Introduction to The Dignity Environmental Assessment Tool

(Dignity-EAT)

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Contents

The evolution of the principles underpinning the Dignity Environmental Assessment Tool

The Dignity Environmental Assessment Tool is based on a set of design principles that have been evolving for more than 35 years.

In an early Australian paper describing the design of the first large scale attempt to accommodate people with severe behavioural problems associated with dementia outside of the psychiatric hospital system Fleming and Bowles identified eight principles of good design:

- small size
- provision of domestic facilities
- easy access to local community
- reduction of unhelpful stimulation
- highlighting of helpful stimuli
- good visual access—that is, residents able to see where they want to go
- provision of a clear pathway that guides residents from inside to outside and back again without obstacles and opportunities for passing interaction
- familiar furniture, fittings and décor. (Fleming and Bowles 1987)

Fleming and Bowles were not alone in their efforts to provide better alternatives to care for people living with dementia at that time. While not explicitly described these principles were also addressed in the development of small, homelike facilities by Brian Kidd (Kidd 1987). Five years later in the United States (US) Cohen and Weisman (Cohen 1991) described nine goals for the environment: (1) ensure safety and security; (2) support functional ability through meaningful activity; (3) maximise awareness and orientation; (4) provide opportunities for stimulation and change; (5) maximise autonomy and control; (6) adapt to changing needs; (7) establish links to the healthy and familiar; (8) provide opportunities for socialisation; and (9) protect privacy. Some 10 years later Marshall (Marshall 2001) provided a synthesis of the principles, promoting facilities that: (1) are small in size; (2) are domestic and homelike; (3) provide scope for ordinary activities (unit kitchens, washing lines, garden sheds); (4) have unobtrusive safety features; (5) have rooms for different functions, with furniture and fittings familiar to the age and generation of the residents; (6) have a safe outside space; (7) have single rooms big enough for a reasonable amount of personal belongings; (8) have good signage and multiple cues where possible; (9) use objects rather than colour for orientation; (10) enhance visual access; and (11) control stimuli, especially noise.

In 1995 the principles guided design of the Meadows, HammondCare's first dementia specific facility which continues to influence designs today (Judd, Marshall, and Phippen 1998). They were added to in 2000 through collaboration with Bennett (K. Bennett 2000)and in 2003 they were used as the framework for a project funded by the NSW Health Department aimed improving conditions in regional hospitals that were accommodating a significant number of long term patients with dementia. This project resulted in the first version of the Environmental Audit Tool (EAT) (Fleming, Forbes, and Bennett 2003; Fleming 2011; Smith et al. 2012).

In 2015 they were revised and used as the framework for a new edition of the Environmental Audit Tool, the EAT-HC, targeted more carefully at people with dementia requiring high levels of care (Fleming and Bennett 2015c) and they were adopted by New South Wales Health as the key principles for improving healthcare environments for people living with dementia (Fleming and Bennett 2014).

The principles used in the EAT-HC were stated:-

- Unobtrusively reduce risks
- Provide a human scale
- Allow people to see and be seen
- Reduce unhelpful stimulation
- Optimise helpful stimulation
- Support movement and engagement
- Create a familiar place
- Provide a variety of places to be alone or with others in the unit
- Provide a variety of places to be alone or with others in the community
- Design in response to a vision for a way of life. (Fleming and Bennett 2017b)

In 2016 they were included in the Australasian Health Facility Guidelines for application to the design of mental health facilities for older people (AHIA 2015); in 2018 they became the standard by which the Australian Aged Care Quality and Safety Commission judged design (Aged Care Quality and safety Commission 2018) and this has continued into the draft ACQSC Standards currently out for discussion (Aged Care Quality and Safety Commission 2022). They are the foundation of the extensive dementia design training resources used by Dementia Training Australia (Fleming and Bennett 2017a), Dementia Australia (Dementia Australia 2022) and Alzheimers WA (alzheimer's wa 2022a, 2022b). They have provided a framework for research into environmental factors such as acoustics (Haynes and Fleming 2014) and thermal comfort (Tartarini et al. 2017) that has informed the development of guidelines.

In February 2019, Richard Fleming (as the Director of Dementia Training Australia), and Kirsty Bennett (as Manager of DTA's National Design Education Service) organized a symposium titled "Vision Driven Design – when good design is not enough." The event was prompted by the need to address the role of the built environment in meeting growing expectations for supporting social relationships and enhancing the quality of life in residential aged care homes. The symposium brought together innovative designers, architects, researchers, and aged care providers to explore the role of a vision for a way of life for residents in aged care in designing the next generation of accommodation for people living with dementia.

After two days of vibrant interactions, key figures, including Fleming, Bennett, Zeisel, and Golembiewski, recognized a core essence in the discussions that warranted broader public attention (Fleming et al. 2022). The opportunity to explore that core arose at the end of 2019 with the writing of the Alzheimer's Disease International's World Alzheimer Report 2020 by Fleming, Zeisel and Bennett (2020). The writing of this report, featuring contributions from 58 authors and 84 case studies across multiple countries, engaged the key figures in lengthy discussions and necessitated a systematic approach. The required structure was provided by using well-established design principles developed by Fleming and Bennett to provide a common framework for many of the chapters (K.A. Bennett, Fleming, and Zeisel 2020).

The decision was made to present these core values as a manifesto, a public declaration of the position or program of a collective entity, in this case, a group sharing a common perspective on the value of the design principles that were used in the writing of the ADI report (Fleming, Zeisel, and Bennett 2021). The writing of the manifesto required the authors to extend their thinking beyond the specifics of the design principles into considerations of the overarching goals of designing well for people living with dementia and the values that are emerging in the international dementia design literature. As a result, the published manifesto begins with the statement that:

As designers, researchers, care deliverers, care receivers, and people living with dementia we have come to understand that good design for people living with dementia entails respecting their dignity, autonomy, independence, equality of opportunity, and non-discrimination.

And goes on to say that:

In pursuit of these goals, we value projects and designs that:

- *Consider the holistic wellbeing of the individual, community, and environment*
- *Are authentically co-designed with people living with dementia*
- *Enable people living with dementia to choose to remain in their communities and with their families*
- *Maximise intergenerational interactions*
- *Focus on the strengths and abilities of people living with dementia while compensating for functional changes*
- *Accentuate the freedom of people living with dementia to make choices*
- *Assist people living with dementia to maintain their culture*
- *Are informed by evidence and research.*

The manifesto stated that these values are supported when design and planning respond to evidence-based principles, listed as:

- Begin each project by developing a vision for a dignified way of life for people living with dementia.
- Where safety measures are agreed to be appropriate, design them to be as unobtrusive as possible.
- Design the environment with a human scale to maximize manageability and comprehensibility.
- Plan the environment to make it easy for people to see and move where they want to go.
- Minimize unhelpful stimulation.
- Optimize helpful stimulation.
- Design the environment to integrate internal and external places that stimulate engagement and enable a person living with dementia to move from place to place.
- Design all components of the environment to be as familiar as possible.
- Afford people opportunities to choose to be alone or with various size groups of people.
- Provide easy access and connection to and from local communities.

A website was developed for the purpose of publishing the manifesto and the first version of the manifesto was uploaded to it on May 1st, 2021.The existence of the website was made known to all the contributors to the ADI report via email. Alzheimers Disease International promoted it to all of its associations in 120 countries and Dementia Alliance International (Dementia Alliance International), a registered nonprofit organization whose membership is exclusively for people with a medically confirmed diagnosis of any type of dementia from around the world, promoted it to its members. In addition, articles describing the manifesto and the website were published in the trade press in Australia and the authors of the manifesto, including those who had been part of the initial discussions, drew attention to the website through their extensive networks.

All of these communications contained an invitation to make suggestions for refining the values and principles and an easily accessed electronic form was provided on the web site to encourage suggestions.

By the July 21, 2021, the Design Dignity Manifesto had been signed by 264 people from 35 countries. Signatories included people living with dementia and their carers, many eminent experts in design and architecture, the UN Special Rapporteur on the Rights of Persons with Disabilities, a US Senator and a Member of the UK House of Lords. Of these 58 had made comments or suggestions. The comments were collated and analysed using the thematic analysis approach of Braun and Clarke (Braun & Clarke, 2006). Analysis of the 58 comments resulted in the identification of 35 discrete topics that needed to be addressed to ensure that the refined manifesto reflected the views of the signatories.

The thematic analysis led to the relatively simple modification of some word choices and the more difficult tasks of modifying the structure and content of the values and principles so that they reflect the views of the original authors and the signatories on how the values and principles fit with existing descriptions of good design for people living with dementia (Fleming, Bennett, and Zeisel 2022). The most significant changes involved the combination of two principles 'Minimise unhelpful stimulation' and 'Optimise helpful stimulation' into the single principle of 'Optimise stimulation' and the inclusion of a new principle 'Afford people opportunities to enjoy contact with nature'.

The current set of principles that resulted from this process are:-

- Begin each project by developing a vision for a dignified way of life for people living with dementia.
- Where safety measures are agreed to be appropriate, design them to be as unobtrusive as possible.
- Design the environment to reflect a human scale.
- Plan the environment to make it easy for people to see and move where they want to go.
- Optimise stimulation.
- Promote movement, engagement, and meaningfulness.
- Afford people opportunities to enjoy contact with nature.
- Design all components of the environment to be as familiar as possible.
- Afford people opportunities to choose to be alone or with various size groups of people.
- Provide easy access and connection to and from local communities, families, and friends.

These now appear on the Dignity Design Dementia website as part of the manifesto. At the time of writing the manifesto has been signed by more than 440 people from more than 30 countries, the majority being experts and practitioners of various aspects of design for people living with dementia (https://designdignitydementia.com/).

The Environmental Assessment Tools that have preceded the D-EAT

As the principles became more clearly defined it became possible to see them as the framework for an assessment tool that could be used to identify the strengths and weaknesses of buildings used to accommodate people living with dementia. The review of the design of the accommodation of long term patients with dementia living in a sample of regional NSW hospitals mentioned above provided an opportunity to develop the first Environmental Audit Tool (EAT) (Fleming, Forbes, and Bennett 2003; Fleming 2010; Smith et al. 2012; Fleming and Bennett 2015b).

By 2015 the culture surrounding the care of people living with dementia had changed towards a more person centred approach and the level of disability of people living with dementia in residential aged care in Australia had increased. Making it necessary to revise the EAT. This resulted in the Environmental Assessment Tool – High Care (EAT-HC) (Fleming and Bennett 2015c, 2017b). International interest in adapting these tools for use in other countries started with the development of the Singaporean Environmental Assessment Tool (SEAT) (Sun 2020; Sun and Fleming 2021). This was followed by the German adaptation (G-EAT) (Fahsold et al. 2021; Fahsold et al. 2022) and the Japanese adaptation (EAT-HC-JV) (Brennan et al. 2021; Brennan et al. 2023). All of these adaptations included a careful examination of the applicability of the principles and items to the local culture (Brennan et al. 2022) leading to modifications at the item level. The integrity of the EAT, based on the principles described above, was not called into question by the cultural adaptation processes.

The psychometric properties and ease of use of these tools have been found to be satisfactory by several researchers who have undertaken systematic reviews of environmental assessment tools (Liu et al. 2023; Calkins, Kaup, and Abushousheh 2022; Kaup et al. 2023; Elf et al. 2017; Golgolnia, Kevdzija, and Marquardt 2023). These authors have made some interesting observations about environmental assessment tools in general and, sometimes, the EAT and EAT-HC in particular.

Elf (Elf et al. 2017) observed that the conceptual framework of the instruments that she reviewed to be limited with many of the instruments being justified on the basis of long-held understanding of the important relationship between healthcare environments, safe care and patient well-being, but little explicit attempt to move beyond this model. She explained this limited use of theory in the development and testing of the instruments as a reflection of the general state of the science a there is still a lack of rigorous research on design and its impact on health.

Calkins ((Calkins, Kaup, and Abushousheh 2022) review focuses on finding tools that are useful in the assessment of environments built with the aim of supporting person centred care, particularly the household model of care. She noted that the EAT-HC is the only tool in her review that addressed some of the unique aspects of a household model in terms of scale, functional kitchens assessable to residents, and presence of residents' own furniture. The older tools, i.e. NURS (Grant 1996), PEAP (M. Lawton et al. 2000), TESS-NH (Sloane et al. 2002) and the E-B Model (J Zeisel et al. 2003) that focus on segregation of individuals living with dementia or emphasize exit and wandering control may have limited relevance to the person centred care of people living with dementia.

Golgolnia ((Golgolnia, Kevdzija, and Marquardt 2023) examined 13 assessment tools with the aim of identifying those that can assist architects and researchers engage with the implementation of evidence-based design. The tools examined included the PEAP ((M. Lawton et al. 2000) and the E-B Model ((John Zeisel, Hyde, and Levkoff 1994). Only three tools were identified as being suitable as an analytical basis for evaluating the architectural variables of dementia-friendly designs. They were the EAT (Fleming, Forbes, and Bennett 2003; Fleming 2010; Smith et al. 2012; Fleming and Bennett 2015b), the EHE-EAT (Waller, Masterson, and Evans 2017) and the TESS-NH (Sloane et al. 2002).

Liu (Liu et al. 2023) subjected 11 assessment tools to rigorous scrutiny using the COSMIN guidelines (COSMIN). The assessment tools were identified from a search of eight databases that resulted in 4342 studies being screened. The assessment tools identified were the EAT (Fleming 2011), the German translation of the EAT (Fahsold et al. 2021; Fahsold et al. 2022), the Singaporean version of the EAT (Sun 2020; Sun and Fleming 2021), the EAT-HC (Fleming and Bennett 2015c), the Japanese version of the EAT-HC (Brennan et al. 2023; Brennan et al. 2021), the Chinese version of the TESS-NH (Ke and Li 2015), the TESS-NH (Sloane et al. 2002), the Dementia Friendly Communities EAT (Fleming and Bennett 2015a), the PCECAT (Burke et al. 2016), the PEAP (M. Lawton et al. 2000), the NURS (Grant 1996) and the Swedish version of the SCEAM (Nordin et al. 2015). In summary, all scales were categorized as weakly recommended. Liu recommended the TESS-NH as the most appropriate scale based on methodological quality and measurement properties; however this view should be tempered by the view of Calkins that the TESS-NH reflects a style of care that has been replaced with a more person centred approach. Liu made the important observation that In this systematic review, only 2 studies referred to the theoretical basis on which the instrument/scale was initially developed. One was TESS-NH developed based on the Social Ecological Models and the other was a localization study of the TESS-NH based on Maslow's Hierarchy of Needs theory.

These reviews show the wide acceptance of the EAT, the EAT-HC and the variations and translations that have followed from them. However, they also throw light on a deficiency in this family of assessments, the lack of a clear description of the conceptual framework underpinning the tools.

Other deficiencies have been pointed out in a report on the development of a new tool (the EASE) intended to be able to discriminate between care models to better enable identification of the best models in long-term care design to maintain quality of life for people with dementia and their caregivers (Kaup et al. 2023). While finding that the EAT-HC performed as well as the EASE in differentiating between the traditional and household models the authors noted that 'the scoring algorithm for the EAT-HC is not consistent. Most of the items reflect a dichotomous two-point scale (yes, feature is present or no, feature is not present) which can be difficult to answer when different parts of a living area are different (e.g., handrails may be present in some but not all areas, lighting can be different). Some items qualify for an additional point (e.g., if safety features are unobtrusive) and thus have a three-point scale. Some sections of the EAT-HC use ratio level data (e.g., % of bedrooms with direct view to a lounge) and thus are on a four-point scale. This makes the weighting of different items unbalanced.' (Kaup et al. 2023) page 9.

The experience of writing the ADI World Alzheimers Report (Fleming, Zeisel, and Bennett 2020), the development of the Dignity Manifesto of Design and its endorsement by a great many internationally recognised experts, combined with the feedback provided by the systematic reviews has set the scene for the next stage in the evolution of the EAT.

The Dignity EAT (D-EAT)

The conceptual framework underpinning the Dignity EAT is to be found in the overarching goals, values and principles of the Dignity Manifesto of Design for People Living with Dementia (https://designdignitydementia.com/). While these may be traced back to the seminal ideas of environmental press put forward by Lawton in the 1970s ((M.P. Lawton 1975) and the beginnings of person centredness in the works of Rogers and Kitwood (Rogers 1951; Kitwood 1997) they have been shaped by the experience of a multitude of experts from around the world and refined by a growing body of research into environmental psycho social correlates (Fleming, Zeisel, and Bennett 2020). However, It is not yet possible to put forward a definitive theoretical framework that would guide our research and practice in the design of environments for people living with dementia. While

our knowledge is growing it remains patchy. As Chaudhury observes 'Specifically, this review highlighted the influence of unit size, spatial layout, homelike character, sensory stimulation, and specific spaces (i.e., dining, bathing, and outdoor spaces) on residents' behaviors and well-being in dementia care facilities.' (Chaudhury et al. 2017) page 9, but '… notable gaps and limitations exist that need to be addressed in future work. Much of the research in this area is cross-sectional, and in some cases, exploratory with small and homogenous samples. Few randomized control studies have been conducted.' (Chaudhury et al. 2017) page 8. Indeed, when the available research is subjected to rigorous examination using, for example, Cochrane methods, it is often found to be wanting by the standards of medical research. A recent Cochrane review on environmental designs in residential care to improve quality of life of older people contains the conclusion that '… the certainty of evidence was low or very low for all outcomes investigated. Thus, there is currently insufficient evidence on which to draw conclusions about the impact of physical environment design changes for older people living in residential aged care. Additional studies that examine the effects of physical environmental designs of residential aged care facilities are required to improve the quality of evidence available.' (Harrison et al. 2022).

Our desire for a rigorous conceptual framework remains unfulfilled. In the meantime, perhaps we can make use of a coherent statement of overarching goals, values and principles, endorsed by hundreds of experts from more than 30 countries, to provide a sufficiently robust framework for our work. Particularly when that framework has been shown to be consistent with other, more general, guiding frameworks such as Universal Design, Salutogenic Design and the Convention on the Rights of Persons with a Disability (K.A. Bennett, Fleming, and Zeisel 2020; Fleming 2021)

The development of the D-EAT began from this basis. While being inspired by the EAT-HC the D-EAT differs from it significantly by the inclusion of the new principle of 'Afford people opportunities to enjoy contact with nature'. The number of items was been increased to provide a more nuanced treatment of the principles that had very few items in the EAT, e.g. the 'Human Scale' principle and the dichotomous scale was replaced with a three point scale which is used consistently to ensure that the weighting of all items is balanced. The language was been modified to reflect a more person centred approach and to be more consistent across items.

On the 1st May 2024 the following email was sent to the 367 signatories to the Dignity Manifesto of Design who have indicated that they wish to receive communications.

Hello,

Three years ago today the Dignity Manifesto of Design for People Living with Dementia was launched. Since then, it has been signed by 450 people from more than 30 countries … and I'm pleased to say that you are one of them.

While it is very satisfying to know that there is a large community of like minded people supporting good design for people living with dementia and that there is a growing consensus on the essential characteristics of good design, there is also a sense that more can be done to test and promote this consensus. With this in mind, I have been working with Kirsty Bennett, a fellow founder of the Manifesto, to produce the first draft of an environmental assessment tool based on the values and principles of the Dignity Manifesto.

Our thought is that providing an assessment tool will encourage the application of the principles of design and, if the tool is used in a number of countries, test the relevance of the principles in

widely different economic and cultural contexts. Hopefully leading to an internationally recognised environmental assessment tool.

You are invited to look at the tool and test it. The goal is to use the feedback provided to develop an assessment tool that will be placed on the Dignity Manifesto of Design website, available for free and unrestricted use under a creative commons license.

There are several stages that will need to be navigated for this to happen. The first is to be sure that there is sufficient consensus on the benefits of providing such a tool, the second is the refinement of the tool in responses to the feedback and the third is the testing of the reliability and validity of the tool. The latter will require resourcing and this is a matter for future discussion. There may well be other stages that will become apparent as the project develops.

The assessment tool, a description of the background to its development, a lengthy overview of the literature relevant to the principles underpinning the tool and a questionnaire that you may use to guide your feedback are available for you to download at https://www.dropbox.com/scl/fo/1s5ff25c4tic6jq83v755/ADukep-Qqf_TXqJRmRrzVnI?rlkey=41oljq1rz0qyko82exnm8hmkp&dl=0 or, if you prefer, by emailing me at assessment@designdignitydementia.com requesting the materials.

Will you please consider being involved in this attempt to take the Dignity Manifesto of Design for People Living with dementia a step further towards real world application. Your views, pro and con, will be appreciated and feedback based on using the assessment tool in a real life situation will be especially valued. Please send your feedback to assessment@designdignitydementia.com .

Happy Birthday to the Dignity Manifesto of Design for People Living with Dementia and best wishes to you.

Richard Fleming, PhD.

Sixty five people responded to this email.

A description of the backgrounds and countries of residence of the respondents is provided below**:**

Table 1:People who provided feedback on the Dignity EAT via the questionnaire

	Background	**Number of Individuals**
1.	Architect	9
2.	Academic/Researcher	19
3.	Carer/Family Care Partner	4
4.	Person living with dementia	2
5.	Educator/Consultant	6

	Background	Number of Individuals
6.	Occupational Therapist	4
7.	Advocate	9
8.	Executive/Manager	3
9.	Social Worker	1
10.	Designer	2
11.	Integrative Therapist	1
12.	Landscape Architect	1
13.	Diversional Therapist	1
14.	Not specified	3
	Total	65

Table 2:Expressions of interest and provision of formal feedback arranged by country

	Expressed Interest	Provided Formal Feedback
Australia	21	7
USA	9	1
UK	7	1
Canada	6	1
New Zealand	4	2
China	2	2
Japan	2	1
Portugal	2	
Brunei	1	1
Chile	1	1
France	1	
Germany	1	
Hong Kong	1	1
India	1	
Israel	1	
Malaysia	1	1
Mexico	1	1
Singapore	1	
Spain	1	
Taiwan	1	1
	65	21

Feedback

The following sections report the feedback on the questions relating to Strength and Weaknesses of the tool and the Suggestions for Improvement.

Strengths

Adaptability to Different Contexts: The tool is designed with principles that guide its application across various settings, making it highly adaptable. Unlike standard checklists, this tool requires users to thoughtfully consider how the environment is used, ensuring that the assessment is context-specific and meaningful. As one respondent noted, the tool is "**based on principles that will influence design approach specific to context, so applicable across a broad range of settings. Not a tick box assessment. Requires thoughtful consideration of environment and its use**"

Integration of Existing Knowledge: The tool is built upon existing evidence-based knowledge and is co-designed with input from people living with dementia. This ensures that the tool is grounded in established research while also being relevant to the needs and experiences of the target population. According to one comment, "**The strengths are that it is built upon existing knowledge, evidence-based, and is co-designed with people living with dementia**".

Emphasis on Nature and Well-Being: The tool highlights the importance of connecting with nature, which is a critical aspect of well-being for people living with dementia. This focus is particularly relevant in contexts where access to nature may be limited. A respondent emphasized, "**It is important to really emphasize the importance of [connecting with nature] for well-being as much as possible… It is so beneficial for people living with dementia**".

Flexibility and User-Friendliness: The tool is described as being easily accessible and understandable for carers, while also providing important information for architects. Its pragmatic approach and clear structure make it user-friendly while still being based on scientific and clinical literature. One respondent noted, "**Easily accessible and understandable to carers. Can provide important information to architects. Is based on scientific and clinical literature**".

Promotion of Dignity and Human-Centeredness: A core strength of the tool is its strong focus on dignity and the human experience, elements that are central to improving the quality of life for people living with dementia. The inclusion of short descriptions for each score point is valued for providing clarity and reducing ambiguity. "**The strength of the Dignity-EAT is the strong focus on dignity and humanness… I found the short description for each score point extremely helpful rather than leaving it open to the user's interpretation**".

Comprehensive and Thorough Assessment: The tool is described as being comprehensive in scope and providing a thorough evaluation of each element within the environment. It ensures that no critical aspect is overlooked. "**The strengths of the tool are its foundations as well as the scope and thoroughness of each element to be evaluated**".

Simplification and Streamlining of Previous Tools: The tool represents a significant simplification and streamlining of previous versions, adding value by focusing on key areas such as the vision of life, contact with nature, and social connection. "**It has significantly simplified and streamlined the previous EATs and critically added value to the tool by putting forward key foci on (1) vision of way of life; (2) contact with nature; (3) social connection**".

Evidence-Based and Contextualized: The tool is praised for its response to evidence-based principles and its contextualization to specific environments, allowing for a more tailored and relevant application. One user noted, "**Dignity-EAT responds to evidence-based principles and is based on a previously well-tested tool. The items are very comprehensive**".

Clarity in Structure, Scoring, and Visual Elements: Some respondents praised the tool for its clear and structured format, with well-explained scoring criteria that facilitate understanding and application. One respondent noted, "**I really like the way you present the overall results table… the bars give a quasi-graphic sense of how well the environment being assessed is doing**," while another suggested, "**Perhaps at the beginning of each principle a positive image or quote or illustration… I like the PRINCIPLE/SCORE chart at the end. At one glance one can view the overall results**".

Weaknesses

Complexity and Requirement for Prior Knowledge: Some respondents commented that the tool necessitates a certain level of understanding and education to be used effectively. Users must grasp the intent behind the questions to derive the full benefit of the assessment. This may pose a challenge for those without specialized knowledge. This complexity could limit the tool's accessibility and ease of use in some contexts. One respondent noted, "**User needs to understand the intent of the question to get the full benefit of completing the assessment**".

Language and Accessibility Issues: The view was expressed that the language used in the tool could be more person-centred and contemporary. Some terminology is seen as technical or outdated, which might lead to confusion, particularly among users without a deep background in dementia-enabling design. Additionally, the tool's format was described as too wordy and not easily accessible, potentially hindering its usability in practice. Feedback indicated that "**Some of the language could be more person-centred and contemporary… Some language design technical and for staff may not be clear what is meant**".

Subjectivity and Inconsistency: The tool's reliance on subjective judgment, especially in areas requiring a deep understanding of dementia-enabling design, could lead to variability in how the tool is applied. This subjectivity might result in inconsistencies, particularly among users with differing levels of expertise. A respondent mentioned, "**Subjective in some areas if the person doesn't have a deep dementia enabling design knowledge**".

Cultural Dependence and Flexibility: The tool may be culturally dependent, with certain aspects not translating well across different cultural contexts. Additionally, there are concerns about the tool's flexibility in responding to specific situations or innovative design possibilities. This limitation could restrict its applicability in diverse settings, where cultural differences and unique contexts may influence the tool's effectiveness. One comment noted, "**Could be culturally dependent**".

Difficulty in Application Across Dementia Stages: The tool appears to be more suited for assessing environments for individuals in the early stages of dementia, with less applicability to those in mid to late stages. This limitation could reduce the tool's utility in settings where residents have varying degrees of cognitive decline. A respondent pointed out, "**The tool seems more appropriate for the early stages of dementia… but doesn't seem to address or provide the tools to assess the appropriateness of the built environment for mid or late-stage dementia**".

Overemphasis on Certain Principles and Conceptual Challenges: Some areas of the tool are considered overly conceptual, making them difficult to assess, particularly for users without a design background. This could result in challenges when applying the tool in practice, as noted by a respondent who stated, "**Some areas are quite conceptual so this can make them difficult to appraise as an external auditor**".

Challenges in Home Care Settings: The tool was viewed as primarily oriented towards long-stay facilities, potentially limiting its usefulness in home care settings where many individuals with dementia are cared for by family members. This focus could restrict the tool's relevance in contexts where home care is more prevalent. One comment highlighted this issue, stating, "**One weakness might be that it is mostly oriented to long-stay facilities… the reality in many countries is that people with dementia are cared for at home by families**".

Potential for Misuse: There is concern that the subjective language of the tool might make it susceptible to misuse, particularly by those seeking quick fixes or those with specific agendas. This could undermine the tool's ability to achieve positive outcomes for individuals living with dementia. A respondent warned, "**The tool could be dangerous in the hands of a someone wanting a quick-fix, someone in denial about the state of their facility, or someone with a particular agenda…although it is very hard to think of anyone in aged care that falls into any of those categories…** ".

Formatting and Usability Concerns: The tool's formatting and length were cited as potential drawbacks, with some users finding it too wordy and not very accessible. This could impact the tool's practicality in real-world settings, where ease of use is crucial. One user commented, "**The tool is useful but IMO it is too wordy and not very accessible**".

Need for Additional Guidance and Examples: Some respondents suggested that the tool could benefit from additional guidance, such as examples or case studies, to help users understand the range of possible responses. This would assist in clarifying subjective areas and improving consistency in application. One suggestion was, "**Users might benefit from seeing examples or case studies to help them to gauge how they should answer the question**".

Limitations in Evaluating Certain Elements: The tool's ability to assess certain elements, such as the appropriateness of environments for later stages of dementia or the use of space, was questioned. Additionally, the lack of classification by space might make the tool challenging to apply, especially for those unfamiliar with how the principles relate to physical environments. A respondent noted, "**Since the items are not classified by space, the application of the tool might be difficult for people who are not familiar with these principles and their relationship with physical environments**".

Suggestions for improvement

Guidance on Specific Questions:

- Provide guidance on how to answer questions about the number of people in common areas.
- Offer consultation advice with a range of staff, residents, and visitors to answer certain questions.
- Include guidance on the required width to allow two wheelchairs to pass.

- Rephrase questions that seem more related to quality of care, such as those about storage and access to transfer equipment.
- Add more detailed and objective definitions for subjective terms like "comfortable," "optimize," and "right size."

Inclusivity Across Care Environments:

- Modify language to be more inclusive of various care environments like day centres and respite cottages, not just residential care.

Educational and Visual Tools:

- Develop additional tools to help users understand the principles and their application better in real-world settings.
- Consider making the introduction section and audit guidance available as a video.
- Create a digital version of the tool, possibly with an FAQ section, that allows users to input scores and generate summaries.
- Include more tools to help services align their vision and philosophy of care with environmental design.
- Use design principles and graphics to enhance the tool's accessibility and engagement.
- Integrate visual elements such as cartoons or graphics to enhance understanding, especially across different languages and cultures.
- Develop case studies or examples showing extremes of good and bad practices to help users understand the range of possibilities.

Narrative Shift Toward Nature Connection:

- Emphasize the narrative shift from viewing nature as a "nice extra" to understanding nature connection as crucial to well-being.
- Add enabling features like things to do and nature-quality elements such as trees and flowering plants.

Broader Application:

- Consider how the tool could be used by designers in various contexts, such as libraries and transportation hubs.
- Improve the user-friendliness of the tool to prevent it from becoming a mere tick-box exercise.
- Explore the possibility of making the tool available online, allowing for easier input and automatic report generation.

Inclusion and Accessibility:

- Include design criteria for people living with dementia from the LGBTQ+ community and those with mental health issues.

- Use colour coding to differentiate columns or rows to make it easier for persons living with dementia to use.

Investigating Congruency:

- Investigate the congruency between environment and behaviour as a potential area for improvement.

Clarity on Built Environment:

- Introduce a clear definition of the built environment in the tool's introduction to help users differentiate it from social and organizational aspects.

Photographic Documentation:

- Provide the option to include photographs of the setting, which could be linked to findings via an online form.

Principle-Specific Improvements:

- For Principle 1, offer more guidance on appraising the design approach related to the vision and philosophy of a unit.
- For Principle 2, consider removing the term "elder" and reorder design approaches to prioritize facilitation over control.
- For Principles 5 and 6, incorporate design approaches that support access to infrastructure for meaningful occupation, such as art and music rooms.
- For Principle 10, address the tension between secure exits and community connection, and include considerations for transport and accessibility.

Scoring and Measurability:

- Provide clearer instructions on transferring scores to the summary sheet and making meaning of them.
- Consider making questions more definitive and measurable, such as specifying decibel levels for noise or the number of residents per space.

Accessibility Through Graphics:

- Use graphics or alternative forms of instruction, such as colours by sections and short sentences, to make the tool more accessible.

Reducing Overlap:

- Address potential overlaps between items, such as merging similar items to streamline the assessment.

Behaviour Observation:

- Include more detailed prompts for observation during assessments and provide opportunities for direct feedback from residents, staff, and family members.

Contextual Adaptation:

- Consider cultural or contextual adaptations, especially for international use, and ensure the tool is applicable in diverse environments.
- Ensure that terms like "elder" do not unintentionally exclude younger individuals with dementia (e.g., young-onset dementia).
- Clarify whether "step-free" includes ramps and provide examples when a leveled entrance is not possible.

Environmental and Structural Considerations:

- Ensure the tool addresses the right to adequate residential care, considering factors like weather, terrain, and environmental efficiency.
- Incorporate lessons from global climate change and pandemic preparedness into the design approach.

Vision and Philosophy Alignment:

- Begin projects by developing a vision for a dignified way of life and ensure safety measures are unobtrusive and human-scaled.

Simplification and Accessibility:

- Simplify and optimize certain elements, like the size of doors and the number of residents, to make them easier to assess.
- Define the comfortable scale of common areas more precisely, possibly with recommended numbers of people per square meter.

Enhanced Visual and Educational Tools:

- Integrate visual elements such as cartoons or graphics to enhance understanding, especially across different languages and cultures.
- Develop case studies or examples showing extremes of good and bad practices to help users understand the range of possibilities.

Consideration of Environmental and Structural Factors:

- Include considerations for environmental architecture that accounts for climate change, energy efficiency, and pandemic preparedness, reflecting global best practices in building design.

Detailed Clarification for Scoring and Assessments:

- Provide more detailed guidance on how to assess certain principles, particularly Principle 1 related to the vision and philosophy of the unit.

Cultural and Contextual Adaptation:

- Ensure that terms like "elder" do not unintentionally exclude younger individuals with dementia (e.g., young-onset dementia), and adjust the order of design approaches to emphasize facilitation over control.

Additional Feedback

Five respondents provided feedback via email rather than using the questionnaire.

Two of these respondents had major reservations about the development of the tool.

One opposed it on the basis that it will be a cul-de-sac in that it will become a standard which will make further innovation unlikely, if not impossible. The same respondent expressed the view that the role of the manifesto should be simply to remain as a marker in time and perspective, to mark a cornerstone in the way we use design. To ensure that by respecting the dignity, autonomy and independence of people living with dementia and by adopting an inclusive mindset, design does no harm.

The second respondent offered the view that the tool is presented as if it is objective and evidence-based, when it actually promotes very strong design decisions that reflect the personal opinions of the authors, limiting the usefulness of the tool in the creative design and design analysis processes. Specifically:-

1. *Many of the assessment phrases and score phases imply higher value for specific design decisions – or imply and promote a limited set of design responses -- reflecting the point of view of the authors, not evidence-based.*
2. *The implicit nature of the "environmental design decisions" in the descriptions and scores, make it difficult for users to identify and then accept or reject the design directions implied by the assessment categories.*
3. *Many assessment items confuse or intermingle research-based evaluation criteria, implied design responses, management rules, and observed traces of user behavior that have no connection to the designed environment – the apples and oranges dilemma.*
4. *The fundamental question to me related to EAT: "Is it the role of an environmental assessment tool to direct its users toward particular implicit design decisions the authors would make were they designing the environment being assessed? Or is it the role of such a tool to enable its users to themselves compare evidence-based direction with the actual environment being assessed?"*

This respondent went on to provide detailed suggestions for improvement of the tool, many of which were at the individual item level. They are included in Appendix 1.

The third informal respondent offered detailed suggestions for additions to the tool, making the comment that some operational matters are also environmental. The suggested additions have been compared to the items in the tool and the following is a list of those that are not, currently, present:

Identifiability of staff:

- *Suggestion:* Ensure staff wear uniforms and name badges, have a staff board with photos and names, and display the names of staff on shift.

Resident bio displays:

- *Suggestion:* Photo displays of residents with biographical information of their choosing.

Phone availability:

- *Suggestion:* Ensure residents have access to phones, incoming calls are reliably answered, and there's a duty phone on every shift.

Smell management:

- *Suggestion:* Eliminate smells from cooking and toileting, emphasizing dignity in smell management.
- *Partially addressed in Dignity EAT* under olfactory cues but not specifically linked to eliminating these particular smells.

Entertainment policy:

- *Suggestion:* Ensure lounges are not dominated by video screens, regulate volume, and have a digital entertainment policy for varied, age-appropriate programming.

Curtain accessibility:

- *Suggestion:* Ensure residents can draw curtains themselves, without needing pull cords.

Outdoor plantings:

- *Suggestion:* Design and maintain outdoor plantings sympathetically, with appropriate shrubs that don't require aggressive pruning.

Lighting and circadian rhythm:

- *Suggestion:* Extend the reference to maintaining circadian rhythms with more specific lighting guidance.
- *Partially present in Dignity EAT*, but lacks the requested specificity.

Trundlers and equipment:

- *Suggestion:* Use trundlers like laundry carts and medication dispensers with soft-running wheels to avoid noise.

Parking:

- *Suggestion:* Ensure adequate parking space for visitors and accessible (preferably covered) pickup parking.

The fourth informal respondent provided quantitative answers to some of the questions based on his use of the tool :-

- Relevance of Content 5
- Clarity Of instructions 5
- Comprehensiveness 5
- Ease of Use 4
- Visual Design 3
- Practicality 4
- Time Efficiency 4

The fifth informal respondent simply offered an encouraging comment.

Summary of initial feedback

Generally, the Dignity Environmental Assessment Tool (Dignity-EAT) was described by respondents as a comprehensive and thoughtfully designed instrument for evaluating environments intended for individuals living with dementia. Its strengths were described as being in its principle-based, evidence-driven approach, which ensures that the tool is adaptable across various contexts and is grounded in established knowledge. The emphasis on dignity, human-centeredness, and the connection to nature reflects an awareness of the key factors that contribute to the well-being of individuals with dementia. Additionally, the tool's accessibility to different users, including carers and architects, and its pragmatic structure make it a valuable resource in the design and assessment of dementia-friendly environments.

However, two respondents expressed strong concerns about the tool, one worried that it could stifle creativity and the other that it is linked too strongly to the views of the authors to be regarded as an objective tool.

A significant concern was the level of prior knowledge required to use it effectively, which could limit its accessibility to a broader audience. The subjective nature of some items and the potential for cultural dependency also raise questions about its consistency and applicability in diverse settings. The tool's orientation towards long-stay facilities, coupled with its perceived lack of suitability for later stages of dementia, may restrict its utility in home care environments and for individuals with more advanced cognitive decline.

The tool's language and formatting were also identified as areas needing improvement. The technical and sometimes outdated terminology, alongside a format that some users find too wordy, could hinder its practical application. Additionally, the tool might benefit from more explicit guidance, including examples and case studies, to support users in making informed assessments.

In summary, while the Dignity-EAT was seen as a robust and well-founded tool with significant strengths, it required further refinement to enhance its accessibility, cultural adaptability, and usability across different stages of dementia and care settings. As well as picking up on the suggestions for improvement to specific items the feedback indicated that refinements should address:-

Enhancing Clarity and Guidance: The usability of the Dignity-EAT would be improved by providing clearer guidance and more precise definitions. This includes offering advice on how to answer challenging questions, consulting with staff and residents, and defining subjective terms like

"comfortable" and "optimize" more concretely. Additionally, clearer instructions on scoring, the transfer of scores, and how to interpret them would greatly benefit users. Providing guidance for specific concepts, such as whether "step-free" includes ramps, and clarifying what constitutes an adequately sized common area, would also be valuable.

Inclusivity and Broader Applicability: The tool's language should be more inclusive of various care environments, such as day centres and respite cottages, not just residential settings. Additionally, the tool could be adapted for use in other contexts like public spaces or transportation hubs. Expanding design criteria to include considerations for LGBTQ+ individuals and those with mental health issues will ensure the tool's broader applicability.

Educational and Visual Tools: The Dignity-EAT tool would benefit from the provision of enhanced educational resources to aid in understanding and engagement. This includes the development of supplementary tools, video tutorials, and digital versions that could provide interactive features like score summaries. Visual elements such as cartoons, graphics, and case studies showcasing good and bad examples could help convey complex concepts more effectively, especially across different cultures and languages.

Cultural and Contextual Adaptation: The tool should be adaptable to various cultural contexts, avoiding terminology that might unintentionally exclude certain groups, such as younger individuals with dementia. Ensuring the tool's relevance across diverse environments, including international settings, is crucial. Additionally, environmental and structural factors like climate change, energy efficiency, and pandemic preparedness should be integrated into the tool to reflect global best practices.

Promoting Nature Connection and Environmental Considerations: The narrative around nature within the tool should emphasize its importance for well-being, moving beyond the view of nature as merely an added benefit. The tool should include enabling features like trees and spaces that encourage interaction with nature. Furthermore, the tool should consider environmental architecture, including climate considerations and energy efficiency, to ensure it remains relevant and effective in diverse settings.

Streamlining and Reducing Redundancy: Efforts should be made to streamline the tool by reducing overlaps between items and ensuring that the assessment process is as efficient as possible.

Next steps

These suggestions were very carefully considered and resulted in the drafting of a revised version of the tool that was distributed for comment on the 19/12/2025 to the 65 signatories to the Manifesto who had expressed an interest in providing feedback. This resulted in a small number of additional comments which resulted in further changes to the tool. This revised version – Revision 1.1 - has now been placed on the Dignity Manifesto of Design for People Living with Dementia.

The authors wish to encourage the use of this new tool by everyone who wishes to develop a better understanding of environments used for the care of people living with dementia. However, it is acknowledged that the tool has not yet undergone a systematic evaluation of its validity and reliability, so it should be used within the following parameters:

1. **Guidance for Reflection and Improvement**
    - The tool is intended as a structured framework to facilitate reflection, discussion, and planning for improving residential environments for people living with dementia.
    - It can be used by care providers, architects, policymakers, and researchers to identify areas of strength and opportunities for improvement.
2. **Not a Definitive Measure**
    - The tool should not be used as a definitive or standardized measure for regulatory compliance or benchmarking until a formal validation study has been conducted.
    - While it provides structured insights, its outcomes should be interpreted as indicative rather than conclusive.
3. **Professional Judgment Required**
    - Users should apply professional expertise and contextual understanding when interpreting results.
    - Findings should be considered alongside other forms of assessment, such as direct observations and stakeholder feedback.
4. **Appropriate Use in Research and Practice**
    - The tool may be used in research settings to explore environmental factors affecting the well-being of people living with dementia, with appropriate acknowledgment of its developmental status.
    - In practice, it should be used as a qualitative assessment tool rather than a quantitative instrument for comparative analysis.
5. **Future Validation and Development**
    - Efforts are encouraged to undertake systematic reliability and validity testing to establish the tool's psychometric properties.
    - Users are invited to provide feedback on its applicability and effectiveness to inform future refinements.

By adhering to these parameters, users can responsibly apply the tool to enhance dementia-friendly environments while acknowledging its current stage of development.

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