Designing Interiors for Dementia & Cognitive Decline

Wayfinding, Acoustics and Visual Comfort

CSR

INTRODUCTION

Dementia, referred to in te reo Māori as mate wareware, is becoming increasingly prevalent across New Zealand's ageing population. According to 2025 statistics, approximately 83,000 people in New Zealand are living with dementia mate wareware.[1] Demographic projections indicate this figure could approach 170,000 by 2050,[2] reinforcing the need for built environments that respond to both current and future demand.

The design of interior environments, whether in residential or care settings, shapes the daily experience of people living with cognitive impairment. Spatial layout, material selection and aesthetics can either support orientation and autonomy or contribute to confusion, anxiety and distress. For architects, this places greater emphasis on evidence-based, person-centred design approaches. This means paying close attention to how spaces look, feel and are navigated, particularly in settings where residents may experience changes in cognition and sensory processing over time.

This paper examines how interior design and product specification can be used as practical tools to support wellbeing and dignity for people living with dementia mate wareware. It focuses on three interrelated design domains: wayfinding, acoustic comfort and visual comfort.

DEMENTIA, DIGNITY AND PERSON-CENTRED DESIGN

Dementia mate wareware refers to health conditions that affect how well our brains work; this includes memory, perception, sensory processing and spatial understanding. It is a progressive condition in which neurological changes typically advance over time, resulting in a gradual intensification of symptoms. The nature and pace of this progression vary between individuals, with experiences shaped by the type of dementia, fundamentally altering how occupants interpret and respond to interior environments.

Changes in how a person processes depth, contrast, sound and memory can make spaces harder to understand and navigate. In poorly designed interiors, these factors may contribute to confusion, agitation, wandering and heightened distress. Conversely, environments that are quiet, predictable and visually calm can support feelings of independence and comfort.

Designing for dignity is a central concept in dementia care. Dignity encompasses both inherent human worth and the dignity of identity, including autonomy, self-respect and continuity of self.[3] Interior environments play a significant role in reinforcing or undermining these qualities, as the way spaces are planned, detailed and finished influences whether they feel institutional or domestic, restrictive or enabling.

To maintain dignity as cognitive abilities change, environments must be capable of responding to individual needs. Person-centred design for people living with dementia mate wareware is an evidence-based approach that aligns environments with the individual's abilities, life history, preferences and cultural context. In New Zealand, this includes consideration of Māori and bicultural perspectives, recognising the importance of whakapapa, identity, collective wellbeing and connection to place.

KEY PRINCIPLES FOR DEMENTIA-FRIENDLY ENVIRONMENTS

Dementia-friendly design places emphasis on clear, legible and accessible environments that support safety and sensory comfort. Interior layouts, materials and finishes should minimise cognitive load while reinforcing familiarity and intuitive use. Evidence-based guidance from organisations such as the *Ministry of Health*[4] and the *Building Better Homes, Towns and Cities*[5] consistently emphasises the role of the built environment in enabling people living with dementia mate wareware to function with greater independence.

Early research into the interaction between people and their surroundings showed that environments which are overly complex or demanding can increase confusion and distress, particularly for people with cognitive impairment.[6] Pioneers in this space, such as Professor Mary Marshall, turned these findings into clear design principles, including: the use of small-scale, domestic settings; good visual access to key spaces; control of sensory stimuli; support for safe movement and engagement; and reinforcement of personal identity.[7]

Across a range of guidance documents, three themes relating to built environment design emerge as having a significant influence on the quality of life of people living with dementia mate wareware:

- **Wayfinding:** How easily people can understand and navigate a space.
- **Acoustic comfort:** How the space sounds and supports communication.
- **Visual comfort:** How the space is visually perceived, interpreted and tolerated.

For architects, these considerations translate directly into how spaces are planned, detailed and specified. The following sections translate these design principles into practical interior design and specification strategies.

WAYFINDING

Key takeaways

- Use subtle material transitions and targeted contrast to signal thresholds and key touchpoints.
- Maintain consistent palettes and detailing to reinforce familiarity and recognition.
- Minimise visual clutter along circulation routes to reduce cognitive load.
- Use familiar domestic elements to support intuitive navigation.
- Provide adequate lighting along movement routes.

Effective wayfinding for people living with dementia mate wareware depends on reducing cognitive effort and supporting intuitive movement through clear, predictable spatial cues. Rather than relying on instruction or signage alone, wayfinding should be embedded within the interior architecture itself.

Material transitions and colour contrast should be applied deliberately and with restraint. Changes in wall or floor materials, texture or colour can be used to signal thresholds, identify functional zones or mark arrivals at key destinations such as bathrooms or communal areas. These transitions should be subtle but clearly defined, avoiding high-contrast patterns, strong geometric motifs or abrupt tonal shifts that may be misinterpreted as steps, holes or physical barriers. Contrast is most effective when used to highlight critical touchpoints, including doors, handrails, sanitary fittings and frequently used furniture.

Consistency in visual language is essential for reinforcing recognition and memory over time. Repeating palettes, materials and detailing across similar spaces reduces the cognitive effort required to interpret new environments and supports familiarity as occupants move throughout a building. Corridors, bedrooms and shared spaces should follow clear and consistent design rules, with variations introduced only where they communicate meaningful differences in function. Visual clutter along circulation routes should be carefully controlled, limiting decorative wall graphics, excessive artwork or overlapping signage.

Recognisable elements such as kitchen tables, shelving units, fireplaces, artwork or window seats provide reference points and support orientation through association rather than instruction. These landmarks are most effective when positioned at decision points or the end of circulation paths. In addition, lighting should be even and continuous along movement routes to support safe mobility, with slightly higher light levels and warmer tones at destinations to subtly attract attention.

ACOUSTIC COMFORT

Key takeaways

- Acoustic comfort reduces cognitive load, agitation and communication difficulty.
- Control reverberation through high-absorption ceiling systems (NRC: 0.80 or higher).
- Supplement with acoustic wall panels in large or reflective spaces.
- Specify insulated and acoustically detailed stud walls to limit sound transmission and flanking between spaces.

Excessive reverberation and background noise can significantly impair speech comprehension, increase agitation and elevate cognitive load. General acoustic design principles therefore focus on controlling reverberation time and limiting unwanted background noise through a coordinated approach to interior finishes, building systems and services.

Reverberation is primarily managed by introducing sufficient sound-absorptive surfaces within an interior space. Ceilings typically provide the largest uninterrupted area and are the most effective location for high-performance absorption. Acoustic ceiling systems with a high Noise Reduction Coefficient (NRC), typically in the order of 0.80 or greater, are commonly specified to absorb mid- and high-frequency sound associated with speech. Where ceilings are discontinuous, highly reflective or exposed, additional absorption should be provided through wall-mounted panels, perforated linings or suspended acoustic elements to achieve balanced absorption across the room.

Wall-based acoustic treatments play a complementary role, especially in larger rooms or areas with extensive glazing or hard surfaces. Fabric-wrapped panels, perforated wall linings and acoustic wall coverings can be used to prevent sound build-up and improve intelligibility without relying solely on ceilings. These treatments should be positioned at conversation height and along reflective surfaces rather than distributed arbitrarily. In open-plan settings, ceiling rafts and baffles can help break up sound and reduce noise propagation without introducing visual clutter or physical barriers at ground level.

Sound transmission between adjacent spaces should be carefully managed to support privacy and reduce disturbance. Acoustic insulation within stud walls and ceiling cavities limits airborne noise transfer between bedrooms, bathrooms, communal areas and staff zones. Where higher performance is required, resilient elements such as staggered studs, double-stud walls or resilient channels can be introduced to reduce vibration transfer through the structure.

VISUAL COMFORT

Key takeaways

- Prioritise controlled access to natural light and avoid glare and strong reflections.
- Specify matte, low-reflectance finishes to reduce visual noise and misinterpretation of surfaces.
- Avoid strong, high-contrast patterns that can create “visual cliff” effects.
- Maintain consistent palettes, luminance levels and detailing to reinforce familiarity.

Visual comfort in environments for people living with dementia mate wareware is closely linked to orientation, safety and emotional regulation. Design strategies should aim to maximise visual clarity while maintaining a domestic visual language, avoiding glare, harsh contrast and unnecessary complexity that can contribute to confusion or distress. Natural light should be prioritised where possible, using careful window placement, internal glazing and light-diffusing blinds or screens to provide daylight in a controlled, comfortable manner without creating strong contrasts, reflections or glare.

Surface finishes strongly influence both visual perception and the character of a space. Matte, low-reflectance wall linings, ceilings and flooring reduce glare and prevent reflections that may appear as movement, water or level changes. Floor finishes should be plain or subtly textured, avoiding strong patterns, high contrast or glossy surfaces that increase visual noise or create a “visual cliff” effect, where abrupt tonal or luminance changes are perceived as a drop-off, step or holes in the ground. Finishes should also provide appropriate slip resistance to support safe movement without relying on visually aggressive textures or coatings.

Consistency in visual language is essential to maintaining calm, familiarity and a sense of domesticity. Repeating palettes, luminance levels and detailing across similar rooms reduces the need for reorientation. Colour, material changes and lighting should be used to define zones and destinations in ways that resemble typical home environments.

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Create dementia-friendly environments with CSR New Zealand

Designing environments that effectively support people living with dementia mate wareware requires architectural responses that balance comfort, functionality and long-term performance. This places particular emphasis on how interior systems are selected and coordinated, as wall, ceiling, flooring, insulation and lighting choices collectively shape how spaces are experienced, navigated and maintained over time.

Within the New Zealand context, CSR offers a portfolio of systems that directly support these objectives. Products such as Bradford SoundScreen™ Acoustic Wall Insulation allow architects to limit noise transmission between bedrooms, communal areas and staff zones, reducing background disturbance and supporting privacy. When combined with Gyprock plasterboard linings and acoustic wall and ceiling assemblies, these systems provide predictable sound performance while meeting fire, structural and durability requirements.

CSR’s interior lining and substrate solutions contribute to visual comfort and long-term material performance. Cemintel wall and ceiling linings provide durable, low-sheen surfaces suited to high-use areas such as corridors, shared living spaces and care zones. These linings enable architects to specify matte, low-reflectance finishes that minimise glare and reduce the risk of visual misinterpretation while maintaining surface robustness, cleanability and resistance to wear. Their dimensional stability and consistent finish quality also support visual continuity across rooms, helping create environments that feel calm and familiar without compromising hygiene or maintenance requirements.

To further enhance acoustic comfort along with interior style, Decorative Acoustics from Woven Image can be integrated into wall and ceiling designs. This range of decorative acoustic panels, tiles and ceiling features combines effective sound absorption with a broad palette of colours, textures and material finishes, helping to manage reverberation in living, communal and circulation spaces while contributing to a visually layered, warm and inviting interior.

By supporting integrated specification across insulation, linings and structural systems, CSR helps architects translate person-centred design principles into buildable, high-performing environments. Backed by a locally supported, performance-tested product range, CSR works alongside design teams to deliver living and care spaces that are durable, dignified and responsive to the needs of people living with dementia mate wareware.

"Interior layouts, materials and finishes should minimise cognitive load while reinforcing familiarity and intuitive use."

REFERENCES

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4 Ibid.

5 Dr Bev James and Nina Saville-Smith. "Building Solutions to Enable People with Dementia to Age in Place: A Literature Review." Building Better, Homes, Towns and Cities. https://www.buildingbetter.nz/wp-content/uploads/2023/10/James_Saville-Smith_2019_building_solutions_to_enable_people_with_dementia_to_age_in_place.pdf (accessed 21 January 2026).

6 Above n 3.

7 Ibid.

All information provided correct as of February 2026