The Power of Daylight

and the visual environment for dementia-friendly design

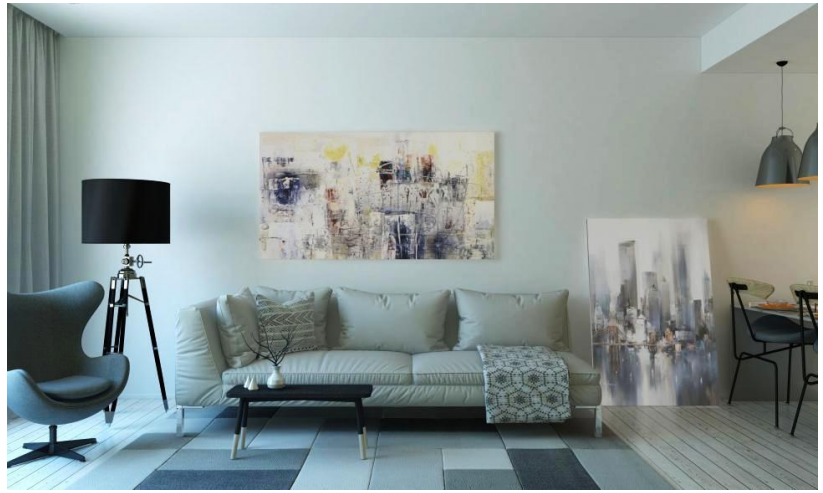
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Jane Waterhouse | 1st May 2025

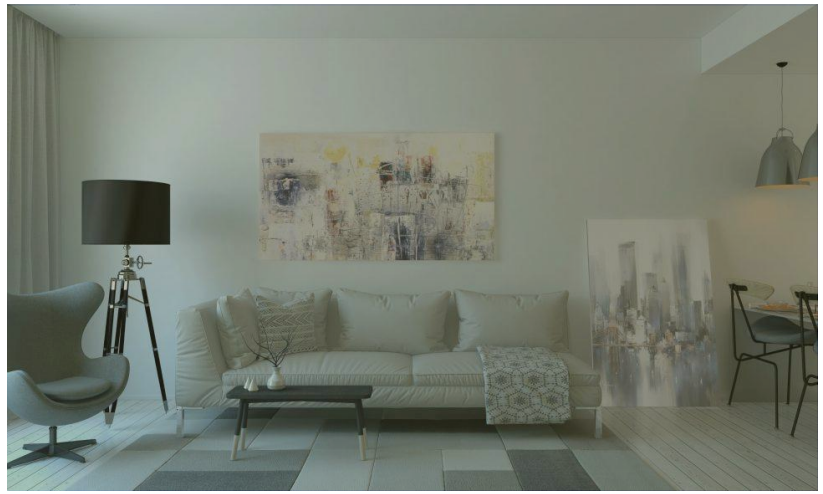
We build to make environments help us live the way we want to



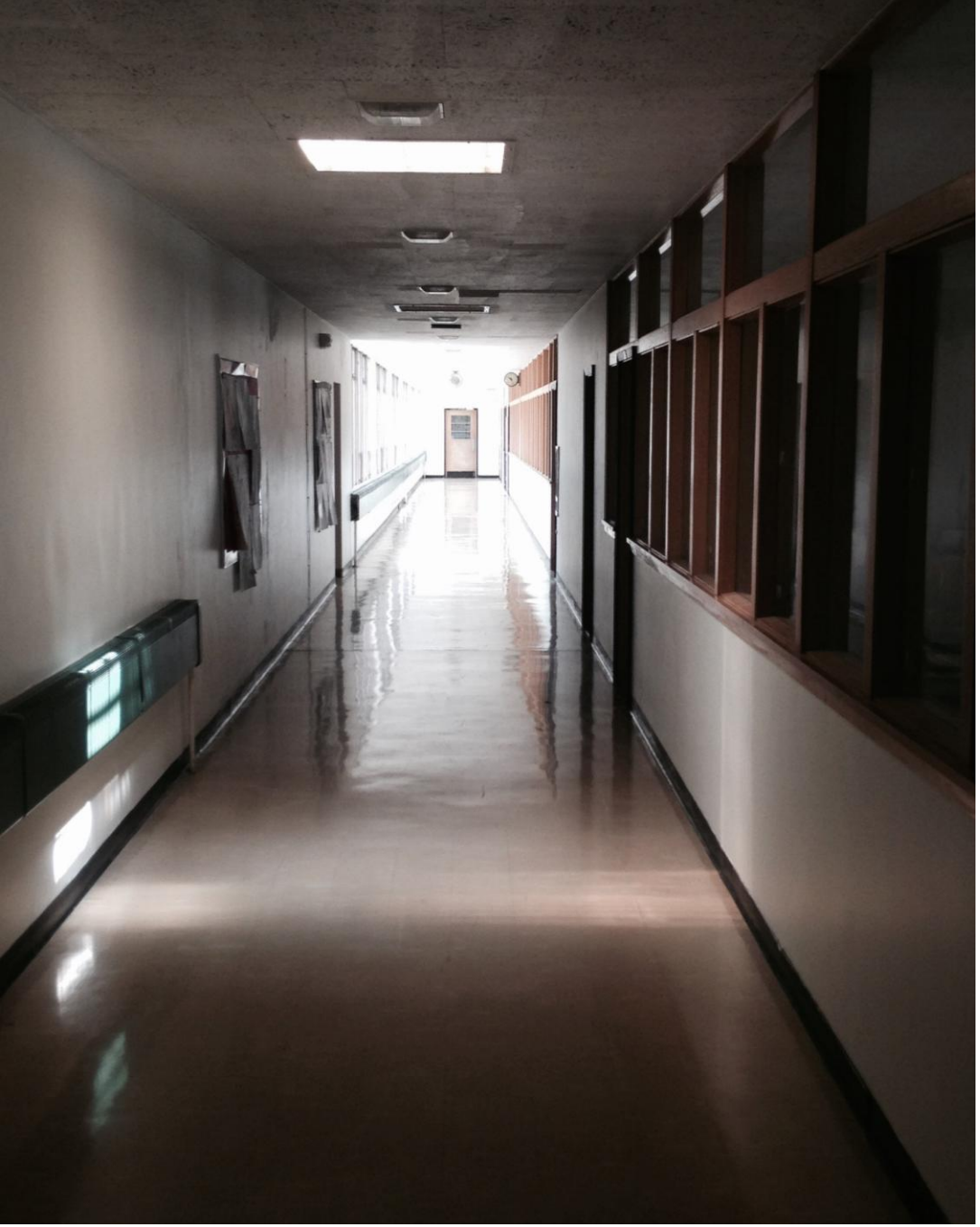
Designing for different eyes, different brains









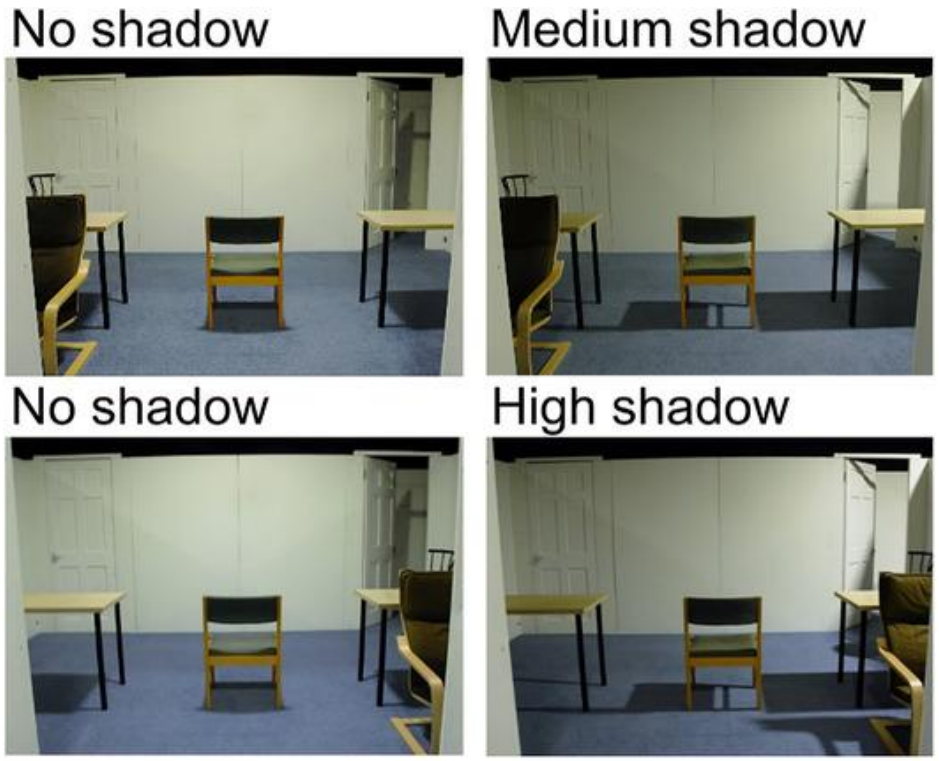


More light for seeing and wellbeing

- Need more light to see well
- Poor lighting can make it hard to navigate, increase likelihood of falls and hallucinations
- Glare and discomfort from over-lighting

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(Figure from Yong et al. 2020)

Balanced lighting distribution

- Uniform lighting is easier to adapt your eyes to
- Very busy, bright or dark areas can be confusing
- Some directional lighting is good for understanding depth





Thinking about surfaces

- Colour contrast
- Light reflectance value & contrast
- Warm colours are more distinguishable
- Black mats or patterned areas can be confusing

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Colour properties of light

- Ensuring good colour rendering
- Morning exposure to cool or full spectrum lighting for training that biological clock
- Effects on alertness

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Familiarity and context is important

- Warmer lighting is more comfortable and home-like
- Nature of the activity and familiarity of the home will impact independence
- Certain spaces will be more important
- Lighting is balanced with needs for privacy and view outside



Why is daylight important?

- Cheap, sustainable light source
- Comfortable, often preferred and people have a higher tolerance for varying conditions
- Very bright, full-spectrum light
- Circadian Regulation and other non-visual health benefits
- Difficult or expensive to optimise after construction

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What happens when its not suitable for us?

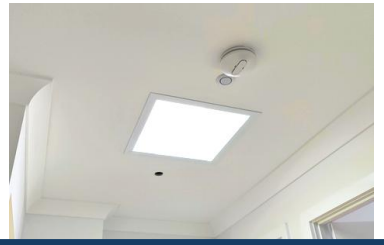
Interior changes






Partial retrofit





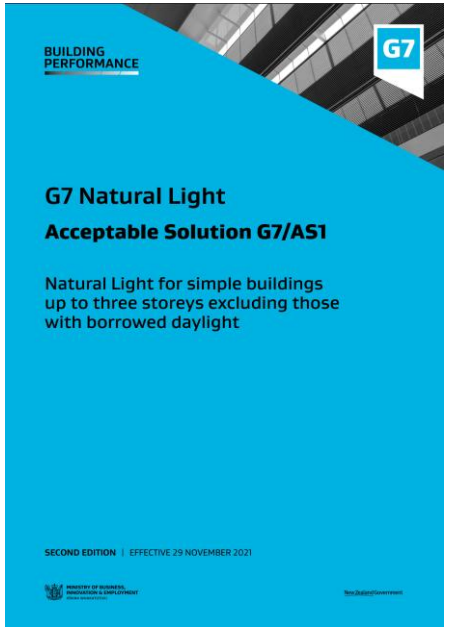

Major Renovations



Relatively accessible and affordable

Difficult and expensive

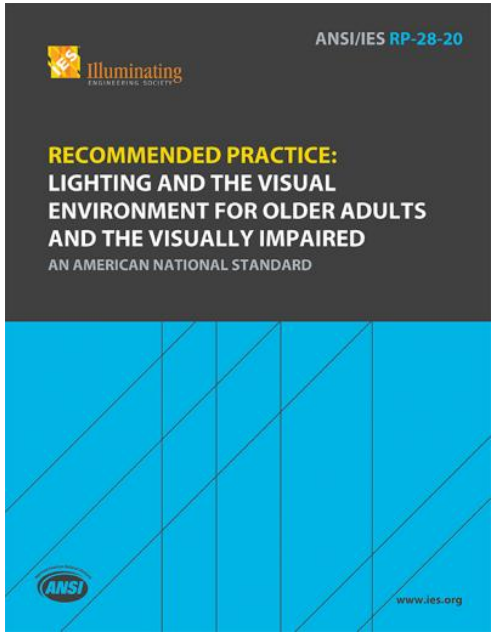
We need suitable guidelines to help make better daylit spaces



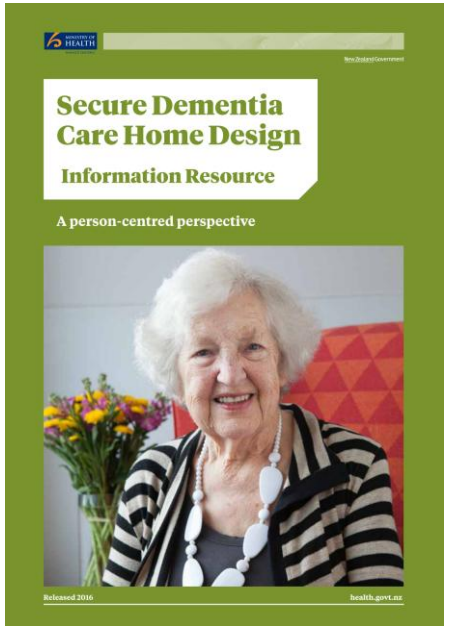
NZ Building code



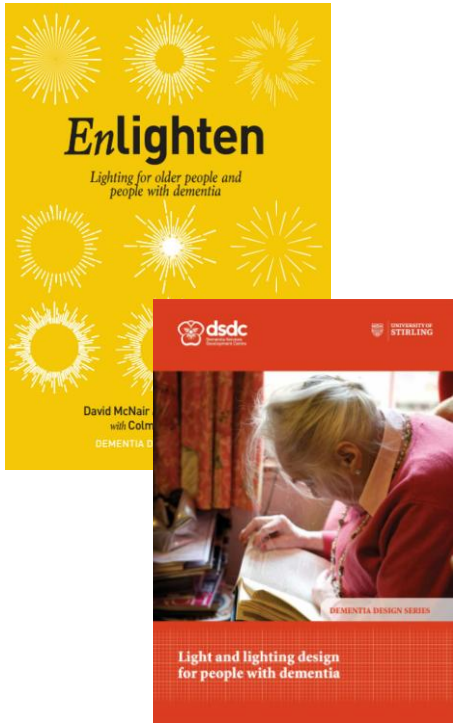
NZ sustainable building certification



Lighting design guidelines



Dementia design guidelines



Dementia lighting guidelines

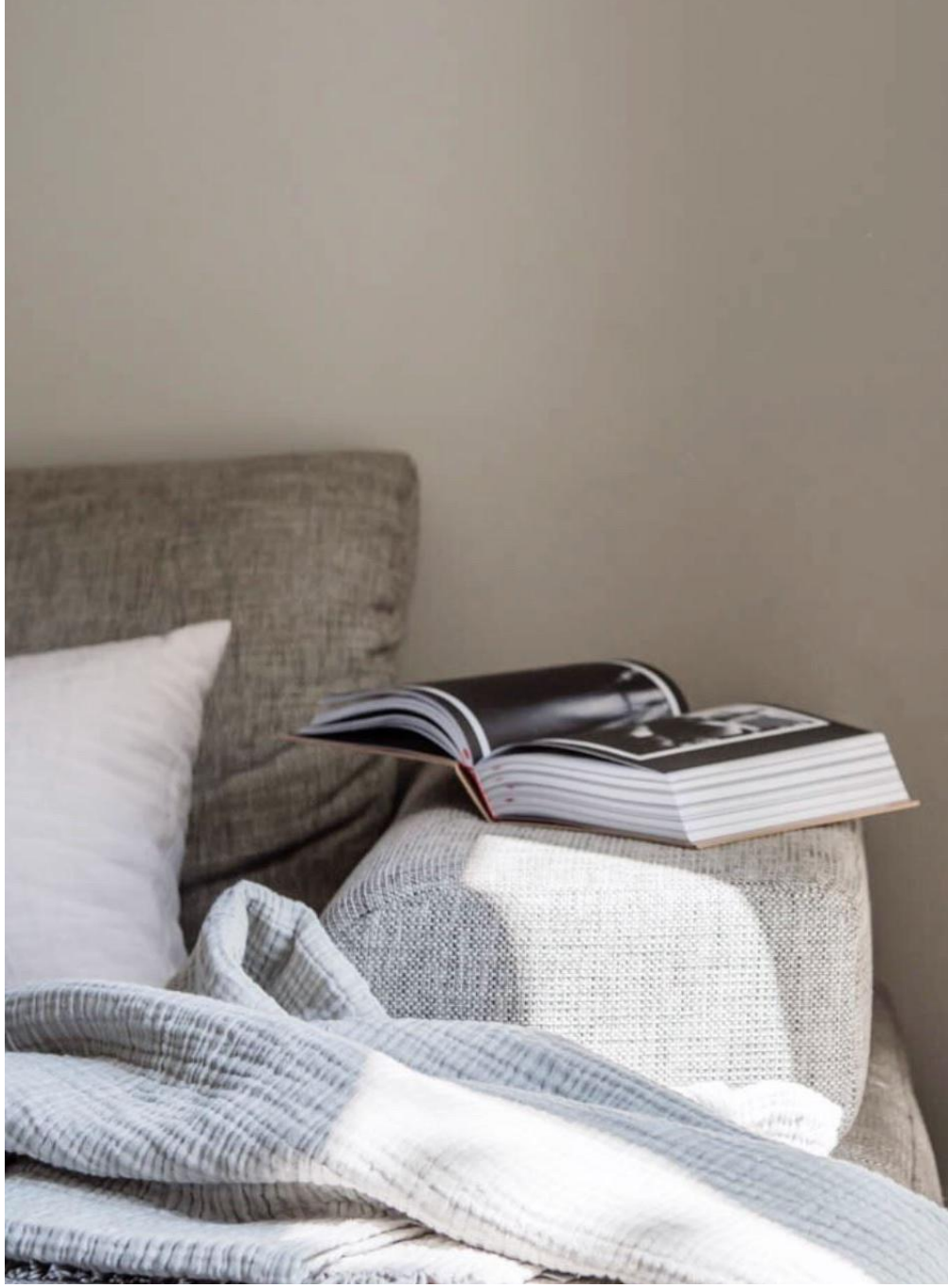
Project 1: Doctoral & Further research

Dementia friendly Daylighting in homes

We are asking older people with dementia, the masters of their lived experience, what are good daylit environments?

Exploring which research methods are empowering for people with dementia?

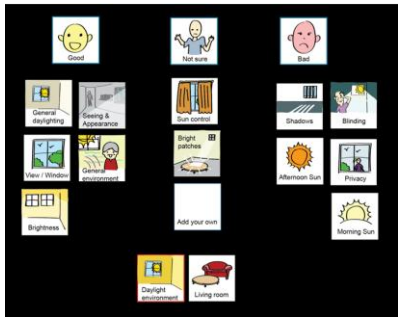
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The ways we ask questions about daylight





Images ©Jane Waterhouse

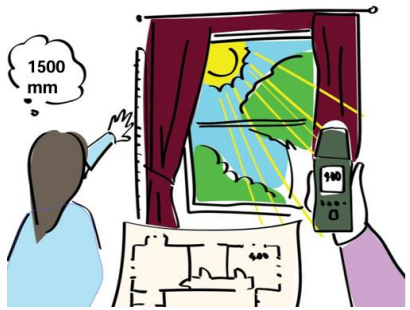




Images ©Jane Waterhouse

The ways we map it to building and lighting information







Measuring daylight

And we trial and error with our participants to refine the methods!

Project 2: more than daylighting

Dementia Design Aotearoa

We hope to build robust, evidence-based resources dedicated to creating dementia-friendly design that is right for us in New Zealand at **CCREATE-AGE**.

We invite people with dementia, care partners, or those working in this sector to be part of join our community so we can co-create this together.

Contact:
Jane Waterhouse | j.waterhouse@auckland.ac.nz
Professor Ngaire Kerse | n.kerse@auckland.ac.nz



Everyone sees the world differently.

Changes to lighting levels, contrast, glare, shadows can help maximise independence and wellbeing.

There are many small things in your home you can improve, but we need to come together so we can invest in enduring changes to fundamental ways we are building.

If you are interested in being part of our projects or the **CCREATE-AGE** community, please reach out!

Jane Waterhouse | j.waterhouse@auckland.ac.nz