

DESIGN *for* DEMENTIA

Volume 1 - A Guide



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DESIGN *for* DEMENTIA

Volume 1 - A Guide

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FOREWORD

by Regina Shaw



Regina Shaw
Co-Chair of the Service Users
Reference Forum (SURF)

The publication of this book will revolutionise design for people living with dementia. Using the systems suggested and working closely with those who are currently living well with dementia in its many forms and stages will help people to fully understand the intricacies of the condition.

Some of the issues around living well with dementia arise from the attitudes of others who think we will be satisfied with room and board with no thought of stimulation in our environment. Of course we need a safe place with clear signage (having agreed colour and design).

But remember, we are people with the needs of other people; stimulation and discussion, not just a TV or radio, although they also have a place at times. Speak to us. Ask us what we want, what we need. Please do not exclude us, you might be surprised. For example, I was a member of a design team at a large children's hospital before my diagnosis and I have retained many of those skills.

We are very lucky in this generation to be given the support and medication to live well with dementia. It is not yet available to all but it is a start on the road, so take advantage of listening to us and learning from us because we can help you to have a better future by designing suitable buildings, communities and care, so that your futures are safer and more fun.

If there is one thing that bonds us all together, whatever our condition, it is that we can still have fun. Whether it's singing songs - old and new - dressing up in our finery for a trip out, or working together to develop new technology, the fun factor is essential.

I attended a '*Sandtray*' session, unsure of what to expect and had a wonderful time. I could have stayed all day.

It's important to remember that sometimes the simplest pleasures are the best and can be the most creative.



1. Mersey Care NHS Trust and Liverpool John Moores University are the UK Partners for a European funded project - Innovate Dementia, a three year INTERREG IVB funded project working with partners in Netherlands, Germany and Belgium to develop innovative solutions for people living with dementia. The project is part of a transnational cooperation programme to address the challenges that go beyond national borders. The ageing population means that there are increasing numbers of people living with dementia, and current methods of supporting people are economically unsustainable. There is a need to work collaboratively to develop innovative care solutions that enable people to live independently and well with dementia.

The project is built around four key themes which are:

- the use of intelligent lighting*
- exercise and nutrition*
- living environments*
- models of access.*

The project uses a 'Living Lab' approach which brings together people living with dementia, health and social care professionals, academia and business to develop and test out innovative care solutions in real life settings. Stakeholders meet every three months to drive the project forward so people living with dementia are at the heart of innovation.

FOREWORD

by Jill Pendleton and Pauline Parker

Much is known about environments that empower and enable people living with dementia yet this knowledge does not appear to be harnessed and utilised when new buildings are being designed and built, with a tendency for architects and designers to start from scratch each time. Zeisel (2004) formulates a compelling narrative that states that the environment provides an intervention in itself for people who are living with dementia, therefore its importance cannot be ignored.

Over the last two years there has been a national movement towards developing dementia friendly communities and cities with pilot sites across the UK attempting to make towns and cities more accessible and understandable to enable people with dementia to live more independently for longer. This is a broad concept which involves transport, housing, local amenities, shops and businesses and includes training and awareness raising.

On an individual level most people with dementia want to stay at home, with few opting for alternative forms of accommodation through personal choice. This provides a challenge for architects and designers to design accommodation to enable people to age in place. Dementia is a complex condition, affecting each person differently with some common symptoms. There is a temptation to think it is all about memory. However, the human brain is responsible for all our functioning so some of the challenges faced by those living with dementia are more wide ranging. For some people perceptual abilities change causing problems with spatial awareness, judging distances and recognition of objects.

These kinds of problems can be helped greatly by following dementia friendly design principles which need to be widely available to enable them to be an inherent part of design and therefore maximise the chances of people being safe and able to negotiate their environments.

Through the *Innovate Dementia* project a '*Living Lab*' model was utilised to engage with a large range of stakeholders from health and social care, academia, business people living with dementia and carers to gain knowledge and expertise around the built environment and life with dementia. This provided a rich source of information which was honed in subsequent sessions to provide some of the material for this book. ¹

The aspiration is that people with dementia will be enabled to live where they want to be for longer, reducing the numbers of people who live in alternative care environments. This will only be possible if the knowledge, design principles and technology that is available is harnessed and integrated into the design of new buildings and external environments. Personal insights and experiences from people living with dementia can never be replaced by books. However, this book contains insights to enable those who read it to plan and build environments that promote independence and enable people to live well with dementia.



John B

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1: INTRODUCTION

'Design for Dementia' is a Design Guide which aims to assist designers and others working in the built environment to tackle the challenge of dementia in society. Dementia is a growing issue associated with the demography of an ageing population.

The premise of 'Design for Dementia' is that 70-80% of people living with dementia continue to live in their own homes rather than in any specialised form of housing. They continue living in the same neighbourhoods and use the same local facilities and centres.

Familiarity with surroundings is recognised as a key to reducing the symptoms and loss of function associated with dementia. By implication, if people can remain living in their own homes, and in their own neighbourhoods, then the disorientation, confusion and anxiety of a move to a new environment can be eliminated.

While older properties can be improved and adapted to suit the requirements of those living with dementia, and businesses can address some of the needs of their customers, the aim must be to improve responsiveness in design of the built environment in the medium and long term. While this may sound like a daunting task, the benefits in financial terms to health and social support services, and in human terms to the families, friends and neighbours who are tackling the challenge of dementia, are huge. Of course, most importantly of all, is assisting people to *'live well with dementia'* as far as possible.

The approaches described in this guide can help people living in their own homes to sustain their capacity for longer, as well as maintaining their quality of life for longer as members of the community. If the improvements in the environment and housing provision described can be achieved, the ongoing cost saving to the NHS will be immense.

The authors have relied on the existing research and evidence base carried out by many universities, researchers and other networks including the work of the Universities of Stirling and Worcester, the King's Fund and Joseph Rowntree Foundation.

However, the authors and the support team are not medical or social researchers. They are interdisciplinary designers who have developed a concern and a keen interest in the issues raised by dementia through their work. Partnership with Liverpool John Moores University, the School of Art and Design and the Faculty of Education Health and Community, has enabled HLP to secure an academic base for this initiative.

Support from MerseyCare NHS Trust, as well as Liverpool John Moores University, has been fundamental to the role the authors have been able to play in carrying out the research projects; and the willing participation of SURF (*Service Users Reference Forum*) and the Dementia Action Alliance has formed the basis of a genuine partnership which has underpinned the preparation of 'Design for Dementia' - A Guide.

'How Dementia Friendly is Our City?'
DAA group members using photo cue cards.



The work described in **'Design for Dementia'** is distinctive in three ways:

- Firstly, the research projects are based on a participatory approach involving **'hands-on'** working methods to better understand and convey the experience of people living with dementia
- Secondly, the interdisciplinary team involved are practicing architects, landscape architects, urban designers and interior designers. As practitioners they deal with the practicalities of design in the urban environment, work in urban neighbourhoods, on housing development and engage with communities as a fundamental aspect of their work. Based on this well grounded experience, **'Design for Dementia'** acts as a bridge between theory and practice and between academic research and implementation
- Thirdly, **'Design for Dementia'** has grown out of a pan-European project. Although it has deep roots on Merseyside it has broad branches. The findings have implications across the developed world, where dementia is a growing epidemic, and the ideas are replicable, nationally and internationally.

Through this distinctive approach, the authors hope that **'Design for Dementia'** will assist by contributing to the debate and by providing practical design guidance.

The opportunity for this Design Guide arises out of the inspirational work of Innovate Dementia Europe and is produced by a collaboration between Bill Halsall of the Halsall Lloyd Partnership, Architects and Designers, and Dr. Rob MacDonald of Liverpool John Moores University.

The research process for the guide included a series of **'Living Lab'** formats and participatory techniques, and the authors are grateful for the involvement of SURF (*Service Users Reference Forum*), Liverpool Dementia Action Alliance, Mersey Care NHS and LJMU.

PARTICIPATORY RESEARCH PROJECTS INCLUDE:

- **The Dementia Friendly Neighbourhood** - responds to the design of interiors and exteriors in pursuit of **'design for all'**
- **How Dementia Friendly is our City?** - an ongoing project. An exercise using photo cue cards to help to understand the response of people with dementia to Liverpool City Centre
- **Connecting Minds through Sandplay** - a creative **'hands-on'** game using a Jungian sand tray and a set of assemblages to stimulate all the senses:
 - **Touch** - sand, pebbles, objects
 - **Smell** - **'sensory garden'** of roses, herbs, spices
 - **Taste** - old fashioned sweets, ice cream
 - **Sight** - coloured shiny objects
 - **Sound** - background music.

A creative exploration towards a **'shared landscape of the mind'**

- **The 'Design for Dementia' Bungalow** explores an ideal model design for a bungalow with all the features required to **'live well with dementia'**. This is being developed as a design **'paradigm'** and it is hoped that we can build a **'show bungalow'** with all the appropriate **'smart'** technologies and most importantly a **'Design for Dementia'** garden.

'Design for Dementia' comprises:-

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*Connecting Minds Conference,
Tate Gallery, Liverpool.*



Members of the Huyton Community Cooperative for the Elderly.



Cooperative members select bricks for their scheme at the brick library.

Huyton Community Cooperative for the Elderly (1998-onwards) was the first Housing Cooperative for the Elderly in Europe. The members participated in the design of their new accommodation and continue to manage their housing developments.

Architects:- The Wilkinson Hindle Halsall Lloyd Partnership, Bill Halsall and Dr. Rob MacDonald.

2. Refer to Housing LIN Case Study Report, October 2013.

Growing older together; The case for housing that is shaped and controlled by older people by Jon Stevens.

BACKGROUND

Our ageing population is a significant demographic factor in the demand for new neighbourhoods and renovated housing. The projected growth in households up to 2033, indicates that a high proportion of the population will be over 65 years old. Dementia does not just affect older people because it is not just a normal part of ageing, it is a brain disease and is considered to be one of the health care challenges of the 21st Century. Over 800,000 people in the UK are affected, and by 2040 this number is expected to double. It is estimated that across the world someone will be diagnosed with a type of dementia every four seconds.

This introduction concerns the design of dementia friendly dwellings and environments based on a *'Living Lab'* approach to cooperative design. Dementia is defined with particular reference to loss of memory. Therapeutic spaces are considered as one means to activate lost memory.

Positive therapeutic intervention needs to recognise all the senses; sight, smell, touch, hearing and taste. The overall scenario is one of adapt and survive, largely in the context of houses and cities that were not designed and built with dementia in mind. The micro and the macro scale are considered as is the role of technology in the home based on the example of the Smart House. In contrast to the role of individual dwellings, issues of the wider neighbourhood and macro city are discussed. The issues of creating dementia friendly cities are considered.

LIVING DESIGN LABS

To design the dementia friendly dwellings and environments of the future we need to work in collaboration with many people at different stages of dementia. Also, we need professional teams of architects, landscape designers, technologists, museum and gallery curators, interior designers, product manufacturers, clinical nursing and medical psychological staff; in fact, we need a *'Living Lab'* and a whole range and cross-section of skills. This inclusive design process should set out to enable the voices of dementia, in design terms, to speak about their environment.

COOPERATIVE MODELS OF ENVIRONMENTAL INTERVENTION

A collaborative design model is based on the Huyton Community Cooperative for the Elderly in Knowsley. Here, 32 elderly people worked with Bill Halsall and Dr. Robert MacDonald in designing their own dwellings from overall layout to bathrooms and kitchens. Fieldway, Fairclough Road and many Housing Cooperatives in Merseyside were created in *'co-design'* workshops that enabled small groups of people to come up with ideas for dwellings, gardens, streets and environments, working with architects to create their own neighbourhoods. ²

There is a very significant archive and record of this unique Liverpool approach to *'co-design'* including many built projects, such as The Eldonian Village.



3. The Granby Neighbourhood, Liverpool.

'Re-engineering' existing 19th Century neighbourhoods to be dementia friendly is a key challenge for the 21st Century.

*Refer to Chapter 9 page 9:7 -
A 'Design for Dementia' adaptation of a
traditional Victorian terraced house.*

DEFINING DEMENTIA

Loss of memory, poor learning, difficulties with language, in recognising objects and in planning and organising, appear to be the main symptoms of dementia. How can environmental intervention assist people with dementia?

It is suggested that therapeutic spaces can activate memory for general events including autobiographical ones. Handling objects can improve well being in health service users and neurological patients. Tactile stimulation can help conversational and social skills, in creating a sense of identity. New perspectives, the acquisition of new information and the enjoyment of positive emotion can be stimulated. How can this research be applied to environmental intervention for the benefit of people with dementia? Environmental intervention needs to recognise the senses; sight, smell, touch, hearing and taste.

SCENARIO: ADAPT AND SURVIVE

We live in a city which is over 800 years old. Liverpool is a recognised City of Memory and Heritage; all the residents of Liverpool hold a special memory bank waiting to be released. In the inner city, 45% of the housing stock comprises small 19th Century terraced housing. The largest percentage of our ageing population live in dwellings and in a city which have not been designed and built with dementia in mind.

Demographically, the challenge for the 21st Century is to improve and adapt our homes and urban places so as to become more responsive in terms of dementia. Cities need to be safe and walkable with more accessible steps and ramps. Nationally, the majority of the current housing stock is well over one hundred years old. ³

Currently, because of austerity measures, there is little finance to build new, ideal dementia friendly dwellings. Therefore, we need to focus on adaptation, flexible modification and creative re-tuning of all our dwelling stock for the future. As far as possible, we need to intervene in the existing urban environment and explore the implications for the future design of new dwellings and environments.

Imagine a typical suburban semi-detached or terraced house, perhaps the home of an ageing couple in their late sixties. What dementia responsive features, technology and modifications can be introduced into these houses? If the opportunity arose, how would we design new houses and neighbourhoods? How might we design a dwelling for dementia in the future? We need to consider two aspects of the environment; the micro scale of the dwelling (or home) and the macro scale of the broader environment or the city.



Handling objects can improve well being.



Cleadon Park Redevelopment, South Tyneside.

Bungalows integrated into mixed developments could provide the basis of a dementia friendly neighbourhood.

4. The 'Smart House' was a high-tech walk-through installation at the Museum of Liverpool. It displayed state of the art new technology which can make life easier and help people to lead more independent lives in their own homes.

Our towns and cities are based on historic settlement patterns largely laid out during the Victorian and Georgian eras. The dwellings and streetscapes were not designed with the issues presented by dementia in mind. The challenges involved in re-engineering historic neighbourhoods to adapt them to dementia friendly design are daunting, but they are being taken up in neighbourhoods such as Anfield in Liverpool and New Earswick in York.

THE DEMENTIA FRIENDLY DWELLINGS: THE MICRO SCALE

In a dementia friendly dwelling, all ground floor thresholds need to be level. Front and back gardens should be accessible, with garden sheds and small greenhouses. Enjoyable, legible green spaces and gardens should be planted with small trees and shrubs that attract wild life.

Outdoor spaces for small pets, should be included. Outdoor sitting spaces with individually designed seating and sheltered conservatories and greenhouses should be orientated to sunlight allowing the body to manufacture vitamin D. ⁴

Bungalows are best. If they are not possible, how should we adapt existing houses? There are numerous possible adaptations, such as downstairs toilets, baths and showers being added as an additional extension? We need better and safer kitchens; bay windows and porches, views to street activities and gardens, eating spaces related to gardens and safe/secure staircases with additional handrails. We need better bedrooms and improved lighting throughout; and consideration of floor and wall finishes, colour and texture. Better bathrooms are needed, as are workrooms, hobby spaces for therapeutic activities, craft and music.

Technology in the home can be provided, as in The Smart House for example:

- Live easy ideas
- Supra Keysafe
- Fingerprint lock
- Video entry system with handset
- Bogus caller panic button
- Voice prompt with door contacts
- Cook easy kitchen appliances that keep you safe
- One cup kettle
- Induction hob
- Talking microwave
- Wireless smoke detector
- Rest easy products to help you relax at home
- Big switch and remote socket
- Easy to use mobile phone
- Talking album
- Carbon monoxide detector
- Touch screen control unit
- Amie personal trigger
- Lifeline Vi home unit
- Big picture phone
- Big jack controller
- Easy to see universal remote control
- Voice recorder
- Passive infra red detector
- Sleep Easy fall detector
- Talking watch
- Epilepsy sensor
- Enuresis sensor kit
- Bed occupancy sensor
- Wash Easy
- Technology that makes washing a pleasure
- Magi plug
- Nova flo
- Flood detector.

See www.moreindependent.co.uk



Edgehill Conservation Area, Liverpool.

St Mary's church forms a centrepiece and familiar landmark within a residential neighbourhood

- Local landmarks have a key role in aiding orientation. Familiarity is a key design principle*
- Green spaces in neighbourhoods provide relaxation and stimulation.*

Carers are very important people, coexisting in the dwelling. They spend much of their time living with the individual experiencing dementia and their spatial and psychological expectations need to be addressed. The dwelling must be designed with sufficient space to accommodate the spatial strain on the occupants, and extra circulation for movement needs to be provided.

DEMENTIA FRIENDLY NEIGHBOURHOODS: THE MACRO SCALE

In an ideal design the neighbourhood might be based on a garden suburb model; cities need to be age friendly. Dementia Friendly streets are essential, with clearly demarked pavements. On-street car parking should not be intrusive. There should be level surfaces with limited trip hazards and lamp posts and good street lighting. Clear pavements are required with bin storage and storage shelters for mobility vehicles, conveniently positioned.

Nearby public green spaces with trees and dog walking spaces should be included with changing seasonal landscapes for natural stimulation.

Vision for a Dementia Friendly Neighbourhood

- Recognise the stimulation of incorporating *'history of place'* in the detail of the public realm
- Trees in public and private spaces
- Opportunities for safe water features in public spaces
- Clearly shared legible gardens are essential, which address the senses of smell, touch, sight, taste and hearing, and the needs of the partially sighted
- Residents should be able to explore the gardens in safety
- Outdoor seating should be located in response to position of plants, trees and shrubs
- Good access to public transport; buses and trains
- Nearby local medical facilities and whole health centres
- Integrated library and reading clubs
- Access to University of the Third Age and churches giving spiritual support
- Local shopping should be within a walkable distance with a variety of shops to choose from
- Finally, memory spaces and places should be designed to clearly include both spatial components of the past and the future to create a rich and functional tapestry and evocative collages. The aim of The Dementia Friendly Neighbourhood should be to aid and rekindle memory.

The experience of dementia.



2: RESEARCH BACKGROUND

by Grahame Smith

"In every sunny life, some rain must fall. My mother died very young. She was 61 and I was around 30. That was, I would say, the worst thing that has ever happened to me. She had Alzheimer's, which is a pernicious disease. You watch somebody you love very much disappear month by month, and you see them beginning to not recognise you or your children. It is deeply unpleasant, especially when it's someone who was extremely bright, articulate, funny, and only in their fifties. You wouldn't wish it on anybody."

Katie Derham, The Times Magazine, 3rd October, 2015.

DEMENTIA AS A MEDICAL CONDITION

It is predicted that as people are living longer, the prevalence of people diagnosed with dementia will also increase. Dementia is a long term condition that adversely impacts upon a person's functioning above and beyond what might be expected from normal ageing. Dementia is a major neurocognitive disorder (NCD) and is a syndrome rather than a specific diagnosis. The term is underpinned by a number of different types of dementia which can have different causes and presentations. Each form of dementia is an organic disorder which results from an identified biological cause. The types of dementia include:

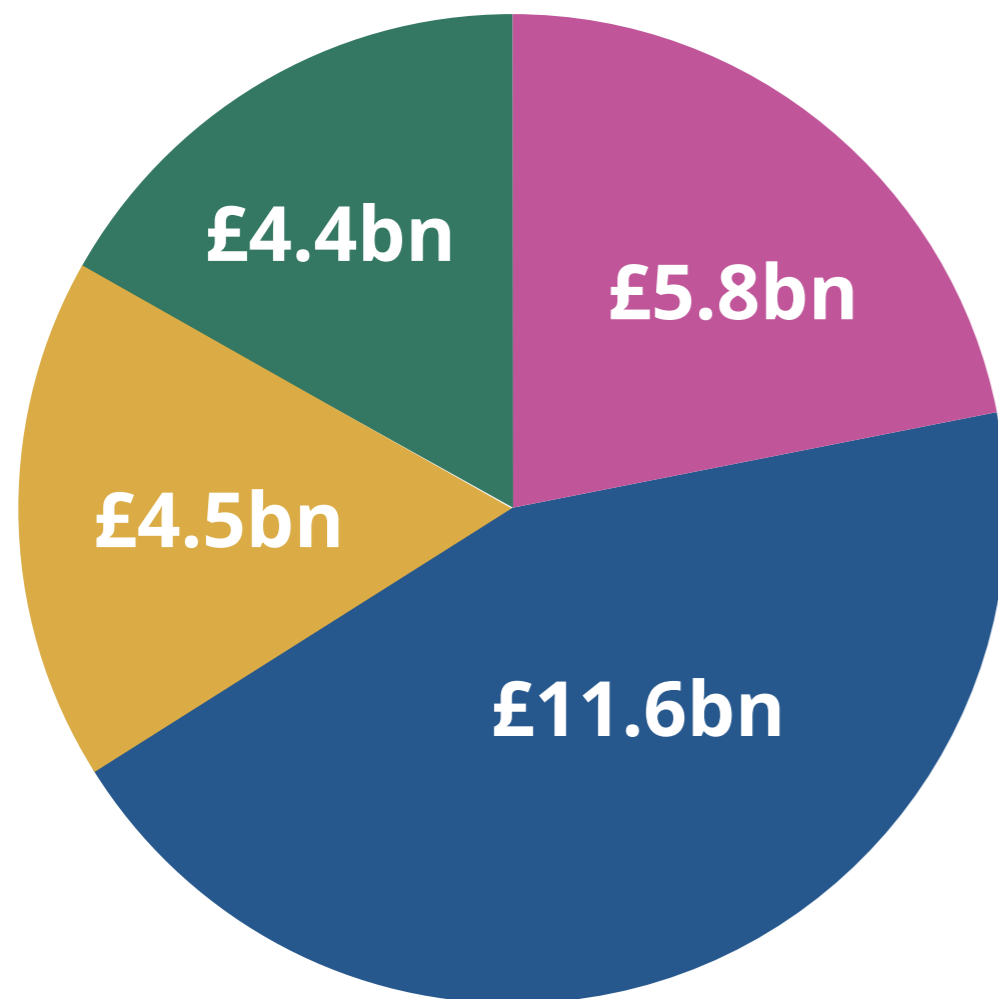
- Alzheimer's disease
- Vascular dementia
- Diabetes
- Blood pressure/strokes/mini-strokes
- Parkinson's disease
- Dementia in Pick's disease
- Dementia in Creutzfeldt-Jakob disease
- Dementia in Huntington's disease
- Dementia in human immunodeficiency virus
- Post-encephalitic dementia
- Head trauma related dementia
- Alcohol related dementia.

Alzheimer's disease is the most common, accounting for 55% of dementias; vascular dementia accounts for about 25%. Generally dementia is diagnosed when there are multiple cognitive impairments, which include impairments to memory, orientation, language, comprehension and reasoning. There is a decline in social functioning and consciousness is less clear. Dementia typically presents as a progressive decline in cognition and social functioning, however, it can also have a sudden onset. The clinical features include the following:

- Apathy
- Aggression
- Restlessness
- Dis-inhibition
- Impulsivity
- Low mood
- Anxiety
- Delusion
- Hallucinations
- Sleep disturbances.

STATISTICS -THE COST OF DEMENTIA IN THE UK

- PRIVATELY FUNDED SOCIAL CARE
- CARE PROVIDED DIRECTLY BY FAMILIES
- PUBLICLY FUNDED SOCIAL CARE (NHS)
- DIAGNOSES, OTHER AND HEALTHCARE COSTS



TOTAL: £26.3BN

- The number of people over 60 is due to increase by 2 million over the next 25 years
- 850,000 people live with dementia in the UK today
- This is projected to rise to 2 million by 2051
- 1 in 14 people in the UK live with dementia
- Although dementia is associated with aging, an estimated 40,000 people have early onset dementia
- The Department of Health estimates that only 59% of people living with dementia have a full diagnosis. Therefore, the statistics may significantly understate the scale of the problem.

Dementia becomes more prevalent with age; the prevalence of dementia is less than 1% before the age of 65 increasing to 25% by the age of 90. Other risk factors which may increase an individual's vulnerability include:

- A family history of dementia including a genetic history
- Down's syndrome
- Cardiovascular problems
- Lifestyle factors - unhealthy diet, lack of physical activity, smoking, high levels of alcohol consumption
- Social isolation
- Head injury.

THE ENVIRONMENT AS AN INTERVENTION

Early diagnosis with a focus on early intervention in dementia is important, especially where the emphasis is to maintain an individual's well being. Treatment guidelines recommend:

- Anti-dementia medication
- Cognitive stimulation
- Reality orientation therapy
- Validation therapy
- Behavioural therapy.

To meet the social challenge of dementia within the UK, respective dementia strategies have been developed within each home country. These strategies generally aim to promote dementia awareness, increase early diagnosis and treatment rates and improve the provision of good-quality care. In addition, the underlying message of these strategies is to support people to live well with dementia, this is a societal aspiration rather than just a treatment aspiration.

It also has to be acknowledged that the majority of people with dementia live at home until the end of life or circumstances change and they need to be admitted to residential care. The environment has a significant role to play in supporting people to live well with dementia. Especially where a person with dementia may be experiencing visuospatial difficulties, changes to an environment can compensate in part for reduced sensory, cognitive and motor ability.

Ideally a person with dementia would continue to live in their home setting until the end of life. This is not always easy to achieve and irrespective of the care setting the environment has to be designed in a way that enables a person with dementia to live well. This can be achieved by the designer listening and understanding what it is like to live with dementia and being person-centred. Taking this into account the designer has to consider whether a person's condition is impacting upon their ability to function, and whether the environment is too challenging and difficult to negotiate. Ideally a person-centred environment for someone with dementia is safe, has access to outdoor and indoor spaces, enhances social interaction, and provides easy ways for a person to find their way around the environment.



HIGH LEVELS OF STRESS

People with dementia often struggle to make sense of their environment and this can result in high levels of stress. They also have a lower threshold for stress, so may become very agitated when they are over-stimulated by noise, excessive activity or movement.

If stress can be reduced or eliminated the results are:

- reduced need for medication*
- reduced falls and hospital admissions*
- healthier residents*
- happier staff*
- happier families/support group.*

Conclusion

There is no 'one size fits all' to designing an environment for people with dementia. However, taking into account the following recommendations from a European funded project, Innovate Dementia, should help;

- A holistic approach to the environment should always be considered. Environments are more than physical spaces; maximising independence, autonomy and well being comes from ensuring a person's psychosocial as well as physical needs are met
- Design should be influenced by promoting independence and normalising living, rather than control. Flexible care environments are important to enable people living with dementia to *'age in place'* and prevent unnecessary admissions to care homes or hospitals
- Future environment models need to utilise the principles of dementia friendly environmental design coupled with home care style methods (Calkins, 2009, p145-154). These principles should cross boundaries and be applied to wherever a person is living.

(WOODS ET AL, 2013. P. 37)



*'A view to green' has
a significant effect on reducing stress*



DAA Group workshop members - using 'photo cue' cards to respond to and comment on their experiences of Liverpool city centre.

3: THE DESIGN GUIDE

by Bill Halsall

LIVING WELL WITH DEMENTIA

This Design Guide is specifically addressed to the needs of people living with dementia. It's estimated that 70-80% of people diagnosed with dementia live at home. While a considerable amount of research and development has been directed at extra care, residential care homes and other specialist care communities which provide care tailored to the needs of people with dementia, in fact most people living with dementia continue living in their own homes and using the same spaces in their neighbourhoods and cities as everyone else.

Therefore, awareness of the issues associated with dementia should inform the design of all new dwellings and new neighbourhoods and the design of the public realm in general. Shops and other businesses serving the wider community should consider the specific needs of people living with dementia. Existing homes and neighbourhoods may be adapted to respond to this new awareness. In the longer term this approach (aging in place) will reduce pressure on health and social services and help prevent accidents, improving safety and security for all. ⁵

The principles of 'Design for Dementia' should be 'built-in' to design briefs and management strategies for the public realm as well as the private domain to enable people living with dementia to 'age in place', to live in supportive neighbourhoods and to use local and town centre facilities.

*5. Refer to Volume 2
Chapter 2 - The Dementia Friendly
Neighbourhood.
Chapter 3 - How Dementia Friendly is our City?
and to Project Summaries in Chapter 4 of
Volume 1.*

THE IDEA FOR A DESIGN GUIDE

The idea for a Design Guide has emerged from the work of the Innovate Dementia Europe Project and from a research proposal put together by Bill Halsall of Halsall Lloyd Partnership and Dr. Rob MacDonald, of Liverpool John Moores University, which builds on their earlier collaborative research into therapeutic environments. It has been encouraged by the SURF Group, (*Service Users Reference Forum*) and been given additional impetus by the 'hands-on' participatory approach employed by Bill and Rob. The experience of dementia is shared by those living with it and their carers. Their willingness to share their experiences and frustrations has informed this guide.

THE PARTICIPATORY APPROACH

Three techniques have been used to facilitate participation:

Photo Cue Cards - 'Living Lab' Format

Sets of cards with relevant photographic images on one side and space for comments on the other side were used to generate responses and discussion in a 'Living Lab' format based on tables of 6 -10 people. The groups were mixed including people living with dementia, carers and professionals. The results were recorded and analysed.

The photo cue cards have been used to explore responses to images of inside and outside spaces generically, but also as an ongoing exploration - 'How Dementia Friendly is our City?'. This exercise has helped to highlight some of the difficulties experienced by people with dementia who use Liverpool City Centre and to identify potential design responses.



Connecting Minds through Sandplay.

Connecting Minds Through Sandplay ⁶

The team have developed a *'hands-on'* method using a *'Jungian sand tray'* and a set of objects including stones, sea shells, marbles, model houses and trees as well as moulds, sieves, spoons, buckets, rakes etc. The aim was to stimulate all the senses:

- **Touch** - sand, pebbles, objects
- **Smell** - *'sensory garden'* of roses, herbs, spices
- **Taste** - old fashioned sweets, ice cream
- **Sight** - coloured, shiny objects
- **Sound** - background music, shells.

In addition memory was stimulated through postcards, newspapers and other items from the sixties.

Hands-on Modelling - The Design *for* Dementia Bungalow

A foam board model is being used to explore ideas for an ideal *'Design for Dementia'* bungalow. The model is at a large scale to enable mixed groups to explore the concept and to envisage the spaces and their connections between them. The model is demountable, including a full range of furniture and fittings. The garden is also fully modelled to the same scale so that the important interconnection between inside and outside environment can be demonstrated. Model human figures to the correct scale assist in understanding functional relationships and animate the model. This concept is being developed towards the implementation of a full scale *'show bungalow'* demonstrating design approaches which will assist living well with dementia. ⁷

This participatory approach has been implemented through a series of *'Living Labs'* which form an ongoing exploration of the issues and opportunities involved in responding to the challenge of dementia. These Living Labs and their outcomes are described in more detail in **Volume 2** of the book.

6. Refer to page 4.11. Project Summary: 'Connecting Minds through Sandplay'. Jungian creative play and the senses.

7. Refer to Chapter 4. Project Summary: The 'Design for Dementia' Bungalow.

8. Refer to Chapter 9, Example of a 'Design for Dementia' adaptation of a traditional Victorian terraced house.

WHO IS THE DESIGN GUIDE AIMED AT?

The Guide is aimed at everyone involved in the design and management of the built environment; to stimulate awareness, raise the profile, explore the issues and promote integrated thinking about the design of housing, public buildings and the environment of streets and public spaces. It is formatted to be accessible to service users and carers and to help to advance the debate about accessibility for all.

Accessibility for All

This is an integrated concept. We cannot look at the needs and aspirations of one group in isolation.

There is already in existence a complex legislative framework and advisory standards covering a wide range of topics. These standards are summarised and explained in Chapter 7.

The Design Guide

- The purpose of the Design Guide is to raise awareness and to stimulate design responses to the issues associated with *'Design for Dementia'*
- The design approach should be *'participatory'* rather than *'bureaucratic'*
- The key design principles (Chapter 6) are applicable to the public realm in general and to public buildings and facilities in particular as well as the private domain of extra care and residential schemes
- New developments should incorporate imaginative design responses, reflecting the needs and aspirations of those *'living well'* with dementia (e.g. the *'Design for Dementia'* bungalow)
- Existing dwellings can be modified and extended in accordance with these principles to enable people to *'live well'* with dementia (e.g. the adaptation of traditional Victorian terraced houses). ⁸



The 'Design for Dementia' Bungalow is being developed as a research project by Halsall Lloyd Partnership in-conjunction with Dr. Rob MacDonald of Liverpool John Moores University.

The concept is to develop a design 'paradigm' for Living well with Dementia based on 'hands-on' participation with people living with dementia as well as carers and professionals.

4: RESEARCH PROJECTS

by Bill Halsall

This chapter provides an outline of the research initiatives which have grown up alongside the development of the 'Design for Dementia' guide and which have informed the concepts and ideas included in this guide (Vol 1). They are ongoing projects and the outputs described are the result of activities by the team during 2015. All of the projects are based on the participatory design philosophy and techniques described in Chapter 3 and focus on the needs, frustrations and aspirations of those living with dementia.

Only by trying to understand their experiences and by trying to perceive the world their way, can we begin to respond as designers working in the built environment.

A BRIEF OUTLINE OF THE PROJECTS

The Dementia Friendly Neighbourhood

Based on the premise that 70-80% of people living with dementia live in their own homes and use the same local environment and facilities as everyone else, how can the design of neighbourhoods be shaped to respond better to the needs of people living with dementia? And how can neighbourhoods and communities help people to live well with dementia?

How Dementia Friendly is our City?

This exercise extends the lessons learnt from the Dementia Friendly Neighbourhood to a city scale, exploring responses to images of Liverpool City Centre. Its conclusions begin to point the way towards the aspiration of dementia friendly cities.

Connecting Minds through Sandplay

Sandplay is a creative hands-on game using a Jungian sand tray and a set of assemblages to stimulate all the senses.

A creative exploration towards a shared landscape of the mind.

The Design for Dementia Bungalow

The 'Design for Dementia' bungalow is a design paradigm which explores the design of an ideal model bungalow with all the features to live well with dementia. It includes an integrated 'Design for Dementia' garden.

All of these projects are described in more detail in Volume 2 - Design for Dementia - Research Projects.

EXTRACT FROM VOLUME 2 - *Summary of comments received at the Innovate Europe 'Living Lab' in response to a series of images (photo cue cards)*



Summary

- People liked recognisable old buildings and open space.

Concerns

- Obstruction caused by cycle racks and flagpoles
- Random colour change of surface
- Uninviting seating
- Unclear signage
- Gloomy looking.

Design could be improved by:

- Being clutter free with clear routes for pedestrians
- Paving patterns that reflect movement routes
- Seats that are comfortable and look like seats
- Clear signage
- More colour - planting design.



Summary

This image was liked by some people, particularly as an environment for young people or professionals.

Concerns

- Parked cars restricting access
- Steps to front doors
- Uniformity
- Balconies (although good safety rails).

Design could be improved by:

- Designing out the steps to achieve disabled access
- Features to distinguish between each house e.g. door colours
- More organised car parking.



Summary

- People liked the busy local community shops.

Concerns

- Obstruction of the pavement by street furniture
- Dirty, slippery pavements
- Trip hazards
- Pavement too narrow
- Not people friendly.

Design could be improved by:

- Removing obstructions from the pedestrian areas
- Clearer visual distinction between road and pavement
- Better, more pedestrian friendly design
- More colour/planting.



Summary

Shop thresholds are a particular area of concern. Perceptual problems can create risk hazards.

Concerns

- Concerns were regarding the trip hazard of the step. Clearly even the sign is an obstruction and potential trip hazard itself
- The red carpet could appear as a hole
- The step is indistinguishable from the pavement
- If the sign is perceived to be necessary it should be clear.

Design could be improved by:

- A distinctive colour on the tread and riser so that people going in or out can clearly see the step.



PROJECT SUMMARY 1: The Dementia Friendly Neighbourhood *by Bill Halsall*

WHAT CAN WE DO TO MAKE NEIGHBOURHOODS MORE FRIENDLY AND USEABLE BY PEOPLE SUFFERING FROM DEMENTIA?

OBJECTIVES

- Explore how neighbourhoods could be more responsive to the needs of people living with dementia
- Gain insight from people living with dementia about their environment.

METHOD

- *'Living lab'* including a mixed group of people including carers, professionals and people living with dementia
- *'Photo cue cards'* were used to assist in stimulating a response to an assortment of images
- Results were collated and analysed.

Neighbourhoods can and should be designed to fulfil the needs of *'all'* groups in the community. This means not only accessible, safe and secure, but stimulating with the conviviality of a mutually supportive community environment.

The benefits of this approach are:

- Tackling loneliness and isolation - promoting community inclusion
- Looking after people in their own neighbourhoods
- Reducing risk of accidents
- Reducing long term cost to the health service and social services.

The Dementia Friendly Neighbourhood project explores this question through participation with the user groups involved in the *'Innovate Dementia Europe Project'*.

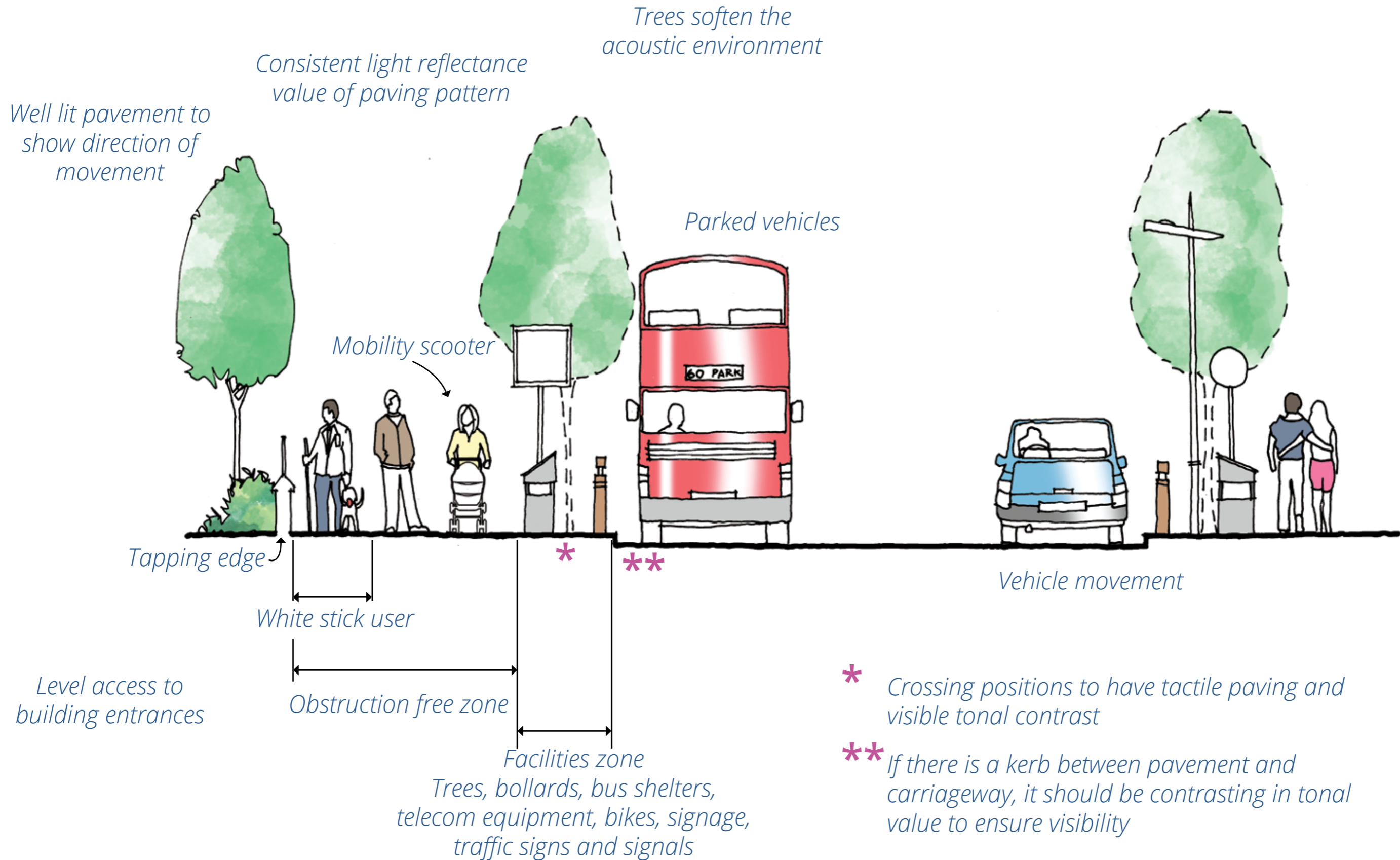
Event Format

The participatory methodology was *'Living Lab'* based, asking mixed groups of people living with dementia, carers and professionals to explore their responses to a series of *'photo cue cards'*. The *'photo cue cards'* comprised a set of images, showing interior and exterior environments. Participants listed their responses on the reverse.

Comments were collated and summarised and conclusions were drawn from the exercise. Some examples are shown on the facing page. The output is recorded in full in **Volume 2 -Research Projects**.

THE DEMENTIA FRIENDLY PAVEMENT CONCEPT

A clear unobstructed pavement with directional paving orientation - wide enough for all categories of users to move confidently and freely, including white stick users and mobility scooters.



EVALUATION OF THE 'LIVING LAB'

- The workshop following the presentation generated a good level of discussion from a mixed group of people
- The visual imagery stimulated a good response with some significant results for the design of the built environment
- In both interiors and exteriors there were significant design features which, with more understanding of the issues of dementia, could have been approached differently to create a better environment for people with dementia in particular, but also for everyone using these spaces
- Design guidance which recognises the issues of dementia and proposes practical approaches to design would assist in transmitting the message to those involved in design, construction, management and maintenance of neighbourhoods
- A *'joined-up'* approach is needed across all aspects of the built environment, not just in purpose-designed extra care or residential care schemes
- The involvement of people diagnosed with dementia in the design process is essential in developing a true understanding of what is needed
- The shared objective should be for an environment which caters for all on an equal footing, mitigating reliance on support services and which will generate a sustainable environment for the future.

KEY POINTS ARISING FROM THE 'LIVING LAB'

Safety and Security

- The visuo-perceptual issues experienced by people living with dementia demand special consideration in the design of internal and external environments. Hazards can arise from arbitrary changes in surface tonal value or from steps which may be invisible because of lack of contrast creating a trip hazard.

Open Space Areas

- A *'green view'* and access to space for walking, socialising and enjoying the sunshine have particular therapeutic benefits for people with dementia.

Use of Colour and Contrast

- Colour, particularly at the red/yellow end of the spectrum is valued. Contrast in tonal values can be used to distinguish a directional route or to identify the difference between horizontal and vertical surfaces or forms
- Colour could also help to identify, for example, an individual front door in a uniform row of properties.

Patterns

- Prominent patterns can cause disturbance - for example herringbone paving with pronounced joints or large patterned curtains or wallpaper
- An 'uneven' appearance of ground surface or patches of darker tone or colour can be confusing and potentially cause hesitation and perhaps accidents. A dark patch could be interpreted as a hole.

Recognition of Familiar Places

- Images of older recognisable buildings or places were liked. Orientation through familiarity assists legibility.

Problems of Obstruction

- Obstructions and clutter in the environment cause confusion and disruption making it harder for people with dementia to move around. The needs of people with dementia and the visually impaired are similar in this respect.

Sociability

- Environments should encourage people to socialise. Institutional environments, e.g. chairs in rows or round the edge of a room discourage social mixing.

Distinctiveness in Design

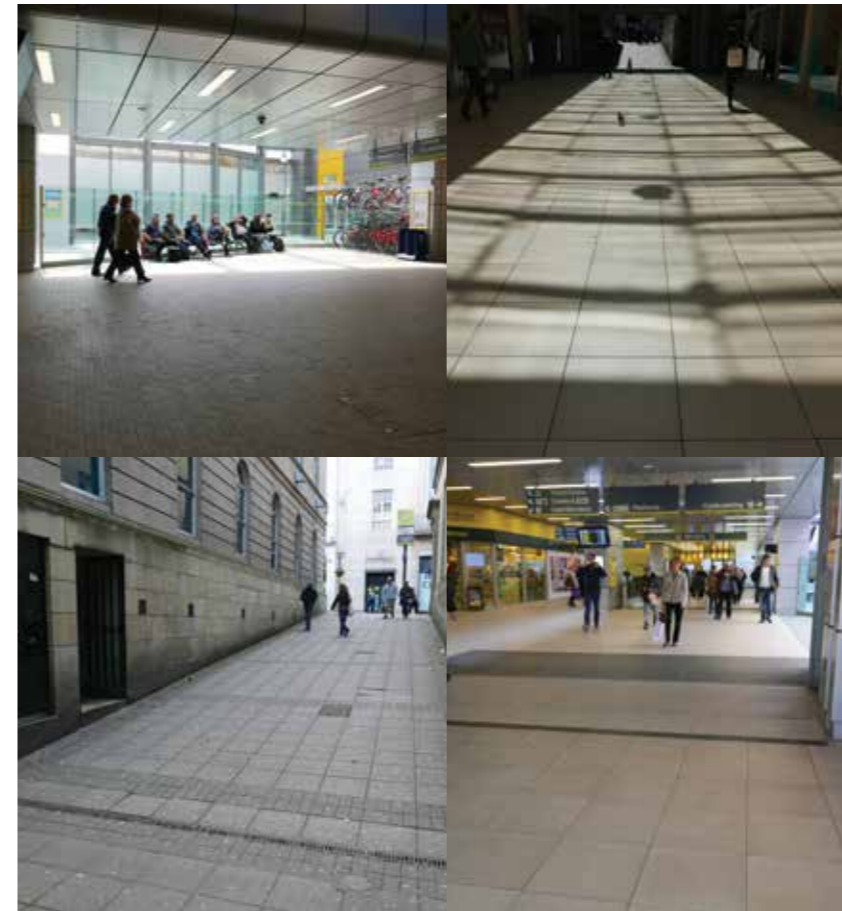
- Sense of place can be developed by creating identity at a large or small scale; for example, chairs in a range of colours or designs, streets with distinctive features rather than repetitive uniformity.

EXTRACTS FROM VOLUME 2 - *Summary of comments received at the Town Hall event and the DAA meeting in response to a series of images (photo cue cards)*



Comments from Workshop Participants

- Seats are uncomfortable, don't look like seats.
- Arbitrary paving patterns
- Grey bins blend in with grey floor
- Noise of buskers
- Cacophony of noise - buskers etc
- *'An awful place'*
- Lively, busy, active, the centre of *'town'* and it is important that this space is welcoming to all
- Seating is same colour as floor - would be better if seating was a different colour.



Comments from Workshop Participants

- Good use of natural light
- Good sitting space
- Handy for bikes
- Shadows on paving could cause a disturbing pattern
- The shadows make it difficult to judge the surface
- The ramp is too steep, difficult in high heels or when wet
- Handrails on the ramp?
- No steps as an alternative?
- The gradient of the ramp is too steep
- Black mat could read as a hole and cause someone with dementia to hesitate - potential accident.



Comments from Workshop Participants

- Signs written on glass are very hard to read and seem very unclear.
- Should there be a tapping edge to assist visually impaired people?
- Black mat with shiny metal strips is disturbing
- Bollards are too low and distracting
- Black mat looks like a hole, or a step up
- The glass door needs clearer signs.



Comments from Workshop Participants

- *'Jazzy'* paving pattern could be disturbing for people with dementia
- Checks on the floor design are very confusing and look very disorientating
- Hidden dark escalators
- Glass balustrades are disturbing
- Could bang your head on the stairs
- No clear signs - need a sign at eye level to say *'Odeon'*.



PROJECT SUMMARY 2: How Dementia Friendly is our City? *by Bill Halsall*

OBJECTIVES

- To see how 'Dementia Friendly' Liverpool City Centre is
- To explore the problems that people living with dementia may have in navigating and using the facilities of the city centre.

METHOD

- 'Living Lab' including a mix of people including carers, professionals and people living with dementia
- 'Photo cue' cards were used to assist in stimulating a response to an assortment of images
- Results were collated and analysed
- An independent Equality Act mini-audit was carried out on each image.

Understandably, most 'dementia friendly' design focuses on the inside private worlds of extra care housing, residential care projects, nursing homes or medical buildings and their surroundings.

However, the challenge of this project is finding a way to make our city centre; its buildings, streets, pavements and spaces more user-friendly and accessible so that people living with dementia can live well with dementia.

People with dementia experience changes in perception and sight. If the designers get it wrong; in terms of materials, texture, pattern or use of colour, then design can raise stress levels and increase the risk of falls amongst vulnerable user groups. People with dementia may have problems judging distances (visuospatial skills) and have difficulty with steps or seeing things in three dimensions. Visuospatial difficulties might lead to distortions and misperceptions of reality - a dark patch on a road can be mistaken for a hole or a glossy surface might be perceived as being wet.

This exercise was carried out using Liverpool city centre as an exemplar and in order to benefit from the direct experience and participation of the user groups. There is no imputation that Liverpool city centre is any worse than other cities. Most cities present a poor pedestrian environment from a dementia accessibility perspective.

The city centre should not exclude anyone. This is the public realm and our ambition is to make all of the public realm dementia friendly. People living with dementia may become confused about where they are, disorientated or lose track of the day or time. Designers can help by creating clear '*legible*' routes through the city centre which are easy and comfortable to use. The environment should also provide a stimulus. The city should be a place to be enjoyed by all.

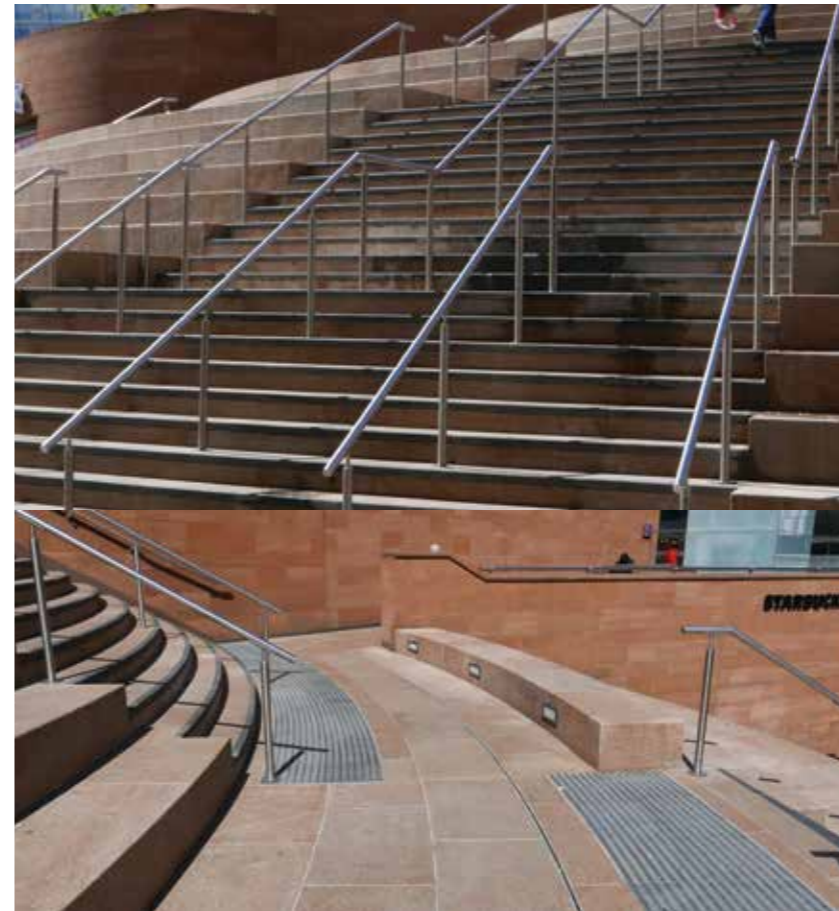
The '*How Dementia Friendly is our City*' project was facilitated using '*photo cue*' cards; images taken on a lunchtime stroll through the city. In a '*Living Lab*' we asked a mixed group of people to comment on a range of themed photographs of different locations and to record their views on the back of the cards. The exercise asked for responses from a user viewpoint including the viewpoint of those living with dementia and using the shared public realm of our city centre. An Equality Act '*mini-audit*' provided a parallel commentary to the photo cues.

EXTRACTS FROM VOLUME 2 - *continued from page 4.6*



Comments from Workshop Participants

- Too high - not visible to people in wheelchairs or buggies
- White on blue is ok because of contrast
- Walking times are a good indication of distance
- Contrasting colours are good
- Too busy, too much information
- Needs more space between the individual signs
- Maybe have white lines between each sign to break them up
- Too much information - should be more selective
- Too close together - spacing between destinations should be increased
- Nothing stands out - colour could be selective to more important destinations.



Comments from Workshop Participants

- Too steep, vertiginous, uncomfortable
- You could walk down expecting the steps to continue and fall over the stone plinth
- Dark strips could appear as holes but tactile paving is good for partially sighted
- Two different kinds of step is very confusing. Would be better if they were all the same depth
- Easily disorientated by different heights of step
- Curved edge to step can be hazardous
- Too many steps
- No signage to where the steps lead
- Confusing use - seating or steps?
- Too much of a travel distance
- Hand rail isn't continuous
- Takes too long to get up or down



Comments from Workshop Participants

- Narrowing steps with tapered riser
- Obstructions - dark shadows
- But a pleasant active space in the summer
- Liked by skateboarders
- Handrails on steps?
- Is there an alternative ramped route?
- Not obvious or clear
- Step not clearly marked
- Bollards too low, so may not be seen and may be easy to walk into/trip over
- Steps and bollards appeared to be a bench
- Underneath appears very dark
- No handrail for steps.



Comments from Workshop Participants

- Glass frontages cause confusing reflections
- Logo appears to be floating
- Tapering step with no hand rail - no disabled access
- Glass entrance makes it hard to distinguish which is the door
- Step appears as a slope, unsafe and hidden
- Black band/mat could appear as a hole - patterned flooring ditto
- Too many different floor surfaces
- All entrances are too dark.



While this exercise was only a *'snap shot'*, it provides some insight for designers, businesses and managers about the issues being faced and perhaps shows the way towards improvements which could be made to assist Liverpool in becoming a *'dementia friendly city'*.

SOME OF THE LESSONS LEARNT

Although this exercise has been simple, non-selective or comprehensive in any way, there are some lessons which can be learnt.

The Pedestrian Environment ⁹

Design consideration is needed in response to the experience of people living with dementia. The pavement experience may be inhospitable:

- If it is obstructed by the bollards, bins, seats or equipment boxes. Clear unobstructed routes are essential
- Shiny, slippery, or black tarmac patches may be misinterpreted as holes. Consistent surfaces in texture and tone are recommended
- Kerbs which are virtually invisible form trip hazards. Kerbs should contrast in tonal value
- Strong paving patterns such as chequerboard may cause disturbance - consistent light reflectance values are required
- Paving patterns or changes in colour which are arbitrary can cause confusion. Paving should be directional, assisting movement in a logical direction
- Lighting designed for traffic safety may not be right for pedestrians. Street lighting should indicate the direction of travel

[9. Refer to Dementia Friendly Pavement Concept page 4.4.](#)

- Pavement users include visually impaired people, people living with dementia as well as wheelchairs, mobility scooters and prams
- Pavements should have unobstructed zones wide enough to cater for all users
- Seats which are an integral part of street furniture may be confusing. Seats should look like seats
- Steps at changes in level should be avoided as far as possible. Where there are changes in level, there should be a clear choice between staircases, ramps or lifts
- Vertical objects such as litter bins or seating areas should contrast with paving so that they are clearly visible
- The city centre environment can be noisy and disturbing to people with dementia
- Noise can be absorbed or masked by trees or water features
- Signage should be clearly visible from a wheelchair position. Symbols and pictograms may be included. Too many signs on finger posts can confuse
- The pattern of shadows can be disturbing and make it difficult to judge the surface. They may be read as steps or obstacles
- Partially sighted people may use a white stick and can be assisted by the provision of a 'tapping edge'
- Small groups of steps can be difficult to judge. Handrails are needed. If there are handrails they should be continuous. If there are steps there should be a clearly visible ramp nearby
- Manhole covers can appear as a hole and should be recessed with matching paving infill.

Thresholds and Entrances

- Black rubber mats seem to be ubiquitous at entrances and thresholds. These may appear as holes to people with dementia and may cause them to hesitate in a busy thoroughfare and cause an accident. Some black mats have shiny metal strips which add to the confusion and disturbance. Thresholds which have a consistent tonal value and light reflectance value (LRV) are safer. However, if there is a step there should be a clear contrast, so that it is clearly visible
- Glass screens can be problematic. How can the fixed screen be distinguished from the door? Reflections in glass screens or balustrades also cause disturbance. 'Manifestations' (clearly visible patterns on glass) as required by regulation, must always be incorporated and clearly visible
- Contrasting door surrounds can assist in identifying the door position
- In the context of existing shop frontages the design of thresholds suitable for use by those with dementia is a particular challenge. There is invariably a change in level. Pavements may slope across the entrance
- Entrances present a design challenge which must be tackled on a case by case basis in response to the principles outlined.

Conclusion

- A more comprehensive design audit should be used to promote the Dementia Friendly City Concept
- This would involve the participation of the city council, businesses, city centre managers as well as user groups and other stakeholders.



Connecting Minds through Sandplay Event - Exploration 2nd July 2015 at HLP's offices

This event took place at HLP's Liverpool office and was based on an exploration of the use of a Jungian sandtray as a vehicle for involvement and participation. Participants included a mixture of academic staff, design professionals and people living with dementia. The format was intended to be play based and fun, breaking down formal inhibitions and relationships so that all could participate on a 'level playing field'. The intent was to provide sensory stimulus through all the senses and to promote memories and associate stories through sandplay.





PROJECT SUMMARY 3: Connecting Minds through Sandplay *by Dr. Rob MacDonald*

OBJECTIVES

- Explore the use of the 'Jungian Sandplay' as a method for stimulating engagement, communication and participation, involving people living with dementia.

METHOD

- Stimulate all the senses
- Promote 'play' and relaxation
- Evoke memory.

JUNGIAN CREATIVE PLAY, MEMORY AND THE SENSES

Jung was able to heal himself during a period of disorientation through the use of symbolic play, constructing a village using stones, mud and water on the banks of a lake, just as he had done as a child. In his building games, the creation of 'concrete' spontaneous imagery helped clarify his thoughts and released streams of fantasies.

Sandplay is a playful game that lasts about an hour and is aimed at encouraging creative lateral thinking, sensory awareness and memory recall. The game could apply to all people with or without dementia. I recall many times on beaches as a child in West Kirkby, Scotland, Cornwall or Devon; long periods when time passed just playing in the sand and rock pools. As a child we hold sea shells to our ears on the sea shore, in the dry and wet sand. These memories are the building blocks of our sensory mind. We all have our own memories held within different objects, we can rediscover them in play. Jungian Sandplay can become art therapy for tactile and visual image making.

Sandplay uses a shallow tray painted blue inside to represent water, or sky, filled with sand, measuring approximately 50x70x7cm. Nearby is a collection of different small objects with which to play in the sand. The play can be photographed and recorded during the game and after the Sandplay is finished, when feedback is discussed and recorded.





A range of objects including a sensory garden, historic objects, herbs and spices and old fashioned sweets were assembled with an operatic soundtrack.

Evaluation

- An enjoyable, relaxing occasion*
- The output in the sandtray was abstract but could be interpreted as a 'garden'*
- The 'displacement' provided by the sandplay enabled a free open discussion, bringing out the issues without confronting difficult topics*
- Experiences and stories unfolded*
- The sandplay approach has potential as an education tool e.g. for health professionals*
- As a design tool, the approach was expressive, free form and three dimensional. It enabled exploration of space, form and materials*
- As a therapy, the techniques are well established, although as a one to one therapy. The potential of group sessions could be explored further.*





10. Reference; 'Foundation and Form in Jungian Sandplay'.

(Steinhardt, 2000)

Doing a sandplay requires no special skill. The players are encouraged to play with the objects in the sand and out of the sand; to touch, smell, taste, listen, look and recall. What memories do the objects bring about? Jung used Sandplay as a technique of *'active imagination'* to provide a creative base for the expressive use of the arts as therapy. ¹⁰

Storr describes how Jung *'encouraged his patients to enter a state of reverie and fun in which judgement was suspended but consciousness preserved'* (Storr, 1983). What does the object feel like? Does the object have a distinctive taste? Can you hear the object? What do you see in the object? Does the object remind you of a person or place? When was the last time you remember seeing the object? Does the object provoke an emotion?

'I remember that day (wedding day) as clear as it can be... but it's a struggle to recall what I did this morning. It's happened to all of us at some time or another. You can't put a name to a face. You forget where you put your keys. You can't remember where you parked the car. Most of the time such slips are a nuisance, rather than a sign of something more serious. Dementia affects everyone in different ways. As well as problems with memory, other signs can include feeling confused even when in a familiar environment, problems thinking things through, and finding it hard to follow conversations' (Alzheimer's Society, 2015).

Sandplay is part verbal, non-rational and unsophisticated, it encourages creative memory regression and stimulates the mind. Sandplay can be compared with artistic free painting, free drawing, free form sculpture or free jazz. Therapies started their history with artists working with people in psychiatric and medical institutions. Perhaps there is a role for them in the 21st Century?

Sandplay is a shared activity that integrates play and choice with small hand sized objects. It involves an unplanned dialogue with individual's inner thoughts and memories. It's fun, joyful and control is to be relaxed. Sandplay mirrors the eternal child in us all.

As a child I was always involved in drawing. I had a need to make marks and explore different materials. I drew on all surfaces; even the kitchen table! As a child, Daniel Libeskind drew on a large sheet of paper on his family dining table until his mother said, Daniel it's time for bed! I enjoyed making marks in snow, dust, chalk, earth, bird seeds and in my father's pet shop. I have always been taken by the real qualities of a blackboard and chalk. Geology was my subject of choice and fossils and rocks appealed. Later I experienced the sand and the primitive cave paintings of the Sahara Desert. Of all the environments that I know, the beach is the most special and wonderful. Now Crosby beach and Anthony Gormley's Iron Men are special and therapeutic. I love to collect objects to the north of Crosby Beach and my fascination is with the original cast iron shore in Liverpool.



- *There are potential benefits in using sandplay as a participatory design tool facilitating mixed groups to explore shared ideas through hands-on modelling. Ideas and concepts from the sandplay could inspire full scale applications*
- *As a catalyst to developing a more positive engagement with service users based on fun and enjoyment the idea has tremendous potential.*

Conclusion

- *The open-ended, exploratory nature of the sandplay event was important as was the willingness of the group to 'relax and play'*
- *Avoidance of prescribed objectives or expectations helped to achieve the 'spirit of play' and to push the boundaries of exploration*
- *Sandplay can be 'democratic' and inclusive.*



PROJECT SUMMARY 4: The Design *for* Dementia Bungalow *by Bill Halsall*

OBJECTIVES

Tackle the main issues of *'living well with dementia'* through the development and refinement of the design of a single archetype. It is envisaged that the *'Design for Dementia'* bungalow could be designed into mixed housing schemes or could form the key component of specialist elderly care schemes. However, the design philosophy is *'long life, loose fit'* - a dwelling which could be aspired to, and lived in, through life by anyone.

METHODS

- Use the design principles established by the *'Design for Dementia'* guide and other guidance. Design a 'paradigm' for a dementia friendly dwelling
- Incorporate statutory standards and voluntary codes for design
- Participatory design process involving hands-on modelling to explore the design with the SURF group
- Evolutionary design process to demonstrate adaptability.

THE CONCEPT

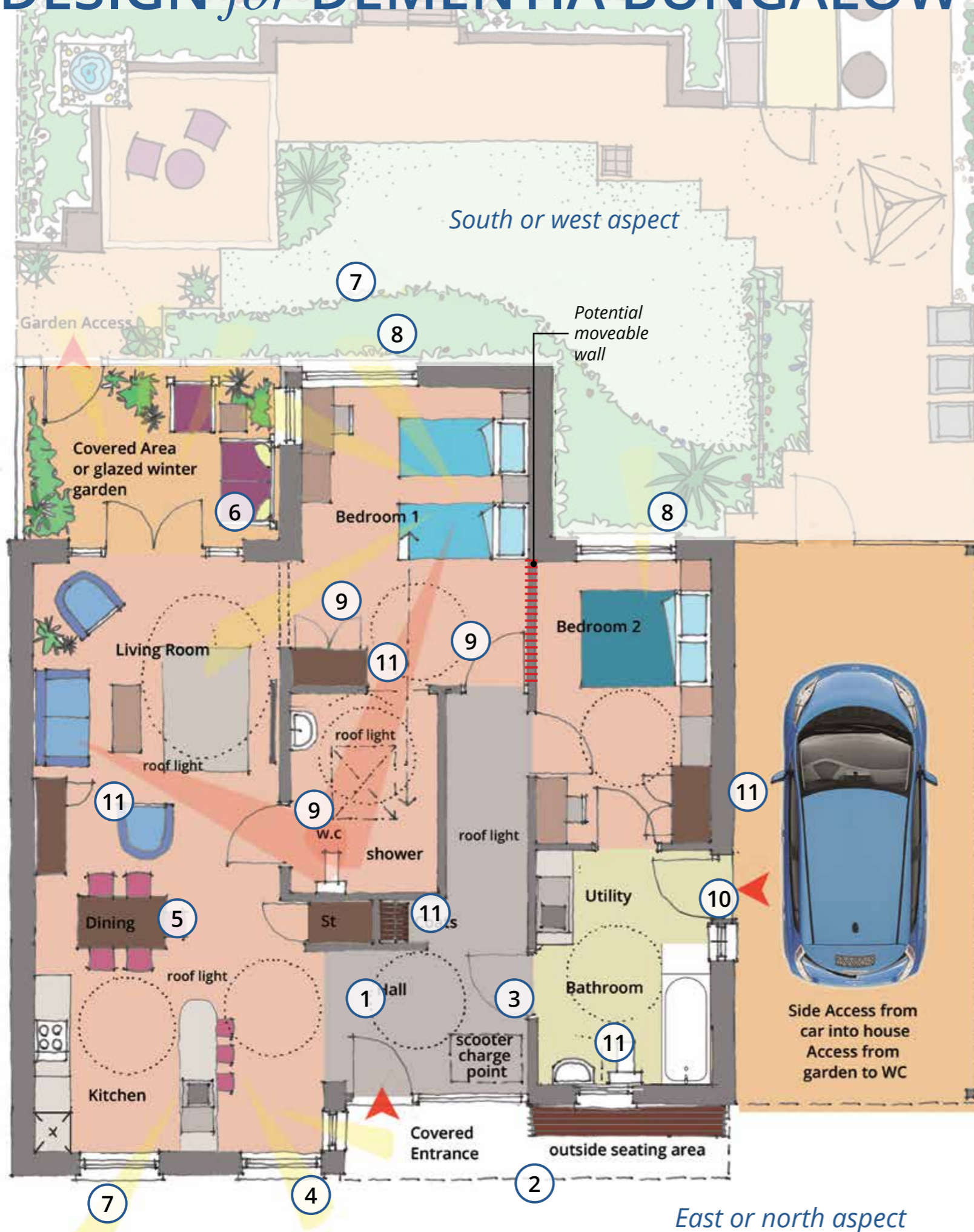
This is a demonstration project arising from the *'Design for Dementia'* guide. The aspirational concept is to take the simplest of dwelling types and to design an *'ideal'* model bungalow.

The Brief

- Satisfy a range of standards including Lifetime Homes, Secured by Design etc
- Simple layout, easily navigable
- Visual cues to assist orientation
- Visual connection and easy access between living room, bedroom and wc
- Low level window sills - view out from a low position
- Hoist route from bedroom to bathroom
- Option between shower or bath
- Separate wc/utility area
- Natural light into the middle of the plan
- Car port with direct access to the bungalow
- Garden with patio area and raised planting beds for easy gardening
- Bedroom for carer - potential moveable wall
- Interior finishes appropriate for dementia
- Open plan kitchen/dining/living area with easy access to the garden

- Easy access between garden and wc
- Workable within mixed housing layouts
- Energy efficient low carbon design and specification - affordable and comfortable
- SMART technology
- Level access throughout including thresholds
- Spaces large enough to provide good ease of movement
- Natural ventilation
- Clearly visible front entrance
- Easy natural *'flow'* between rooms
- Higher levels of artificial light (twice normal)
- Task focused lighting
- Reduce the number of doors (or removable doors)
- Good views from seated position to front and rear
- Views to *'green'* and communal activity
- Tonal contrast between floors, walls and doors
- For the carer - balance privacy and access
- Views of the approach to the front entrance
- *'Viewable'* kitchen/bedroom/bathroom storage - easy to find things
- Easy to maintain.

DESIGN *for* DEMENTIA BUNGALOW



- 1 Open plan living from hall - kitchen dining - living room allows visual connection of spaces and reduces stress of multiple doors
- 2 Covered entrance and glazed screen promotes improved security and observation of outside - 'who is coming to the door?'
- 3 Large entrance hall with easily accessible storage and scooter charge point. Easy to orientate from entrance
- 4 Kitchen and dining areas have natural daylight and views to the outside
- 5 Open plan living and dining promotes easy observation and inclusiveness
- 6 Sheltered rear space/winter garden allows outdoor enjoyment and activity for a longer period of the year, maximising sunlight and vitamin D manufacture in the skin
- 7 All rooms offer views to the front garden or rear garden areas. Gardens planted with interesting shrubs and flowers. 'Sensory' garden providing stimulus to smell and taste as well as sight, sound and touch
- 8 Both bedrooms offer clear, interesting views to the rear garden even if a member of the family is bed bound. A direct connection is also created between living room and bedroom to facilitate inclusion of all family members and promote easy supervision
- 9 Visual links between living and bedroom areas are created including views of the toilet/wc
- 10 Additional visitor wc has direct access to bedroom 2. This wc also has a direct external link from the garden and parking area. This bathroom has been linked with a separate utility space to remove the washing machine, possible smells and noise from the open plan kitchen - living space
- 11 Functional storage - related to room functions



Conservatory or outdoor space connected to the garden

Main bathroom with top light or walk-in shower

Open plan living space connected to bathroom

Kitchen/dining area - views out to the entrance

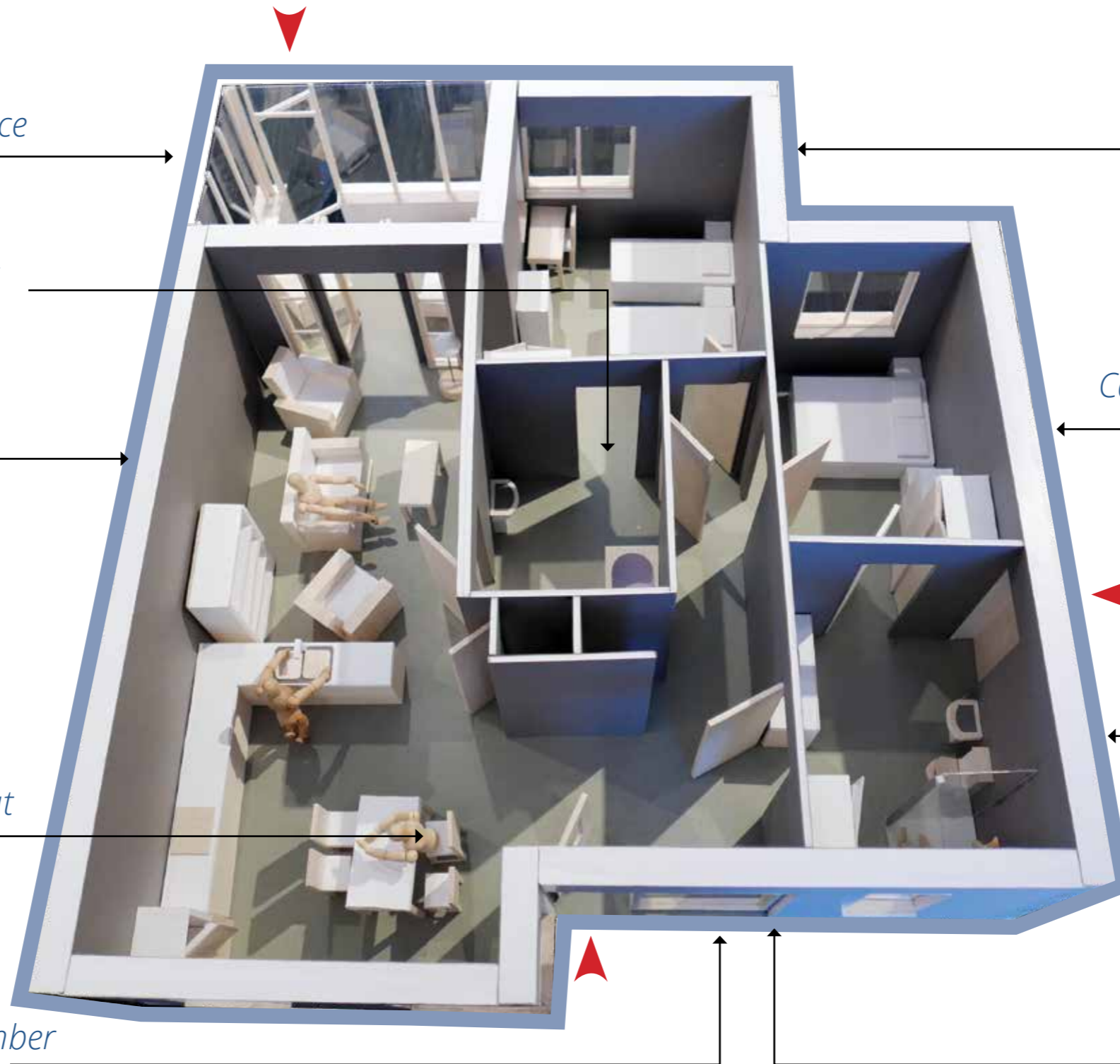
Entrance hall - minimum number of doors and good views out

Main bedroom with views to the garden, living room and wc

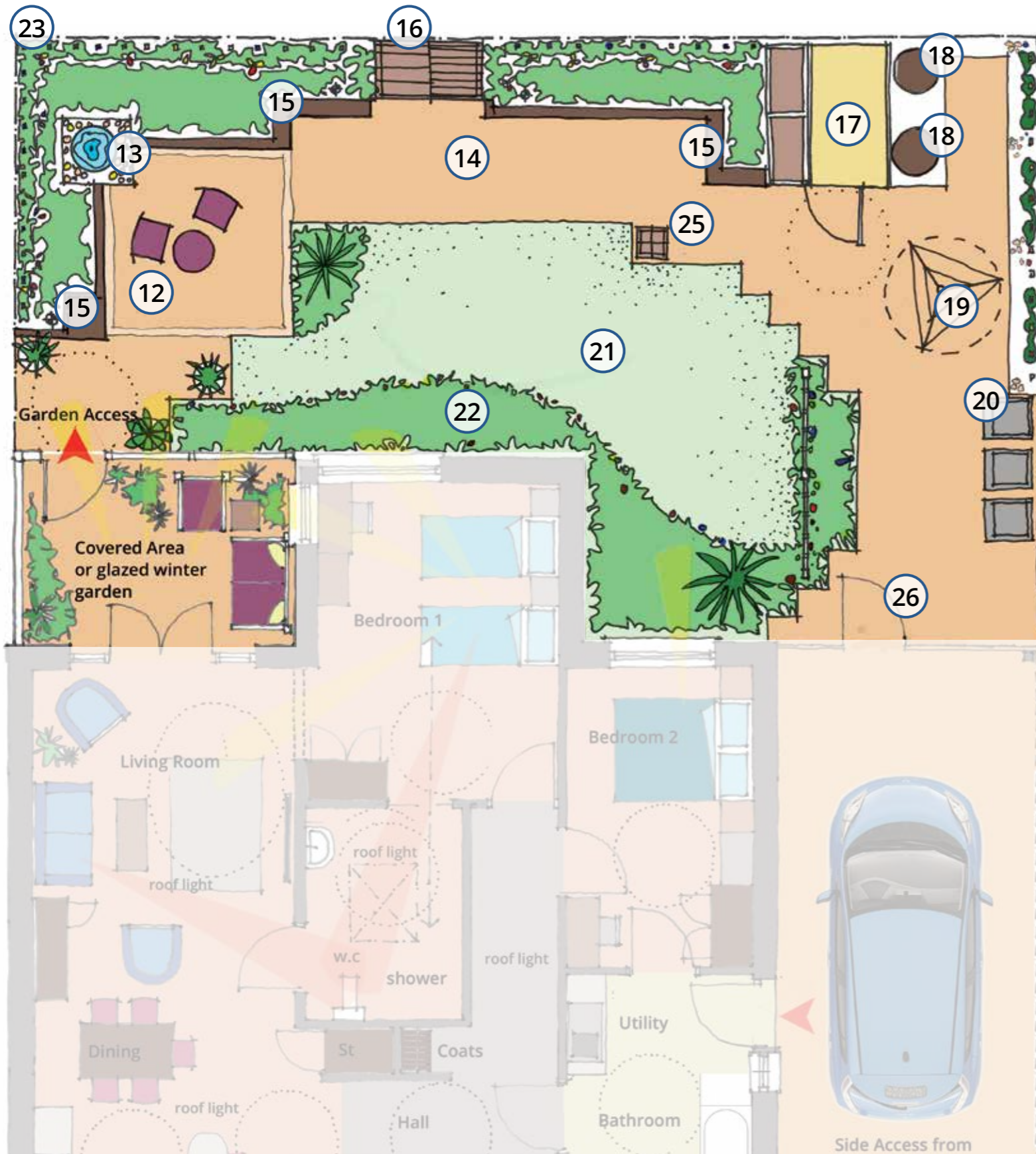
Carer's bedroom with potential knock through panel within the wall to the main bedroom and en-suite connection to the shower room

Shower/utility room accessible from the garden and car port

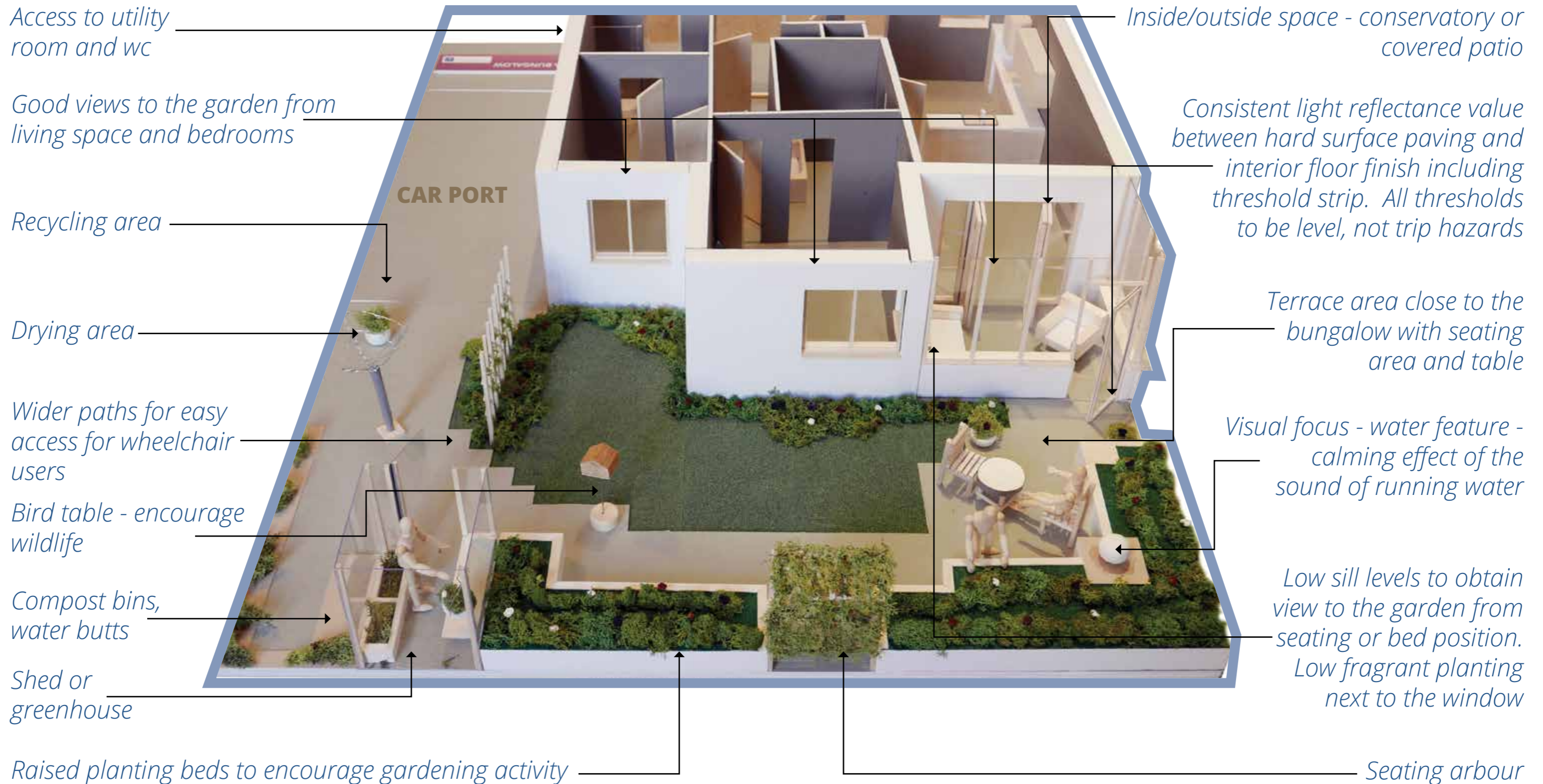
Front entrance - covered and highly visible

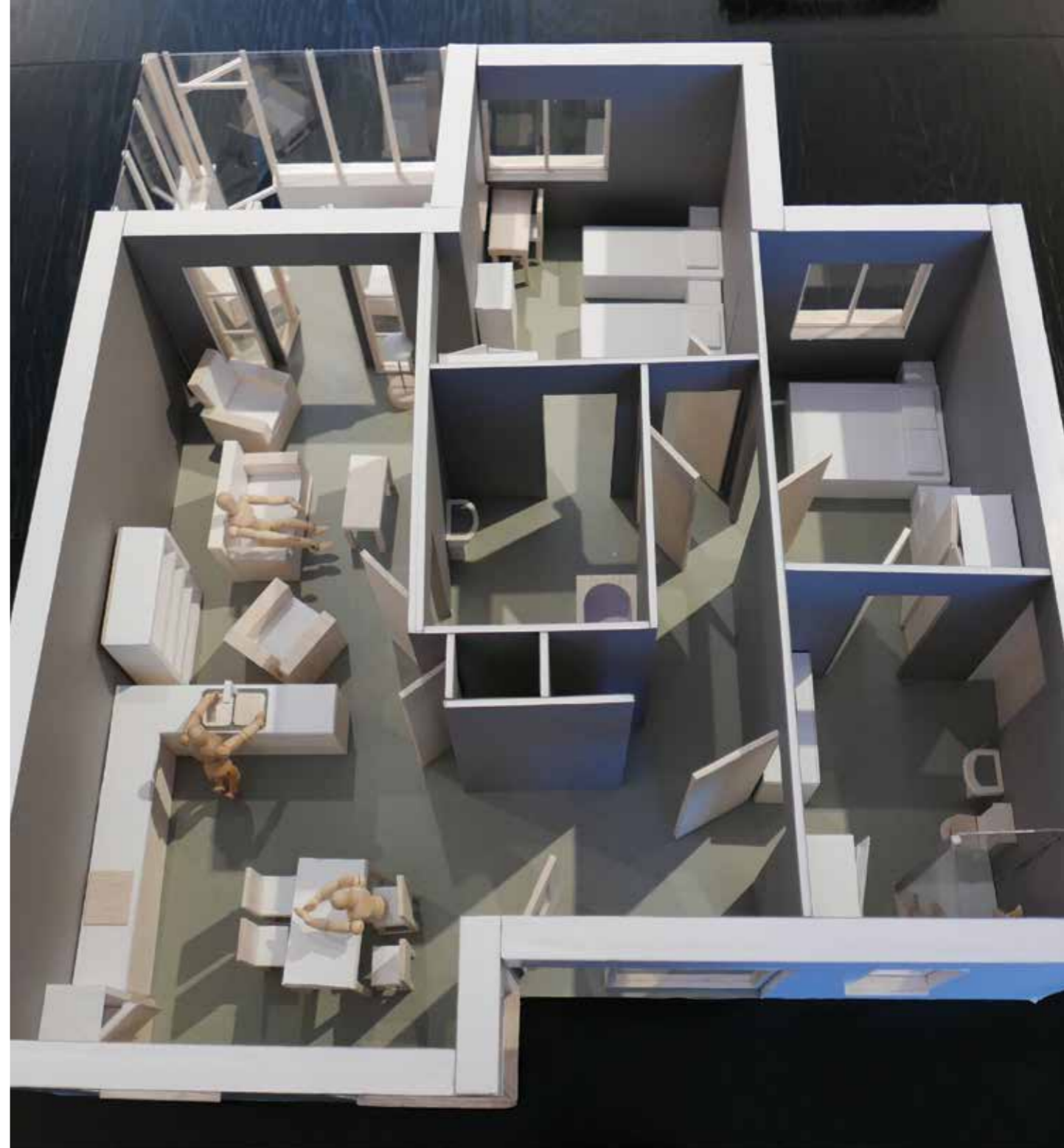


DESIGN *for* DEMENTIA GARDEN



- 12 Patio terrace with table set for eating or activities
- 13 Visual focus - water feature; sound, movement, reflection
- 14 Clear wide paths
- 15 Raised beds, with areas of wider coping for sitting
- 16 Visual focus - seating arbour
- 17 Greenhouse or shed
- 18 Compost bin/water butt
- 19 Washing line
- 20 Bins/recycling, screened from garden by timber trellis
- 21 Lawn
- 22 Low, fragrant planting next to windows
- 23 Boundary fence softened by climbers
- 24 Lighting to enable the garden to be enjoyed in the evening
- 25 Bird table or bird bath to encourage visiting birds.
- 26 Security gate and fence





5: WHAT CAN DESIGNERS DO TO HELP?

by Dr. Rob MacDonald

'Environmental or behavioural techniques should be used as a first line of treatment (for dementia) rather than beginning with pharmacological interventions'.

(Van Hoof, 2010)

THE SOCIAL VISION OF THE FOURTH AGE

In this chapter, the experiences of dementia, ageing and loneliness are compared with a more positive imaginary vision of living and wellbeing that might be possible in the future. This introduction follows the important sociological theories of Wright-Mills. He suggested that psychology does not involve historic specificity, rather we need a sociology that is historically relevant and has temporal reach (Wright-Mills, 1959, ch. 8).

This chapter presents a phenomenological perspective of the experience of dementia by considering a person's past, present and future *'life worlds'*. Phenomenology emerges from the literature, as a philosophy which is directly concerned with *'man'* in his real life world. To quote Schutz, *'Phenomenological philosophy claims to be a philosophy of man in his 'life-world' and to be able to explain the meaning of this 'life-world' in a rigorously scientific manner. As a participant sociologist we try to see with the eyes of those with dementia and return to the living streams of experiences in the world of dementia'* (Shultz, 1962, p. 121).

We are concerned with the design of dementia friendly dwellings and urban environments. In *'Design for Dementia'* we discuss loss of memory and the design of therapeutic spaces that might reactivate lost memories. We need to consider the phenomenological and sociological aspects of sight, smell, touch, hearing and taste; we consider the eyes of the skin and the poetics of space. In terms of Wright-Mills we discuss the relationship between micro and macro scale.

LIFE WORLD OF DEMENTIA PAST

'Let's imagine an 83 year old widow living in a nineteenth century small terraced house in the late twentieth century. (Forty Five percent of Northern English Cities comprise small 'bye-law' terraced housing). The toilet is at the bottom of the yard. There is a step between the kitchen and the yard. The old lady sits, knits and does crossword puzzles. She has a budgie and a dog. Housing Association grants enable a rear extension to be constructed which creates a new kitchen and an upstairs bathroom with a toilet. The step and change of level remains and the old lady trips; she breaks her hip resulting in six months in hospital. In hospital she develops a virus and can only be visited by relatives, nurses and doctors dressed in viral proof gowns. The elderly lady reverts to the language of her childhood, Gallic and so she just survives, physically, and returns home. She cannot get up the stairs and sleeps in the front room downstairs. The toilet is upstairs which is not reachable and so she again reverts to her childhood and uses a potty or bedpan...'

"Sans Teeth, Sans Eyes, Sans Everything"

(Shakespeare, 1600)

.... increasingly these experiences are common to us all, as ageing and dementia become society's epidemic.



Design participation process, Eccles.

LIFE-WORLD OF DEMENTIA PRESENT

Is the growing concern and experience of dementia at a watershed and a tipping point? Is this the result of an ageing population that is seen to be creating a global epidemic? There are now more elderly people living alone. Over eighty percent of people wish to live at home as this avoids loss of familiar surroundings. Therapeutic environments are recognised as promoting positive wellbeing. Poor functional design contributes towards a bad experience of macro and micro space. **'Design for Dementia'** poses the question, can architecture and design help people to live better with dementia?

LIFE-WORLD OF DEMENTIA FUTURE

There are clear demographic changes in the population driving the demand for new neighbourhoods and dwellings. Most cities have been designed without dementia in mind. In the future we need to make neighbourhoods better. Importantly we need to adapt and survive. People experiencing dementia want to **'live well'** with the illness. How, in the future, can this be achieved?

Design should be convivial with mutual support. Loneliness is a killer and the sociology of this needs to be tackled. People expect to live in their own neighbourhoods and this can reduce risks and accidents caused by lack of local knowledge. Indoor and outdoor accidents create a large cost burden on the NHS and social services. Good environments for **'living well'** need to be familiar, distinctive, legible, accessible, comfortable and safe.

Dementia friendly environments need to be well designed for all groups including children. Clearly mobility standards should be paramount and take into account people with hearing, vision and mental health difficulties. We experience our environments through all our senses. Safety and security are critically important.

THE ROLE OF ARCHITECTURE AND DESIGN

The future vision of dementia friendly places will only happen through inclusive collaborative teams of people experiencing the illness working in a **'Living Lab'** of sociologists, designers, architects, engineers, artists, planners, psychologists and clinicians; in fact a whole range of skills are required to bring about the involvement of communities, including empowerment, support and neighbourhood management. Radical community architecture and sociology have always had an important history of participation with communities. These approaches were investigated by the author in 'Architecture and Behaviour' (1980). This community and sociological research follows in the traditions of community studies and **'Design for Dementia'** is a clear derivation.

IMPAIRMENTS OF DEMENTIA -Potential Design Responses



SIGHT

- Impaired vision due to yellowing of the lens
- Colour perception at the blue end of the spectrum deteriorates first, red/orange colours are retained longer
- Blurring of vision and increased sensitivity to glare - surfaces may appear differently, avoid black or shiny finishes
- Use high contrast - highlight key features, edges and hazards
- Need for higher lighting levels.



IMPAIRED LEARNING

- Simple, straightforward designs and layouts.
- Use landmarks and wayfinders
- Avoid changes that could cause disorientation.



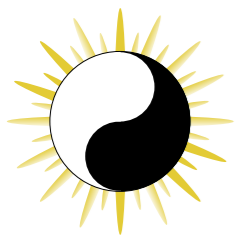
HEARING

- Noise disturbance causes distress
- Reduce ambient noise level
- Good sound insulation and absorbency
- Soft finishes and furnishing.



MUSCULO-SKELETAL PROBLEMS

- Reduce risks by using level access with tonal continuity at thresholds
- Reduce the number of doors where possible
- Provide handrails and aids, made visible with high contrast.



CIRCADIAN RHYTHM (*body clock*)

- Confusion of night and day
- Maximise natural light to increase awareness of daytime
- Easy access to outdoor open space - outdoor experience
- '*Green*' view from key rooms, especially from seating positions.



IMPAIRED REASONING

- Keep things simple, reduce choices which could cause stress
- Logical, easy to understand routes.



IMPAIRED MEMORY (*especially for recent events*)

- Open shelves and glazed cupboard/drawer fronts can ease the anxiety of losing things
- Avoid confusion of doors that all look the same but have different functions
- Memorable objects and images to assist navigation and sense of identity.



VISUO-PERCEPTUAL PROBLEMS

- Difficulty judging distances
- Avoid steps where possible. If unavoidable, clearly distinguish treads and risers
- Carefully considered use of glass - reflections can cause disturbance
- Are doors and glazed screens clearly distinguishable?
- Considered use of tonal contrast e.g. avoid all-white bathrooms.

'at times, the loss of function of residents with dementia is incorrectly blamed on the dementia when inappropriate design is at the base...'

(Bakker, 2014, p. 62)

RESPONDING TO THE CHALLENGE

Designers working in the built environment can respond to this challenge through their work. Some responses may be very simple to achieve, such as avoiding the use of black rubber mats at thresholds. If this type of response can be achieved with a bit of consideration, but no additional cost then this is a first, but potentially very liberating step for people with dementia, who may perceive the black mat as a hole, or a change of material as a step.

In the built environment the impact of design decisions on people living with dementia needs serious consideration. However, these environments are used by everyone, people of all abilities and all disabilities must be considered as must the needs of all age groups. The built environment must respond to the needs of all groups in the community, potentially making for a quite complex design brief.

There are many guides already in existence which deal with, for example:

- The needs of wheelchair users
- The needs of sight or hearing impaired users
- Servicing and access constraints
- Safe play for children
- Reducing traffic speeds
- Open space and play requirements.

In general, the design guidelines involved concur with each other, but there can also be conflicting requirements which need to be reconciled and resolved through a rigorous design process. The interrelationship of the many applicable standards, design guides and design audit methods is discussed in detail in Chapter 7.

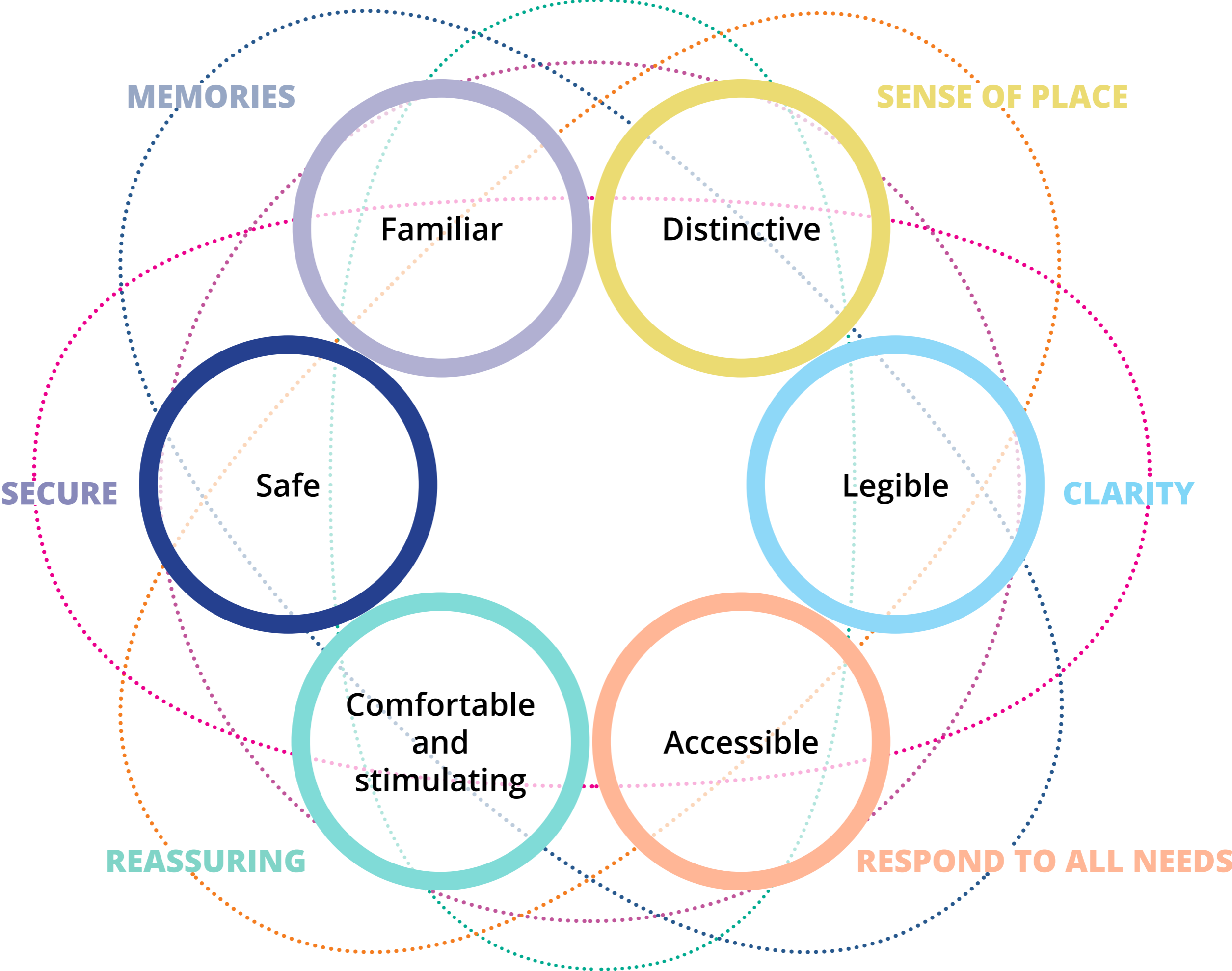
However, the authors believe that the objective is not to **'tick all the boxes'**, or to produce more tick boxes or point scoring systems. Our objective is to address the needs of all groups in the community, and to base designs on a set of considerations which build awareness and foster an **'empathy'** for the perceptual difficulties encountered by those living with dementia; difficulties which are not as self evident as physical disabilities, but which are no less real.

'LIVING WELL' WITH DEMENTIA IN THE COMMUNITY

This concept implies consideration of accessibility, safety and security but also importantly providing the stimulus and conviviality of a mutually supportive community environment. For example:

- Dementia friendly accommodation in a mixed community environment rather than in a segregated area
- Avoiding an institutional approach or **'feel'**
- Design principles applied holistically to the design of all residential typologies - **'future proofing'** designs as far as possible
- Exploring the potential of the adaptation of existing housing to enable **'living well with dementia'**
- Consideration of the design and management of shops and other publicly accessible buildings to cater for people with dementia
- Streets, pathways and lighting rethought to encourage and facilitate use by everyone including those **'living with dementia'**
- Integrated design of parks and open spaces to foster uses by all age groups and abilities.

KEY DESIGN PRINCIPLES



6: DESIGN PRINCIPLES

by Bill Halsall

'In the case of cancer and cardiovascular disease, it's about adding years to your life. In the case of dementia it's about adding life to your years'.

(Piot, 2015)

DESIGN PRINCIPLES

Six key integrated design principles guide our thinking about 'Design for Dementia', whether in the context of specialist care, housing design or planning the wider environment.

1. Familiarity

People living with dementia relate to their environment through familiar places, objects, or landmarks. Familiar faces of family friends and neighbours become very important. Memory of past times and events may be more easily recalled than recent events.

Designers can respond by considering:

- **Use of local landmarks** within the living environment and as a setting for new designs in the macro scale
- **History and heritage** are a stimulus to memory
- **Memories** stimulated by all the senses - sight, touch, smell, hearing, taste
- **Essence of their era** - familiar environment
- **Recognisable room appearances** - domestic feel rather than institutional
- **Landscape setting** including a stimulus all year round
- **Bio-diversity** attracting wildlife, birds, bees, butterflies.

2. Distinctive Environments

To assist people with dementia to move freely and independently around their homes and their neighbourhood, environments must generate a sense of place through distinctiveness of design.

Designers can respond by considering:

- **Sense of place** generated through character areas expressed through design. Think about their era of design, creating internal environments that relate to their memories
- **Feels like home** - 'personalisation'
- **Character** - calm and reassuring environment
- **Sense of identity**, - appropriate to the user
- **Variety in size and design of spaces** to inspire a range of indoor or outdoor activities
- **'Thresholds'** which define and soften the transition between character areas
- **'Clear Gateways'** to generate a sense of place and identity both externally and internally.

3. Legibility

To navigate their surroundings people with dementia need help in finding their way to where they want to go.

Designers can respond by considering:

- **Clarity and legibility** in design and layout. Easy visibility of destinations and entrances in obvious positions
- **Visual integrated design** using layout, colour, materials and lighting
- **Wayfinders** to aid orientation and act as landmarks between spaces
- **Simple, clear movement patterns**, make it easy to find your way around the dwelling or neighbourhood
- **Entrances**, highlighted and identifiable
- **Lighting** to provide clear, well lit routes
- **Simple hierarchy of spaces** internally and externally, will help people to find their way around
- **Orientation**, views out to the garden or the street '*views to green*'.

4. Accessibility

The design of all environments must respond to the needs of a full range of users including those living with dementia.

Designers can respond by considering:

- **Circulation**, wide enough for wheelchairs, mobility scooters and pedestrians to pass each other with ease and safety. Storage of mobility scooters and charging facilities are an important consideration in the design of dwellings and care homes
- **Materials**, carefully selected to avoid reflective or dark surfaces which could confuse perception. Patterns in flooring or paving should be used with care to avoid perceptual difficulties. Avoid arbitrary patterns which could confuse and disturb
- **Continuous level routes**, with surface materials chosen to aid orientation and sense of direction
- **Avoid steps**, people living with dementia may have difficulty judging distance. Steps or escalators, if necessary, should have clearly visible alternatives - lifts or ramps at an acceptable gradient
- **Reduce clutter and obstructions**, particularly in footways which should be dedicated for use by pedestrians, mobility scooters and wheelchairs
- **The needs of other users** should also be considered as part of a comprehensive and integrated design methodology. For example, the needs of the visually impaired and white stick users who require tapping edges and clearly identifiable demarcation of safe areas, including road crossing positions identified by tactile paving areas.

5. Comfortable and Stimulating Environments

Environments should reduce stress and disorientation and encourage participation, conversation and activity.

Designers can respond by considering:

- **Comfortable domestic scale**, reassuring, recognisable environments. Avoid an institutional feel and foster a sense of independence and control
- **Green spaces**, encouraging contact with nature. A '*view to green space*' is beneficial, as is walking and socialising in a green space
- **Sensory stimuli**, smell, touch, taste, sight and sound - considered use of colour
- **Noise can be disturbing**, position living spaces away from disruptive noise. Consider reverberation between walls and hard surfaces. Provide sound absorbent materials, both inside and outside
- **Design circuits rather than 'dead ends'** to avoid frustration and provide views out to aid orientation.

6. Safety

The safety of people with dementia in both the home environment and the external spaces they use, is obviously a critical design requirement.

Designers can respond by considering:

- **Maximise active frontage and permeability** to generate a flow of people and animate space
- **Defensible space**, clear delineation between private and public areas, but maintain good visibility of public space
- **Tackle loneliness and isolation** by providing informal rooms or spaces which will attract a mix of people and stimulate engagement and participation. Small intimate breakout spaces should also be well overlooked
- **External spaces should be well overlooked**. Natural surveillance of spaces creates '*eyes on the street*' and contributes to a safe, secure neighbourhood, conducive to communal life
- **SMART technology** can assist safety and security, for example, sensory operated lighting and secure systems providing discrete monitoring of vulnerable residents.

Summary

These key principles provide a starting point for the development of the design process which is described in more detail in subsequent chapters.



7: APPROACH TO DESIGN

by Bill Halsall

DESIGN APPROACH

The design principles outlined in Chapter 6 provide a simple structure to frame thinking about a design approach based on an understanding of the issues facing people living with dementia. We outline the opportunities presented to designers to enrich their designs through a considered and thoughtful approach based on empathy and awareness, particularly of the perceptual difficulties encountered by people living with dementia.

In our shared built environment of houses, neighbourhoods, towns and cities, we can, not only design in response to an ever growing catalogue of rules and regulations, but pro-actively generate better designs.

Better design promotes better *'liveability'* and enriches our experience providing stimulus to the senses and *'joy'* in our experience of life.

This *'experiential'* approach to design has a special relevance in *'Designing for Dementia'*, considering all the senses to produce responsive living environments which are safe and secure and conducive to community life.

*Wythenshawe Hospital, South Manchester
'Greenprint'.*

*Courtyard design demonstrates the principles
of therapeutic environments and the benefits
of a 'view to green'.*

ENHANCING ENJOYMENT

A better approach to design enhances enjoyment of the environment for;

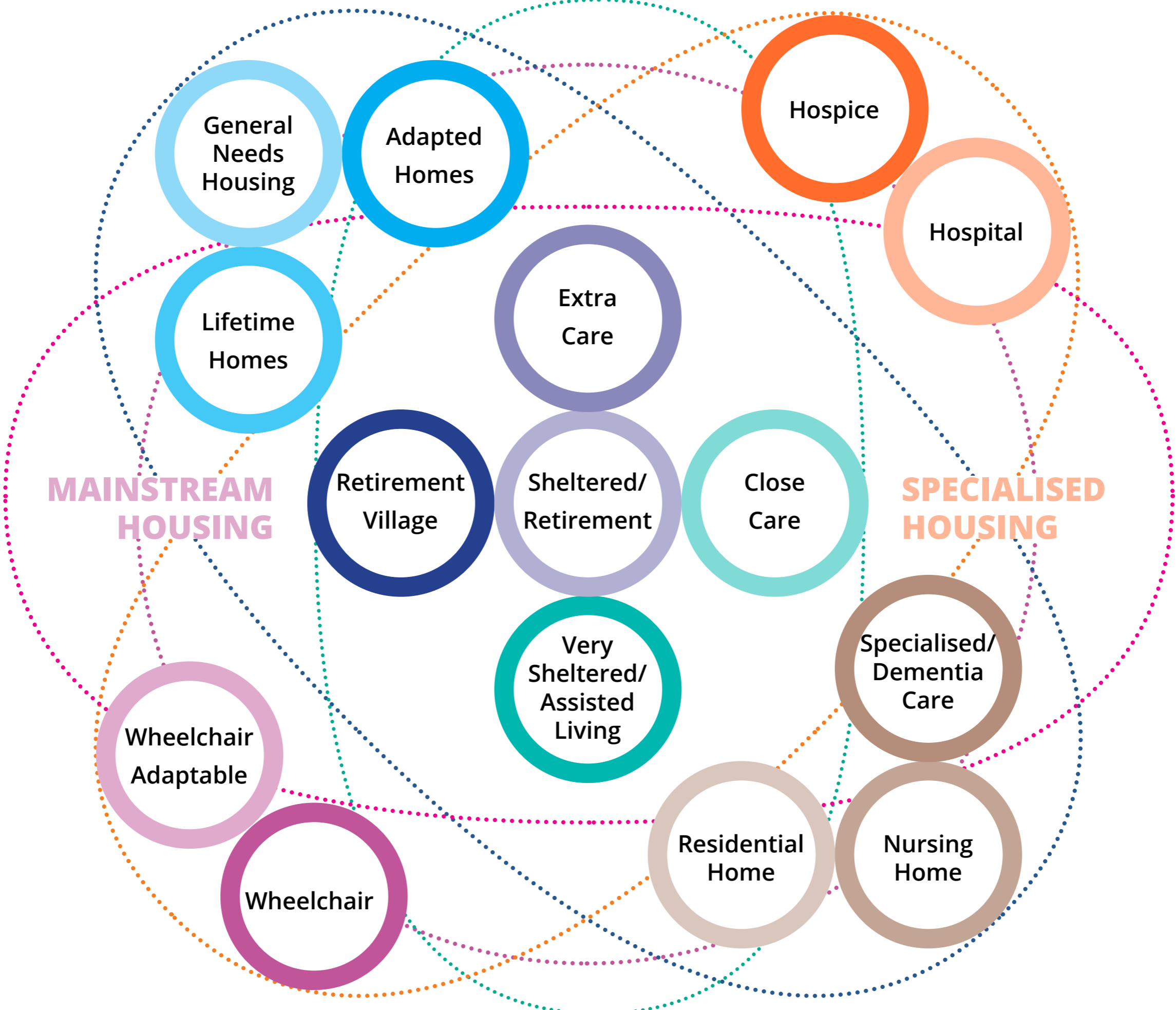
- All age groups, including young people and families
- Children's play
- Those with reduced mobility
- Those with impaired vision or hearing
- Those with mental health issues
- People living well with dementia.

FRAMEWORK OF CONSTRAINTS AND STANDARDS

Design takes place within a complex framework of constraints and standards applicable to different kinds of projects. Relevant statutory and advisory standards are summarised later in this chapter.

SPECTRUM OF CARE

Based on the HAPPI report. Housing Our Aging Population; Panel for Innovation, refer to page 7.8.



HOW CAN THIS APPROACH BE ACHIEVED?

The approach is participatory. This is fundamental and involves good communication, collaboration and involvement of all groups within the community, including people living with dementia.

- **Working with end users** – understanding the context and taking on board the experiences of end users to develop innovative and imaginative responses
- **Involvement of communities from the outset** – A strategy for community and stakeholder engagement should be agreed at the beginning of all projects
- **Empowerment of local groups** and initiatives along with stakeholders and agencies should be at the core of projects
- **Involvement with the academic community and health professionals** – sharing knowledge and experience towards a better understanding of the challenge
- **An interdisciplinary design approach** – planners, urban designers, highway engineers, architects, landscape architects and interior designers working together. Sharing expertise through design collaboration towards a consensus based vision and an agreed set of objectives, is the best route to success.

SPECTRUM OF CARE

The diagram opposite shows a spectrum of care provision based on the HAPPI report. The spectrum shows a graduation in care provision from less to more intensive levels of care. The focus of **'Design for Dementia'** is the question - How can the general environment, as well as housing provision, better respond to the needs of people with dementia?

The proposition is that this approach will, in the medium to long term, reduce pressure on the more intensive, specialised end of the spectrum and reduce the disruption and disorientation of moving people to the appropriate care facility. This approach generates greater independence and self reliance, particularly in the early stages of dementia, potentially delaying or avoiding the need to move to a more intensive care facility.

Within this guide, we have illustrated some general principles which should be followed in the design of care homes as well as general family housing, where the design approach is based on the design principles outlined in Chapter 6. We have not attempted to tackle the design details of more intensive facilities such as hospitals or hospices. There are references under further reading which can assist in these more specialised areas of design.

ONGOING MANAGEMENT

Design and implementation is only one part of the process, ongoing management is essential. The responsible bodies include local authority highway engineers, city centre managers, housing associations, and private sector landlords as well as retail chains and those responsible for public buildings.

Communities can be involved in managing their neighbourhoods and projects. That this process can be sustainable is demonstrated by the success of housing co-operatives, neighbourhood based housing associations, development trusts and other neighbourhood management models.

Support networks, including dementia friendly cafés, shops and businesses represent a more broadly based and inclusive approach. Some businesses are already responding. People with dementia can have difficulty dealing with money and supermarkets may have marked dementia friendly aisles to assist people with dementia without embarrassment and to avoid queues and avoidable frustrations.



Standards Summary:

STATUTORY

- Equality Act 2010
- The Building Act 1984
- Building Regulations 2010 and latest amendments
- Construction Products Regulations and CE marking
- Highways Act 1980
- Town and Country Planning (General Permitted Development) Order 2015.

ADVISORY

- Building for Life 12
- Manual for Streets
- BS8300: 2009 Code of Practice for Access to Buildings for Disabled People
- Dementia Design Audit Tool, Sterling University
- Secured by Design
- Housing Our Aging Population: Panel for Innovation (HAPPI Report)
- Housing Our Aging Population: Plan for Implementation (HAPPI 2)
- Lifetime Homes
- Housing and Communities Agency: Design and Quality Standards.

SUMMARY OF DESIGN STANDARDS

The inclusive approach to 'Design for Dementia' implies that designers should not 'Design for Dementia' in isolation. There are a wide range of standards which will apply; some are statutory and some are advisory. They are summarised over the following pages. The following is not exclusive, there are other advisory standards issued by different specialist groups, however, it shows the extent of the prevailing legislative and advisory framework which can come into play and which we must be aware of when we approach '*design for all*'.

STATUTORY LEGISLATIVE STANDARDS

Equality Act 2010

Key Areas

The Equality Act replaces the Equal Pay Act 1970, the Sex Discrimination Act 1975, the Race Relations Act 1976, the Disability Discrimination Act 1995, much of the Equality Act 2006, the Employment Equality (Religion or Belief) Regulations 2003, the Employment Equality (Sexual Orientation) Regulations 2003, the Employment Equality (Age) Regulations 2006, and the Equality Act (Sexual Orientation) Regulations 2007 (where applicable, as subsequently amended).

Comments

Gives guidance to all sectors of the community, employers and employees as to rights regarding discrimination and equality. Cross references to other legislative documents and guidance documents.

The Act provides for '*detriment arising from disability*', which clarifies and widens protection against disability discrimination. The Act abandons the previous list of capacities, relying instead on the general requirement that impairment has a substantial and long-term effect on a person's ability to carry out normal day-to-day activities.

Consequently, we must assume that the impairment of dementia is covered by the Equality Act 2010.

The Building Act 1984

Key Areas

The Building Act 1984 is the primary legislation under which the Building Regulations and other secondary legislation are made.

Comments

The '**Act**' allows for the Building Regulations to be amended as and when required to ensure best practice and evolving technologies and systems can be incorporated.

Building Regulations 2010

Key Areas

Particularly Part M: Access to and Use of Building 2010 (2015 Edition) Vols 1 and 2.

Comments

This section covers the technical guidance that supports Part M of schedule 1 of the Building Regulations, with the requirements in respect of access to and use of buildings.

Construction Products Regulations and CE Marking

Key Areas

Manufacturers, distributors and importers of construction products need to be aware of provisions that may govern the use of such products in the UK.

Comments

Under the CPR, from 1 July 2013 a construction product will need to be CE marked and accompanied by a declaration of performance if it is to be placed on the market in the European economic area. CE markings are applicable to construction products and this includes any product designated for use by disabled people.

Highways Act 1980

Key Areas

This Act provides for the creation, improvement and maintenance of roads and for acquisition of land. The Act also deals with the management and operation of the road network in England and Wales.

Comments

The Act, under Section 38, allows local authorities to adopt roads constructed by developers and for all future maintenance of the adopted road to be undertaken by the local authority. The Act refers to **The Manual for Streets** for approved layouts and standards. These standards include requirements for roads to be designed and constructed to allow ease of use and safe use by vehicles and pedestrians, including the formation of safe pedestrian crossing points, traffic calming, lowered kerbs etc to allow unrestricted access by all sectors of the population. Under Section 278 of the Act, an agreement allows private developers to either fund or complete works to public highways outside or beyond the development site itself, such as traffic calming and capacity improvements.

Town and Country Planning (General Permitted Development) Order 2015

Key Areas

Forming part of the Town and Country Planning Act: 1990. Development Control is a key part of planning control and is exercised in the UK to prevent any significant development of property without permission by the local authority. In Part III of the Town and Country Planning Act 1990, under Section 59 the Secretary of State delegates to public bodies the right to grant planning permission.

Comments

Under the General Permitted Development Order householders are given rights to develop their property within strict guidelines without the need to obtain planning permission. This will include extensions, loft conversions etc. but must be within certain set size limitations.

However, these rights to permitted development may have been removed at initial planning permission stage or if the property is within designated areas. The Order will allow for adaptations to houses to accommodate disabled occupier's needs without the need for prolonged periods of time taken to obtain formal permission.

ADVISORY LEGISLATIVE STANDARDS

Building for Life 12

Key Areas

Building for Life is the industry standard, endorsed by the government for well designed homes and neighbourhoods that local communities, local authorities and developers are invited to use to stimulate conversations about creating good places to live.

BFL 12 is a series of 12 questions which require a response in order to assess how successful a scheme will be:

1. Connections
2. Facilities and services
3. Public transport
4. Meeting local housing requirements
5. Character
6. Working with the site and it's context
7. Creating well designed streets and spaces
8. Easy to find your way around
9. Streets for all
10. Car parking
11. Public and private space
12. External storage and amenity space.

Comments

The 12 sections are split to more specific questions within the particular section. All answers are subjective and each section should achieve a **'green'** under a traffic light assessment system.

Manual for Streets

Key Areas

The Manual for Streets focuses on lightly-trafficked residential streets, but many of its key principles may be applicable to other types of streets, for example high streets and lightly-trafficked lanes in rural areas. Advice is given to help ensure sustainable and accessible environments are included within the public realm.

Comments

The MfS gives advice to Local Highway Authorities and developers on the layout of streets and roads to ensure public safety for all road users, pedestrian and vehicular. Advice is given on crossing points, pavement and road widths and safe access routes.

BS8300: 2009 Code of Practice for Access to Buildings for Disabled People

Key Areas

BS8300:2009 provides specific data and information concerning how people of all abilities and disabilities should expect a building to work in order to accommodate them.

Comments

Useful reference document giving clear advice via diagrams and text to help designers deliver buildings which are useable for all members of the community.

Dementia Design Audit Tools - Sterling University

Key Areas

A design audit tool for designers, comprising three parts
Part 1 - Guidance and Notes
Part 2 - Work Book
Part 3 - Literature Review.

Part 1 Guidance and Notes subdivides the building into basic areas. The environment within each area is then assessed and given a classification of essential or recommended, all essential items must be met. Each area is then scored (the weighting is on essential items) and the overall score totalled. Gold, Silver, Bronze can be awarded to the scheme depending on its overall success.

Comments

The design audit tool is an extensively useful document for designers and clients. It is an essential tool for use at the initial design phase of a project and then as a reference as the project progresses through to completion.

Secured by Design

Key Areas

Secured by Design is the UK Police initiative supporting the principals of designing out crime. SBD goes through an extensive list of requirements and standards which must be met in order to achieve Secured by Design accreditation.

Comments

Most local authority planning departments expect that housing developments follow the recommendations of SBD. Reference is made to SBD by the HCA Design and Quality Standards.

Housing Our Aging Population: Panel for Innovation (HAPPI Report)

Key Areas

Panel set up by the government to consider 4 key questions for the future development of dwellings:

1. Improving the quality of life of our ageing population by influencing the availability and choice of high quality, sustainable homes and neighbourhoods
2. Challenging the perceptions of mainstream and specialised housing for older people, for existing and future generations
3. Raising the aspirations of older people to demand higher quality, more sustainable homes
4. Spreading awareness of the possibilities offered through innovative design of housing and neighbourhoods.

There are 10 key components which should be considered for the design and use of housing for older people:

1. Space standards
2. Use of natural light
3. Avoiding internal corridors and single aspect flats
4. Homes to be care ready
5. Encourage interaction and social use of circulation spaces
6. Multi-use space for casual meetings and interaction
7. Public realm, encourage interaction with external environment
8. Energy efficiency
9. Adequate storage
10. External surfaces, priority to pedestrians.

Housing Our Aging Population: Plan for Implementation (HAPPI 2)

Key Areas

Government inquiry into the implementation of The HAPPI Report.

Comments

The inquiry urges the government to boost the adoption of the HAPPI Report through its various departments and agencies:

- Homes and Communities Agency
- Department of Health
- Department of Communities and Local Government
- Local Planning Authorities
- Housing Departments/Adult Care Services.

Lifetime Homes

Key Areas

Lifetime Homes incorporates 16 '*standards*' that a new dwelling should achieve to be designated as a '*Lifetime Home*':

1. Parking (width or widening capability)
2. Approach to dwellings from parking
3. Approach to all entrances
4. Entrances
5. Communal stairs and lifts
6. Internal doorways and hallways
7. Circulation space
8. Entrance level living space
9. Potential for entrance level bed space
10. Entrance level wc and shower drainage
11. wc and bathroom walls
12. Stairs and potential through floor lift in dwellings
13. Potential for fitting hoist
14. Bathrooms
15. Glazing and window handle height
16. Location of service controls.

Comments

Compliance required by Housing and Communities Agency for all grant funded housing developments.

The London Housing Design Guide (LHDG)

The LHDG gives space standards for all new residential development in London. The Lifetime Homes standards are referenced in the LHDG, and it is expected that all units achieve the Lifetime Homes criteria, or have full wheelchair provision.

Standards for wheelchair housing are also given in the LHDG, although this is superseded by the recent changes to Part M.

Habinteg Wheelchair Housing Design Guide

<http://www.habinteg.org.uk>

The Habinteg guide gives standards and guidance for the design of housing for use by wheelchair users. The guide gives '*recommendations*' as well as '*requirements*'. This standard has been absorbed into Part M of the building regulations and is very similar to Part M4(3) Wheelchair User Dwellings.

Building Regulations Part M 2015 Edition Volume 1: Dwellings

The recent amendments to Part M of the building regulations effectively absorb the Lifetime Homes standard and the Habinteg guide. From 1 October 2015 local authorities will be obliged to use these three standards, rather than any DDA (Disability Discrimination Act) guidance that they may have developed.

The three standards are:

- M4(1) Category 1: Visitable dwellings
- M4(2) Category 2: Accessible and adaptable dwellings
- M4(3) Category 3: Wheelchair user dwellings.

These relate to pre-existing guidance as follows:

- M4(1) - Brings in minimum standards for level access, doors and wc provision
- M4(2) - Effectively absorbs the Lifetime Homes Standard
- M4(3) - Effectively absorbs the Habinteg Wheelchair Housing Design Guide.

Housing and Communities Agency: Design and Quality Standards

Key Areas

Precise guidance for the design and quality standards that must be met by affordable housing providers who get funding from the Homes and Community Agency.

Comments

Standards include, amongst others, space standards that must be achieved, within set size bands. Reference is made to Lifetime Homes and Building for Life.

Conclusion

- This summary provides an overview of standards which may be applicable
- It is not exhaustive. Designers should refer to the original source documents, rather than rely on this summary
- Applicable design standards are subject to continuous change and revisions
- To achieve 'access for all', designers should consider the needs and aspirations of all users and work with the statutory and advisory framework outlined.



8: PUBLIC REALM

by Estelle Keeley



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Following the principles outlined in Chapter 6, this chapter develops a more detailed application of these principles to the design and layout of the external environment. A contextual design approach is demonstrated, using well established methodologies to illustrate a more analytical approach.

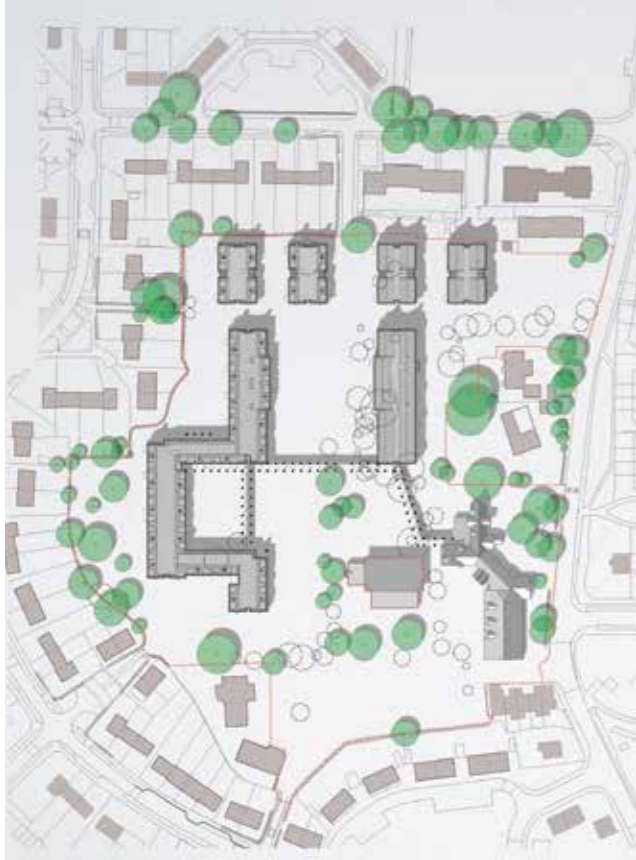
Tackling the design of the public realm involves reconciling the requirements of all groups in the community. **'Design for Dementia'** is only one facet of a more holistic design approach. The needs and aspirations of all must be considered as well as the constraints and safety requirements of highway design. Some of the applicable legislation and advisory standards are summarised in Chapter 7.

Landscape design provides a unique opportunity to focus on the specific implications and opportunities of **'Design for Dementia'**. Enjoyment of the external environment has key benefits for people living with dementia; reducing stress and disturbance and creating stimulus and **'joy'**. Landscape design has the ability to manipulate all of the five senses - touch, taste, smell, hearing and sight. This is an important consideration in **'Design for Dementia'**, and richly evocative and pleasurable landscape design can help people living with dementia to live well.

Olive Gardens, Liverpool - a linear park designed as a focus for a mixed housing area including sheltered housing for the elderly and elderly person's bungalows.

EXAMPLE APPLICATION

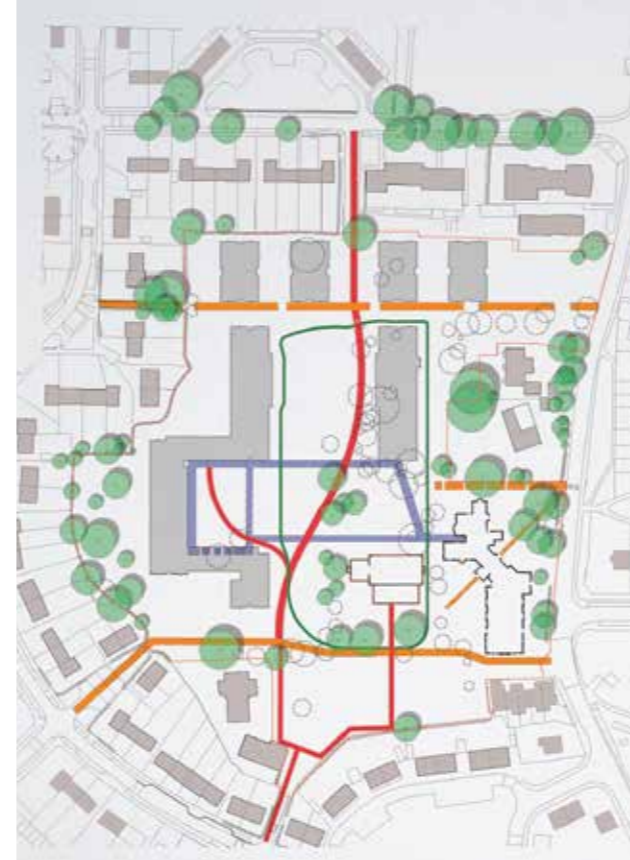
A sample application of the principles established by Kevin Lynch - New Earswick, York.



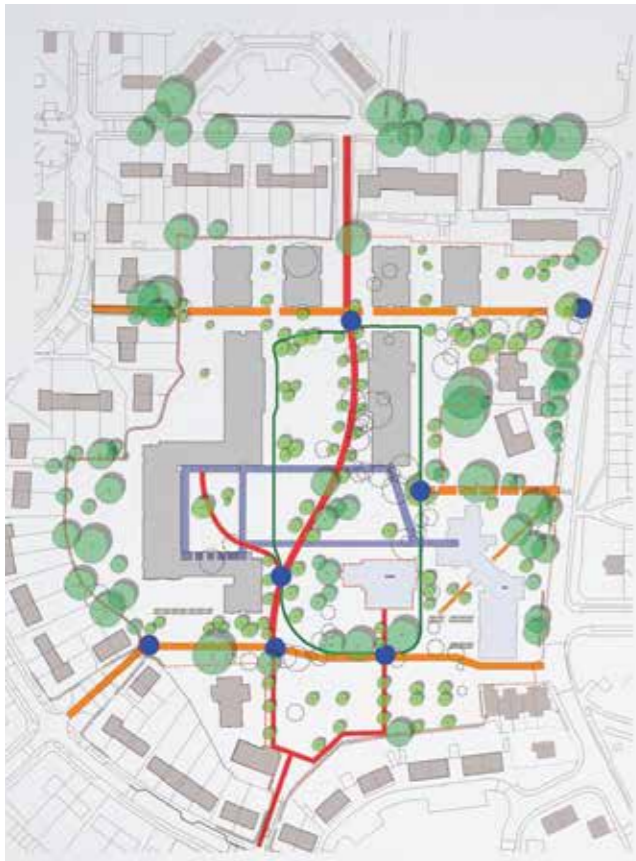
A. Edges (built form)



B. Character areas (districts)



C. Paths (movement and circulation)



D. Nodes and landmarks



E. Bring it together



Public Realm Design



Public Realm Design: Place Making

In August 2014, HLP was appointed to design the public realm for the redevelopment of a residential care home in the garden suburb of New Earswick, York.

The scheme creates a new living environment on an urban village model, including a care home and extra care accommodation in an extensive and well-designed public realm.

A primary aim of the design was to design a dementia- and disability-friendly public realm that helped to combat loneliness, stigma and social exclusion including:

- a stimulating, responsive and flexible environment
- accommodating the needs of elderly, infirm and people living with dementia
- encouraging community networks, community cohesion and fostering an inter-generational approach and mutual support
- inclusive design ensuring disabled access to all parts of the scheme.

The public realm design responds to the history of place and characteristics of the existing neighbourhood to develop a familiar and recognisable environment. Research by Kevin Lynch (*Image of the city 1960*) established that individuals often understand and navigate through a neighbourhood using their own mental maps based on five key elements; edges, districts, paths, nodes and landmarks.

Public realm designed within these principles enables people with dementia to be more able to use outdoor spaces. The five elements inform the design of the built environment and can be summarised:

A. Edges (and Built Form)

- Containment of space
- Clear differentiation through enclosure
- Perceived boundaries such as hedges and buildings.

B. Character Areas ('Districts')

- Sense of identity to distinguish one place from another
- Thresholds between character areas
- Visual connections.

C. Paths

- Movement and circulation
- Intuitive movement
- Orientation and legibility
- Gently winding paths.

D. Nodes and Landmarks

- Path intersections, change of direction
- Events
- Transport
- Facilities
- Wayfinding; visual connections, readily identifiable objects which serve as external reference points for legibility and orientation
- Focal points.

E. Bringing it all Together

- Integrated design
- Built form
- Roads and paths
- Tree structure
- Open space network
- Layered landscape
- Hard and soft materials
- Sense of place.



Refer to Housing LIN Viewpoint Reports, June 2012.

'Breaking New Ground: The Quest for Dementia Friendly Communities' by Dr. Lynn Mitchell.

HOW SHOULD WE ADDRESS THE KEY OBJECTIVES OF PUBLIC REALM DESIGN TO BE MORE DEMENTIA FRIENDLY?

The well-being of people with dementia can be improved through the physical, cognitive, social and psychological benefits of being outdoors (Pollock and Marshall, 2012). In our experience the planning and design considerations that support people to *'live well'* with dementia in the public realm, can be categorised following the six inter-related design principles summarised below:

Familiarity

Improve the ability for independent movement within a familiar environment and enable people to recognise and understand their surroundings. This helps to reduce anxiety, increase a sense of security and prompt memory recall (Mitchell and Burton, 2012)

Design considerations:

- Person centred design ethos recognising that there is no *'one size fits all'* approach
- Own clearly visible front door to engender dignity of the individual
- Design spaces of varied size and nature to inspire a range of outdoor social activities; including a choice of destination such as small break-out spaces for reflection or conversation
- Consider that spaces for small groups of less than 10 people are better than larger spaces
- Include spaces and routes to promote physical exercise
- Design to inspire and evoke memories, i.e. sensory planting.

Distinctiveness

Neighbourhoods with character and identity help to maintain levels of attention and concentration. Reinforce spatial experience, spatial distinctiveness and special sense of place - *'visuospatial distinctiveness'*.

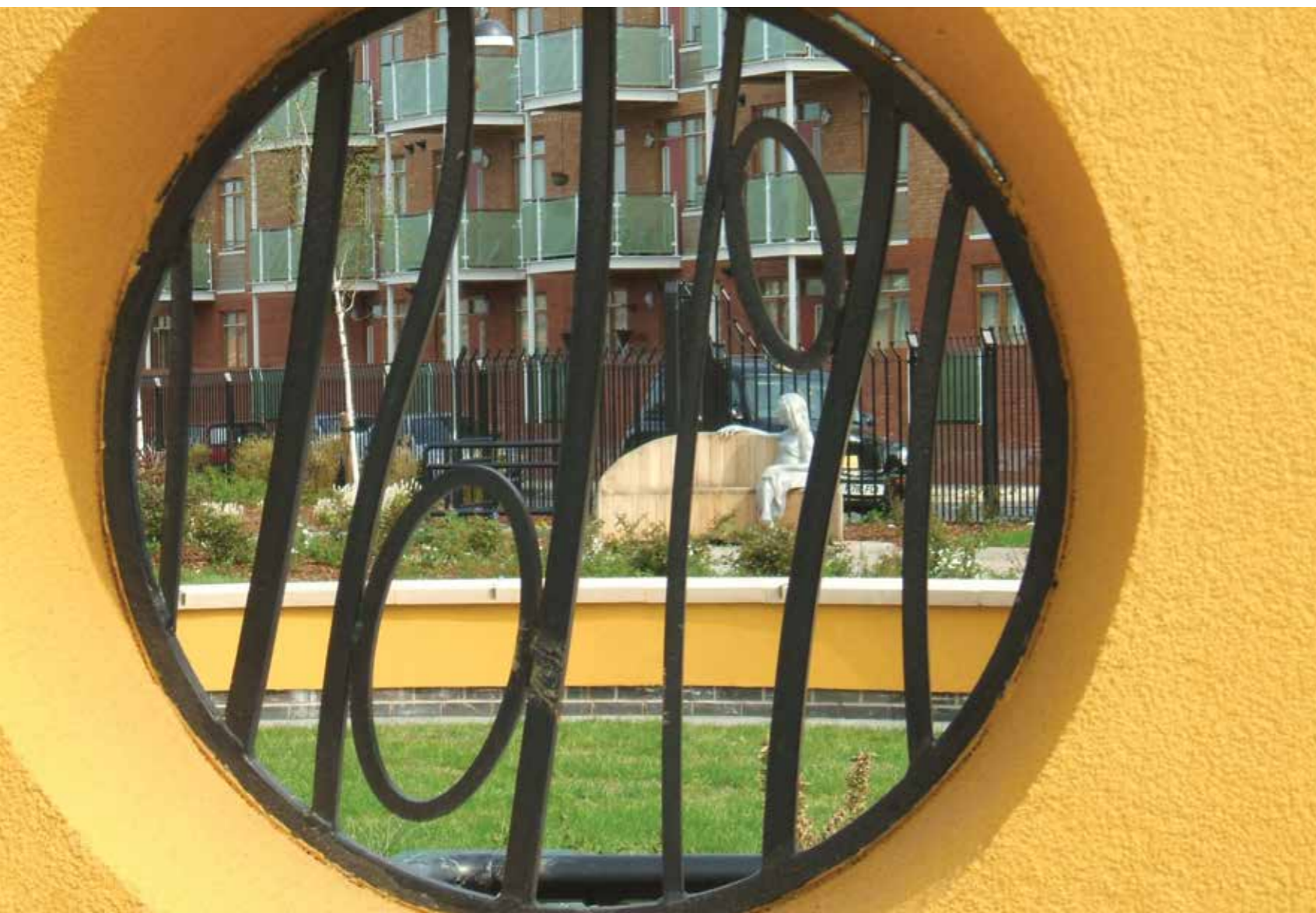
Design considerations:

- Design a sense of place within an environment
- Person centred sense of scale
- Use distinctive wayfinders/landmarks to enable intuitive movement, including clear *'easy-read'* signage and public art
- Include an inter-connected, rich variety of spatial types and character areas
- Promote sensory distinctiveness using plants with colour and fragrance.

Sample Application

The private garden for the *'Design for Dementia'* bungalow (Chapter 4: **PROJECT SUMMARY 4: The Design for Dementia Bungalow**) includes:

- Landmarks
- Colour contrast and lighting to help orientation
- Ergonomic raised bed planting to enable easy gardening
- Seating and working spaces protected from direct sunlight and wind
- Good visibility and visual access from inside the bungalow
- Opportunities for a variety of activities in a safe, attractive and familiar outdoor space
- Easy access to toilet facilities
- Wildlife opportunities.



Legibility

Help an individual to understand a place's layout and what goes on in it by providing clear legibility for orientation and navigation. This is important at two levels; physical form and activity patterns (Bentley, 1985). This can reduce feelings of disorientation, confusion and anxiety.

Design considerations:

- Wide paths with even surface materials and defined edges, free of obstacles and confusing decision points
- Routes should guide people past points of interest which can provide opportunities to engage in activities and social interaction, as well as places to stop and rest; and opportunities for play in which children both visiting and from the neighbourhood can have fun
- Encourage spatial awareness/mind map. People with dementia may have reduced spatial awareness and less capacity for sense of direction. Therefore, design the strongest visual cues to indicate direction
- Include clearly displayed signage at a lower level, approximately 1.2m above ground level, including dementia-friendly signs and symbols which should be well lit
- In communal gardens include pathways that meander and return to terraces and building entrances to ensure people with dementia remain well-orientated and rested
- Avoid '**dead ends**', paths should form continuous routes.

Accessibility

Enable people with dementia to access fresh air, sunlight and views of the natural environment. This also helps to improve and maintain general health through exercise, and reduced levels of anxiousness and agitation (Mitchell and Burton, 2012).

Design considerations:

- Research has proven that having a green view and access to external garden areas gives a 50% reduction in symptoms of dementia including stress, agitation and aggression, and the consequent need for medication
- Design for seamless interaction between internal and external spaces, bringing the outside in, both visually and physically
- Ensure visual accessibility to outside areas, involving activity and movement
- Use care in the choice of materials; use tone, not colour, to guide movement
- Create level surfaces at building thresholds, free from visual or textural contrast
- Include appropriate visual and tactile contrasts used for paths, furniture and planting
- Ensure short walking distance between facilities – people over 75 take 10-20 mins to walk 400m, younger people take 5-10mins
- Lighting to enable the gardens to be enjoyed at night
- Raised beds to make planting more accessible
- Easily operable garden gates
- Handrails in compliance with building regulations
- Gentle gradients, avoiding steps
- Paths wide enough for pedestrians and mobility scooters to pass comfortably.



Comfort and Stimulus

Encourage people with dementia to enjoy their outdoor environment with physical and psychological comfort, dignity and independence of the individual through creation of person-centred spaces.

Design considerations:

- A view to, and awareness of, what's going on outside is important in terms of the passing of the seasons, time of day (circadian rhythm) and weather changes, as well as views of activities taking place
- Noise can startle and disturb. A tranquil environment is required, that reduces noise, particularly sound next to windows, so utilise planting design and keep movement routes away from windows. Use the *'Meter-Pro'* App on a smart phone, which measures decibel levels
- Ensure design does not appear clinical or institutional
- Ensure the correct sunlight orientation of spaces
- Have regard to other micro-climatic considerations, i.e. shaded and sheltered sitting points to maintain a comfortable body temperature
- Clear, easy access to a toilet should be provided
- Plenty of timber seating with back and arm rests; traditional designs can be recognised and identified as a seat better than contemporary styles
- Maximise stimulus - joy of the outdoor environment encourages relaxation and calm
- Use water in the landscape for both stimulus and calming effects (subject to safety considerations)
- Promote sensory stimulus - smell, touch, taste, sight, hearing
- Texture and forms of materials provide tactile experience and continuity of surface
- Encourage wildlife - design in wildlife corridors and plants which encourage bird life
- Provide sheltered bus stops with handrails and seating
- Incorporate handrails at crossings, safety islands and corridors.

Safety and Security in the Public Realm

Enable people with dementia to access and use the public realm without anxiousness and agitation.

Design considerations:

- Spaces should be fully secure and enclosed where necessary with appropriate railings. For instance, a transparent railing allowing views beyond, with planting to help camouflage the railing height and deter climbing
- Specify non-slip, non-reflective materials with defined edging to paths
- Take care using shared surfaces – a *'safe-zone'* with defined edges is needed
- The impact of other users such as cyclists, motorists and emergency vehicles should be considered in detail. Any potential conflicts should be tackled at an early stage of design
- Include walking zones safe from traffic including frequent marked crossing positions and visually distinctive kerbs
- In a street - reduce obstructions
- Design wider pavements to accommodate a range of uses, including mobility scooters
- Specify visible kerbs to indicate changes of level
- Good lighting is essential
- Consider observation and natural surveillance of spaces from the buildings.



Conclusion

Well designed public and private outdoor spaces can respond to the six key design principles to produce responsive and stimulating living environments. The considerations can be applied to both micro and macro scales, i.e. individual dwellings and the broader environment of the city. They can also be applied to both adaptation or modification of our existing built environments and the design of new neighbourhoods.

Activities

Plan and design for activities that might take place in outside spaces. Activities are recognised as a critical component of good quality dementia care (Hazen and McManus, 2012). Benefits include:

- The opportunity to reminisce and engage in familiar activities i.e. gardening, laundry/hanging out the washing, craft and hobbies
- Inspiring and evoking memories i.e. work areas that reflect past interests and jobs
- Providing the satisfaction of entering and leaving different spaces
- Enabling interaction, enjoyment of other's company and spending quality time with families.

Design considerations:

Design for a range of outdoor activities:

- That encourage social interaction
- That assist physical health, activity, exercise and exposure to sunlight for essential vitamin D
- That engage the brain
- That allow relaxation - sitting, watching and reflecting
- That provide multi-sensory stimulation
- That restore and reinforce long-held skills, abilities and knowledge
- That enable people to achieve their creative potential and self expression
- That can be undertaken in the evening when the light is fading - probably need lighting and heating
- That can be intergenerational and/or entertain the children who are visiting.

Planting Choice

Plant choice is essential to the individual's perception, experience and enjoyment of the external environment, as well as influencing memory recall and association with natural timelines and chronology.

Design considerations:

- Develop a plant species palette which reflects seasonal change
- Sensory planting including:
 - Touch/sight i.e. texture such as bark, leaf colour, plants including lamb's ears and squirrel-tail grass
 - Smell i.e. fragrant plants such as:
 - Groundcover i.e. chamomile, sweet woodruff
 - Climbers i.e. star jasmine, honeysuckle, rose
 - Shrubs i.e. rosemary, lavender, mint
 - Use strongly scented plants beside paths so fragrance is released when people brush past, i.e. lavender and sage
 - Sound i.e. rustling plants such as bamboo, verbena and oats
- Locate groups of strongly scented or colourful plants as navigational markers
- Take care in choosing the height of species, i.e. low-medium height next to windows to allow clear views from inside into the garden
- To enable a sense of involvement in the design process and to prompt particular memories, include individual species choice by the residents and their families e.g. hydrangeas or roses
- Provide opportunity to experience the sights and sounds of wildlife by incorporating species attractive to wildlife e.g. butterflies, birds, bees
- Incorporate nesting boxes and bird baths
- Plants with bright berries or inedible fruits should be located out of reach
- To avoid aggravating skin conditions, all plants should be non-toxic, thornless and without serrated leaves.



A.1



A.2



A.3



A.4



A.5



B.1



B.2



B.3



C.1



C.2



D



E.1



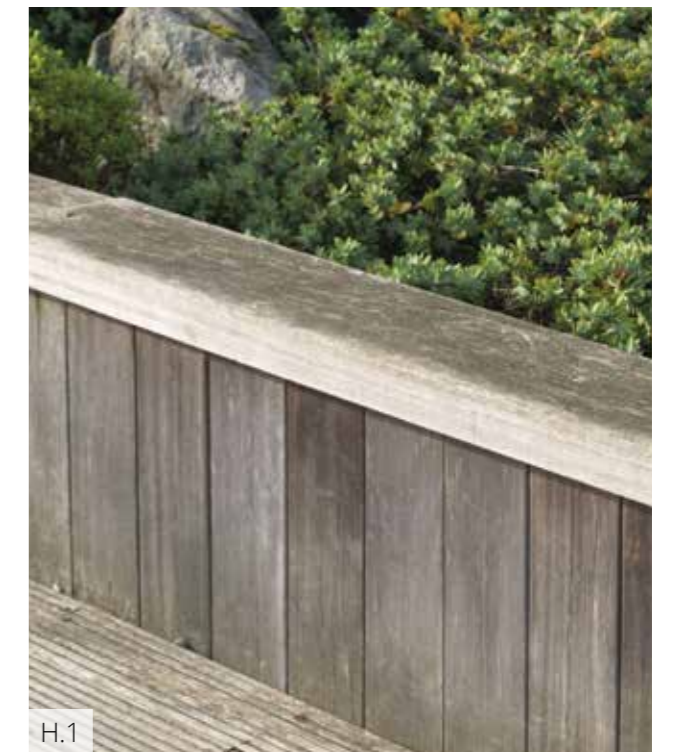
F



G.1



G.2



H.1

SAMPLE PALETTE OF MATERIALS

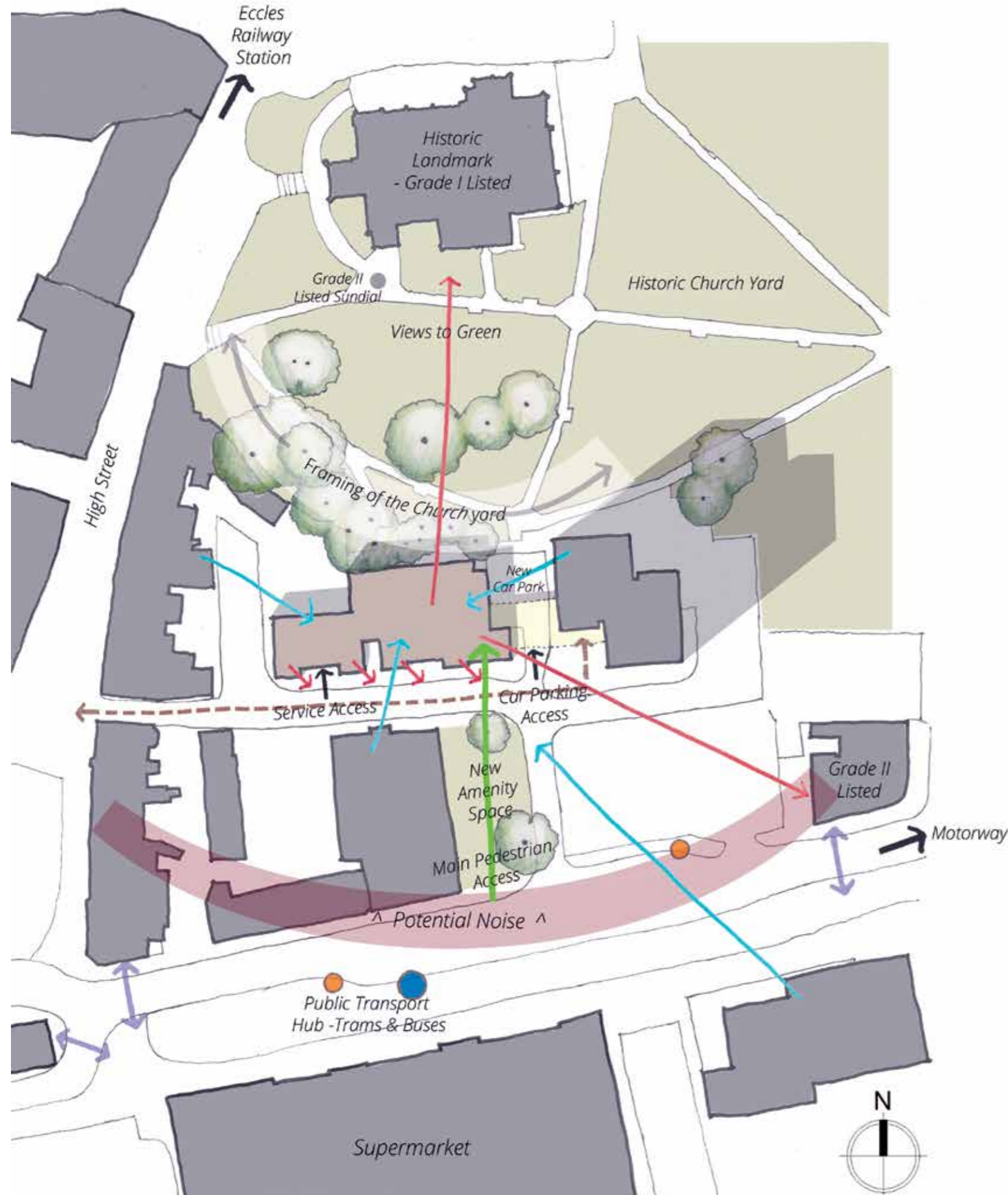
A simple palette of hard materials, junction details and street furniture can achieve the environmental qualities, spatial characteristics and functional requirements of the site.

A palette will be site specific responding to the analysis of the context. Design characteristics of the public realm and external spaces including gardens should relate closely to their context and adjacent built form. Material choice will also consider cost, long term sustainability and ease of maintenance.

Element	Example Location	Image/Code Ref	Sample Material
Footpaths and Surfaces	Primary pathways	A.1	Resin-bound gravel with textured sett edging
		A.2	Coloured tarmac with textured sett block edging
	Public terraces and way-finding spaces	A.3	Sandstone Flags, 600x600x50mm (but match the grout to the flag)
	Courtyard gardens	A.4	Resin-bound gravel, with aluminium edging
	Minor pathways and private patios	A.5	Textured flag paving
Vehicle Surfaces	- thresholds	B.1	Textured pcc setts, standard
	- access routes	B.2	Coloured tarmac, contrast, colour demarcation of crossing
		B.3	Permeable pcc textured setts
Edges and Margins	Generally	C.1	Pcc Pin kerb
		C.2	Pcc square top, 100mm wide, laid flush or raised 50mm
Handrails	Steel handrails to ramps and steps, where necessary	D	Stainless steel or powder coated 40mm dia. Fixed to walls where possible (warm to touch handrail preferred)
Railings/Fences	Tall garden boundaries	E.1	Weld-mesh fencing; visually permeable Type: Weld-mesh panels
Signage	Thresholds and Wayfinding spaces	F	Mild steel signage column with decorative cast ring detail, finger arms (lower position preferred)
Benches and Seats	Focal points	G.1	Timber seating on gabion baskets
		G.2	Hardwood, with backrest and arms
Raised Planters		H.1	Timber hardwood retaining wall components with seat-top coping

TYPICAL SITE LAYOUT

Contextual analysis for an extra care scheme on an infill site in the setting of a listed building.



- KEY**
- █ Views Out (Prospect)
 - █ Views In
 - Pedestrian Route
 - █ Bridge Link
 - █ Potential Noise Source
 - █ Pedestrian Crossings
 - █ Existing Buildings
 - █ Proposed Building
 - █ Bus Stop
 - █ Tram Stop
 - █ Main Pedestrian Entrance & Route

The contextual analysis demonstrates how a new building, to a dementia friendly design, can be inserted into a physical and social context, benefiting from local landmarks and providing views over green space.

9: BUILT FORM

by Alan Ravenhill



Alan Ravenhill
Halsall Lloyd Partnership
Architect and Illustrator
BA (Hons), Dip Arch, RIBA

An integrated approach to design implies that the form of development should be considered as a holistic design. Because of the beneficial effects for those living with dementia of a *'green'* view, of walking in open space and of gardening activity, the inter-relationship of inside and outside space is at the core of *'Design for Dementia'*. Built form frames space, and buildings sit in context. The complexities of these relationships are at the heart of good, responsible design.

KEY CONSIDERATIONS

Site Layout

A person with impaired memory and reasoning will rely very heavily on what they can see. Creating a clear layout with lots of visual cues is important. Complex layouts and long corridors should be avoided.

Aspect and Prospect

Aspect considerations relate to the importance of sun direction in relation to room layout. Prospect considerations relate to the importance of views out to the natural landscape or street scene.

Internal Layout Factors

Orientation of rooms and spaces

- East facing rooms can be rooms used in the mornings such as kitchens or bedrooms
- East, but preferably south and west facing rooms can be communal rooms, living rooms and gardens
- North, north west or north east facing aspects may be better for access, for parking and services
- However, consideration should also be given to the potential problems of overheating of south facing rooms in summer, particularly in view of predicted climate change. Overhangs, brise soleil or special glass may be needed to mitigate these risks.

Internal Visibility

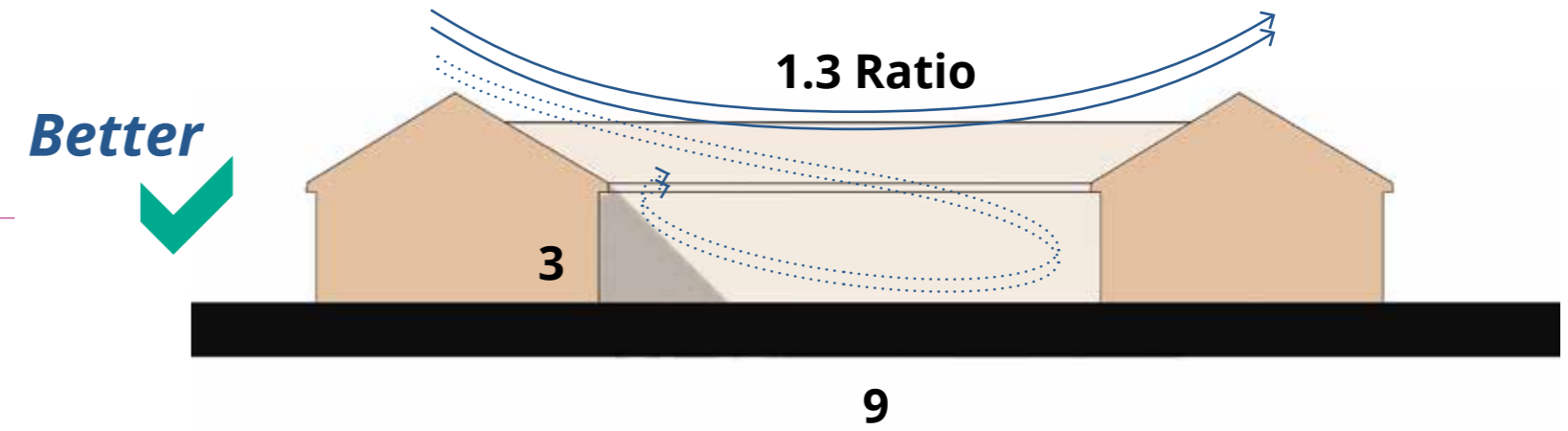
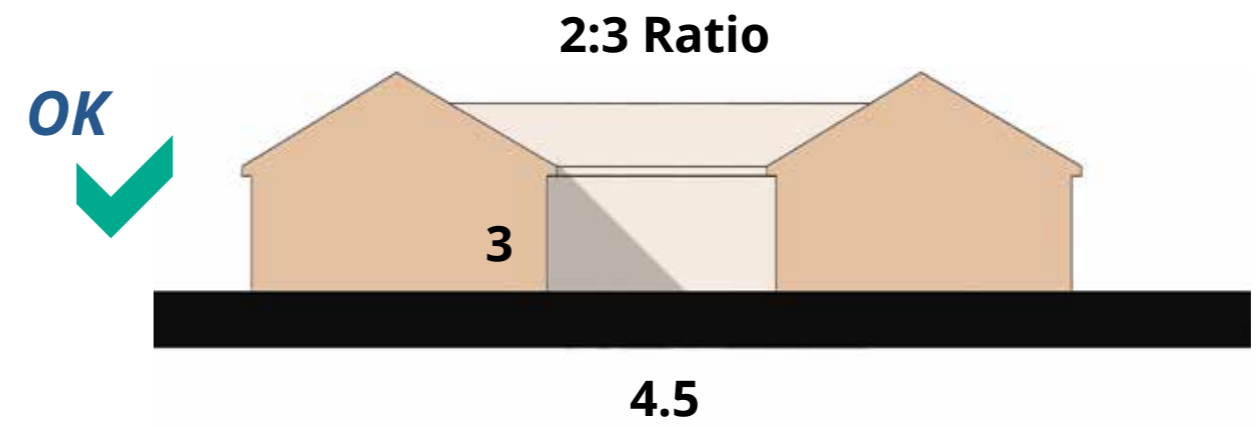
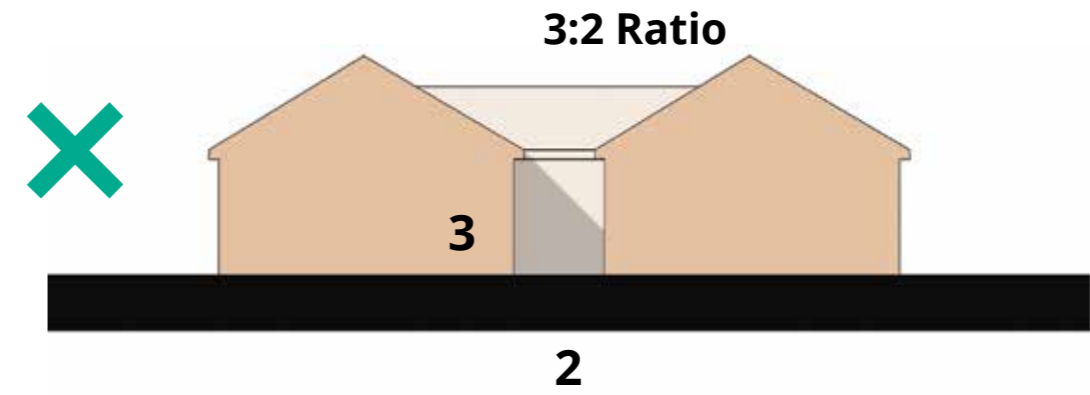
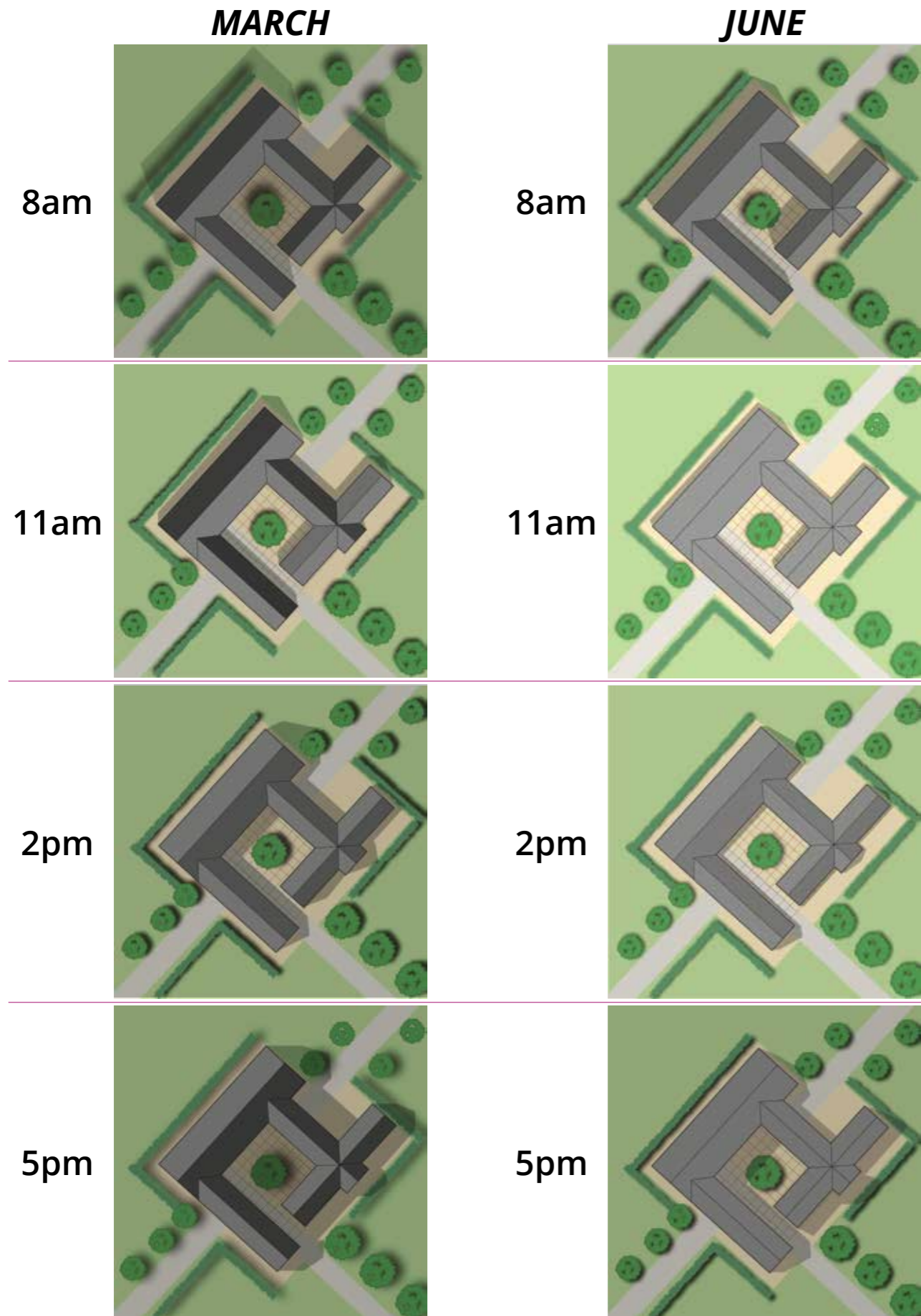
Open plan layouts, carefully planned so that residents can see the toilet from key positions in the house or apartment work well. Also people *'living with dementia'* can mislay things easily, so good visibility of kitchen shelves for example, will help. Glazed panels to drawers and cupboards with clear labelling indicating their contents will also help.

Waymarking and Navigation

Use landmarks within buildings or external spaces. These may be features of the building and will assist people to find their way around. Signage should be very clear and pictorial. Personalisation in extra care or residential care schemes can assist people to identify their flats. Familiar objects or pictures will help to create an individuality in their environment.

SUN PATH FOR COURTYARDS

ASPECT RATIOS - HEIGHT/WIDTH



But the micro-climate can also be affected by wind and turbulence

Within the scheme, designers should endeavour to create sense of place, distinct easily identifiable spaces to assist navigation, particularly at changes of direction or destinations. Natural light introduced at key locations can assist orientation, as can views to external landmarks.

Privacy and Sociability

Design should be based on a clear hierarchy of spaces between public and private areas. A good separation is required between living areas, and service areas which can be a source of noise, such as catering kitchens.

Clear definition should be achieved at dwelling *'thresholds'* with opportunities for *'personalisation'* designed in. Connections with the outside, views to green space and access to patio, terraces or balcony should be considered from the point of view of people who may be confined to bed, so window sill levels should be low.

Courtyards

Courtyards are a popular form, they are perceived to be safe and enclosed. However, they may be unsuccessful if there is insufficient sunlight. The height/width ratio is critical both for usage and planting design. Microclimatic effects of wind direction and behaviour are also a factor. In general in the UK, 2:3 is the minimum height/width ratio but courtyards can also be too big with a risk of wind turbulence.

Scale

Avoiding an institutional feel is difficult, but domestic scale is important in achieving this. Single storey dwellings are preferred (see the *'Design for Dementia'* Bungalow Project). This might not always be possible. In flatted schemes there should be obvious staircases and lifts in prominently visible positions. There should always be an alternative; many people living with dementia have difficulty judging distance and are, therefore, uncomfortable with steps.

Spaces should be domestically scaled so communal areas should be broken down into smaller living room sized spaces rather than larger communal rooms. Smaller spaces are better suited to the activities of daily living. Corridors should be kept short or avoided. If corridors cannot be avoided there should be a clearly visible destination at the end.

Visibility/Permeability

Within the constraints of privacy, designs should be open plan but avoid directly facing bedroom doors or apartment entrances. Glazed screens can be useful in some situations, to assist orientation, but the screens must be easily identifiable, so as not to be confused with doorways and openings. Glazing can cause reflections which can be disorientating. Ability to move freely without obstructions is important. Lighting levels must be enhanced and signs should be at an appropriate level for wheelchair users.

Layout

Straight circulation systems enable residents to find their way better than layouts with lots of changes of direction. However, *'circuit'* layouts avoid the frustration of dead ends. Any turns in corridors should be marked by *'wayfinding'* events to assist orientation.

Corridors

Corridors, if unavoidable, should be short and wide enough to function as social spaces, possibly with informal meeting areas, seating and views to the garden. Natural light should be maximised. Wayfinding events and rest points with handrails should be designed in from the outset.

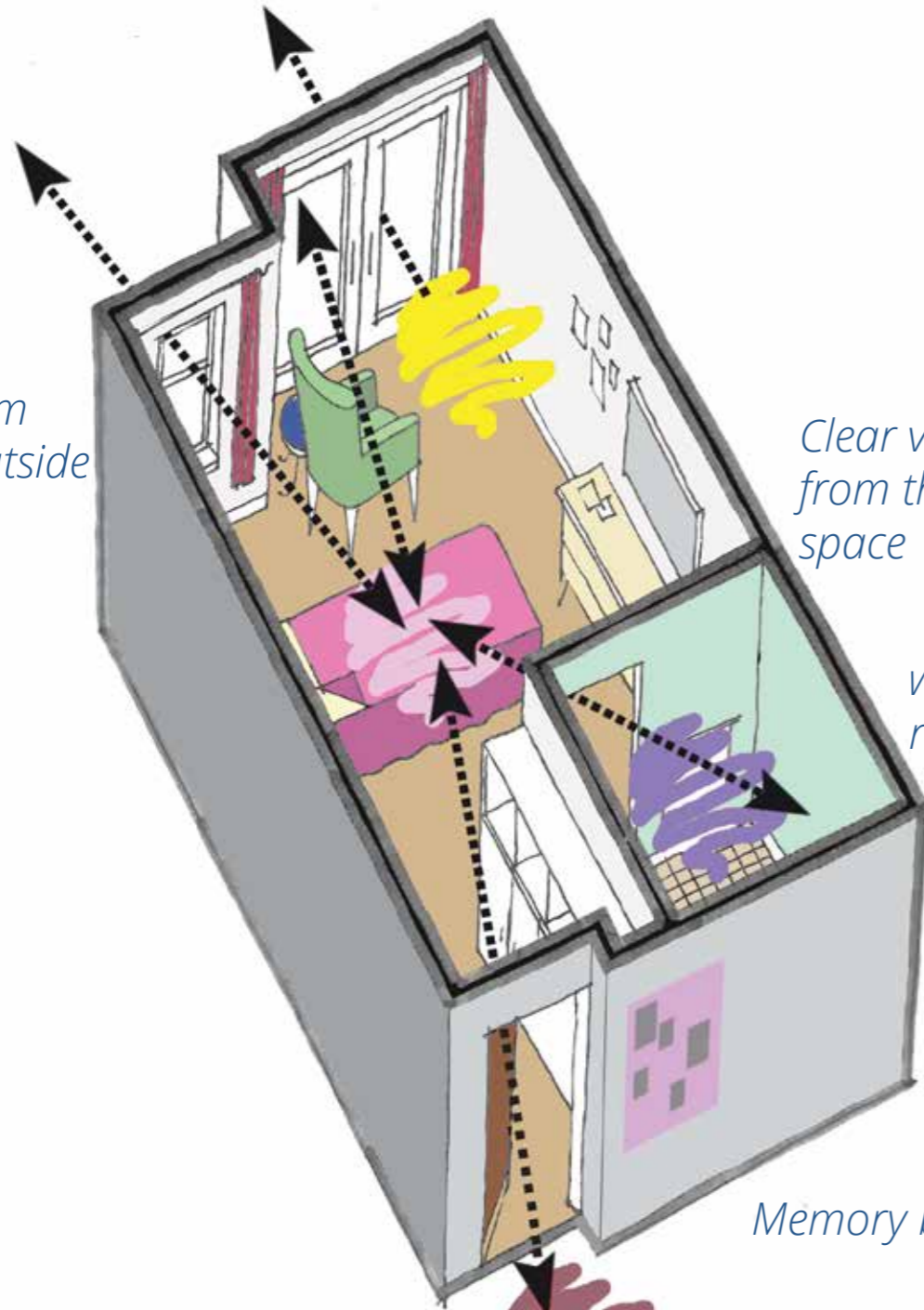
Wayfinders

Wayfinders are a useful way of establishing location and assisting orientation. Wayfinding events could include small seating areas, murals or pictorial signage, windows, views out or daylight.

TYPICAL RESIDENTIAL CARE UNIT

Clear views from sitting area into patio garden. Allowing light into room

Views from bed to outside area and garden



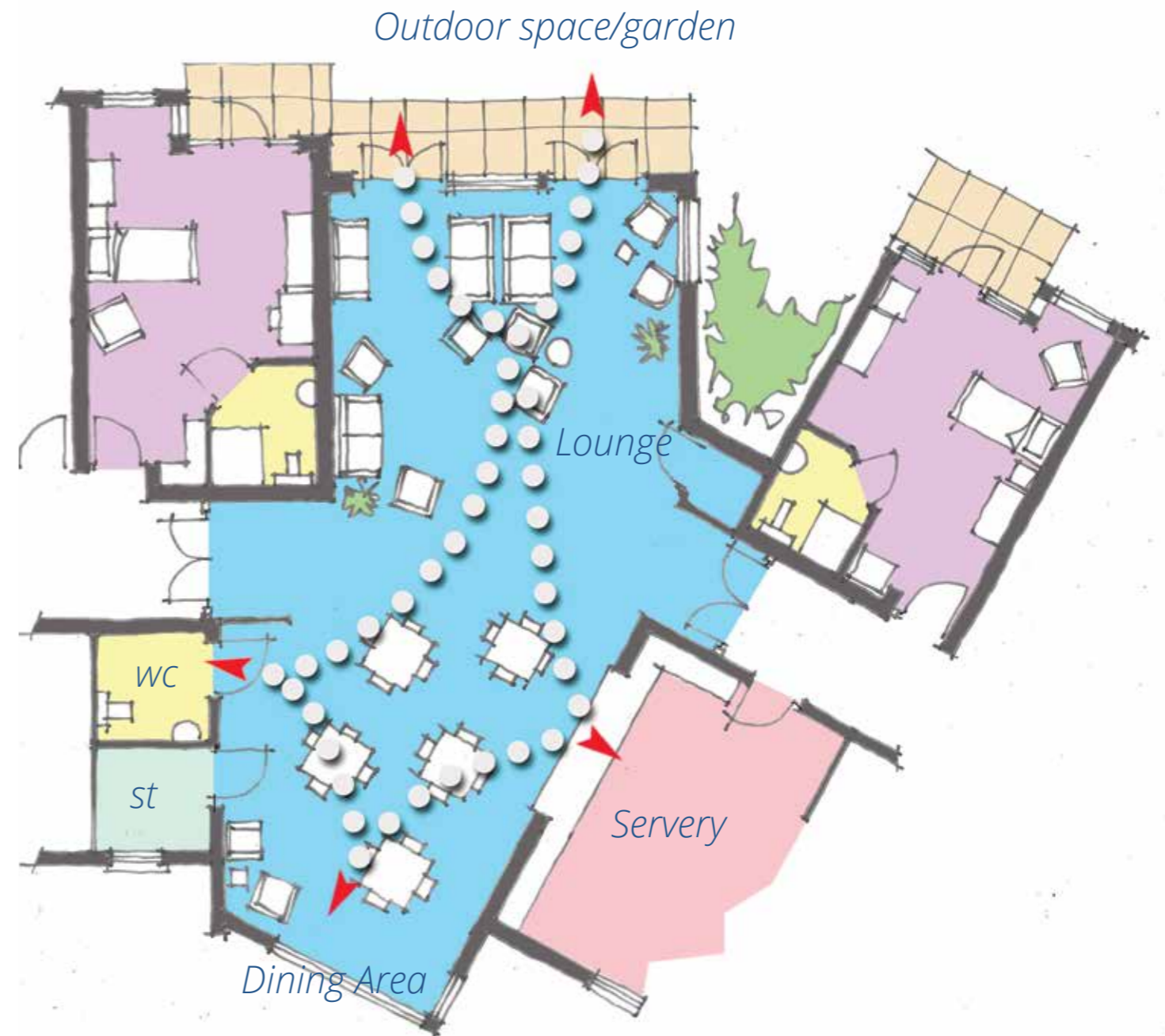
Clear view of w.c from the bed space

wc and wet room

Memory board/box

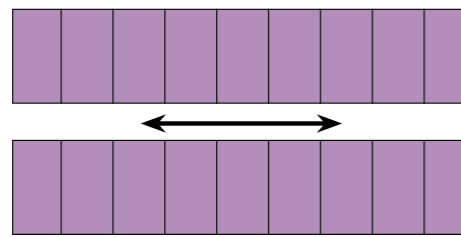
Clear view to see who is at the front door and beyond... interesting activity?

CONNECTIONS OF ROOMS AND SPACES

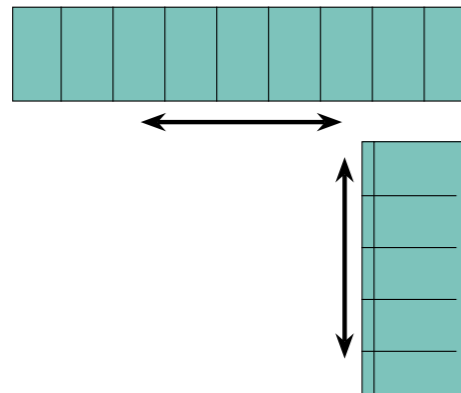


- Good accessibility of toilets from communal spaces is necessary
- Linkage between room functions should be considered in design layouts e.g. lounge/dining/kitchen
- En-suite shower/wc is essential with the wc visible from the bed position
- Keep services space separate (reduce noise disturbance)
- Maintain links wherever possible between interior and exterior spaces and design-in good natural daylight.

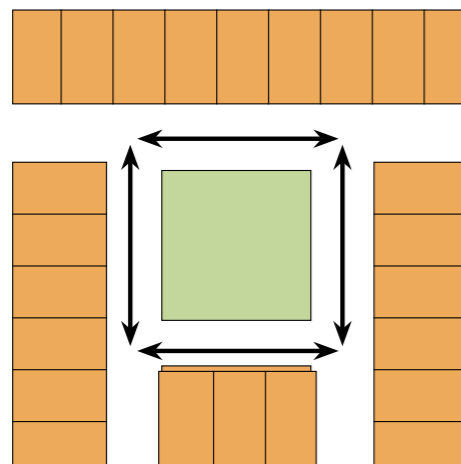
CORRIDORS



straight circulation system



L-shaped circulation system with change in direction



Continuous path around an inside courtyard

Bathrooms

To assist easy usage the layout should be highly visible with contrast between floor and walls and fittings and surfaces. Light reflective materials should be limited and lighting levels should be a minimum of 300 lux. Fixtures and fittings should be traditional and familiar, avoiding concealed *'on/off'* tap fittings for example.

Designers need to achieve these features while still avoiding an institutional *'feel'*.

Lifts and Stairs

Although single storey developments are preferred, multi-storey schemes may be necessary. In this instance lifts and stairs should be clearly visible and alternative choices, well lit and signed to aid navigation.

'Design for Dementia' audit tools

Relevant publications which provide a checklist approach are:

- Dementia Design Audit Tool - Stirling University
- Dementia Design Checklist - NHS National Services Scotland
- HAPPI Audit
- Building for Life Standards
- Secured by Design.

Summary

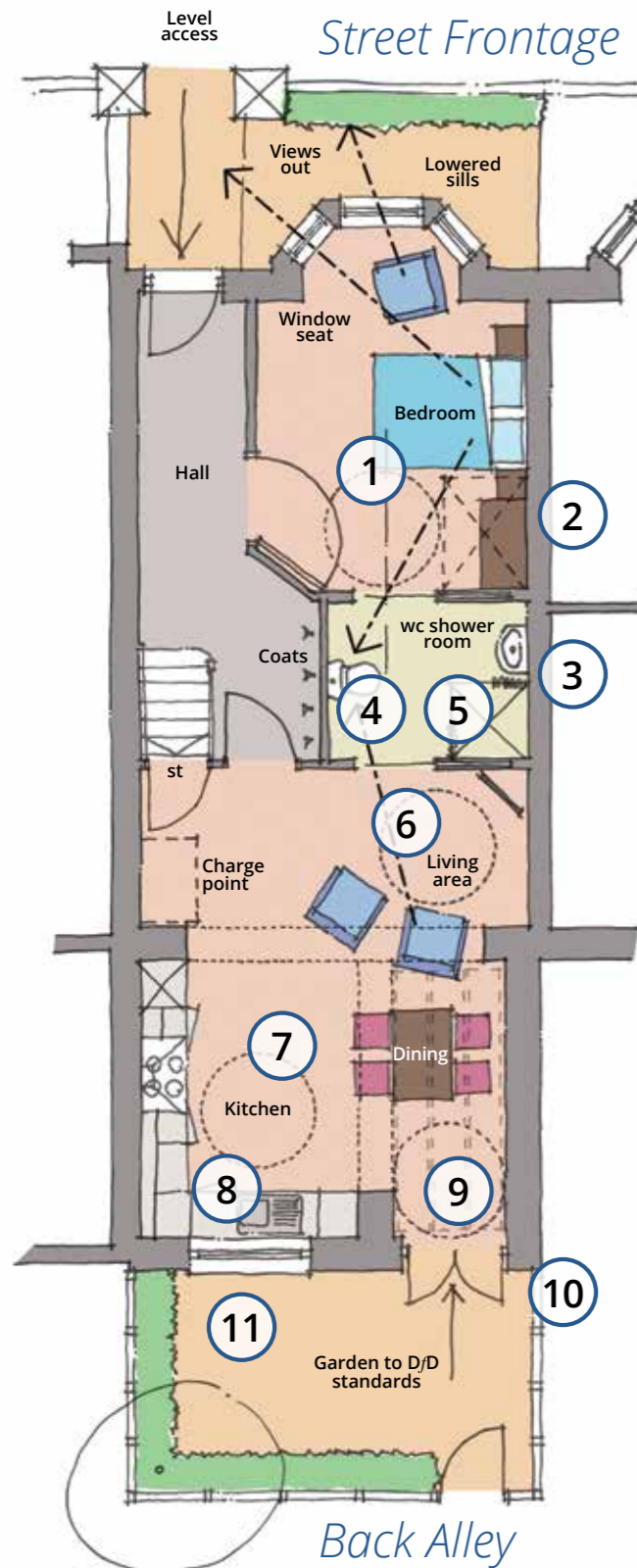
- These design principles can be applied to a range of types of scheme including extra care and specialist residential care schemes - examples of these applications are illustrated on pages 9.4 and 9.6
- They can also be applied to the refurbishment and adaptation of existing dwellings such as the Victorian Terraced House shown on page 9.7
- The **'Design for Dementia'** bungalow research project demonstrates the principles applied to an *'ideal'* model archetype.

EXAMPLE OF A DEMENTIA CARE CLUSTER

SCHEMATIC SINGLE STOREY DEVELOPMENT

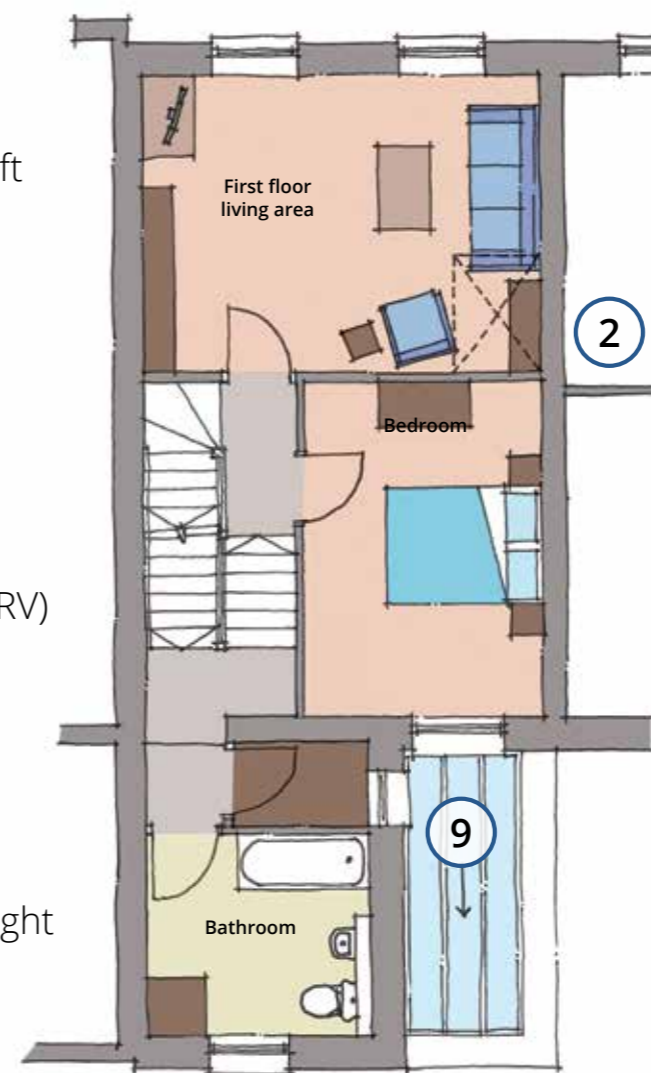


EXAMPLE OF A DESIGN *for* DEMENTIA ADAPTATION OF A TRADITIONAL VICTORIAN TERRACED HOUSE

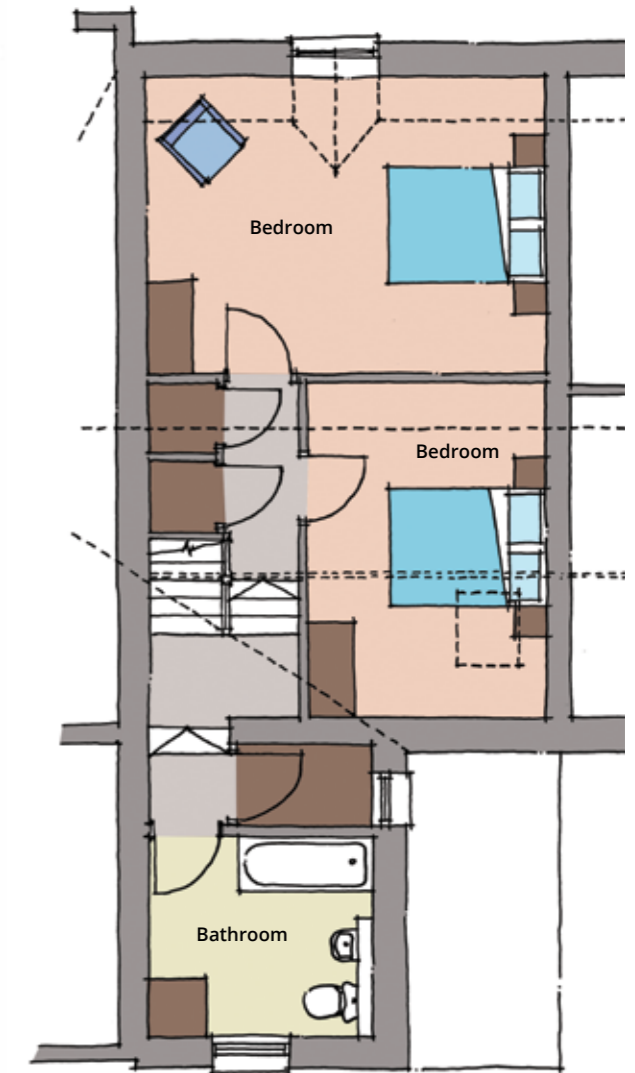


GROUND FLOOR

- ① hoist position
- ② knock through panel in floor for possible future lift
- ③ bathroom to disability standards
- ④ wc and wet room - visible from bed position and living area
- ⑤ walk in shower
- ⑥ continuous floor - equal light reflectance value (LRV)
- ⑦ kitchen/dining area, open plan
- ⑧ kitchen with open shelving and glazed door/cupboard fronts
- ⑨ glass roof side extension - admitting natural daylight to open plan, living/dining/kitchen area
- ⑩ access to garden with level access
- ⑪ raised planting beds



FIRST FLOOR



SECOND FLOOR/ATTIC



Image © Skopos Fabrics Ltd design and develop fabrics for dementia care to create a welcoming and homely environment.

10: THE PRIVATE DOMAIN

by Janice Macdonald



Janice Macdonald
Halsall Lloyd Partnership
Interior Designer
Graphic Designer
and Publisher
MCSD

The design of interiors requires intensive and detailed consideration of a range of factors in response to the difficulties people with dementia experience in negotiating their living environment. These difficulties include the visuo-perceptual aspects associated with dementia such as change in colour perception and difficulty in judging distance. Textures and patterns can cause disturbance as can reflective surfaces and changes in floor colour.

KEY QUALITIES FOR SUCCESSFUL INTERIORS

- **Simple** - layouts should be clutter free and easy to understand
- **Logical** - designs should have a clear logic to ease navigation
- **Functional** - spaces should be appropriate to their use
- **Quiet** - noise can disturb, sound should be softened
- **'Living well'** - design should foster independence and control as far as possible and provide stimulus through all the senses.

FACTORS THAT NEED TO BE TAKEN INTO CONSIDERATION

The eyesight of the elderly, and people living with dementia takes on various changes and their perception of their surroundings is altered. Understanding this is a good starting point when considering the design of the internal environment.

- **TONE** - how much light the colour reflects
- **HUE** - position on the colour wheel
- **SATURATION** - depth or '*vividness*' of the colour.

Colour and Tonal Values

People with dementia have diminished ability to see contrast, therefore a good tonal contrast is needed between walls and floors. Ability to perceive colour may be reduced, so choice of colour finishes or signage is critical.

VISUAL DEGENERATION - COLOUR

Due to the yellowing of the eye lens, the blue end of the spectrum is lost first. Therefore, it is easier to see warmer colours. More vivid colours should be used to compensate for the decline of the ageing eye.

youthful eye dulled ageing eye



reduced intensity of colour perception

colour vision is lost from the blue end of the spectrum first

Through desaturation, blues are completely lost or changed



youthful eye ageing eye

reduced intensity of colour perception

Through desaturation reds are still reds



youthful eye ageing eye

use more vivid colours to compensate for the dulled ageing eye; use warmer hues

desaturation

SATURATION

By using strong colours and keeping in mind the appropriate age of the era intended, safe, soothing, familiar interiors can be created, that can both reduce stress and aid perception at the same time.

Choose more vivid colours to compensate for the dullness of the ageing lens.

Colour intensity



←
greater intensity

Colour saturation



←
greater saturation



→ *warmer hues*

'Persons with Alzheimer's Disease frequently show a number of visual disfunctions including impaired spatial contrast sensitivity, motion change discrimination, and colour vision as well as blurred vision, even if they have normal visual acuity and have no ocular diseases'.

(Van Hoof, 2010)

'The main feature of a surface, which appears to be strongly correlated with the ability of blind and partially sighted people to identify differences in colour, is the amount of light the surface reflects, or its light reflectance value (LRV).'

(BS 8300 : 2009)

The aged eye, whether the person is affected by dementia or not, starts to degenerate. This may produce interrelated issues. If additional lighting levels are provided to compensate for reduced acuity, then there may be a risk of glare. Other results of degeneration may be reduced perception of contrast and tone; reduced depth perception and perception of colour. On the colour wheel the blue end of the spectrum is one of the first colours to be lost due to the yellowing of the eye lens. Therefore, using warmer tones and vivid colours will compensate for the dullness of the ageing eye.

Using stronger, more vivid colours is more interesting and attractive, as long as the environment is still familiar to the end user. Beautiful interiors can still be created which can be appreciated by older people and people living with dementia as well as visitors or family members.

Private spaces should be personalised, taking care not to create a hotel or institutional feel. Small personal details create familiarity and help to reinforce identity.

Memory and Familiarity

- Memory can be aided through considerations of familiarity. Remembered styles and scenes may assist in reducing disorientation for end users
- Domestic scale of seating and dining areas is important. Pedestal tables should be avoided because they can be unstable when leant on. Wing back chairs restrict visibility and socialisation. Cushions should have a plain side so that they can be reversed if the pattern is causing disturbance
- Make mirrors reversible, as to some, their own reflections can be disturbing and confusing. Simply turning the mirror around to show a picture on the reverse can help reduce agitation
- Sanitaryware should be recognisable and visible, contrasting against floor and wall finishes
- Tableware may be *'of an era'* to be more easily recognised and useable.

Spatial Use

Meaningful activities should be encouraged in spaces designed for specific purposes such as:

- **Reading** - conveniently positioned open shelves, stable low tables, comfy chairs, quiet environment with good task lighting
- **Games Areas** - social spaces, high chairs and tables, accessible visible shelves or cupboards, good lighting
- **Cafe/Bar Areas** - open sociable, inviting food smells, high tables and chairs
- **Cinema/TV Lounge** - open, sociable, domestic scale, comfy chairs, low tables (TV with 4k screen)
- **Gardens/Allotments** - raised planting beds, accessible, useable garden tools. Sitting out areas should be visible, close, and accessible
- **Workshops** - benches, high seats, good lighting levels. Tool racks should be on display
- **Exercise Routes** - internal routes should be designed to encourage walking with resting areas, views out and fresh air. Natural light is important
- **Dead Ends** should be avoided in favour of circuits. If dead ends are unavoidable there should be views out and natural light. The end should have a significance, a meeting place, a place of interest. Routes and long corridors should include natural spaces for people to rest or to gather, creating small social spaces
- **Art Space** - encouraging creativity provides stress relief; with accessible materials and implements on display
- **Visitors Areas** - space for visitors including children should be provided to encourage family engagement in safety.

VISUAL DEGENERATION - TONE AND CONTRAST

Understanding the importance of tone and contrast and how it can be used, is a vital tool as well as an aid to design.

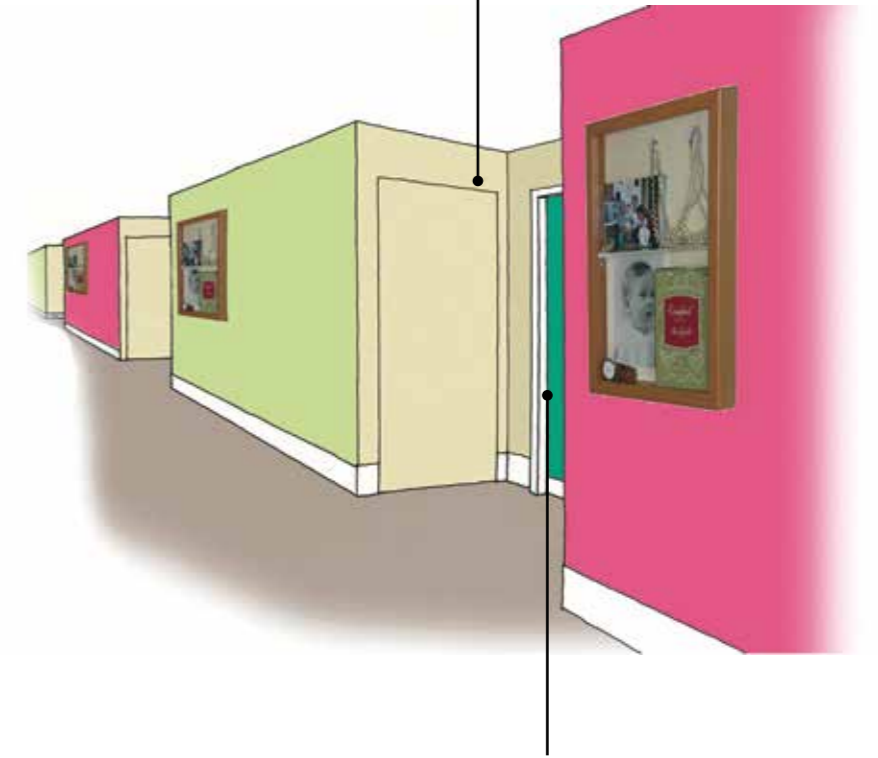
The use of subtle traditional patterns will help keep the interior familiar to the end users' era. Avoid using striped or swirling strobing patterns which could cause distress and agitation.



Monochrome image demonstrating comparative light reflectance value (LRV) of materials



Non accessible doors painted out the same colour as the walls



Highlighting accessible doors with contrasting architrave and door colour

Materials in full colour

The light reflectance value (LRV) of finishes is a useful method for designing and selecting materials to assist people living with dementia to perceive their environment more clearly. If the LRV's of adjacent materials are close in value then their appearance to the ageing eye will be consistent and unthreatening. This is particularly relevant to floor finishes because a change in LRV at floor level could be misinterpreted as a step.

Alternatively, contrast can be used to give definition to different surfaces, such as between walls and floors. A minimum of 30 LRV is required to create this contrast.

Contrast between walls and floors, skirting boards, architraves and doors will help people living with dementia to perceive their environment more clearly and help them to negotiate it. Doors which are accessible can also be distinguished from doors which are non-accessible such as service rooms by the applied use of colour.



Image © Skopos Fabrics Ltd design and develop fabrics for dementia care to create a welcoming and homely environment.

Spatial Awareness and Legibility

In response to the visuo-perceptual complications experienced with dementia, special consideration should be given to how people perceive their environment and negotiate it. Legibility can be assisted by:

- Providing clear sight lines with signage at lower levels
- Even lighting conditions, especially daylight
- Installing matt, even coloured flooring. Light reflectance values can be measured using a mobile phone on mono to check whether tonal contrasts are excessive or disturbing
- Reducing noise and reverberation through using sound absorbent materials. Curtains and soft furnishings will help. Carpets are available which are moisture and dirt repellent and easy to clean.

Visual Degeneration

People with dementia are prone to visual impairment and may have a progressive diminishing ability to see contrast. Colour vision may also be impaired, tending to grey. Vision may be blurred.

Change in eyesight occurs with age, which affects vision and colour perception. Thickening and yellowing of the lens alters the way colour is perceived. People with dementia may experience:

- Reduction in contrast perception, resulting in difficulty differentiating between subtle changes in the environment such as carpets and steps
- Reduction in the perceived saturation or vividness of colours. For example reds can start to fade to pink
- A progressive reduction in ability to perceive the blue end of the spectrum and dullness of the aging lens, so the use of warmer brighter colours will help make things more visible
- Tonal contrast will aid perception e.g. floors to walls and walls to doors. Contrasting skirting boards and architraves.

Orientation in Time and Space

Orientation can be assisted through:

- Reflecting the seasons in decor or artwork
- Large calenders with time of day (i.e. morning or afternoon) and actual day and time
- Large clocks with large numbers (Arabic not Roman numerals)
- Natural daylight - assists in creating awareness of day/night cycle (circadian rhythm)
- Outside spaces - accessible and green
- Localisation - creating sense of place
- Wayfinders - landmarks within the building
- Legible, clear, simple design, clutter free
- Views to outside green spaces and to local landmarks.

Summary

- Reduce agitation and stress
- Facilitate independence - 'living well'
- Community environment and social interaction
- Safety and security - reducing falls
- Enable routine activity through the day.

COMMUNITY ENVIRONMENTS

the function of the room must be easily recognisable

In the context of the design of care homes where there are shared internal spaces, the design challenge is to create a community environment with a domestic scale and intimate feel, rather than an institutional environment with hard sterile finishes and large undefined spaces.

Good colour choices, which use tonal change to give good visual definition and textures which are non-reflective can be used to create interiors which will have a sense of identity and sophistication.



Bringing the outside in

Visual and physical access to natural outdoor spaces can reduce stress, improve an overall sense of well-being and can provide relief from pain. Elements of outdoor spaces can stimulate each of the five senses; touch, taste, smell, hearing and sight. Its positive benefits are proven for people with dementia, their visitors and members of staff.



A view to natural spaces and awareness of what's going on outside is also important in terms of the passing of the seasons, time of day, weather changes, as well as views of activities taking place.

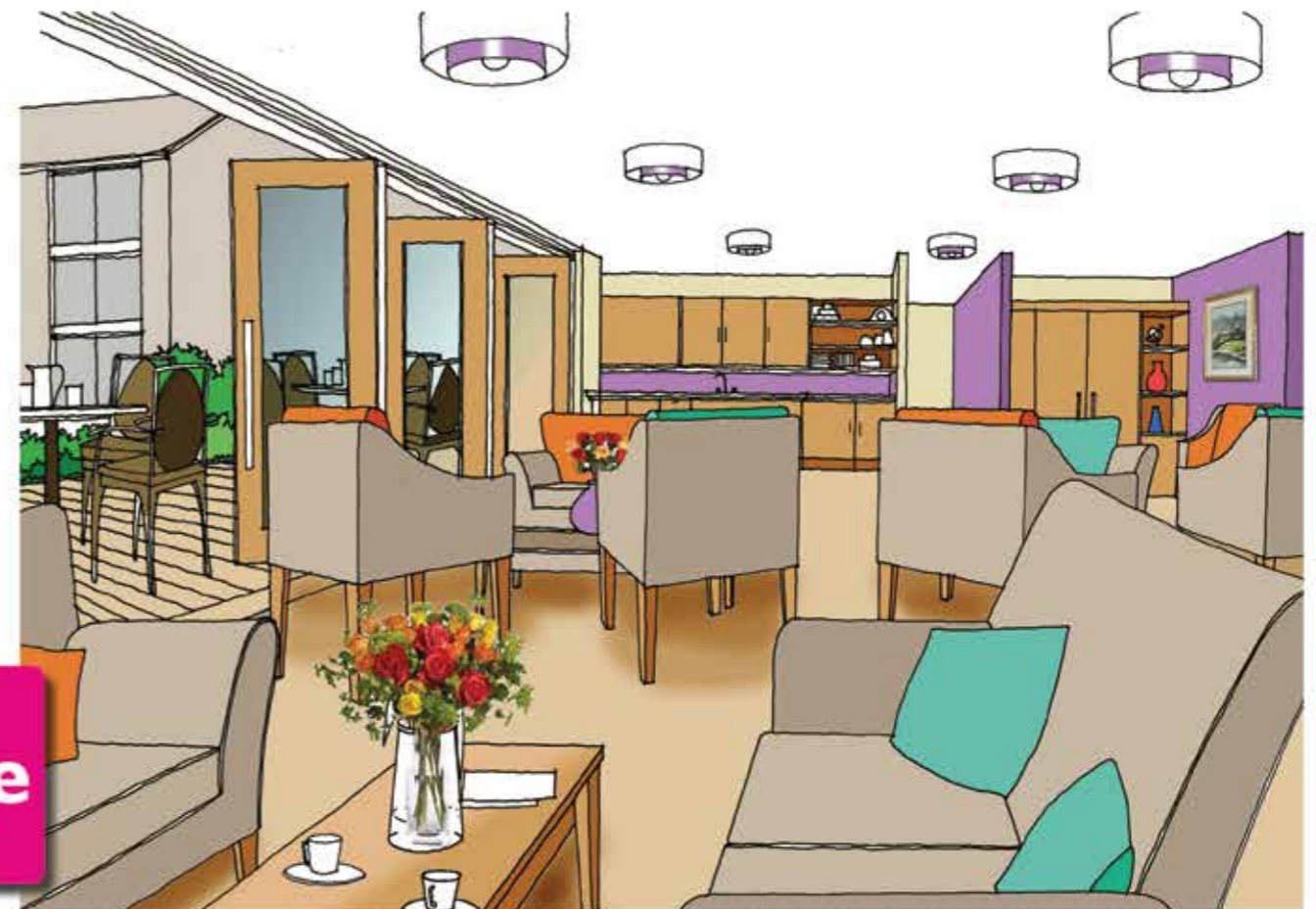
avoid glossy or reflective surfaces



avoid clutter; it is confusing



bright lights during the day and darkness at night helps the circadian rhythm. Good lighting is vital

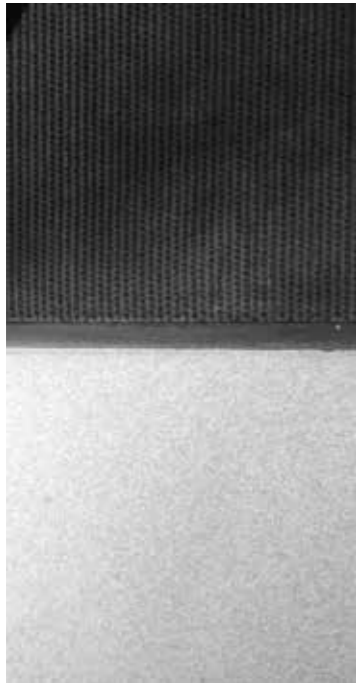


furniture should be of an essence of the end user's period to encourage familiarity

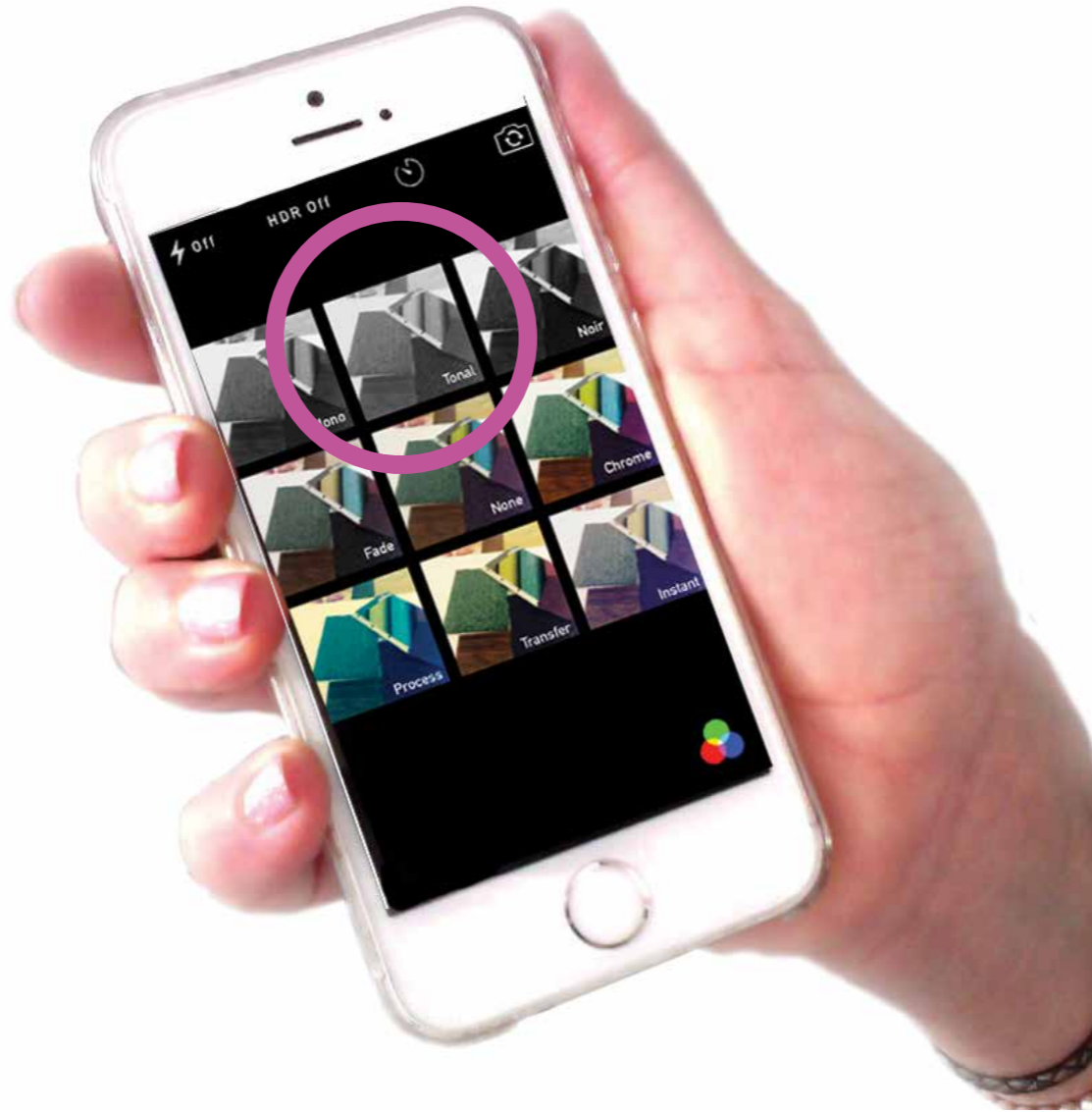




Full colour



Monochrome equivalent



How can people be helped to live well in their own homes?

- Familiarity - neighbours - support community
- Possible adaptations as required
- Ramped access - comply with Lifetime Homes Standards; preferably with front and back level access
- Downstairs wc positioned where it is easily accessible from bedroom and living space
- Lighting levels - as much natural daylight as possible; 2x normal artificial lighting levels
- Continuous floor finishes, no trip hazards. Matching LRV (light reflectance value) at changes in floor finish so as not to create the visual impression of a step
- Contrast in colours used as a tool to aid definition e.g. architraves to the doors, or skirting in a contrasting tone
- Fully openable windows to encourage fresh air, increasing air quality
- Easy access to gardens - visual connection
- Kitchen - replace cupboard doors with glazed fronts to allow contents to be seen, graphic and lettered signage on drawers.

Open plan layouts are preferred where possible (please refer to the 'Design for Dementia' bungalow page 4:15 and the example of a 'Design for Dementia' adaptation of a Victorian Terraced House page 9:7).

CHOOSING FINISHES AT JUNCTIONS

There will be various situations that will require changes in floor finishes. Matching LRV (light reflectance value) is vital to avoid giving the impressions of steps, ledges or black holes. A useful tool to check LRV levels, is the tonal view option on a mobile phone.

NAVIGATION

Good clear, clutter free navigation is important. Making the signage and wayfinders both graphic and in text form, helping those living with dementia find their way stress free.

position memory boxes adjacent to apartment entrances. A familiar object can mean a lot

use building features, landmarks, objects, signage and colour together to give as many cues as possible



artwork should be meaningful



signage should be consistent, clear, simple in text and format, with picture graphics to help those who cannot read

"Having dementia is like being a swan, you look OK on the surface but your legs are going like crazy to keep you afloat"

visual links between spaces helps promote independence and reduce anxiety

tonal contrast (measured in LRVs) is critical for ensuring visual accessibility

critical and trim elements should contrast significantly in tone where practically possible



FINISHES

When choosing finishes, various things need to be considered:

- Are they fit for purpose, in that they do what they need to do in the area specified?
- The era, in that the end user will feel familiar and comfortable to the surroundings created
- With careful consideration and intuitive thinking based on the findings of research into dementia, risk free interiors may be designed
- Creating an atmosphere free of clutter, easing decision making
- Clear and simple design, reducing agitation and confusion
- Free from risks with subtle tonal changes or heightened tonal changes to highlight hazards and to provide spatial definition.

Carpets

Considerations

- Noise reduction
- Soft underfoot, deadening sound
- Domestic feel, of an era the end user will be familiar with
- Cleanability and durability
- Avoid strong busy patterns
- Continuity of tonal values throughout to help eliminate trip hazards. Strong tonal changes can appear as steps, creating confusion and distress
- Contrasting threshold strips can create trip hazards. Keep tonality the same across thresholds
- Different strong tonal values can be used as a tool to highlight hazards.

Vinyl/Sheet Flooring

Considerations

- Easy to clean
- Specify matt finish
- Avoid shiny/wet-look
- Slip resistance
- Match LRV (Light reflectance value) at junctions
- Avoid chequeboard patterns
- Avoid dimples which can be irritable under foot.

Ceramic Tiles

Considerations

- Use in limited areas (hard, cold and noisy)
- If tiles are to be used, match the grout to the tile - joint lines can cause agitation.

Walls

Considerations

- Matt finish, avoiding shiny wet-look finishes
- Wallpaper will give a traditional feel better than painted walls, even if it's just one wall
- Limit aggressive patterns, look to feature tonal difference within patterns
- Make sure accessible doors are clearly highlighted with clear colours and accent architraves to help people see the doors
- Play down doors that don't need to be accessible by painting out in the same colour as walls including architrave. This will reduce the number of doors the end user has to consider, reducing confusion and frustration
- Contrast walls with floor, LRV 30% difference (min).



Image © Skopos Fabrics Ltd design and develop fabrics for dementia care to create a welcoming and homely environment.

Furnishings

Considerations

- Domestic feel considering the end user's era, a style which will be familiar to them
- Subtle patterns or plain fabrics - strong bold patterns can irritate and cause agitation
- Textures attractive to the touch, which can be soothing and reassuring
- Soft furnishings which absorb the noise will help to sooth agitation
- Many manufacturers are now supplying dementia friendly products. See Useful Websites in Further Reading at the back of the book.

Glazing and Doorways

Considerations

- Glazing should be used very carefully. Visibility between spaces can assist orientation, but confusion between a glazed door and side screen could cause confusion and potential accidents. Glazing should be distinguished by the use of clear '*manifestations*' (clearly visible patterns on glass). Fixed screens may have a transom to distinguish them from doors or openings
- Reflections from glass screens, doors or balustrades can also cause confusion and distress and can exacerbate visuo-perceptual difficulties
- Thresholds should provide an even transition with continuity of LRV. Black rubber mats present particular difficulties and can appear as a hole. Steps should be avoided if possible, but if necessary should be identified by contrast between treads and risers. For further reading please refer to BS 8300:2009.

Conclusion

- People living with dementia, whether living in their own homes or living in care homes, can be enabled to have greater control and confidence within their environment, through careful use of colour, materials and finishes as well as good lighting and acoustics
- Stress, confusion and disturbance can be reduced by making the right choices in the design of the interior domain
- Safety can be improved and accidents reduced
- Further information about the design of the interior domain can be obtained from a range of publications produced by Stirling University e.g:
 - Designing interiors for people with dementia - *Liz Fuggle, Associate Architect, DSDC*
 - Light and lighting design for people with dementia - *David McNair, Director of Lighting, DSDC*
Colm Cunningham, Director, The Dementia Centre, Hammond Care
Richard Pollock, Director of Architecture, DSDC
Brian McGuire, Managing Director, Vision Call Scotland
 - Hearing, sound and the acoustic environment for people with dementia - *Maria McManus, Associate Director, DSDC*
Clifford McClenaghan, Associate Architect, DSDC.



WORKING WITH
COMMUNITIES

NEW USES FOR
OLD BUILDINGS

COMMUNITY
HOUSING

11: SUMMARY AND CONCLUSIONS

by Bill Halsall

Designers and other professionals who are working in the built environment can help people living with dementia to live well with dementia. The approach outlined in this publication is 'holistic', based on an awareness and understanding of the challenges for those living with dementia and wide reaching, dealing with the whole environment including neighbourhoods and town centres.

There is also a finely grained consideration of detail involved, including specifications of finishes and furnishings. Small choices can make a big difference. The intent of '**Design for Dementia**' is '*aspirational*', raising standards in the design of housing and the public realm to respond to the challenge of the increasing numbers of the population who will live with dementia. But there is also something for everyone in this approach. Many of the lessons learnt about the effect of the environment on those with dementia can benefit everyone. Things like reduced clutter in pavements, wayfinding in the public realm and stimulus to all the senses would benefit us all.

'**Design for Dementia**' does not deal with the design considerations indicated by dementia in isolation from the needs and aspiration of others. We are designing for all abilities and for all disabilities through the same process. While tick boxes and point scoring systems are a good way of auditing designs, they do not in themselves produce good design.

The aim is to produce good design which 'ticks the boxes', not to assume that because it ticks the boxes it must be good design. The authors would rather encourage designers to be thoughtful and consider the problems of those with dementia, to work in participation with dementia action groups such as SURF (*Service Users Reference Forum*) and local communities, using their creative skills to develop richly stimulating designs. Their creative skills are needed to produce safe, secure, convivial, community empowered neighbourhoods and the responsive living environments that society needs.

The working methods used to research this book are based on participation with those living with dementia, carers, professionals, academics and an inter-disciplinary team of designers. This experience is a resource which is hard to tap into, but which through the participatory approach employed has been richly rewarding and enjoyable for all involved. The fun-factor is always a vital ingredient!

The methods used, including photo cue cards, sandplay and '*hands-on*' modelling have been described in Chapter 4 and the detailed evaluation of the '*Living Labs*' and their outputs is fully demonstrated in **Volume 2 - Design for Dementia - Research Projects**.

These projects are ongoing and we hope that some full size exemplars or demonstration projects will be constructed soon. Meanwhile, all the members of the team have been inspired to create designs which respond to the needs and aspirations of those living with dementia. Whether they are involved in designing buildings, landscapes, interiors or the urban environment, they now use their awareness and design skills to focus on creating dementia friendly and sustainable neighbourhoods for the future.

The Halsall Lloyd Partnership team with the 'Design for Dementia' bungalow model.

Left to right Daniel Gibbs, Vicky Bray, Joanne Reardon, Stephanie Roberts, Chris Wells.



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DAA group members participating in the design of the 'Design for Dementia' bungalow.



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Olive Gardens, Liverpool
A 'view to green' is highly beneficial,
helping people living with dementia to
live well with dementia.



*'We had a wonderful time,
best time in ages'*

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USEFUL WEBSITES

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- www.housinglin.org.uk

Bill is a Senior Partner of the Halsall Lloyd Partnership. He has promoted the practice from a small local architectural practice to a nationally based inter-disciplinary design practice with offices in Liverpool, Preston, Nottingham and Newcastle.

Born in 1950 and spending his early life in Bootle, Bill studied Architecture at Liverpool University. After a short period, working in London he returned to Liverpool to complete his training and qualified as an Architect in 1974. In 1979 he undertook a part time course in Birmingham and qualified as a Landscape Architect in 1983.

He has played a pioneering role in new housing initiatives including early work with the Housing Cooperative Movement. As Architect of the Eldonian Village in Liverpool and many other award winning community based housing projects, he has promoted sustainable communities and environmentally innovative solutions throughout his 40 year career.

His work is based on an inclusive philosophy, generating good design through participation and involvement of clients, communities and user groups. Tackling urban issues through promoting shared vision and consensus building between stakeholders, he has produced sustainable designs and masterplans with a high degree of ownership, commitment and deliverability. Solutions include both new build and refurbishment as well as integrated environmental projects and open space designs. He has been involved in many publications and research projects and is currently involved in research focussing on the links between design and health.

Bill's involvement and commitment continues to find expression through design of convivial, safe and stimulating living and working environments which are conducive to communal life and create distinctive neighbourhoods with a strong local identity. Through his work he continues to develop the principles of socially and environmentally sustainable design and the spirit of innovation in the design process.

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The Authors



Dr. Rob MacDonald RIBA is a Registered ARB Architect who was born in Toxteth in 1951. After two Trans Sahara expeditions he returned to study at Liverpool University where he obtained two First Class Honours Degrees and completed his PhD through research into Terraced Housing. Subsequently, he worked in Zambia, Wales and Glasgow before returning to Liverpool to work with Bill Halsall on Housing Cooperatives and resident engagement.

Since 1989 Rob has been The Reader in Architecture at Liverpool John Moores University and his research focuses on Therapeutic Environments, Architecture for Good Mental Health and Well Being, **'Design for Dementia'** and a book chapter on **'Dementia and The Environment'**. He has published in **'The Design for Mental Health Journal'** about a new Prescription for Psychiatry and The Book **'DIY Integrated City'**.

Recently he was funded by the university to visit The Royal College of Surgeons, Physik Garden, Wellcome Foundation Library, Finsbury Health Centre, Peckham Pioneering Health Centre and The Maggie's Cancer Care Building at Charing Cross.

Rob is a Design Champion and Service User for Mersey Care NHS Trust and a member of The Performance and Investment Committee (PIC) after being warmly welcomed by the service users, carers and The Non Executive Chairman.

Rob is the elected Chairman of The Patients Reference Panel at his General Practice in Crosby and Blundellsands. In 2015 Rob has been invited to give the Keynote address, about a service user's perspective, to The International Conference of Dementia and Facilities Management at Silverstone, Milton Keynes.

It's Rob's belief, based on his personal experiences of mental health, that creative collaboration, cooperation, conversation and user participation ought to be at the centre of making good health care architecture.

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Halsall Lloyd Partnership

ARCHITECTS & DESIGNERS



The Halsall Lloyd Partnership is an interdisciplinary design practice with a wide range of skills in all aspects of the built environment. HLP create design solutions with care and understanding within a culture of innovation in both product and process.

HLP's approach is proactive, working with clients and communities to develop ideas and realise visions; and we are environmentally driven to achieve successful sustainable projects.

HLP works as a studio based team offering a responsive, high quality integrated design service from a single point of delivery.

HLP's services include:

- Architecture
- Masterplanning
- Urban Design
- Landscape Architecture
- Conservation Architect
- Community Participation
- Interior Design
- Graphic Design
- Project Management
- Clerk of Works Service
- Energy Advice and Assessment
- Principal Designer

The partnership was established in 1975, has a network of four offices, and works throughout England and Wales.

Our offices are based in:

- Liverpool
- Preston
- Nottingham
- Newcastle

In 2008 HLP became a Limited Liability Partnership (registration number OC333403). For more details about the practice and our work please visit our website at www.hlpdesign.com

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The Liverpool School of Art and Design at LJMU was first opened in 1865, becoming the first school of Art and Design in England outside of London.

The school occupies the RIBA Award Winning purpose designed John Lennon Building.

Today a community of artists, designers, illustrators and architects deliver cutting edge programmes, high impact research and work alongside some of the world's most iconic cultural leaders.

There is active research in Architecture, Fashion Design, Fine Art, Graphic Design, History of Art and Spatial Design. The School has partnerships with Tate Liverpool, Liverpool Biennial, Bluecoat, RIBA NW and FACT.

Recently, The School of Art and Design has developed good research and practice relationships with The Halsall Lloyd Partnership which have resulted in publications, conference presentations and real building proposals.

'Design for Dementia' is a Design Guide which aims to assist designers and others working in the built environment to tackle the challenge of dementia in society. Dementia is a growing issue associated with the demography of an ageing population.

The premise of 'Design for Dementia' is that 70-80% of people living with dementia continue to live in their own homes rather than in any specialised form of housing. They continue living in the same neighbourhoods and use the same local facilities and centres.

Familiarity with surroundings is recognised as a key to reducing the symptoms and loss of function of dementia. By implication, if people can remain living in their own homes, in their own neighbourhoods, then the disorientation, confusion and anxiety of a move to a new environment is reduced.

While older properties can be improved and adapted to suit the requirements of those living with dementia, and businesses can address some of the needs of their customers, the aim must be to improve responsiveness in design of the built environment in the medium and long term. While this may sound like a daunting task, the benefits in financial terms to health and social support services, and in human terms to the families, friends and neighbours who are tackling the challenge of dementia, are huge. Of course, most importantly of all, is assisting people to *'live well with dementia'* as far as possible.

The opportunity for this Design Guide arises out of the inspirational work of Innovate Dementia Europe and is produced by a collaboration between Bill Halsall of Halsall Lloyd Partnership, Architects and Designers, and Dr. Rob MacDonald of Liverpool John Moores University.

The research process for the guide included a series of *'Living Lab'* formats and participatory techniques, and the authors are grateful for the involvement of SURF (*Service Users Reference Forum*), Liverpool Dementia Action Alliance, Mersey Care NHS and LJMU.

PARTICIPATORY RESEARCH PROJECTS INCLUDE:

- **The Dementia Friendly Neighbourhood** - responds to the design of interiors and exteriors in pursuit of *'design for all'*
- **How Dementia Friendly is our City?** - an ongoing project. An exercise using photo cue cards to help to understand the response of people with dementia to Liverpool City Centre
- **Connecting Minds through Sandplay** is a creative *'hands-on'* game using a Jungian sand tray and a set of assemblages to stimulate all the senses:
 - **Touch** - sand, pebbles, objects
 - **Smell** - *'sensory garden'* of roses, herbs, spices
 - **Taste** - old fashioned sweets, ice cream
 - **Sight** - coloured shiny objects
 - **Sound** - background music.

A creative exploration towards a *'shared landscape of the mind'*.

- **The 'Design for Dementia' Bungalow** explores an ideal model design for a bungalow with all the features required to *'live well with dementia'*. This is being developed as a design *'paradigm'* and it is hoped that we can build a *'show bungalow'* with all the appropriate *'smart'* technologies and most importantly a *'Design for Dementia'* garden.

'Design for Dementia' comprises:-

Volume 1 - Design for Dementia - A Guide with helpful guidance in the design of exterior and interior environments.

[ISBN 978-0-9929231-1-2](#)

Volume 2 - Design for Dementia - Research Projects, outlines the research projects and describes the participatory approach.

[ISBN 978-0-9929231-2-9](#)

DESIGN for DEMENTIA is a Design Guide which aims to assist all of those responsible for the design and management of the built environment to tackle the growing challenges of dementia in society.

Volume 1 DESIGN for DEMENTIA - A Guide provides helpful guidance in the design of exterior and interior environments.

Volume 2 DESIGN for DEMENTIA - Research Projects gives details of the research projects which underpin the guide.



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