTHORS OWN

FIG. 62 INITIAL PRE-DESIGN DEVELOPMENT
SOURCE: AUTHORS OWN

INITIAL MASTER PLANNING PROCESS

The final three images (Fig. 62) demonstrate the process in which the emotive drawings have influenced the initial design concepts, regarding access around the site and the placement and location of site elements. Each concept has a varying level of complexity, whereby the sparse areas have been considered to locate the retirement village community around the perimeter of the site. Upon a review of each scheme, 12A was selected as a final preliminary design – which is explored further on the following page considering how different parts of the master plan could be experienced.

CAFE/SOCIAL
SPACES

WANDERING
PATHS

RESIDENTIAL
SPACES

PRESCHOOL
ENVIRONMENT

INITIAL MASTER PLAN CONCEPT

LEGEND

DEMENTIA CARE HOME	SERVICE BLOCK
HOSPITAL LEVEL CARE	CHILDCARE/PRESCHOOL
RESPIRE CARE	CARPARK
DEMENTIA DAY CENTRE	

FIG. 63 FINAL PRE-DESIGN CONCEPT
SOURCE: AUTHORS OWN

CRITICAL REVIEW | MAY 2020

In May of 2020, the design and thesis research up until this point was reviewed, and specifically assessed the following parts of the project;

PROPOSAL	Thesis motivation
	Research question
	Theorists
	Methodology
DESIGN	Site
	Motivation/Context
	Programme
	Initial design iterations

Following the design of the masterplan (Fig. 63) feedback from reviewers highlighted a significant problem regarding the translation of emotive drawings in plan to determine the sites functionality. Whilst the emotive qualities of the drawings were appreciated, meaning was lost at the macro scale in which these qualities were thought to be best experienced at the micro, person scale. 'Responsive Environments' was suggested as a key resource that could help inform a more programmatic master plan design and further consider how the important notions of 'place-identity' and well-being could equally inform and support the workability of the sites master plan. Further consideration of the types of users of the site was identified to need more thought going forward and planning for people who did not wish to be around children as part of the intergenerational component.

Performance Criteria: In terms of the design's success against the performance criteria, the design at this stage only addresses the 'identity' component (through consideration of intergenerational engagement) of the total four components measuring the success of the design outcome. As the measures evaluate the design at a person-centric level, the following stages of design development needed to delve more into the person-scale of the design for the purpose of achieving each of the four measures of success, in the aim to improve the well-being of the person living with dementia within the Alexandra site context.

IDENTITY

- Domestic, residential scale units
- Familiar design elements/form
- Promotes multigenerational engagement
- Playful and engaging atmosphere

AUTONOMY

- Allows for choice within the built and natural environment
- Ability to maintain and manage stimuli (residents)
- Ensures dignity by offering private space (indoor + outdoors)
- Accommodates for wayfinding using sensory cues & landmarks
- Uses passive/unnoticeable safety features i.e. sightlines & vegetation

CONNECTEDNESS

- Permeable architecture for sight and access in and around building
- Close in proximity to and establishes clear community links
- Connection to nature through sensory experience
- The ability to acknowledge nature's natural rhythms and cycles

MEANING

- Sense of normality i.e. makes individuals really feel at home
- Welcoming for individuals and the wider community
- Promotes movement through lively activities and memorable experiences

FIG. 64 INITIAL EXPLORATION SUCCESS (PERFORMANCE)
SOURCE: AUTHORS OWN

FIG. 65 FINAL CONCEPT DESIGN | RAIL TRAIL
SOURCE: AUTHORS OWN

CONCEPT DESIGN

EMOTIVE APPROACH

FIG. 66 PRE-DESIGN EMOTIVE DRAWINGS
SOURCE: AUTHORS OWN

SHIFT IN DESIGN APPROACH

Following the initial design exploration review, the research approach shifted from an emotive to a programmatic focus to explore the site's workability at the macro master plan scale. As emotive qualities of the site were found to be more important at the micro, experiential scale, the re-design of the master plan considered site elements such as sunlight, design programme, scale and placement, and the wider relationships the selected site has with the existing community. During this stage, the existing site's opportunities in terms of access (both vehicle and pedestrian) were also considered.

Documented in the following section, the iterations through sketch and diagramming found this method beneficial in exploring how the master plan could best work considering the differing program components and their relationship to the wider site context. Community atmosphere was still a large part of the design decisions made at this stage, particularly considering proximity, access as well as the notion of safety in design (specifically for the dementia unit and preschool) -whereby establishing layers of security was achieved by wrapping the retirement village around these components for the benefit of passive sightlines and observation.

PRAGMATIC APPROACH

SUN/ORIENTATION PROGRAMME

PROXIMITY

ACCESS

SUN/ORIENTATION

PROGRAMME

PROXIMITY

ACCESS

SUN/ORIENTATION

PROGRAMME

PROXIMITY

ACCESS

FIG. 67 CONCEPT DESIGN SKETCH DRAWINGS

SOURCE: AUTHORS OWN

KEY

DEMENTIA HOME

PRESCHOOL

RETIREMENT SPACE
(ALLOCATED)

FIG. 68 CONCEPT DESIGN DIGITAL DRAWINGS
SOURCE: AUTHORS OWN

DESIGN EVALUATION

Due to the extensive research scope, the main design focus was refined to the community centre, dementia units and the preschool. As the research highlighted plentiful benefits in terms of intergenerational engagement between people living with dementia and children, the smaller site area selected for these two elements was separated from the main community area to give people a choice in which parts of the site they wish to use or access.

Situating the main community area in the middle of the development for the benefit of access between the different user groups, aimed to support a lively atmosphere, incorporating community-based elements such as vegetable gardens etc. Ease of entry into this space was equally considered through different openings at the perimeter of each edge, and the proposed dementia home site is designed to have a singular means of access to this area, allowing for observation by others to support wandering tendencies (passive safety feature).

Located at the site's eastern edge, the dementia units (separated in terms of the level of care they provide) allow sightlines to the external environment, namely the Rail Trail at the Dunstan Road boundary. To support intergenerational engagement, a preschool and playground have been integrated on the same site as the dementia units, in which an artificial pond visually distinguishes these areas from the wider retirement community. Integration of the pond aimed to reference natural features of the existing residential development, aiming to create a more relaxing environment by introducing natural elements into the designed site.

FIG. 69 FINAL DESIGN OF COMMUNITY SPACES
SOURCE: AUTHORS OWN & GOOGLE/PINTEREST SEARCH (2020)

FIG. 70 SCOPE : SITE PLANNING
SOURCE: AUTHORS OWN

NARROWING THE SCOPE

Over the course of iterations of the master plan, it became clear that because of the selection of such a large site, the scope of the design programme was consequentially large in attempt to accommodate it. At this point of the design, the decision was made to leave the master plan of the retirement village and community block at the provisional stage to provide context for the more significant parts of the project, being the dementia care home and the childcare centre. Refining the scope in this way aimed to allow the design to become more vibrant as the new size allowed for more consideration when designing architectural elements at a more intimate scale; i.e. the creation of the exterior and interior spaces of specific buildings, landscaping around the site as well as design decisions regarding how the dementia memory home could interact with the childcare centre, encouraging the desired community engagement. The notion that these programme components would share the same site was successful in the sense that each are near one another, enabling the wider community in, as well as the added benefit of the Central Otago Rail Trail being located at the site's boundary, allowing passers-by to look in at the site, whilst allowing residents to look out and connect with other members of the community.

Retirement Village

Community
i.e. Retirement
+ Surrounding
Facilities

Preliminary
Design Only

Childcare Centre

Pre-School

Parking

Concept/Developed

Dementia Care

Hospital Level
Care
Developed
Design

Main Dementia
Unit

Respite Care

Day Care

Amenity Block

Parking

SCOPE SPECIFIC BREAK-DOWN

To explore the refinement of the scale in more detail, the diagram on the left is an abstraction of the design programme components and to what level of detail the scope will allow them to be designed to. As previously mentioned, both the design of the retirement village components, i.e. the designated residential 'lots' and community block, will be designed only to the preliminary point to give the currently empty, existing site context for the community engagement part of the proposed design. At this stage of the project the childcare centre aimed to be designed during concept development, whilst the dementia memory home would be the leading focus across all stages of the project design. By staggering each programme component in the scope in relation to the project timeframe, this aimed to allow for more time to be spent on the intimate details of the project as it relates to a person living with dementia, and their experience of the architectural proposal on a small scale. This is due to many of the effects of the disease affecting the human body's ability to function in space as memory and motor skills begin to decline.

In terms of the following section documenting the design process, iterations of the placement and design of the programme elements focused on decisions based around sunlight opportunities and how this can affect people at different times of day (sundowning in dementia), qualities of space required within the site (i.e. ideal quiet spaces/spaces of activity), site circulation and consideration for potential building entry points. Separating the dementia home components into their respective levels of care allowed for forms to develop easily in plan, whereby a loop design was adopted to support residents with wayfinding, allowing people who may become lost to eventually find their way back to for example, their bedroom. Landscaping was a key part of this design phase, as prior research also indicated the benefits of nature in creating a more relaxing, sensory environment. The site plan (Fig. 74) demonstrates the final concept design, which takes into consideration each of the identified design decisions.

DAYLIGHT EXPOSURE

PROGRAMME BREAK DOWN QUIET VS PLAYFUL SPACE

SITE CIRCULATION

BUILDING ENTRY POINTS

FIG. 72 SITE PLANNING | SKETCH & MODELS
SOURCE: AUTHORS OWN

KEY

- DEMENTIA HOME
- HOSPITAL LEVEL CARE
- RESPITE CARE
- DAY CARE
- PRESCHOOL

FIG. 73 SITE PLANNING ITERATIONS
SOURCE: AUTHORS OWN

SITE PLAN

LEGEND

01 Single bedsit housing	08 Amenity block
02 Community facilities	09 Main site entrance
03 Parking	10 Day care/creative space
04 Vegetable garden	11 Respite care
05 Hospital level dementia care	12 Sensory garden
06 Dementia unit	13 Playground
07 Pond	14 Preschool

FIG. 74 FINAL CONCEPT SITE PLAN
SOURCE: AUTHORS OWN

FIG. 75 SCOPE REFINEMENT | MAIN DEMENTIA HOME
SOURCE: AUTHORS OWN

FURTHER SCOPE REFINEMENT

Although refining the scope previously had allowed for exploration of the experiential qualities within the site, the impact of dementia on an individual was still seemly distant in how the design aimed to support the individual. For this reason, the design at this point of the project was refined again, whereby only the mid-stage (4-6) dementia home was decided to be further developed. This refinement would allow for the design of the users' experience at a more intimate level in the architectural proposal. Therefore, the following iterations seek to explore the architectural proposal from the exterior design of the building as well as from the interior perspective, considering access between and qualities of space of the internal programme components such as bedrooms, living areas and points of access within the dementia memory home. By specifically considering aspects such as the historical aesthetic of the wider region and more intimate details such as an individual with dementia and their daily routine, the design aimed to create a more sympathetic relationship between the user and how they relate to the architectural space around them.

FIG. 76 SURROUNDING RESIDENTIAL TYPOLOGY
SOURCE: AUTHORS OWN

SURROUNDING RESIDENTIAL TYPOLOGY

During the beginning of the project, prior research highlighted the impact that familiar elements have in supporting an individual living with dementia. This concept in terms of the disease itself is particularly significant because often, as the symptoms of dementia worsen in an individual, specifically their ability to remember things, it is common that they may revert to living in the past. The effects of this can be upsetting to loved ones and distressing for individuals living with dementia who may get confused with who others are and may not understand their nearby surroundings. For this reason, a study of the surrounding residential typology was undertaken, explicitly considering the new housing development located at the southern end of the site, alongside a more historical study of housing typologies typical over time within New Zealand. From these studies, forms, materials, arrangement of floor plans and building details (such as windows) were abstracted and highlighted to consider how these more familiar elements across a longer timeline (1880s - present-day) might be integrated into the design to introduce a sense of familiarity into the new design. These elements were then explored in the design iterations that follow, testing programme, access/ internal movement and formal composition as derived from the identified predominant gable roof form. The interior architecture was also considered through analysis of a typical routine of a person living with dementia, abstracted into spatial movement, informing the proximity and relationship the design programme has concerning spatial positioning and reasoning.

COLOUR

VEGETATION

CLADDING TYPE

DECIDUOUS TREES

FIG. 77 MATERIAL/ATMOSPHERIC PALLETE

SOURCE: AUTHORS OWN

1880s-	Villa
1920s-	Bungalow
1930s-	Art Deco

FIG. 78 ANALYSIS OF NZ'S HOUSING TYPOLOGY OVER TIME
SOURCE: (ADAPTED FROM RENOVATE, JUNE 2020)

FIG. 80 PHYSICAL MODELLING ROOF EXPLORATION | PAPER
 SOURCE: AUTHORS OWN

DEMENTIA HOME
SPECIFIC

▲
◀ FIG. 81 FORM DESIGN + GABLE ROOF EXPLORATION
SOURCE: AUTHORS OWN

DAILY ROUTINE | SPATIAL TRANSLATION

MORNING

- wake up **bedroom**
- get ready for day; wash, teeth brushed, get dressed **bedroom/bathroom**
- prepare and eat breakfast **dining/kitchen**
- have conversation over coffee **dining/lounge**
- read newspaper, try craft project, reminisce old photos **dining/lounge**
- take a break, have some quiet time **bedroom/lounge**
- do chores together, laundry, set table **bedroom/laundry/common area**
- take a walk, play an active game **outdoors/lounge**

AFTERNOON

- prepare and eat lunch, read mail, wash dishes **kitchen/dining/lounge**
- listen to music, do crosswords/puzzles, watch tv **lounge**
- do some gardening, take a walk, visit a friend **outdoors + amenity centre**
- take a short nap/break **bedroom**

EVENING

- prepare and eat dinner, clean up the kitchen **kitchen/dining/living**
- reminisce over coffee and dessert **dining/lounge**
- play cards, watch a movie, get a massage **dining/lounge**
- bathe, get ready for bed, read a book **bedroom**

INTERNAL COURTYARD
DESIGN | INDOOR/OUTDOOR
FLOW

FIG. 82 DEMENTIA HOME INTERNAL LAYOUT
SOURCE: AUTHORS OWN

FIG. 83 FORM + INTERNAL MOVEMENT
SOURCE: AUTHORS OWN

FINAL CONCEPT DESIGN | FLOOR PLAN

The final concept design (Fig. 84) demonstrates the loop pattern's implementation, aiming to support wandering tendencies typical of individuals living with dementia. The building has been designed to consider sunlight by allocating specific programme elements in relation to daylighting, whereby bedrooms have been located east to west (through north) for the benefit of maximising solar gains across all seasons of the year. In terms of the configuration and location of the two sets of living/dining/kitchen spaces, these are located closest to the interior of the loop pattern, which extend outward into two separate outdoor courtyards. These courtyards allow users, residents, visitors and staff members to connect to the natural surroundings whilst having more privacy than the main wandering paths – as seen in the site plan (Fig. 74). In terms of the staff areas, these are located towards the south of the building nearby services such as the laundry and storage rooms, and more importantly, have been designed to have visual access to the outdoor areas of the site for passive observation and safety of residents.

It should be noted that there is only one means of access in and out of the main dementia home, which is from the main entranceway at the front of the building. In previous design iterations, there was a particular key focus on creating an entrance that had more of a likeness to the home in the sense that the nurses' station (typical of aged care facilities) is not visible, by instead creating a lounge area that visitors can 'pause' and sit in, either on the way in or way out of the building. The purpose of creating an atmosphere like this essentially was to create a more homelike environment as opposed to an institutional model for aged care, where it is a place that people want to reside in, rather than a place they must go when their needs increase as their dementia progresses. This idea is communicated by the visualisations that follow, highlighting critical moments in the final concept design.

PERSPECTIVE OF
MAIN ENTRANCEWAY

FIG. 85 SITE MAIN ENTRANCE
SOURCE: AUTHORS OWN

RAIL TRAIL
PERSPECTIVE

FIG. 86 RAIL TRAIL
SOURCE: AUTHORS OWN

DEMENTIA CARE
HOME BEDROOM
PERSPECTIVE

FIG. 87 MAIN DEMENTIA HOME BEDROOM
SOURCE: AUTHORS OWN

SENSORY COMPONENTS

SMELL

SIGHT

TASTE

SOUND

TOUCH

PERSPECTIVE OF
WANDERING GARDEN

FIG. 88 WANDERING/SENSORY GARDEN
SOURCE: AUTHORS OWN

“would *you* live here *yourself*?”

- Guest reviewer | August 2020 -

The research review at the six-month mark found the refinement of the design scope was beneficial in exploring the experiential parts of the project. The intergenerational programme was identified to be of benefit in terms of future development, specifically by considering moving the playground from its location at the western edge to become integrated between the architectural building components, achieving more of a sense of engagement and interaction between different site users. Another component highlighted that would benefit from more consideration was the sensory garden located amongst the wandering pathway, connecting each of the architectural programme elements. Feedback suggested a study of plant types could support a heightened experience of this part of the design for both young and elderly site users. The notion of planting was further elaborated on in respect to designing for the safety of site users, whereby the use of certain types of vegetation, as well as the notion of site lines and permeable edges could be used as opposed to gates and fences which further contribute to the stigma of aged care environments.

Familiarity in terms of designing the form of the architectural programme was cautioned, aiming to ensure the design does not 'date' too quickly whilst trying to establish a relationship to past residential typologies. However, form finding in terms of the roof's development was highlighted to be a successful part of the concept design stage due to its relationship to modern architecture. In addition to the notion of familiar elements, the bus stop and letter box features highlighted in the experiential images were acknowledged in terms of their implementation, however questioned in their placement to ensure stigma is not being designed for, opposing the research aim to mitigate it. Finally the reviewers asked a thoughtful question for the purpose of provoking more reflective thinking to help guide the next stages of the design, being – "would you live here yourself"

Performance Criteria: Addressing the four components of the design criteria, the conceptual design achieved more success as opposed to the initial design exploration – as highlighted by points in bold (Fig. 89) . Whilst the design achieves all components concerning Identity, the developed design phase aims to focus on the remaining three elements of Autonomy, Connectedness and Meaning – guided by the feedback from the August review. As the final design resolution seeks to enhance a persons sense of well-being with the designed aged care environment, the achievement of the remaining elements of the performance criteria needed to be met to ensure a successful resolution in response to the problem of stigma set out at the beginning of the research.

IDENTITY

- Domestic, residential scale units
- Familiar design elements/form
- Promotes multigenerational engagement
- Playful and engaging atmosphere

AUTONOMY

- Allows for choice within the built and natural environment
- Ability to maintain and manage stimuli (residents)
- Ensures dignity by offering private space (indoor +outdoors)
- Accommodates for wayfinding using sensory cues & landmarks
- Uses passive/unnoticeable safety features i.e. sightlines & vegetation

CONNECTEDNESS

- Permeable architecture for sight and access in and around building
- Close in proximity to and establishes clear community links
- Connection to nature through sensory experience
- The ability to acknowledge nature's natural rhythms and cycles

MEANING

- Sense of normality i.e. makes individuals really feel at home
- Welcoming for individuals and the wider community
- Promotes movement through lively activities and memorable experiences

FIG. 89 CONCEPT DESIGN SUCCESS (PERFORMANCE)

SOURCE: AUTHORS OWN

FIG. 90 FORM + COMPOSITION MODELLING
SOURCE: AUTHORS OWN

DEVELOPED DESIGN

FIG. 91 DEVELOPED DESIGN SCOPE: FEAR & STIGMA
SOURCE: AUTHORS OWN

DESIGN PHASE 3 | SCOPE

The final phase of the design process began with a revision of the research's initial intent, developed at the beginning of this thesis. This intent being, to create and design an environment for people living with dementia, which others perceive as being 'normal', despite behaviours associated with dementia sometimes opposing what others may consider widely accepted socio-cultural norms. As 'stigma' stems from the difference between people living with the disease and those who don't, the fear developed, as a result, is a crucial component in the design that must be reduced to allow people to live well within the wider community. Therefore, at the developed design stage, the previous concept was analysed in section to determine which areas were most likely to contribute to the fear of the disease and, therefore, impact how the wider society perceives people living with dementia.

It should also be acknowledged that the 'fear' of dementia also stems from the types of environment individuals with impairments often occupy— this being the traditional nursing home environment. In the past, these places reflected a kind of 'institutional architecture' and were considered somewhere many like-situated individuals would reside in, somewhat hidden away from the wider society. This environment, which lacked any familiar feeling of the home, therefore also equally contributes to the perception of individuals, developing a fear of the idea of dementia and the associated environments in the process.

It was concluded that because of these factors, the design's aesthetic becomes equally important in achieving an environment representative of a familiar sense of 'home'. Fig. 91 considers the current design as it may be perceived concerning stigma, finding that private space areas are more likely to be stigmatised – as these areas are 'hidden' from the wider society. As a result of closer analysis, it became clear that sightlines in and out of the site were important, i.e. how people can see in and out. Therefore, the following section aims to build on this concept through further design iterations and exploration.

PROGRAMME REFINEMENT

To allow the design to give the users and public the option to see in and out of the site, the proximity between building components was analysed regarding how much space there was between different elements of the architectural programme. The analysis found that there was not very much space between the main dementia unit, the hospital, and respite buildings to see outwards towards the rest of the site, let alone allowing members of the public to see the activity going on within the site boundaries. The impact of this not only contributes to stigma but also negatively impacts the users' ability to establish their relationship to the site through the idea of 'place-identity', specifically through being able to relate to the surrounding environment (in this case, seasonality, expressed by the deciduous planting), others in the wider community and the ability to be a part of and view community activity such as the rail trail at the edge of the site. Therefore, a solution was to create more space around the main dementia building by merging the respite and daycare buildings and relocating the new building beside the main amenity building at the site's eastern edge. As a result, the hospital-level care and main dementia buildings obtained more breathing room on either side, allowing more view outwards. Equally, it also allowed the new building (containing the merged programme) to act as a passive means of security and privacy in its new location - due to its size and ability to be both a visual and spatial block. The following section documents these changes and explores the new building's form concerning its ability to be aesthetically cohesive with the architectural programme and how the changes integrate with the existing loop floor plan and developed gable roof typology.

MERGING PROGRAMME TO ENHANCE LIVABILITY & MAXIMISE ENJOYMENT OF SURROUNDINGS

CHANGE OF
SEASONALITY
(DECIDUOUS TREES)

ESTABLISHING
CONNECTION
(VIEW OF OTHERS)

STIMULATION &
ACTIVITY
(VIEW TO RAIL TRAIL)

FIG. 94 COMBINING DAY CARE AND RESPITE CENTRES
SOURCE: AUTHORS OWN

FIG. 95 RELOCATION OF MERGED PROGRAMME
SOURCE: AUTHORS OWN

FIG. 97 ITERATIONS OF FORM (ROOF) - UNIFORMITY
SOURCE: AUTHORS OWN

FIG. 98 DEVELOPED DESIGN | MODELLING FORM
SOURCE: AUTHORS OWN

REFINING FORM

To understand how each of the forms would work in the site's context, a physical model was developed exploring the uniformity between each programme component – specifically in terms of the aesthetic form and the functionality/workability of the programme (loop circulation). During this point of the design process, it was realised that whilst each of the residential areas had a similar look (aiming to reinforce the idea of the 'familiar'), the preschool and admin building had less of a relationship. This disconnect was because their forms were considered more 'block-like', limiting their ability to relate and contribute to the intended 'familiar' site atmosphere. As a result, the following iterative design process looked to develop these buildings in terms of their formal composition to enhance the uniformity within the proposed development, focusing on the roofline to strengthen the relationship to the residential spaces developed during the conceptual design stage.

MAIN ENTRANCE
TOWARDS MAIN
DEMENTIA HOME

MAIN DEMENTIA HOME +
PRESCHOOL

NEW RESPITE/DAY CARE
BUILDING

FIG. 99 PERSPECTIVE VIEWS WITHIN MODEL

SOURCE: AUTHORS OWN

FIG. 100 ADMIN/ACTIVITY BUILDING
SOURCE: AUTHORS OWN

FIG. 101 FORM UNIFORMITY DIAGRAMS
SOURCE: AUTHORS OWN

CREATING A NORMATIVE ENVIRONMENT_01

ADMIN/ACTIVITY BUILDING

The first stage of creating a more cohesive and uniform environment looked at the main entrance to the site, situated between the two main admin buildings. The main entrance in this instance is significant as it is the sole point of entry into the development to keep residents safe, mainly due to the risk that wandering tendencies can often pose. To clearly indicate the location of the main entrance at the site's edge, a welcoming archway was designed which frames the view of the site's interior, encouraging the community into the designed environment.

In terms of the admin block design, an analysis was completed of buildings within the wider region (such as the Queenstown Country Club) to understand how the local architecture could inspire the designs form and seamlessly integrate into the context of the Alexandra site. As the roof design was a large part of creating a relationship to the wider residential, regional typology, the relationship that the building has to the street edge became the focus for the following iterative design process. Creating a site edge that is inviting for the wider community was considered through the notion of permeability—inspiring the location of the proposed café at the front of the second admin block – intending to invite people into the site through a shared social programme (as opposed to the main dementia unit with a less universal purpose). Materiality through glazing at the street edge further supports the idea of permeability, allowing people to see both in and out of the site. Pathways added around the street frontage of these buildings aim to reflect garden pathways by including natural vegetation/shrubbery, aiming to sympathise with the notion of the front garden/porch areas typical of a stand-alone home.

FIG. 102 SKETCH DESIGN OF ADMIN BUILDING
SOURCE: AUTHORS OWN

FIG. 103 ADMIN BUILDING SET-BACK CONCEPT
SOURCE: AUTHORS OWN

FIG. 104 PRESCHOOL BUILDING ITERATIONS
SOURCE: AUTHORS OWN

FIG. 105 INTERGENERATIONAL RELATIONSHIP DIAGRAM
SOURCE: AUTHORS OWN

CREATING A NORMATIVE ENVIRONMENT_02

PRESCHOOL BUILDING

Following further development of the admin building, to create an improved sense of uniformity with the design of the residential spaces, the preschool building was also highlighted as a component needing to establish a similar, uniform typology to the rest of the site.

Similar to the admin building, the formal composition was thoroughly considered, with more attention paid to potential opportunities of permeable edges due to the building situated alongside Dunstan Road and the Central Otago Rail Trail. As the idea of incorporating nature and the positive effect that it has on mental and physical well-being had been studied at the beginning of the research, the following iterative process tested the idea of incorporating a garden into the middle of the preschool building to engage and invite people into the space – as well as equally providing a therapeutic environment to look towards whilst inside. Although the aim was to develop the building only at the conceptual level, the new forms intend to add to the essence of the entire design, being that it is sympathetic in terms of formal composition and feel, inevitably supporting the overall goal of creating a normal and welcoming environment in the eyes of both the individuals living with dementia, as well as the wider community.

FIG. 106 PRESCHOOL DESIGN ITERATIONS
SOURCE: AUTHORS OWN

FIG. 107 PRESCHOOL DESIGN FINAL CONCEPTS
SOURCE: AUTHORS OWN

FIG. 108 ASSESSMENT OF PERMEABILITY | VEGE GARDEN
SOURCE: AUTHORS OWN

PERMEABILITY OF SITE – VEGETABLE GARDEN

In terms of creating a permeable edge between the site and the external context, the vegetable garden was the last remaining component significant because, without further consideration, it could have presented a level of risk to the overall safety of residents who will call the site home. Therefore, the final design iterations in this series focus on the arrangement of components on the site to balance the notion of permeability with the safety and security of residents. As a result, passive design solutions have been introduced to mitigate the need for more invasive safety measures such as tall wire fences (as seen at the perimeter of dementia homes such as Te Hopai in Wellington). The notion of utilising passive security measures has been extended across the broader site plan regarding the vegetation selected, ranging from native planting and shrubbery acting as 'barriers' of which individuals will be less likely to cross (i.e. hedging or prickly native plantings). In terms of vegetation, plants of deciduous nature have also been considered in the final site plan – derived from the earlier study of regional vegetation typologies. These have been implemented to reinforce the resident's connection to the wider environment - through visual connection to nature and its ability to portray seasonal change (strengthening an individual's sense of 'place-identity').

COVID - 19 ISOLATION CONSIDERATIONS

MAIN DEMENTIA UNIT (ISOLATION PLAN)

During the year 2020, when this thesis was written, the global pandemic known as the coronavirus (COVID-19) was realised, changing how everyone in society went about everyday life. The New Zealand Governments response of creating a four-tier alert system meant that at the highest alert level (4), the nation went into a lockdown, whereby all citizens were required to stay at home until restrictions were lifted. Regarding how this affected people's mental well-being, the aged care community was hit significantly hard as no visitors were allowed into these facilities – creating feelings of loneliness and isolation. To consider this possible scenario, the research briefly considered the implications a level 4 lockdown could have on the conceptual ground floor plan. Using the main dementia home as an example, Fig. 109 explores how the building may be sectioned off from the rest of the complex if required, based on ideas from research unpublished at the time of this thesis. Conceptually it was thought that three bedrooms could be used if there was a potential infection outbreak, whereby the sizeable central walkway could be split, creating a smaller loop design between the secondary kitchen/living/dining spaces. This would leave one outdoor courtyard for residents to use if they felt well enough or symptoms were mild to retain the link to the outdoor environment while maintaining social distancing practices within the same domain. This leaves the remainder of the facility relatively operational by keeping the main loop design, the left outdoor courtyard, and the outdoor spaces outside of the facility for the other residents' use. In terms of potential entry points, these have been marked and locations of which have sanitiser/disinfectant to maintain good hygiene practices.

FIG. 110 SITE FOLIAGE
SOURCE: AUTHORS OWN

FINAL DESIGN

SITE PLAN | FINAL DESIGN

THE 'NORMATIVE' ENVIRONMENT

As a result of the final iterative process, this chapter explores the developed design findings at the macro (site) and microscale (main dementia home floor plan). Although the design has been considered through the lens of architecture, the invention's success equally lies in its ability to relate to the user, in this case, being an individual living with dementia.

At the macro scale, the sites' most significant challenge was to create a sense of community, restricted within the confines of the site whilst still connecting residents with people within the wider community - aiming to mitigate current stigmas surrounding people and environments associated with cognitive diseases. The developed design phase mainly focused on the 'fear' created due to perceived private spaces, where the solution was to establish a more permeable yet safe site edge using sightlines and passive safety design techniques (vegetation selection). A unique part of the design is its close relationship to the Central Otago Rail Trail, which offered the opportunity to increase community connection (Fig. 111). Creating a perceived 'normal', home-like environment at the macro scale was developed through the design of gardens and pathways- specifically the wandering loop – creating a middle ground where intergenerational engagement can occur between residents and the wider community using the preschool. The loop pathway connecting the architecture ensures wandering can occur safely. However, it also gives users a sense of freedom and autonomy to explore and find comfort in the natural environment made user-friendly by implementing familiar cues (such as bus stop seating, letterbox, and playground components). The concept of place-identity in how one relates to their surrounding environment and place is highlighted through the selection of deciduous planting, demonstrated in the following drawings and experiential images.

LEGEND

01 BEDSIT/RETIREMENT VILLAGE	06 FLOWER GARDEN	11 CENTRAL OTAGO RAIL TRAIL	16 PRIVATE GARDEN
02 PRIVATE ACCESS TO HOSPITAL LEVEL CARE	07 MAIN VEHICLE ACCESS (MASTER-PLAN)	12 ADMIN BUILDING 02 (CREATIVE)	17 PRESCHOOL
03 VEGETABLE GARDEN	08 MAIN PEDESTRIAN ACCESS	13 SENSORY GARDEN POND	18 PRESCHOOL ACCESS
04 HOSPITAL LEVEL CARE	09 MAIN DEMENTIA HOME	14 PLAY AREAS	19 PARKING
05 ADMIN BUILDING 01 (AMENITY)	10 CAFÉ	15 RESPITE AND DAY DEMENTIA CENTRE	

◀ FIG. 111 DEVELOPED DESIGN SITE PLAN
 SOURCE: AUTHORS OWN

Provision for a secondary vehicle access - to be located between Dunstan Road (Main Arterial Route) and the Central Otago Rail Trail

SECTION A-A

SECTION B-B

SECTIONS | FINAL DESIGN

PERMEABILITY & THE FEAR OF DEMENTIA

Site sections (Fig. 112) describe the relationship that the final design has with the site's wider context, focusing on creating an increased sense of community through the notion of permeability between all site users; residents, visitors, preschoolers, families, friends, as well as passers-by. Equally, the drawings convey the site's relationship with its natural surroundings and its ability to reinforce 'place' within the designed environment.

SECTION C-C

FIG. 112 DEVELOPED DESIGN SHORT SECTIONS | FEAR OF DEMENTIA
SOURCE: AUTHORS OWN

SECTION D-D

SECTIONS | FINAL DESIGN
PERMEABILITY & THE FEAR OF DEMENTIA

FIG. 113 DEVELOPED DESIGN LONG SITE PLAN
SOURCE: AUTHORS OWN

MAIN ENTRANCE

The site's main entrance as the sole point of access into the site (for residents) aims to frame the site's interior and domestic scale buildings through a glazed archway, enhancing sightlines both in and out of the development. Materials specific to the local vernacular, specifically timber and shist, have been used to clad the buildings' exterior aiming to sympathise with the rugged Central Otago natural environment. The domestic scale of forms ensures the development opposes an institution, seeking to establish a welcoming, home-like environment where residents living with dementia are more familiar, equally contributing to societies' perception of a typical home-like environment.

FIG. 114 FINAL DESIGN | MAIN ENTRANCE

SOURCE: AUTHORS OWN

WANDERING/SENSORY GARDEN

The sites loop path acts as an essential connection between all architectural programme components, ensuring a sense of cohesiveness and connectedness between all site users. The pond framed by the loop pathway contributes to that of a therapeutic environment and equally as a safety component separating the main entrance from residential areas. Considering the safety of children, the pond is designed to be shallow enough not to pose a risk yet still allows users to maintain a sensory connection to the natural environment.

FIG. 115 FINAL DESIGN | SENSORY GARDEN

SOURCE: AUTHORS OWN

INTERGENERATIONAL SPACE

The loop path creates a critical connection between residential and preschool components, creating a playful and engaging atmosphere that allows for meaningful intergenerational engagement through choice and autonomy.

FIG. 116 FINAL DESIGN | WANDERING PATH FROM PRESCHOOL
SOURCE: AUTHORS OWN

RAIL TRAIL

As a key contributor to establishing wider community engagement, permeable site edges allow for greater connection between site users and passers-by. The farm-style gate ensures that the development relates to Alexandra's rural background while adding an extra security layer for children and residents.

FIG. 117 FINAL DESIGN | CENTRAL OTAGO RAIL TRAIL
SOURCE: AUTHORS OWN

MAIN DEMENTIA HOME | FINAL DESIGN

THE INTIMATE, PERSON DETAILED SCALE

The developed floor plan aims to support ideas presented during concept design; however, it has been further refined to establish domestic scale and furnishings to reinforce its home-like environment.

LEGEND

01	FLOWER GARDEN	14	INTERNAL COURTYARD 02
02	PAVILLION	15	MEDICINE/PROVISIONAL
TRANSITION ROOM FOR COVID-19
03	MAIN DEMENTIA HOME ENTRY	16	SLUICE ROOM
04	'PAUSE' SPACE	17	GENERAL STORAGE
05	BEDROOM	18	LAUNDRY
06	ACCESSIBLE BATHROOM	19	ACCESS TO WASHING LINE
07	LIVING ROOM	20	STAFF BEDROOM
08	DINING ROOM	21	STAFF BATHROOM
09	KITCHEN	22	STAFF KITCHEN/DINING
10	OUTDOOR WINDOW SEAT	23	COUNCILLING/NURSES
OFFICE
11	INTERNAL COURTYARD 01	24	WANDERING PATH
12	TV + GAMES ROOM	25	BUS SHELTER (SEATING
ALTERNATIVE
13	FAMILY ROOM		

◀ FIG. 118 DEVELOPED DESIGN FLOOR PLAN
SOURCE: AUTHORS OWN

BEDROOM

The user's bedroom design is essential for establishing a home-like and welcoming environment, as it is essentially an individual's private sanctuary – where one can feel safe and dignified. Nature views aim to support the individual by reinforcing a sense of identity. The designed space supports personalisation and comfort, overshadowing the dominance of required safety features, i.e. the sensor mat for wandering, located beside the bed (Fig. 119).

FIG. 119 FINAL DESIGN | INTERIOR BEDROOM
SOURCE: AUTHORS OWN

INTERNAL COURTYARD

Internal courtyards allow residents, staff, and visitors to connect with the natural environment through a safe and secure means whilst allowing for privacy with autonomy.

FIG. 120 FINAL DESIGN | INTERNAL COURTYARD
SOURCE: AUTHORS OWN

MAIN INTERIOR ENTRANCE

The foyer to the main dementia unit has been designed to be as home-like as possible through domestic furnishings located within the 'pause' space and the unique ability to look out at internal courtyards along the building's corridors. The nurse's station (towards the left) is notably hidden to reduce the feeling of being in a typical, sterile nursing home environment; however, it includes a small window for the benefit of passive security and observation between the main door and outdoor environment.

FIG. 121 FINAL DESIGN | 'PAUSE' ENTRY SPACE

SOURCE: AUTHORS OWN

FIG. 122 EXPERIENCE OF THE FINAL DESIGN
SOURCE: AUTHORS OWN

FINAL DESIGN | SUMMARY & REFLECTION

In response to the performance criteria set at the beginning of the thesis, the third and final design discussed and presented in the previous chapter successfully has achieved each of the four components regarding Identity, Autonomy, Connectedness and Meaning for the underlying purpose of mitigating stigma within aged care environments. Whilst a contributing factor to the success of the design is the aesthetic of the form and typology in relation to Alexandra and the Central Otago residential context, the main successor in achieving an environment that mitigates stigma is through the development of a shared architectural programme, encouraging intergenerational engagement between residential areas of the dementia home and the preschool, located together on the same site. The sense of connectedness created through the integration of unique programme components, combined with encouraging the wider community to engage with the site using permeability as a design tool, suggests there is a significant opportunity for aged care environments in New Zealand to diversify the architectural programme - to improve the perception and well-being of individuals living in aged care environments.

Therefore, as a result of the research and the previous design explorations, the final design successfully addresses how architecture can honour the identity of a person living with dementia by developing an empathetic design that establishes essential community connections. Thus, challenging existing social stigmas associated with the disease concerning the perception of aged care environments.

IDENTITY

- Domestic, residential scale units
- Familiar design elements/form
- Promotes multigenerational engagement
- Playful and engaging atmosphere

AUTONOMY

- Allows for choice within the built and natural environment
- Ability to maintain and manage stimuli (residents)
- Ensures dignity by offering private space (indoor + outdoors)
- Accommodates for wayfinding using sensory cues & landmarks
- Uses passive/unnoticeable safety features i.e. sightlines & vegetation

CONNECTEDNESS

- Permeable architecture for sight and access in and around building
- Close in proximity to and establishes clear community links
- Connection to nature through sensory experience
- The ability to acknowledge nature's natural rhythms and cycles

MEANING

- Sense of normality i.e. makes individuals really feel at home
- Welcoming for individuals and the wider community
- Promotes movement through lively activities and memorable experiences

FIG. 123 DEVELOPED DESIGN SUCCESS (PERFORMANCE)
SOURCE: AUTHORS OWN

DISCUSSION | CONCLUSION

FIG. 124 VEGETATION AT ALEXANDRA SITE
SOURCE: AUTHORS OWN

CONCLUSION

DESIGN OUTCOME

Dementia, in its entirety, is a disease that presents itself in the way of mental incapability and one that can cause an array of social detriments to individuals who have been diagnosed. As if the implications of the disease, namely loss of memory, thinking and causing 'abnormal' behaviours, do not create enough of a challenge for people living with dementia, the social stigmas developed as a result of perception in the eyes of society, as well as the influence of a negative architectural representation, can rob one of their sense of self and how one relates to their surrounding environment.

At the beginning of the project, the research identified that in New Zealand, there is a huge issue regarding the availability of aged care facilities for the increasing elderly population. Whilst the improvement of medical care can be perceived as a positive advance in the healthcare industry, the added years of life that can be gained often mean that the risk of developing age-related diseases such as dementia have dramatically increased, reinforced by Professor Guy Brown, who states;

"... years are being added to our lives, life is not being added to our years: the extra years are being added at the end of our lives and are of poor quality" (Brown, 2015).

An initial analysis of aged care facilities in New Zealand found that the township of Alexandra, located within the Central Otago region, had a significant need for a new aged care facility, as the current intervention does not support the growing, local demand for care. As a result, locals are forced to leave the place they call home to find residence in towns further away, causing stress and negative implications to an individual's sense of self – as they cannot recognise and relate to their new surrounding environment.

In response to these issues, this thesis sort to ask the question;
"How can architecture honour the identity of a person living with dementia, and re-establish community to challenge the current stigma associated with the disease?"

With this question in mind, a literature review concluded that to be successful within Alexandra's context, the design needed to address components that fall under the headings of 'Identity', 'Autonomy', 'Connectedness' and 'Meaning'. Analysis of similar projects at both a local and international scale provided the research with an understanding of design implementations

to address these criteria and test these ideas during the iterative process, as the project's scope allowed.

Using a design-led research approach, the iterative methods explored the use of an intergenerational programme alongside design elements whilst ensuring to keep the person living with dementia and their experience of the design at the heart of the process, i.e. through consideration of routine and spatial building layout. The critical thinking behind the intergenerational programme was to encourage the community to engage with the design of the dementia home to mitigate/remove pre-existing social stigmas associated with aged care facilities. Each design iteration was worked through to create a site that could support the daily challenges that individuals living with dementia face, with an overarching aim to comfort overall well-being.

The first phase of the design explored emotive qualities concerning how a person may experience living with dementia to inspire the design at the macro level. The review of this phase highlighted the unsuccessfulness of this method in creating an empathetic experience at the intimate level and identified that the programmatic components of the scheme were equally important and should be further considered in terms of the designs' relationship to its wider context.

The second phase, concept design, built off this critique and began to explore further the fundamentals of site elements at the macro scale and consider the more intimate experience of the main dementia homes floor plan - made possible through the refinement of the design scope. Whilst much of the feedback after the conceptual design phase supported the design progress, as opposed to the initial design exploration, the idea of stigma was reinforced as to be careful not to introduce more stigma through the introduction of 'familiar elements' in response to trying to mitigate it. The question posed; "would you live here yourself" was a significant turning point which concluded the review of this stage, steering the third phase of the project towards creating a more home-like, normative environment - aiming to reduce the perception of 'difference' developed by members of society and how they view the design from the outside in.

The third and final phase of the design process - developed design - refined the current programme to reaffirm the self in space at a more intimate scale. Permeability of space was also

considered in response to the outside perception of the site, passive modes of safety/security (through vegetation), interior usability, scale and uniformity of the site's building typology. Assessment of the performance criteria developed as a result of the literature review and case study analysis found that close attention to these areas of the design allowed these criteria to be met, and thus has suggested a design solution in response to the research question posed at the beginning of the thesis.

In conclusion, this thesis explores the response to the problems presented regarding New Zealand's lack of aged care services, with a critical focus on retaining a person's sense of self whilst mitigating the negative impact of stigma on individuals living with dementia. As the problem of the lack of aged-care facilities is only set to increase due to an amplified risk of developing cognitive diseases, the importance of designing care specifically for people living with impairment in an empathetic way is even more significant - to provide comfort to people in a disease that can cause much distress. The research found the initial review of the literature and case study analysis particularly beneficial in providing the context of the thesis with a good base to answer the research question set out at the beginning of the project. In terms of the opportunity this research suggests for the design of aged care environments within the New Zealand context in the future, the design produced demonstrates that a diverse architectural programme can provide a meaningful experience for those residing within aged-care environments. Equally, it can support the well-being of individuals living with the effects of the disease, alongside the added aim to mitigate the detrimental implications of stigma on one's sense of self and, therefore, the ability to live 'well' with dementia.

BIBLIOGRAPHY

- Alzheimer's Association Australia. (n.d.). Alzheimer's and Dementia. Retrieved November 12, 2020, from <https://www.alz.org/au/dementia-alzheimers-australia.asp>
- Alzheimer's New Zealand. (n.d.). The impact of dementia in NZ [Government resource].
Alzheimers New Zealand. Retrieved February 9, 2020, from <https://www.alzheimers.org.nz/our-voice/new-zealand-data>
- Brown, G. C. (2015). Living too long: The current focus of medical research on increasing the quantity, rather than the quality, of life is damaging our health and harming the economy. *EMBO Reports*, 16(2), 137–141. <https://doi.org/10.15252/embr.201439518>
- Calkins, M. P. (2009). Evidence-based long term care design. *NeuroRehabilitation*, 25(3), 145–154. <https://doi.org/10.3233/NRE-2009-0512>
- Corner, L., & Bond, J. (2004). Being at risk of dementia: Fears and anxieties of older adults. *Journal of Aging Studies*, 18(2), 143–155. <https://doi.org/10.1016/j.jaging.2004.01.007>
- Dobbs, D., Eckert, J. K., Rubinstein, B., Keimig, L., Clark, L., Frankowski, A. C., & Zimmerman, S. (2008). An Ethnographic Study of Stigma and Ageism in Residential Care or Assisted Living. *The Gerontologist*, 48(4), 517–526. <https://doi.org/10.1093/geront/48.4.517>
- Easthope, H. (2009). Fixed Identities in a mobile world? The relationship between mobility, place and identity. *Identities: Global Studies in Culture and Power*, 1(16). <https://www.tandfonline.com/doi/pdf/10.1080/10702890802605810?needAccess=true>
- Evans, G. W. (2003). The Built Environment and Mental Health. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 80(4), 536–555. <https://doi.org/10.1093/jurban/jtg063>
- Goffman, E. (1968). *Essays on the social situation of mental patients and other inmates*. Pelican Books.
- Gullery, L. (2020, August 31). Demand for dementia care set to triple over the next three decades [News source]. News. <https://www.stuff.co.nz/waikato-times/news/122435748/demand-for-dementia-care-set-to-triple-over-next-three-decades>
- Hume, D. (1739). *A treatise of human nature: Being an attempt to introduce the experimental method of reasoning into moral subjects*. Oxford University Press.

- Jacobson, K. (2009). A developed nature: A phenomenological account of the experience of home. *Continental Philosophy Review*, 42(3), 355–373. <https://doi.org/10.1007/s11007-009-9113-1>
- Knowles, R. L. (2006). *Ritual house: Drawing on nature's rhythms for architecture and urban design*. Island Press.
- Ministry of Health. (2018, August 2). Dementia [Government resource]. <https://www.health.govt.nz/your-health/conditions-and-treatments/diseases-and-illnesses/dementia#:~:text=Dementia%20is%20the%20term%20used,the%20structure%20of%20their%20brain.>
- Mitchell, L., & Burton, E. (2006). Neighbourhoods for life: Designing dementia-friendly outdoor environments. *Quality in Ageing and Older Adults*, 7(1), 26–33. <https://doi.org/10.1108/14717794200600005>
- Pallasmaa, J. (2012). *The eyes of the skin: Architecture and the senses* (3rd ed.). John Wiley & Sons. <https://ebookcentral-proquest-com.helicon.vuw.ac.nz/lib/vuw/detail.action?docID=896076#>
- Proshansky, H. M. (1978). The City and Self-Identity. *Environment and Behavior*, 10(2), 147–169. <https://doi.org/10.1177/0013916578102002>
- Schwarz, B., & Rodiek, S. (2007). Introduction: Outdoor Environments for People with Dementia. *Journal of Housing For the Elderly*, 21(1–2), 1–11. https://doi.org/10.1300/J081v21n01_01
- Sodo, J., & Winters, M. (2019). *Missing Main Street: Reconnecting Older Adults with Dementia to the Fabric of Authentic Living*. CBI Pub. Co.
- Steele, F. (1981). *The sense of place*. CBI Pub. Co.
- Steele, L., Swaffer, K., Carr, R., Phillipson, L., & Fleming, R. (2020). Ending confinement and segregation: Barriers to realising human rights in the everyday lives of people living with dementia in residential aged care. *Australian Journal of Human Rights*, 1–21. <https://doi.org/10.1080/1323238X.2020.1773671>
- Swaffer, K. (2014). Dementia: Stigma, Language, and Dementia-friendly. *Dementia*, 13(6), 709–716. <https://doi.org/10.1177/1471301214548143>
- Swaffer, K. (2015). Dementia and Prescribed Disengagement™. *Dementia*, 14(1), 3–6. <https://doi.org/10.1177/1471301214548143>

org/10.1177/1471301214548136

The Eden Alternative, Inc. (n.d.). The Eden Alternative Domains of Well-Being (p. 11) [Guide]. Retrieved August 23, 2020, from <https://www.edenalt.org/wp-content/uploads/2016/02/EdenAltWellBeingWhitePaperv5.pdf>

Twigger-Ross, C., Bonaiuto, M., & Breakwell, G. (2003). Identity Theories and Environmental Psychology. https://www.researchgate.net/profile/Clare_Twigger-Ross/publication/329774787_Pages_from_9780754618881_text/links/5c1a141192851c22a3361004/Pages-from-9780754618881-text.pdf

University of Tasmania. (n.d.). Wicking Dementia and Education Centre—University of Tasmania [Online course]. Retrieved February 9, 2020, from <https://mooc.utas.edu.au/course/content/21-14>

Wallace, S. (2020, February 23). Drugging the elderly: The aged care industry responds. Sunday Star Times. <https://www.stuff.co.nz/national/health/119685708/drugging-the-elderly-the-industry-responds>

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