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# The future of design for aged care

context

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## Good design key to growth of aged care sector

According to the latest New Zealand Aged Care Association (NZACA) annual report 2021-2022, the population of New Zealand aged 65+ stands at 846,000 people. This is predicted to increase to c1,358,900 people by 2042. What's more, 94,100 are aged 85+ with expectations that this will increase to 233,300 by 2042. With only 425 retirement villages, seniors living at home, and those in assisted care or hospital, the aged sector looks set to explode as new facilities will be required to meet demands.

With many people now living to a much older age, retirement living will require a step change to accommodate all ages and stages. The continuum of care approach will be essential as retirement village operators continue to add care suites, assisted living options, secure dementia units, and hospital care.

At Context, we understand the different levels of care needed for an ageing population. We believe that understanding the importance of good design to enable better living is the key to the future of retirement living. We have the expertise, technical knowledge, and deep understanding of design to create better environments for those aged 65 and above.

Property researchers JLL estimate 48,736 residents are in retirement villages (based on the calculation of 1.3 residents per unit). The data suggests an increase of 24,544 new units needed by 2033 to meet future demand over the current 37,489 units.

JLL's Retirement Villages Market Review 2022 details the following key insights:

1. Retirement villages across New Zealand continue to deliver new units to meet increasing demand, however, demand is outstripping the existing development pipeline.
2. New Zealand's population is ageing, which will continue to support the present and future demand for retirement villages.
3. More ethnic diversity of occupiers in retirement villages will create a further need for more units in the future.
4. The market share of the 'big six' operators will remain high, as evidenced by their supply pipelines.
5. The aged care market provides a key part of the continuum of care.

Working with the private sector, our clients and their investors, our focus is to design and develop safe, liveable, and adaptable sustainable spaces for today and the future. By encouraging innovation and adopting new technology and digital solutions, we're here to improve the quality and efficiency of senior care in New Zealand.



## Meet the team

When it comes to retirement living and aged care, our experienced and passionate team will help you deliver a successful project. We put the needs of both clients and residents first to ensure a smooth process is maintained, going above and beyond the standard role of scope engagement.

We can help in your journey of delivering better communities by providing vibrant villages where residents truly feel at home. We offer the following integrated design services:

- Architectural design
- Masterplanning
- Urban design

- Landscape design
- Interior design
- Sustainability
- Digital services

Context's aged care team has the expertise and hands-on experience designing for retirement villages and care facilities, along with a full understanding of Safety in Design principles. We have collaborated with many leading retirement village operators in the sector, delivering end-to-end projects, including small-scale and large-scale developments, villas, and community buildings.

Here's a short video featuring Context Associate, Judith Taylor talking about how we work with clients in the aged care sector.



## Key personnel



### **Craig Birch**

#### **Principal – Registered Architect**

Craig leads the aged care team at Context and has extensive experience in designing for seniors. A remediation specialist, he is also an accredited practitioner for the New Zealand Green Building Council. He recently achieved Green Star Accredited Professionals (GSAPs) status.



### **Judith Taylor**

#### **Associate – Registered Architect**

Judith has an impressive track record in planning and managing complex building projects across a range of sectors. She has experience in designing for the aged care sector, specification writing, and health and safety, as well as being an authority on Safety in Design. Judith is also President of the Te Kāhui Whaihanga New Zealand Institute of Architects.



### **Melodi Barzandeh**

#### **Senior Registered Architect**

Melodi has expertise in extensive construction monitoring and observation, architecture, design management, detailing, and coordinating multiple deliverables, from client initiation through to completion. She has previously worked as a project lead on multiple Metlifecare developments and has invaluable knowledge of the design and delivery of projects in the aged care sector.



### **Anthony Vile**

#### **Urban Design Lead**

Anthony has over 20 years of experience in urban design and masterplanning. He has accumulated a broad range of project design and management experience across a diverse range of sectors, project types, scales, and situations. Anthony believes in the transformative power of good design and has extensive knowledge of designing for seniors, having worked on several projects with Freedom Lifestyle Villages.



### **Antonia Guthrey**

#### **Senior Landscape Architect**

Antonia has a strong background in design-led community development. Her work includes urban design and land redevelopment, as well as public spaces, education, retirement living, and masterplanning. She is passionate about designing places that positively impact people and the environment.



### **Danielle Wai**

#### **Interior Designer**

Danielle has an intimate understanding of the user experience and specialises in helping clients get to know their customers from a design perspective. Her background includes the complex refurbishment of a 90-unit residential dementia-care facility in York, UK. The multiple award-winning village has been widely recognised for the quality of its spatial design programme, which Danielle led.



# Retirement Village

Auckland

## Services

Unmanned aerial vehicle (drone) building inspection

## Sector

Aged care

## Brief

Use drone technology to capture building repair requirements across a retirement village site as part of a building upgrade programme.

## Building inspections from another point of view

Our client – a major retirement village operator – recently acquired a new site and asked us to undertake a full building inspection to understand maintenance and upgrade requirements.

Due to disruptions from Covid-19, some of the maintenance team's Working at Heights permits had lapsed, which meant they needed another solution to understand the condition of the buildings, specifically the roof and façades. We suggested flying a drone over the site to capture photographs and video to complete a comprehensive building inspection.

Opting for drone imagery made it a lot quicker to get the job done, negating the need for scaffolding and minimising health and safety risks. We were also able to capture difficult to reach aspects like the roof edges and parapets.

Digital files were processed quickly, and quality images were then presented to the client showing external detail, surface texture and roof information.

Using drone imagery has proved faster, cheaper, and more effective than traditional manual inspections, and we are currently working with the client across other sites to identify maintenance and remediation issues using this technology.





# Taupō EUL Retirement Village

Taupō

## Services

Masterplanning  
Urban design  
Interior design

## Sector

Local government

## Brief

Create a new masterplan for a 26-hectare mixed-use development that combines commercial space, a retirement village, community facilities, and more.

## Retirement living in the new heart of Taupō

East Urban Lands (EUL) is a remnant 180ha site sitting between Taupō's edge and the State Highway 1 bypass. The land was purchased by Taupō District Council as part of the bypass project.

We were engaged to re-design a 26-hectare portion of the masterplan that provides a mixed-use village centre and forms a gateway into the new community.

Our strategic masterplan will deliver 2,000 new homes, commercial core, retirement village, and community facilities such as a medical centre and childcare.

The proposed retirement village provides a range of accommodation from independent villas and apartments to fully serviced care homes — greatly expanding the client's offerings and allowing them to cater to a wider range of resident needs.

Vibrant shared spaces (including lounges, activity rooms, and an on-site wellness centre) make for an inviting and warm sense of community and enable residents to form vital person-to-person connections.





# The Chocolate Works

York, UK

## Services

Interior restoration and architectural repurposing

## Sector

Aged care

## Brief

Transform and refurbish a former Grade II\* listed chocolate factory headquarters into 90-units and eight luxury apartments, incorporating a pioneering residential dementia care facility.

## Life is sweet for residents of former chocolate factory HQ

NORR – an architecture and engineering company based in Leeds (UK) – worked on this brief with Context's Danielle Wai as care village Spatial Lead.

The objective was to provide a unique visitor experience with innovative care, and luxury living for residents. The owners wanted to include pioneering initiatives based on a concept built in the Netherlands of a 'care village' – an approach not seen in the UK before.

At the heart of the village a large restored glazed atrium became the centrepiece of the facility, hosting a unique market square, complete with fully operational shops. The 'outdoors in' environment was enhanced using realistic artificial trees, foliage, and water features.

Focus was placed on how the existing listed building could be adapted to accommodate the very specific requirements of dementia friendly design, this included:

- An indoor 'village' market square setting, enabling residents to maintain independent daily routines, including trips to the salon, cinema, café, and licensed pub; in addition to creating an appealing space for visiting guests.
- A variety of both larger social areas and smaller quiet lounges to enable choice and comfort.
- Recognisable wayfinding – through use of clear signage and identifiable colour changes on each floor.
- Floorplans designed for flow, with looping walkways, and no dead ends, maintaining points of interest along the way and good visibility into the central atrium along the corridors for orientation.
- Access to natural daylight that was paramount in aiding circadian rhythms and sleep patterns.

The multi-award winning care facility has proved to be popular with residents, visitors and staff alike.

# Sustainability principles in aged care design

In November 2021, the Ministry of Business, Innovation, and Employment (MBIE) announced changes to the Building Code to make new homes and buildings more energy efficient. The documents outline compliance pathways to meet minimum insulation requirements for new housing set out in clause H1 Energy Efficiency of the New Zealand Building Code. The changes to the insulation requirements represent the first step towards MBIE's Building for Climate Change programme.

This change in legislation has coincided with the global rise of eco-friendly lifestyles for people of all ages, including seniors. Moreover, leading retirement village operators are taking sustainability-linked loans related to reductions in carbon emissions and construction waste and, in some instances for the development of dementia care.

While retirement village operators have historically built well with a focus on low maintenance and longevity, the government initiative has necessitated a different approach to retirement village design. Retirement village operators now need to factor in two frameworks that will apply to new communal residential and non-residential buildings, in line with the Building for Climate Change programme. These are:

- **Transforming Operational Efficiency** – which looks at emissions from the operation of the building (i.e., energy and water), water use, and occupant health and wellbeing. Currently, buildings in NZ use approximately 20% of all energy produced and over half of the electricity generated. Water supply is also affected by climate change and reducing water demand will help secure the supply. Operational efficiency also has an impact on the indoor environmental quality (IEQ) of buildings, this is primarily related to how much energy is required to maintain suitable indoor conditions throughout the year.
- **Whole-of-Life Embodied Carbon Emissions Reduction** – this covers emissions across the full supply chain, repair, and maintenance of buildings throughout their lifecycle, and processes at the end-of-life of a building by maximising new build efficiency, increasing building material efficiency, and reducing the carbon intensity of the material. The current

construction sector accounts for 20% of New Zealand's carbon emissions through the energy and materials used in construction.

## **For Transforming Operational Efficiency, our team can assist by:**

- Reviewing operational activities and determining where savings can be made to assist in the transformation, either through direct or indirect emissions.
- Appraising indoor air quality including temperature, humidity, and ventilation.
- Assessing thermal performance.
- Developing reporting strategies for operational efficiencies.
- Assisting in the selection of building materials and appliances.
- Assessing opportunities for onsite energy generation.

## **When it comes to Whole-of-Life Embodied Carbon Emissions Reduction we can help with:**

- Assisting in creating a Life Cycle Assessment (LCA) to calculate embodied carbon emissions of a building.
- Reviewing and working with clients and the sector to enable access/selection of low-carbon products; and coordinating with sustainable businesses and the New Zealand Green Building Council (NZGBC).
- Developing incentives to encourage uptake and overall improvement of low-carbon products.
- Designing with efficiency (material use and construction waste).
- Investigating a joined-up approach to retrofits (i.e. align with seismic strengthening standards and fire regulations being developed) with incentives in the form of carbon credits for reused materials or the reuse of a building.
- Integrated design with other design professionals to ensure that goals are achieved.

### **In-house sustainability team**

Additionally, we have several sustainability experts and Homestar accredited designers able to undertake Homestar assessments, Passive House designers able to design to Passive House standards, as well as architects who have undertaken the internationally renowned Living Building Challenge.

### **Sustainable commercial buildings**

While Passive House and Homestar standards are appropriate for villas and homes within a retirement village, we recommend that other on-site buildings, such as communal meeting areas, hospital facilities and dining rooms are designed to Green Star standards. This standard is a certification system used to evaluate the sustainability and environmental performance of buildings. In the aged care sector, building to the Green Star standard can have numerous benefits, from cost savings and energy efficiencies, through to lowering the overall carbon footprint of the site.

Our aged care team leader Craig Birch is a Green Star Accredited Professionals (GSAPs). GSAPs have the skills to work on projects targeting Green Star and make high-quality submissions as part of the rating.

What's more Green Star buildings may also be eligible for government incentives or grants, which can help to offset some of the costs associated with building to the standard.

### **Our sustainability services**

These include sustainability discovery workshops, site selection, and feasibility studies, sustainable landscapes, life cycle assessments, and thermal modelling to design for better energy use. We also have expertise in materiality and sustainable specifications that have adaptive reuse and sustainably sourced origins.

### **Demand for sustainability**

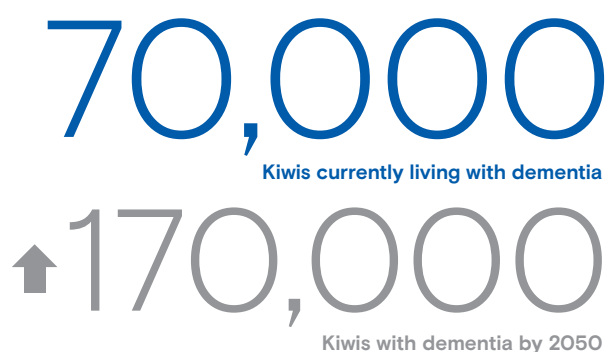
With many retirees looking for ways to reduce their carbon footprint and government supporting eco-friendly buildings through legislation, sustainability design options are now mandatory in the retirement village sector. We believe that through good design, we can help to shape our cities and the buildings we live and work in to create spaces where communities can thrive, whilst benefiting the environment and achieving reduced carbon emission goals. In doing so, we will create and retain thoughtfully designed, functional, and sustainable buildings and environments providing a robust and sustainable economy.



# The future of dementia care in New Zealand

As the population of Kiwis suffering from dementia — and those caring for them — grows, the expectations and demand put on aged care facilities will evolve. New Zealand's not quite ready yet — but through smart design, we can get there.

According to Aged Care NZ, more than 70,000 Kiwis currently live with dementia — and by 2050, our fast-ageing population is expected to push that number to upwards of 170,000.



But dementia doesn't just affect the people who suffer from it. It impacts their partners and children, their immediate family, their friends — anyone and everyone involved in caring for them or making decisions about that care, swelling that impending 170,000 to at least double the number.

In the approaching decades, these hundreds of thousands of people within the sphere of dementia and dementia care will bring new expectations to and put increased pressure on New Zealand's care facilities — and as they stand, many of these facilities require upgrades to accommodate the coming wave of need and to meet market demand for elevated quality of care.

Numerous studies have testified to the mental health and quality of life benefits enjoyed by dementia care patients as a result of considered, thoughtfully designed built environments — 169 of which are collated and evaluated in [this October 2014 piece](#) by Gesine Marquardt, Kathrin Bueter, and Tom Motzek, published in the Health Environments Research & Design Journal.

These studies lend themselves to the adoption of evidence-based design within the dementia care sector. Luckily, most (if not all) of the needed upgrades are within reach, thanks to recent advancements in design thinking around dementia care and innovative, affordable design solutions that simultaneously improve the resident experience, satisfy the customer (read: family) desires around comfort and care, and future-proof our nation's vitally important aged care assets.

But one thing is certain: the way we design for dementia needs to shift if we're to avoid a dearth of appropriate facilities in the near future. Using fresh thinking in the sector, we can better provide for those in need and offer greater comfort to their loved ones.



As Context continues to work in this area, we are always looking to better understand the design requirements of New Zealand's retirement and aged care players. Our team of specialist designers is turning to global best-practice to underpin their thinking and solutions for the sector.

These practices are anchored by the key principles of designing for dementia, outlined in this paper by Context's Associate Judith Taylor and Interior Designer Danielle Wai — who led the award-winning spatial design programme for the groundbreaking [Chocolate Works Care Village](#) dementia facility in the UK.

## 9 key principles of designing for dementia

### A sense of community and spirit

Whether we're introverts or extroverts, regular human interaction is critical to our mental health. Once they enter a care facility, it's essential that residents feel they belong to a community. Creative workshops such as painting, pottery, music, gardening, and dancing can boost morale, stimulate the mind, and enable vital social interaction. These cognitively invigorating activities have also been [clinically shown](#) to improve communication capabilities and quality of life amongst dementia patients.

Alternatively, successful community environments within care facilities can be created via thoughtfully designed 'care villages.' This revolutionary design thinking, pioneered by De Hogeweyk in the Netherlands, brings the shops, café, salon, and cinema into the home — creating a community that allows residents to buy their snacks, birthday cards, manicures, and other staples of 'normal' life whilst offering familiarity, dignity, and independence.



### Freedom and independence

Within any form of long-term care, the perception of freedom is fundamental to resident happiness and empowerment — and the key to that freedom is in-built design solutions that reduce fall risk. One major cause of falls is the finish of floors; as older people tend to shuffle, low-pile carpet or slip-resistant finishes are a necessity.

Appropriate furniture, such as pieces that eliminate sharp edges and chairs that promote mobility rather than inhibit it, should be considered. [A 2018 study published in SAGE Open Medicine](#) underscores this, having found that 'residents, experts, and carers all prefer chairs...above the recommended height for older people', allowing them easier ingress and egress. Seating in aged care should also account for depth, enabling residents to rest comfortably without having to slump.

In addition to being hazard-free, aged care environments should facilitate movement as much as safety considerations allow. If a resident wishes to walk from their bedroom to the café, for instance, they should be able to follow clearly defined, well-signposted, amply lit pathways with obvious handrails.

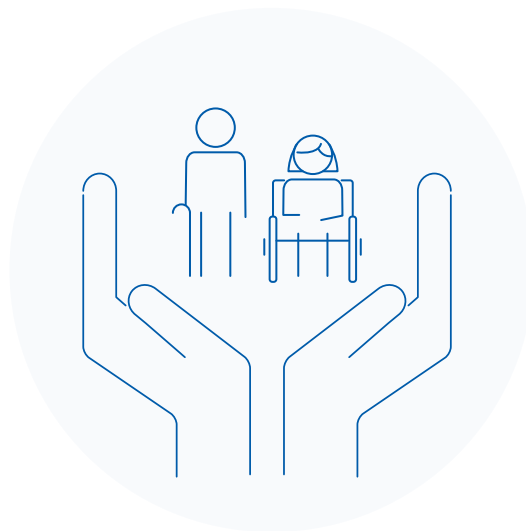


## Dignity

It's unfortunately relatively common for less-than-dignified features (design elements that lend themselves more to stage sets rather than real homes) to be included in dementia care facilities.

Treating patients with dignity is one of the foundational ethics of nursing. Numerous studies — including [this 2008 piece from BMC Nursing](#) — explore the relationship between dignity and autonomy and the means through which aged care practitioners and facilities can foster the two concepts, show that dignity is critical to our identities, our mental health, and our understanding of ourselves.

It's an essential component of resident satisfaction and, by extension, the satisfaction of their families. As these families are often technically 'clients' of aged care organisations, dignity is vital to the long-term viability and sustainability of any given facility.



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## Family, friends, and intergenerational considerations

Aged care environments should, wherever possible, eschew the clinical and lean into the fresh, the homely, and the comfortable. If friends and family are visiting their loved ones in a warm, inviting space, they're more likely to make frequent trips that have a resulting positive effect on the mental state of a resident.

Moreover, [studies have proven](#) that intergenerational dementia programmes — such as bringing children into dementia care homes to participate in activities like reading or art — stimulate memory and communication and generally improve residents' quality of life.



## Pastimes, hobbies, and demographics

Dementia care residents run the demographic range and bring with them a colourful slew of pastimes and hobbies that, if continued while in the home, can dramatically improve their mental health and cognitive states.

[Resources from the Alzheimer's Society](#) suggest that regular activity and exercise that remind residents of their lives pre-care facility can help them maintain cognitive and motor skills and provide them with a sense of achievement that, in turn, furnishes them with a sense of purpose.

Architecture and design should accommodate this via fit-for-purpose spaces for the likes of art and walking, as well as the integration of nature and the outdoors with safe indoor areas.



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## A meaningful existence

In a [2012 study published in JAMA Psychiatry](#), researchers found a positive correlation between a sense of purpose and the delay of cognitive decline in dementia patients. The conclusion of this study — that ‘higher levels of purpose in life reduce the deleterious effects of AD (Alzheimer’s disease) pathological changes on cognition in advanced age’ — has been corroborated by other research efforts and points to the importance of activities and stimulation that promote a sense of purpose in dementia sufferers.

Even simple things — such as providing residents with bird feeders or plants that require their tending and care, asking them to set the table for dinner, or forming sports and arts clubs for them to actively participate in, can offer critical meaning to a person’s day.



## Integration of the five senses

As a proven method for the elevation of awareness and the enhancement of concentration and attention in those with memory dysfunction, multi-sensory stimulation (MSS) has recently gained recognition and popularity as an effective technique within dementia care facilities.

Integrating the five senses — sight, smell, hearing, feel, and taste — within care facility interiors can create a calming balance and a harmonic setting for residents. This can be accomplished through the implementation of design thinking and elements such as tailored spaces for music therapy, aromatherapy, and pet therapy.



## The importance of nature and daylight

Sleep disturbances and the behavioural problems that arise as a result are noted symptoms of dementia. Within care facilities, consideration should be given to lighting solutions that replicate the look and feel of nature, promote the preservation of normal circadian rhythms, and foster, as much as possible, the observance of typical sleeping hours and patterns.

The benefits of these natural lighting solutions have been summarised in various journal pieces, including a [2017 Neurodegenerative Disease Management study](#) that found that ‘timed light exposure can consolidate and improve night-time sleep efficiency, increase daytime wakefulness, and reduce evening agitation without the adverse effects of pharmacological solutions.’ Furthermore, a [2019 study in the journal Working with Older People](#) outlined the physical, emotional, and social benefits of ‘green dementia care’.

As far as design solutions are concerned, examples include lounges with ample light that are designed to prevent overheating, easy access to the outdoors that takes all safety considerations into account, and the integration of new lighting technology within residents’ rooms that mirrors natural outdoor light patterns.



## Reminiscence therapy

Dementia sufferers tend to experience short-term memory loss more intensely than longer-term, meaning they feel deep connections to memories from their younger years. Dementia care should aim to trigger relatable memories and a sense of familiarity through design – for instance, by incorporating interior design elements such as memory boxes at bedroom door entrances or by surrounding residents with images from their youth of recognisable cultural figures, important historical moments, or local seaside resorts from their hometowns.

These memory linkages are referred to as reminiscence therapy, and studies – [such as this 2018 entry in the International Journal of Geriatric Psychiatry](#) – have shown a significant decrease in depressive symptoms in dementia patients.



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## Dementia design principles

When it comes to design principles for dementia and high care, we follow the guidelines developed by Waitematā DHB and the Ministry of Health. The latter focuses on the experience for the person with dementia in both secure and non-secure facilities under the following headings: homelike therapeutic environment, gardens, and outdoor environs, care home size and density, colour and contrast, lighting, managing environmental stimulation, memory aides/cues, floor plans and community links.



If you would like to discuss our experience designing for the aged care sector, email [hello@context.nz](mailto:hello@context.nz), and one of our team will be in touch.

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