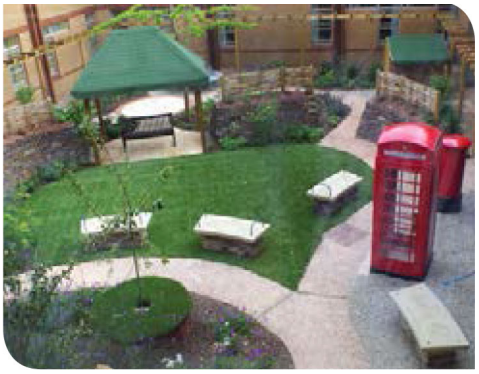
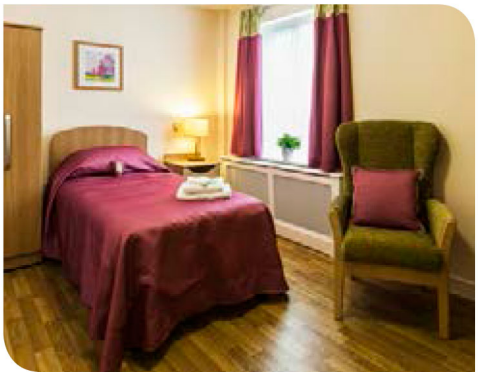
Department of Health

Health Building Note 08-02

Dementia-friendly Health and Social Care Environments





March 2015

Health Building Note 08-02

Dementia-friendly Health and Social Care Environments

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This document is available from our website at www.gov.uk/government/collections/health-building-notes-core-elements.

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Foreword

Supporting people who are living with dementia is one of the biggest challenges that our health and social care system will face in the 21st-century. There is rightly much emphasis placed upon how we deliver care, but the environment within which we deliver care, can also make an enormous difference to the quality of people's lives.
There is clear evidence to show that if you get the environment right, this has benefits not only for people who use care services, but also for their families, friends and staff.

I am extremely delighted with this new guidance document, which has been put together by some of the leading figures in the health and social care sector. These recommendations have come directly out of practical experience, and show what elements of the built environment make a difference to the quality of care. This expertise is now available to all those people who are running, or developing dementia services.

21st-century citizens' have a right to expect high quality services, and the environment within which care is delivered is an important factor that has an impact on well-being and cognitive function.

The use of colour and the layout of the buildings, can make an enormous improvement in people's quality of life, and can reduce the impact of their dementia and help them live more independent lives. The correct colours, textures and layout of the buildings can help to reduce confusion, isolation, and anxiety, and help people live well with their dementia.

This guidance has something to say to everybody who is developing a new dementia service, but it is also as relevant to those people who are currently providing care and who may want to look at how they ensure their maintenance and refurbishment programmes deliver the very best environment in which to support people and enable them to have a good quality of life. This is an important document for all health and social care providers, and it should be the foundation for all development and refurbishment decisions.

Professor Martin Green OBE
Chief Executive, Care England
DH: Independent Sector Dementia Champion

The Alzheimer's Society is pleased to support the HBN 08-02 'Dementia–friendly Health and Social Care Environments'. When a person living with dementia is trying to make sense of the world around them, their immediate surroundings can make all the difference to their quality of life. We know that the experience of people living with dementia and their carers is adversely affected when health and care services fail to provide dementia-appropriate advice, care and ongoing support. This is a situation that is made worse when the person living with dementia has additional health needs.

This guideline is an important development as it means we capture and share good practice and embed consistency and quality so we have more well-designed dementia-friendly health and social care environments that have the power to stimulate, refresh, remind and give pleasure to people with dementia.

George McNamara
Head of Policy and Public Affairs, Alzheimer's Society

At a time when there is unprecedented demand for health and social care, Age UK welcomes this authoritative guide to dementia friendly health and care environments. Over many years, there has been an emphasis on discovering therapies or cures for dementia. By all scientific estimates, the discovery of such a cure is some way off, though the G7 Dementia Summit of 2013 has set up an impressive programme of research to be undertaken by 2025. In the meantime, providing the highest possible care must be one of our priorities for the 850,000 people who are currently estimated to have dementia. This guide will contribute significantly to the creation of dementia-friendly environments that are so critical to the effective delivery of health and social care.

The guidance is not only impressively evidence-based but it addresses important additional issues critical to the delivery of effective care. These include the importance of patient involvement, the development of a dementia-friendly culture (including attitudes, perceptions and awareness of the condition) and the changing context of health and social care delivery via technology, and the move to integrated care. Age UK is pleased to have contributed to the development of this guide and we wholeheartedly recommend it to architects, planners and managers in the NHS and local authorities who are involved in the provision of dementia-friendly health and social environments.

Tom Wright
CBE, Group Chief Executive, Age UK

Structure

Figure 0.1 below illustrates the structure and contents of Health Building Note 08-02. It is intended to support navigation through the documents nine sections.

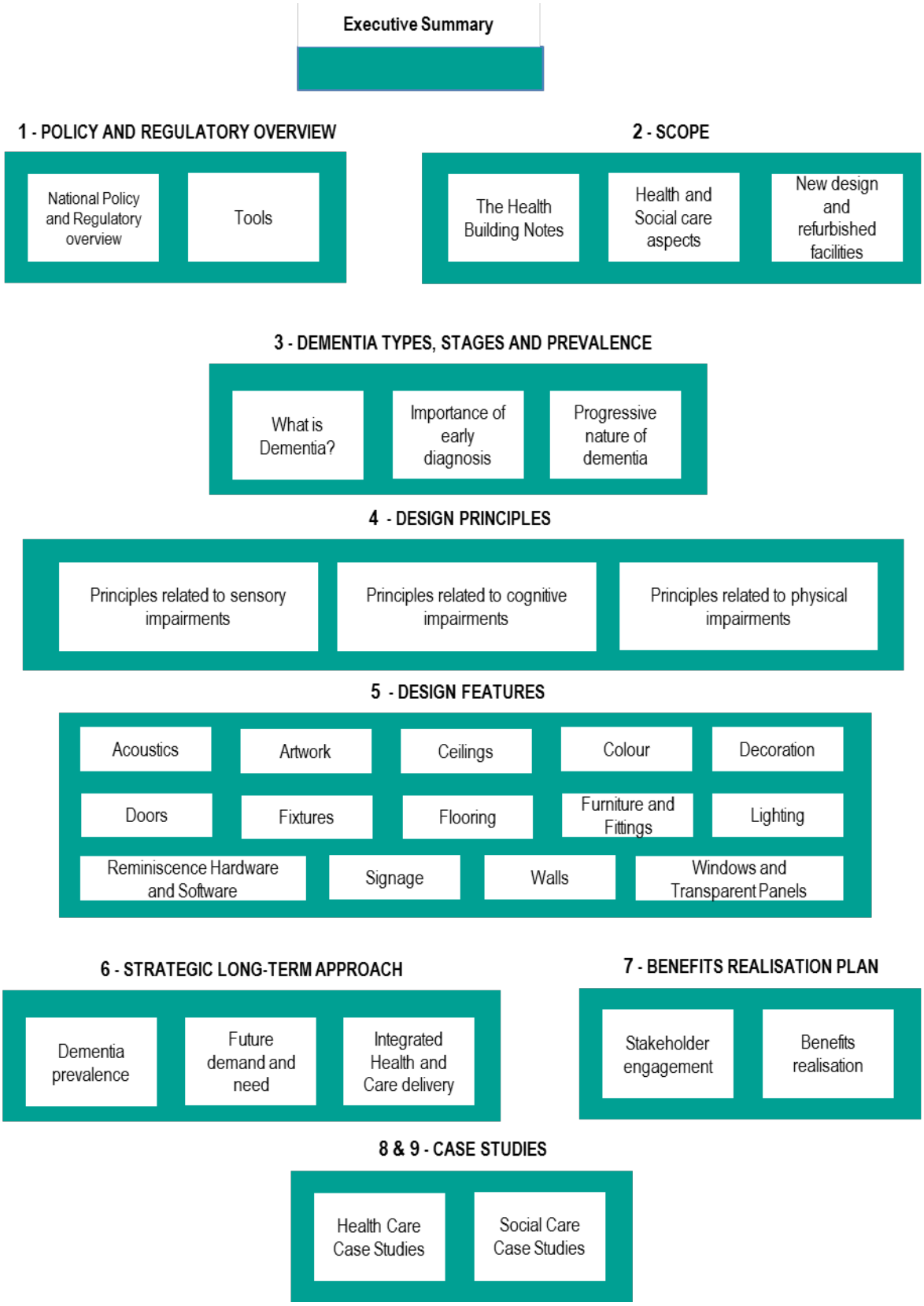

Figure 0.1: Structure of HBN contents

Executive Summary

Design Quality and HBNs

Design quality is essential in the context of care facilities, where well-designed health and care buildings can help patients recover their health and well-being, and have a positive effect on staff performance and retention. Additionally, good design improves efficiency and provides better Value for Money for the taxpayer in the context of whole-life costs. Health Building Notes (HBNs) are the key documents for all health building, planning and briefing guidance in England. They draw together the best current knowledge for healthcare needs and should be regarded as best practice guidance and providing essential information on how to comply with the statutory and policy framework around the assurance of estates and facilities.

Dementia

The term 'dementia' describes a set of symptoms that include loss of concentration and memory problems, mood and behaviour changes, and problems with communicating and reasoning. These symptoms occur when the brain is damaged by certain diseases, such as Alzheimer's Disease, a series of small strokes or other neurological conditions such as Parkinson's Disease. Around 60 per cent of people living with dementia have Alzheimer's; around 20 per cent have vascular dementia. There are other less common forms of dementia, for example, dementia with Lewy Bodies and Frontotemporal Dementia.

HBN 08-02 aims

The quality and readiness of the health and social care estate is vital for high quality, safe and efficient health and social care. This HBN sets out the design guidance for dementia-friendly health and social care environments. The design principles and the core design features together with a selection of case studies provide guidance for the development of new design solutions and the adaptation/ extension of existing facilities.

HBN 08-02 is intended particularly for those who are new to this topic and also to people living with dementia or their advocates who may be engaged as part of stakeholder engagement processes. It may also be helpful for commissioning organisations, auditors and regulators, giving an overall perspective of the dementia-friendly design issues that need to be addressed.

Dementia Capital Programme

The £50m DH Capital Investment Programme funded 115 health and social care pilot projects aimed at improving the quality of life of people living with dementia. The diverse range of innovative pilot projects were delivered within a tight time frame and contributed to the programme's data collection and reporting activities. The findings of which were combined with literature and use to develop: a set of dementia-friendly design principles; core design features; and case studies which were used to develop this HBN following a period of consultation with key stakeholders and international experts.

HBN 08-02 Contents

The HBN comprises the following 9 sections.

- Section 1: Policy and regulatory overview.
- Section 2: Scope.
- Section 3: Dementia types, stages and prevalence.
- Section 4: Design principles.
- Section 5: Core design features.
- Section 6: Strategic issues.
- Section 7: Benefits realisation.
- Section 8: Health care settings case studies.
- Section 9: Social care settings case studies.

Related Regulation and Guidance

HBN 08-02 should be read in conjunction with existing DH regulations and guidance, including HTM, HBNs, Health Facilities Notes, Design Guides and other national documents.

Acknowledgments

The Department of Health (DH) would like to thank all those who have helped to develop and produce this guidance, including all those who commented and sent contributions during the consultation phase. The DH appreciates the work done by the organisations and individuals from the 115 pilot projects, IFF Research and Loughborough University on the Dementia Capital Investment Programme which produced a diverse range of innovative projects within a tight time frame and timely contributions to the programme's data collection and reporting activities.

The DH would also like to convey a special thanks to those below: the **Technical Authors** for drawing together a comprehensive and informative document; the **HBN Reference Group** for contributing their expertise in developing guidance and best practice for the design of health and social care infrastructure which helped with the early formation of the document's structure and approach; the **Dementia Stakeholder Panel,** comprising international experts in the field of Dementia Care and the design and operation of dementia-friendly health and care environments, which took part in a two-stage consultation process; the **115 pilot projects** who provided the photographs and access for the photographs used throughout this document; and the individuals and organisations who provided the case studies presented in Sections 8 and 9.

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Photography

All the photographs included in this document have been produced during the Dementia Capital Investment Programme by the research team and the 115 pilot projects who have taken part to the programme.

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List of abbreviations

AD	Alzheimer's Disease
ADB	Activity Data Base
BIM	Building Information Modelling
BR	Benefits Realisation
BREEAM H	Building Research Establishment's Environmental Assessment Method for Healthcare
bvFTD	behavioural variant of Frontotemporal Dementia
CCT	Correlated Colour Temperature
CQC	Care Quality Commission
CCG	Clinical Commissioning Group
CMS	Common Minimum Standards
CPD	Continuing Professional Development
CQC	Care Quality Commission
DCS	Detailed Case Study
DAA	Dementia Action Alliance
DDA	Disability Discrimination Act
DFEWG	Dementia Friendly Environments Working Group
DH	Department of Health
DQI	Design Quality Indicators
DLB	Dementia Lewy Bodies
DRTS	Digital Reminiscence Therapy Software
DSDC	Dementia Services Development Centre
EAT	Environmental Audit Tool
EHE	Enhancing the Healing Environment
FTD	Frontotemporal Dementia
FTLD	Frontotemporal Lobar Degeneration
HIA	Health Impact Assessment
HBN	Health Building Note
HSE	Health and Safety Executive
HTM	Health Technical Memoranda
ICT	Information and Communication Technology
ID no	Identification number
LED	Light-Emitting Diode
LA	Local Authority
LPTA	Lowest Price, Technically Acceptable
LRV	Light Reflectance Value
MEP	Mechanical Electrical Plumbing
MoU	Memoranda of Understanding
NEAT	NHS Environmental Assessment Tool
NHS	National Health Service
NSW	New South Wales
PAM	Premises Assurance Model
PATH	Performance Assessment Tool for quality improvement in Hospitals
PDC	Public Dividend Capital
PEAT	Patient Environment Action Team
PLACE	Patient Led Assessment of the Care Environment
PRINCE2	PRojects in Controlled Environments version 2
QALYs	Quality-Adjusted Life-Years
QoL	Quality of Life
QIPP	Quality, Innovation, Productivity and Prevention

RGB	Red Green Blue
SC	Social Care
SEAD	Strategic Environmental Assessment Directive
SHAPE	Strategic Health Asset Planning and Evaluation
SRoI	Social Return on Investment
VfM	Value for Money
WHO	World Health Organisation

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Section 1:
Policy and regulatory overview

1. POLICY AND REGULATORY OVERVIEW

Introduction

. Section 1 provides a policy and regulatory overview to set the context that this Health Building Note (HBN) 08-02 Dementia-friendly Health and Social Care Environments reflects.

National Policy

. The NHS Constitution: the NHS belongs to us all establishes the principles and values of the NHS in England. It sets out the rights to which patients, public and staff are entitled. It also outlines the pledges that the NHS is committed to achieve, together with responsibilities that the public, patients and staff owe to one another to ensure that the NHS operates fairly and effectively. All healthcare organisations are required by law to take account of the Constitution in their decisions and actions.

. One of the government's key priorities is delivering better health and social care outcomes.

. The quality and fitness-for-purpose of the health and social care estate is vital for high quality, safe and efficient health and social care, and this document seeks to set out the design principles for dementia-friendly environments to be used in the design and planning of new, and adaptation/extension of existing, health and social care settings.

. Design quality is important in the context of health and social care buildings, where well-designed buildings can help patients and residents maintain and recover their health and well-being, and have a positive effect on staff performance and retention. Additionally, good design improves the efficiency of operational relationships and provides better whole-life value for money for the taxpayer.

Regulatory overview

. Assurance of estates and facilities in the new landscape is assessed against a set of legal requirements and standards, which need to be read in conjunction with the relevant guidance provided by the HBN suite and available planning and design guidelines.

. This HBN intends to point out and focus on the dementia-friendly design principles and features which should be taken into account in the planning and design of health and social care environments.

. Its use does not derogate from the existing national regulatory framework which is summarised in Figure 1.1.

. The Health and Safety Executive (HSE) is the national regulator for workplace health and safety. The following legislation places legal duties on various dutyholders, for more information, visit the HSE's website:

- Health and Safety at Work etc. Act 1974, Section 3;
- Workplace (Health, Safety and Welfare) Regulations 1992;
- Management of Health and Safety at Work Regulations 1999, regulation 3;
- The Construction (Design and Management) Regulations 2007; and
- Manual Handling Operations Regulations.

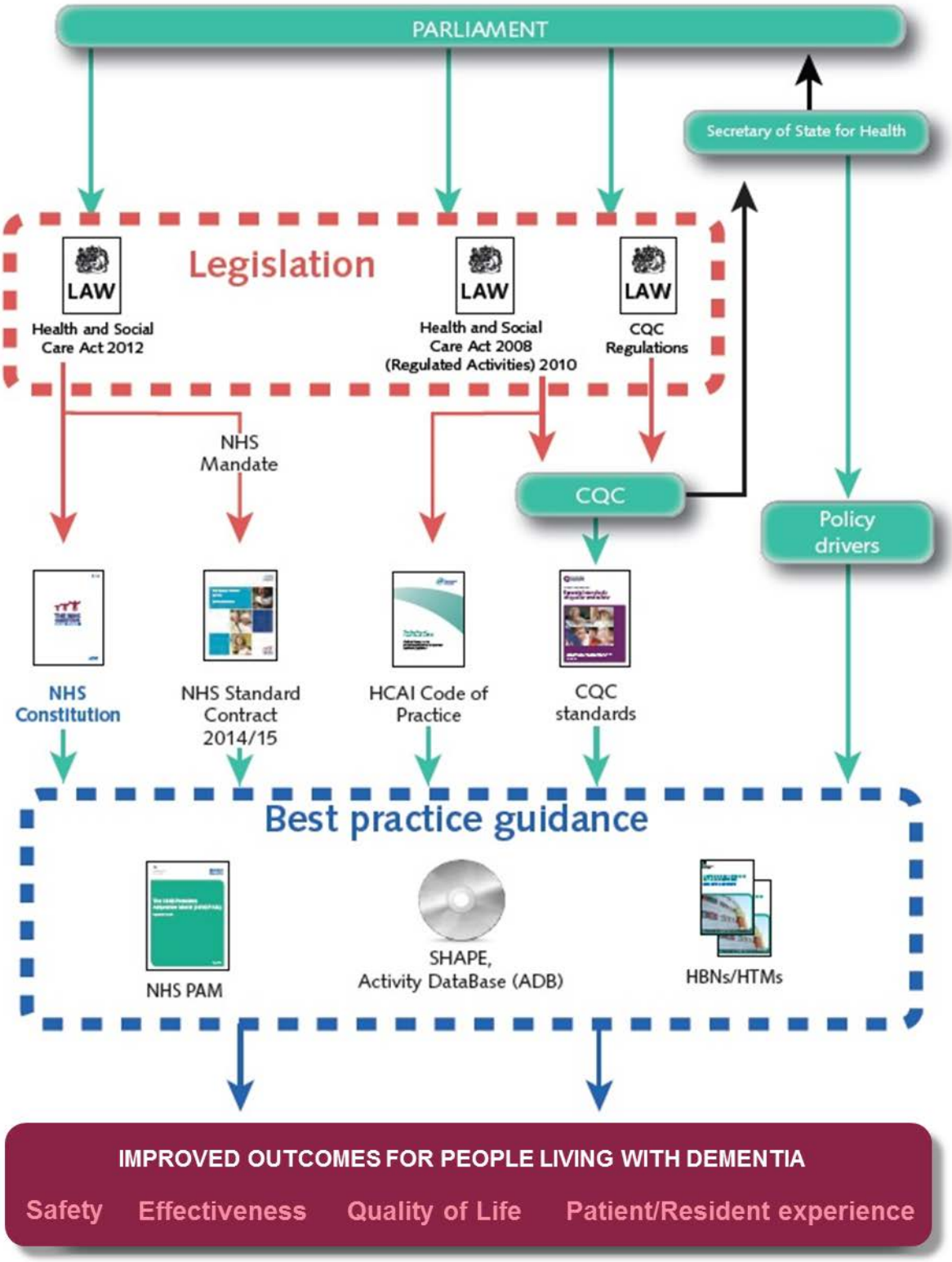

Figure 1.1: Health Building Notes and the legislative framework

Strategic planning tools

. Strategic Health Asset Planning & Evaluation (SHAPE) is a web-enabled, evidence based planning software application which informs and supports the strategic planning of services and physical assets across the national health and social care economy. It has the scope to combine existing national data sets of clinical activity, public health, primary care and demographic data with estates' performance and location. SHAPE is free to NHS professionals and Local Authority professionals with a role in public health and social care.

. Health Impact Assessment (HIA) is part of the World Health Organisation (WHO) mandatory 'Impact Assessment' required by Government for all relevant policies for developing better, evidenced-based policy by careful consideration of the impact on the health of the population. It is required when a Strategic Environmental Assessment Directive (SEAD) does not cover human health.

. Premises Assurance Model (PAM) is a management tool released to support the NHS in enhancing the quality and safety of NHS premises while increasing efficiency and effectiveness. Although not mandatory, NHS PAM allows organisations that provide NHS-funded care and services to better understand the effectiveness, quality and safety with which they manage their estate and facilities services, and how that links to patient experience and patient safety. NHS PAM has been designed to apply across the range of estates and facilities management services, and includes references to evidence and guidance to assist in deciding the level of NHS PAM assurance applicable to a particular healthcare organisation. The 2014 version updates the previous model and incorporates 'soft' facilities management services, consistent, aligned with post-Francis regulatory requirements and supports the long-term financial sustainability of the NHS.

Design tools

. Common Minimum Standards (CMS) for the procurement of built environments in the public sector make provision for practicality, achievability and value for money to be considered in certain circumstances. The CMS recommend that Design Quality Indicators (DQIs) are used as part of ensuring that all stakeholders, including end-users, are involved in the development of the output specification, design brief and in the assessment of project success. The DQIs for the health sector have been developed by the UK Construction Industry Council as a five-stage facilitated and accredited process. This replaces the Achieving Excellence Design Evaluation Toolkit (AEDET) originally produced by the Department of Health, which has been archived and is no longer supported.

. Building Research Establishment's Environmental Assessment Method for Healthcare (BREEAM H) replaced NHS Environmental Assessment Tool (NEAT) in July 2008. It is a self-assessment accredited process to measure the environmental impact of healthcare buildings as standards, for refurbishments and new build. It is a four-scale scoring international environmental assessment tool for Impact, Planning, Construction and Commissioning Stages.

. Activity Data Base (ADB) is a toolkit/offline software which includes topics based on Health Building Notes, Health Technical Memoranda (HTM) and DH baseline standards, and contains information intended for use by healthcare estates and facilities professionals in England, Scotland, Wales and Northern Ireland. It is the DH briefing and design software tool used to develop environments of care, during briefing development, design, construction and alteration of healthcare facilities. Spaces designed using ADB data comply with the planning guidance in HBNs and HTM until the last update in March 2013.

. The design brief is one of the important elements that form part of the overall process in creating a healthcare project. It is essential that the brief is developed in the context of the total lifespan of the project. Taking the correct decisions early on in a project especially during the development of the design brief will reduce avoidable and expensive change during later

stage of the construction project. The brief will:

- describe clinical service needs and design vision/objectives;
- define environmental quality and sustainability objectives, whole hospital policies and departmental policies; and
- detail technical requirements and schedules of accommodation.

. Building Information Modelling (BIM) will be mandatory by 2016 for all large public centrally procured projects. BIM can be used for effective management of information throughout a project's lifecycle, from initial design to disposal and demolition.

Assessment tools

. Patient-Led Assessments of the Care Environment (PLACE) is the new system for assessing the quality of the patient environment. It was introduced in April 2013 to replace the Patient Environment Action Team (PEAT) inspections. PLACE is being expanded in 2015 to cover dementia. The annual assessments apply to hospitals, hospices and day treatment centres providing NHS funded care to facilitate local people going into hospitals as part of teams to assess how the environment supports patients' privacy and dignity, food, cleanliness and general building maintenance. It focuses entirely on the care environment and does not cover clinical care provision or how well staff are doing their job.

. Performance Assessment Tool for quality improvement in Hospitals (PATH) is a tool based on a patient-centred approach designed by the WHO for internal use and on a voluntary basis only, to identify areas for further scrutiny and to share best practice. It is not meant to be used for external reporting, accreditation or restructuring purposes. Hospitals collect data for the PATH indicators and transfer the information to the WHO Collaborating Centre for the Institutionalization of Quality in Health Care.

Section 2:
Scope

2. SCOPE

Introduction

. This section outlines the suite of HBNs currently available and the scope of the Health Building Note 08-02 Dementia-friendly Health and Social Care Environments.

About Health Building Notes

. HBNs are the key documents for all health building, planning and briefing guidance in England. They draw together the best current knowledge for healthcare needs and should be regarded as setting standards of best practice and providing essential information on how to comply with the statutory and policy framework around the assurance of estates and facilities.

. The main aims of HBNs are to:

- promote the design of healthcare facilities with regard to the safety, privacy and dignity of patients, staff and visitors;
- provide best practice guidance to architects, designers and healthcare planners seeking information on the special needs of typical healthcare facilities; and
- help achieve Value-for-Money solutions for the planning and design of healthcare facilities.

. HBNs provide best practice guidance on the design and planning of new healthcare buildings and on the adaptation/ extension of existing facilities.

The Health Building Note suite

. The Health Building Notes have been organised into a generic suite of 17 elements:

- Building Notes 00-Core generic which cover core (clinical) activities or support systems as appropriate;
- 16 core subjects which are subdivided into specific topics and classified by a two-digit suffix (-01, -02 etc.), and may be further subdivided into Supplements A, B, etc.; and
- Care-group-based Health Building Notes which provide information about a specific care group or pathway but cross-refer to health.

Health Building Note number and series title	Type of Health Building
Health Building Note 00 – Core elements	Support-system-based
Health Building Note 01 – Cardiac care	Care-group-based
Health Building Note 02 – Cancer care	Care-group-based
Health Building Note 03 – Mental health	Care-group-based
Health Building Note 04 – In-patient care	Generic-activity-based
Health Building Note 05 – Older people	Care-group-based
Health Building Note 06 – Diagnostics	Generic-activity-based
Health Building Note 07 – Renal care	Care-group-based
Health Building Note 08 – Long-term conditions/long-stay care	Care-group-based
Health Building Note 09 – Children, young people and maternity services	Care-group-based
Health Building Note 10 – Surgery	Generic-activity-based
Health Building Note 11 – Community care	Generic-activity-based
Health Building Note 12 – Out-patient care	Generic-activity-based
Health Building Note 13 – Decontamination	Support-system-based
Health Building Note 14 – Medicines management	Support-system-based
Health Building Note 15 – Emergency care	Care-group-based
Health Building Note 16 – Pathology	Support-system-based

Table 2.1: Health Building Notes note and series title

Innovative and overarching features of HBN 08-02

. HBN 08-02 is the first expansion of the HBN 08 series on long-term conditions/long-stay care. It is intended to provide guidance for the design of dementia-friendly environments in all health and social care settings where people living with dementia need to access, navigate and stay.

. HBN 08-02 aims to provide a useful guidance to all those stakeholders who might be new to the dementia condition and/or might like a different overview from their institutional duties. Designers might find some clinical-driven hints to specific solutions, while clinicians might operate the built environment as designed.

. Design principles and core design features are interconnected through the matrix reported at the beginning of Section 5 to ease navigation of the document.

. Eight health and social care case studies across selected settings have been presented at the end of this document, thus providing useful examples of how some of the suggested design principles can be applied and which might be more appropriate to specific settings.

. This HBN comprises the following nine sections.

- Section 1 sets the context that this HBN needs to reflect, and provides a policy and regulatory overview.
- Section 2 outlines the suit of HBNs currently available and the scope of Health Building Note 08-02 Dementia-friendly Health and Care Environments. It also summarises the extensive variety of settings, spaces and built environment components addressed by the 115 pilot projects which illustrates the breadth which this HBN needs to reflect.
- Section 3 outlines the dementia types, stages and prevalence but is not intended to replace clinical diagnosis. It also serves a basis for developing the dementia-friendly design principles.
- Section 4 introduces the design principles for dementia-friendly environments along with a supporting rationale.
- Section 5 describes the core design features and provides examples of how building elements can be designed and used to support the design principles.
- Section 6 emphasises the importance of adopting a long-term strategic approach taking due account of: demand and need; organisational structures; organisational culture; processes; technology; and physical environments.
- Section 7 provides guidance on purposeful stakeholder engagement, benefits realisation and whole life value relevant to the planning and design of dementia-friendly health and social care environments.
- Section 8 presents four case studies that illustrate how the design principles and features can be applied to health care settings.
- Section 9 presents four case studies that illustrate how the design principles and features can be applied to social care settings.
- References are all listed at the end of the document, with specific sections for each design principle.

Genesis of Health Building Note 08-02

. One of the government's key health and social priorities is delivering better outcomes for people living with dementia, who, in the UK, now number approximately 850,000, and is forecast to increase to over 1 million by 2025 and over 2 million by 2050. Current estimates are that the cost of dementia care is £19bn for England and £23bn for the UK. An estimated 25 per cent of hospital beds are occupied by people living with dementia and approximately two-thirds of care home residents are currently estimated to have dementia. All of this highlights the challenge posed by dementia and the reasons for it being given government priority. Living Well with Dementia: A National Dementia Strategy, published in 2009, was the starting point for government action. The Prime Minister's

challenge on dementia, published in 2012, replaced the Strategy and focused on driving up improvements in health and care for people with dementia, better research and creating dementia-friendly communities. More recently (in February 2015) the government published the Prime Minister's challenge on dementia 2020, which sets out the achievements of the PM's challenge, and what needs to be done to make sure that dementia care, support, awareness and research are transformed by 2020.

. This HBN draws on international literature on dementia-friendly design and evidence from the DH Capital Programme "Improving the environment of care for people with dementia". The programme aimed to: fund physical interventions on the built environment, including supportive technology and integration across care pathways; expand the range of health and care services offering dedicated dementia-friendly environments; and stimulate further use of supportive environments to help the increasing number of people diagnosed with dementia receive the best possible care.

. Figure 2.1 illustrates the approach taken in this HBN: the application of dementia-friendly design principles and design features to develop dementia-friendly health and social care environments for people living well with dementia.

. This HBN underwent a two stages consultation process, as illustrated by the delivery plan in Figure 2.2, prior to the completion of the document. The first consultation included a national HBN Reference Guidance Group, who mainly addressed issues in relation to the structure and format of the document, and an international Dementia Stakeholder Panel, who included: patient and resident representatives; design and practitioners; NHS and social care service providers; Royal College of Nursing and Royal College of GP's representatives; and academic and research experts. The second consultation process involved only the international Dementia Stakeholder Panel, who refined the second draft of the document and addressed further specific details.

Figure 2.1: HBN 08-02 approach to develop dementia-friendly care environments

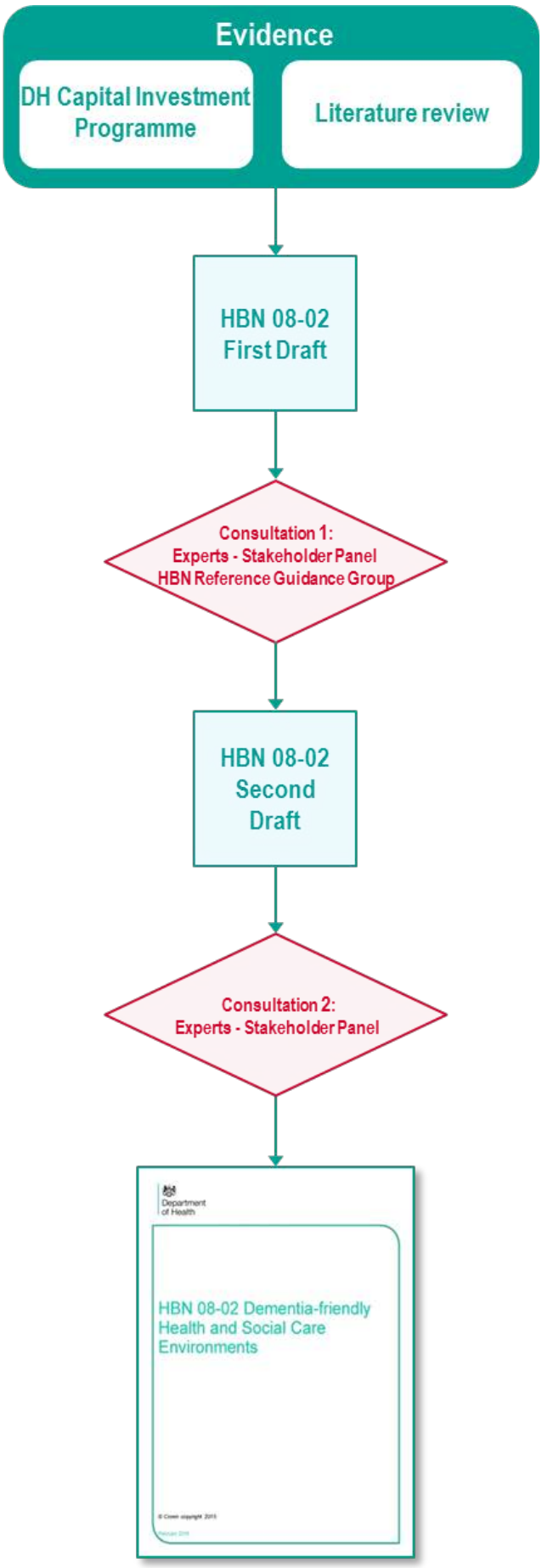

Figure 2.2: Health Building Note 08-02 delivery plan

New and refurbished facilities

. The structure of this new HBN 08-02 intends to provide guidance and support for both new and refurbished facilities.

. The design principles can be used to inform the initial design of new facilities and the core design features can be used to identify possible options before selecting the most appropriate building component.

. Some of the interventions can be of relatively low cost and easily implemented especially as part of routine maintenance strategies, for example, colour schemes on the walls can be cost effectively adopted as part of scheduled routine maintenance.

. The design principles and core design features presented in this HBN support the choice of readily available commercial and/or be-spoke solutions specific to one organisation.

. The diversity of settings, spaces and intervention components associated with the DH Capital Programme guided the selection of the eight case studies presented in Sections 8 and 9. These case studies provide useful reference to as to how individual the 12 design principles described in Section 4 can be applied to different settings.

Types of acute and social care settings

. NHS settings can include the following, descriptions of which can be found here:

- Acute hospital
- Ambulance service
- Community hospital
- Community nursing, medical and therapy service
- Community pharmacy
- Dental service
- General practice
- Hospital pharmacy
- Learning disabilities
- Mental health service
- Prisons and other custodial settings

. Social care settings include:

- Residential care homes vary in size; provide short or long-term 24-hr care and support where staff help with daily activities such as washing, dressing, meals and going to the toilet.
- Nursing homes offer similar care to residential care homes but also provide 24-hr medical care from a qualified nurse.
- Home health care: includes the provision of nursing, therapy, personal care or housekeeping services in the client's own home.
- Rehabilitation centres: provide physical and occupational therapy; includes inpatient and outpatient treatment.
- Hospices: provide supportive treatment to terminally ill patients and their families.
- Day Centres: help to people living with dementia to stay in their community and function to the fullness of their ability, maintain, improve or relearn social life skills and activities of daily living.
- Dementia hubs and respite care: provide a range of services for both carers and people with dementia, family and friends, and support informal carers.
- Extra care housing: provide self-contained homes with design features and support services that enable self-care and independent living.
- Respite Homes: provide respite care for older people who need extra support following an operation or illness.

. According to Care Quality Commission (CQC) there are currently (March 2015) 33,117 registered care homes in England, however, this number frequently changes. There are two main types of care homes that can be searched for on the CQC website: residential and nursing.

. This HBN 08-02 builds on the urgent need of different types of settings, as emerged during the DH Capital Programme.

. Most of NHS and LA (social care) pilot projects funded by the Dementia Capital Programme focused on multiple settings. See Figure 2.3 for the NHS pilot project

settings and Figure 2.4 for the LA (social care) pilot project settings.

. The diversity of settings associated with the DH Capital Programme is reflected in the selection of the eight case studies in Sections 8 and 9, which cover health and social care settings. The spaces have led to the understanding that more interventions and investments are needed in the spaces where people spend most of their days, disregarding from being a ward in a hospital, a living room in a care home or a an activity room in a day centre. The built environment components which underwent major changes during the DH Dementia Programme have led to the recognition that there is a level of transferability of ideas and solutions cross-settings and cross-spaces.

Figure 2.3 NHS pilot project settings	
Hospital Foundation Trust	24%
Hospital Trust	12%
University Hospital Foundation Trust	7%
University Hospital Trust	5%
Partnership Trust	5%
Acute Hospital Trust	5%
Teaching Hospital Trust	5%
Community Hospitals	5%
District Hospital Foundation Trust	5%
Community Hospitals Foundation Trust	2%
Hospital Foundation Trust & social care	2%
General Hospital Trust	2%
Hospital Trust & social care	2%
Mental Health Hospital Foundation Trust	2%
Mental Health Hospital Trust & social care	2%
General Hospital Foundation Trust	2%
Mental Health Hospital Trust	2%
Healthcare Foundation Trust	2%
Community Healthcare Trust	2%
Partnership Foundation Trust	2%
Teaching Hospital Foundation Trust	2%

Figure 2.4 Social care (LA) pilot project settings	
Care homes	73%
Integrated specialist projects	11%
General community dare centres or respite centre or hub	10%
Sheltered and extra care	3%
Nursing homes	3%
Specialist dementia care facility	1%

Types of built environment spaces

. Most of the 115 NHS and social care pilot projects involved in the 2013/14 DH Dementia-friendly Environments Programme focused on communal spaces (as presented in Figures 2.5 and 2.6) thus emphasising the importance of and need for spaces that support socialisation and help people living with dementia feel more connected to normal life and part of a community.

. Many of the pilot projects provided greater connectivity to the outdoors as 50% of the NHS and 75% of social care pilot projects included gardens and/or conservatories. The high prominence of (assisted and en-suite) bathrooms and bedrooms reflect the importance of private space and dignity. Entrances, corridors and pathways emphasise the importance of creating a welcoming environment and way-finding.

. The spaces demonstrated an important a positive cultural shift in the way dementia is perceived from care providers. By improving the environments for socialisation, care providers help a person living with dementia feel connected to normal life and part of a community.

Figure 2.5: NHS pilot project spaces	
Gardens	50%
Day areas/lounges	43%
Assisted bathrooms	38%
Reception areas	36%
Corridors and pathways	36%
Nursing stations	31%
Dining rooms	31%
Bedrooms	26%
Ensuite bathrooms	24%
Facilities for carers	21%
Entrance	19%
Outdoor spaces	14%
Social area	14%
Waiting areas	12%
Communal lounges	7%
Sensory/reminiscence therapy rooms	7%
Conservatories	5%
Café	5%
Public toilets	5%
Therapy/activity spaces	5%
Overnight suites	5%
End of life care rooms	5%
Counselling rooms	2%
Kitchens	0%
Shops/hairdressing	0%

Figure 2.6: Social care pilot project spaces	
Gardens	76%
Day areas/lounges	36%
Assisted bathrooms	34%
Dining rooms	28%
Corridors and pathways	26%
Outdoor spaces	22%
Bedrooms	20%
Ensuite bathrooms	19%
Entrance	19%
Sensory/reminiscence therapy rooms	18%
Kitchen	18%
Therapy/activity spaces	16%
Reception area	15%
Conservatories	15%
Social area	14%
Café	12%
Communal lounges	9%
Public toilets	4%
Shops/hairdressing	4%
Nursing stations	3%
Waiting areas	1%
Overnight suites	1%
Facilities for carers	0%
End of life care rooms	0%
Counselling rooms	0%

Types of built environment components

. Many different types of built environment components can be modified as an intervention to create dementia-friendly environments depending on: what types of outcomes needed in a given setting; the funds available; decant and access to spaces; and if the intended improvements form part of routine maintenance, refurbishment or new build.

. The components being addressed by the pilots have been summarised in Figure 2.7 (NHS) and Figure 2.8 (LA). Most of the pilot projects enhanced multiple components. The five most common components being improved by the NHS and LA were very similar and included flooring finishes, colour, signage, lighting, artwork (NHS) and furniture (LA).

. The NHS pilot projects focused on flooring, colour coding and signage with significant emphasis on way-finding in hospital setting for people living with dementia.

. The social care (LA) pilot projects focused on signage, flooring finishes, lighting and furniture, with noteworthy works on colour coding, reminiscence objects and artwork to support cognitive impairments.

. Many (45% of the NHS and 49% of the LA) pilot projects included innovative aspects related to the use of technology (as a component).

. Many pilot projects included aspects relating to lighting (including dynamic lighting).

. Many (81% of the NHS and 59% of the LA) pilot projects used artwork to support the creation of dementia-friendly environments.

Figure 2.7: NHS pilot project components	
Flooring finishes	71%
Colour/coding	52%
Signage	50%
Lighting	45%
Artworks	45%
Walls and cladding	40%
Decoration	36%
Wayfinding	33%
Furniture	26%
Reminiscence objects	26%
Fittings and fixtures	24%
Handrails	24%
Internal doors	21%
Ceiling finishes	19%
Mechanical-electrical installations	10%
Internal stairs and ramps	7%
Windows and balconies	5%
Plants and flowers	5%
Elevators and escalators	2%
Glazing	2%
Curtains	2%
External doors	2%

Figure 2.8: Social care pilot project components	
Signage	62%
Flooring finishes	53%
Lighting	49%
Furniture	45%
Colour/coding	34%
Reminiscence objects	34%
Artworks	32%
Decoration	27%
Walls and cladding	23%
Internal doors	18%
Plants and flowers	18%
Wayfinding	16%
Fittings and fixtures	15%
Mechanical-electrical installations	15%
Handrails	12%
Windows and balconies	12%
Ceiling finishes	11%
External doors	8%
Internal stairs and ramps	7%
Curtains	7%
Blinds and shutters	4%
Glazing	1%
Reminiscence pods	1%
Elevators and escalators	0%
External stairs and ramps	0%

Section 3:
Dementia types, stages and prevalence

3. DEMENTIA TYPES, STAGES AND PREVALENCE

Introduction

. This section outlines the dementia types, stages and prevalence but is not intended to be an exhaustive guide. Additional information can be found on the Alzheimer's Society's website.

. This section is intended to reduce the considerable lack of awareness and understanding of dementia which can: reduce designers' ability to provide dementia-friendly care enviroments; and lead to stigma and barriers to diagnosis and care.

. This section also supports the development of the 12 Design Principles for dementia-friendly environments which have been presented in Section 4. The rationale being linked to the dementia related sensory, cognitive and physical impairments which can be very different for each individual living with dementia.

What is dementia?

. Dementia is an umbrella term used to describe a range of symptoms that occur when the brain is affected by certain diseases or conditions. These symptoms relate to deterioration in cognitive function, behavioural changes and functional limitations, such as memory loss, confusion, mood and personality changes, problems with planning and doing tasks in the right order.

. According to the World Health Organization (2015): "Dementia is a syndrome due to disease of the brain, usually of a chronic or progressive nature, in which there is disturbance of multiple cortical functions, calculation, learning capacity, language and judgement. Consciousness is not clouded. Impairments of cognitive function are commonly accompanied, and occasionally preceded by, deterioration in emotional control, social behaviour or motivation. Dementia is caused by a variety of diseases and injuries that primarily or secondarily affect the brain, such as Alzheimer's disease or stroke."Dementia mainly affects elderly people; however, it is an abnormal condition and not part of normal brain ageing.

. Prevalence statistics need to be treated with caution due to a lack of good definitions and diagnostic data. However, according to Age UK (2014):

- it is a common condition and, according and affects 850,000 people in the UK;
- the most recent estimates of diagnosed and undiagnosed rates find that the prevalence of late onset dementia is 7.1 per cent among people of 65 or over;
- prevalence in the population increases with age, from 1.7 per cent in 65-69s to 41.4 per cent in people of 95 or over; and
- most people do not develop dementia – even among the very oldest people, the majority (60 per cent) do not develop dementia.

Types of dementia

. According to Age UK (2014), there are over 100 types of dementia which have differentiating symptoms and rates of progression. The following discusses the four most commons types of dementia and provides background information. It does not replace any advice given by clinicians. Further details can be found from the Alzheimer's Society and NHS Choices websites.

. Alzheimer's Disease is the most common cause of dementia and occurs in 50 to 75 per cent of cases. Nerve cells die in particular areas of the brain which shrinks as gaps develop in the temporal lobe and hippocampus, which are responsible for storing and retrieving new information. It usually develops slowly over several years and people will experience symptoms in different ways. The National Institute for Aging-Alzheimer's Association's (Bradley, et

al., 2012) diagnostic criteria for Alzheimer's Disease (AD) state that there can be a number of different clinical manifestations Alzheimer's disease including:

- Amnestic presentation: the most common presentation of AD dementia involves deficits in learning and recall of recently learned information, plus difficulties with reasoning, judgment, visuospatial abilities, language functions (speaking, reading, writing), and/or changes in personality, behaviour or comportment.
- There are also non-amnestic presentations in which symptoms other than memory loss are the most pronounced. Visuospatial presentations (often labelled 'posterior cortical atrophy'). The most prominent deficits are in visuospatial and perceptual abilities, including object recognition and localisation, impaired face recognition, visual attention problems, and reading and writing problem, but deficits in other cognitive domains are also present. Language presentation: The most prominent deficits are in word-finding, but deficits in other cognitive domains are also present. Executive dysfunction: The most prominent deficits are impaired reasoning, judgment, and problem solving, but deficits in other cognitive domains are also present.

. Vascular Dementia, according to the Alzheimer's Society (2015), is the second most common cause of dementia and 20 to 30 per cent of the cases and people from certain ethnic groups are more likely to develop cardiovascular disease and vascular dementia than others.

.1 . Vascular dementia can occur when blood flow to the brain is reduced due to problems with the blood vessels that supply it with oxygen and nutrients. Parts of the brain become damaged and eventually die. However, if caught early enough, brain deterioration can be stopped and vascular dementia prevented. It normally progresses, at different rates from person to person, over several years and the symptoms get worse over time.

.1 . Progression may be sudden after an event such as a stroke. Vascular dementia can be split into the following.

.1 . Progression may be a sudden after an event such as a stroke. Vascular dementia can be split into the following.

- Stroke-related dementia includes: Multi-Infarct Dementia (MID), which happens after a series of small strokes; post-stroke dementia, which happens after a stroke.
- Subcortical vascular dementia is caused by changes to very small blood vessels in the brain. It is also called Binswanger's disease, small vessel disease-related dementia or lacunar state.
- Mixed dementia affects over 10 per cent of people diagnosed with dementia (i.e. vascular dementia and Alzheimer's disease).

.1 . Dementia with Lewy Bodies (DLB) (i.e. tiny deposits of protein in nerve cells) is the third most common cause of dementia and accounts for around 10 per cent of all cases. It is a progressive condition and symptoms become more severe over the course of many years although the rate progression and type of symptoms can vary from person to person. It can cause common dementia symptoms, including memory loss, and reduced spatial awareness and problem solving skills. However, there some symptoms more specifically associated with the disease such as hallucinations and Parkinson's–type movement.

.1 . Frontotemporal Dementia (FTD) (sometimes referred to as Pick's disease) accounts for under 5% of cases but is the second most common cause of dementia in people under the age of 65. It is caused when nerve cells in the frontal and/or temporal lobes die and the pathways that connect them change. The frontal and temporal lobes areas of the brain regulate: personality, emotions and behaviour; reasoning, planning and decision-making; and language understanding and production.

.1 . FTD is a progressive condition and symptoms get worse over time at widely varying speeds of progression with some people living with FTD for more than 15

years. As the disease progresses, people may display some problems with movement similar to those seen in Parkinson's or motor neurone disease. Symptoms depend on which area of the brain is affected; however, different forms of FTD have common symptoms. The three main types of FTD are as follows.

- Behavioural variant Frontotemporal Dementia (bvFTD): the parts of the frontal lobe which regulate social behaviour may be most affected.
- Semantic dementia: the parts of the temporal lobe which support understanding of language and factual knowledge are most affected.
- Progressive non-fluent aphasia, parts of the frontal and temporal lobes which control speech and writing are most affected.

Importance of timely diagnosis

.1 . There are many causes of dementia, most of which cannot be cured, but early diagnosis can: help people living with dementia to get the right treatment and support; help those close to them prepare and plan for the future; and slow it down and help maintain mental function. With treatment and support, many people are able to lead active, fulfilled lives.

.1 . Dementia may not be diagnosed early on due to its slow progressive nature; and the difficulty in distinguishing it from mild forgetfulness associated with the ageing process. Early signs usually include short-term memory difficulties, and language or spatial awareness difficulties which can lead to subsequent withdrawal from work or social activities.

.1 . The Alzheimer's Society provides additional information on assessment and diagnosis.

Impact of dementia on the individual

.1 . People living with dementia may: lose their inhabitations; find social situations challenging; lose interest in socialising and their usual activities; become apathetic; have difficulty finding the right words and objects; and present loss of personhood and a reduced perception of time and space. The impact on a person's mental ability makes tasks and activities that require concentration, planning and organisation increasingly difficult, thus leading to day-to-day tasks and decision making becoming more challenging.

.2 . Among older people it is one of the major causes of disability and dependency worldwide.

.2 . Each person leaving with dementia is unique and will experience dementia differently. The impact tends to be unique to each individual and is determined by many factors including: the type and extent of neurological damage; thoughts, feelings and behaviour of the individual before onset; and their social context including level of support. Although, mood and behaviour may change, the individual remains the same equally valuable person.

.2 . The development of a life story for a person living with dementia helps to stimulate their long-term memory and support sense of identity and self-esteem whilst helping carers to better understand who they are caring for and generate respect for their life achievements. Life stories can be used to provide person-centric care and person tailored therapeutic activities. They can also help to better understand a person's cultural and/or religious background, which can influence what they eat, religious observances, ways of dressing and undressing, and how they wash or go to the toilet.

.2 . Dementia is overwhelming not only for the people living with it, but can also have significant physical, psychological, social and economic impact on relatives and caregivers.

Progressive nature of dementia

.2 . Dementia is an organic disorder associated with the physical deterioration of the brain tissue.

.2 . It is usually progressive and rate of progression varies between different people and the type of dementia.

.2 . Progression in dementia can be separated into the following three stages,

see WHO (2015) for further details of the signs and symptoms associated with linked these three stages.

- early stage (mild),
- middle stage (moderate); and
- late stage (severe).

However, not all forms of dementia can be characterised by such distinct stages.

Alzheimer's Disease	Vascular Dementia:	Dementia with Lewy bodies:	Frontotemporal Dementia
Progressive Characteristics			
Can be associated with a gradual decline in the person's ability to remember, understand, communicate and reason.	Can be associated with gradual decline in functioning or sudden decline following a further stroke.	Can progress more rapidly and experience visual hallucinations and have difficulty with balance and judging distance.	In the early stages, people generally experience behavioural changes associated with damage to the front of the brain. Later in the disease, symptoms will usually appear to be similar to those of Alzheimer's disease.
Cognitive Impairment: Memory and decision making			
Reduced ability to remember, think and make decisions. Regularly forgetting recent events, names and faces. Regularly misplacing items or putting them in odd places. Confusion about the time of day. Disorientation and getting lost especially away from normal surroundings.	Impaired judgement and inability to plan the steps to complete a task, rather than memory loss.	Changes in alertness, attention and confusion, which may be unpredictable and change from hour to hour or day to day.	Difficulty recognising people or knowing what objects are for. Day-to-day memory may remain intact in the early stages, but problems with attention and concentration could give the impression of memory problems. Difficulty with simple plans and decisions.
Cognitive Impairment: Communications			
Communication and language become more difficult. Problems finding the right words.	Problems with communication.	Problems with communication.	Decline in language abilities including difficulty getting words out or understanding words. Repeating commonly used words and phrases, or forget the meaning of words. Personality changes including changes in how people express their feelings towards others or a lack of understanding of other people's feelings.
Functional Limitations: Difficulties with daily activities			
Frequent problems sleeping and restlessness at night. Increasingly unsteady on their feet and fall more often. Gradually requiring more help with daily activities such as dressing, toileting and eating.	Difficulty walking or changes in the way of walking. Frequent urge to urinate or other bladder symptoms although can be common in older age.	Parkinson's disease-type symptoms such as slowed movements, muscle stiffness and tremors. Sleep disturbances causing people to move or talk in their sleep. Fainting, unsteadiness and falls.	Changes in food preference, over-eating or over-drinking.
Behavioural Manifestation: Hallucinations			
Visual hallucinations where they see objects, animals or people that aren't there.		Visual hallucinations where they see objects, animals or people that aren't there.	
Behavioural Manifestation: Behaviour and personality			
Mood or behaviour problems such as apathy, irritability, or losing confidence with some people can become sad or depressed. Increased anxieties, phobias, anger or agitation.	More emotional and personality changes including mood fluctuations more prominent, depression and apathy (becoming disinterested in things).		Lack of personal and social awareness including failure to maintain their normal level of personal hygiene and grooming. Lack of interest or concern, become disinhibited or behaving inappropriately. Making inappropriate jokes, lack of tact. Some people become impulsive or easily distracted. Changes in their humour or sexual behaviour, becoming violent, develop unusual beliefs, interests or obsessions. Lack of awareness of any personality or behaviour changes.

Table 3.1: Summary of dementia types and symptoms

Section 4:
Design principles

4. DESIGN PRINCIPLES

Introduction

. This section draws upon the previous sections, literature and the findings from the DH's recent Capital Programme to provide 12 Design Principles for dementia-friendly environments.

. These principles should guide the development of dementia-friendly environments in health and social care settings.

. The rationale behind the development of the principles has been linked to the dementia related sensory, cognitive and physical impairments.

4.4. Supporting references have been presented at the end of the document for each design principle.

Development of the design principles for dementia-friendly environments

Design principles

. Various researchers have developed different sets of design principles and assessment tools that evaluate the impact of the built environment on people with dementia. The Design for Dementia Audit Tool developed by the DSDC at the University of Stirling (Cunningham, Marshall et al. 2008 and Cunningham 2009) based on criteria identified by Marshall for residential facilities for people with dementia (Marshall 2001). The Environmental Audit Tool (EAT) developed by NWS Department of Health (Australia), which comprises 72 items grouped in 10 principles (Fleming 2011). The Enhancing the Healing Environment (EHE) Environmental Assessment Tool was first developed in 2013 by the King's Fund to help organisations design more supportive environments for people living with dementia.

. All the principles apart from Principle 1 have been grouped under three dementia related categories: sensory; cognitive; and physical.

Principle 1 – 'Provide a safe environment' is considered an overarching principle.

Sensory impairments

. Dementia can reduce the ability to see, hear, taste, smell and touch. People with dementia can also find it difficult to distinguish and differentiate between simultaneous sensory stimulations and become confused. This can lead to greater risk exposure and the need for round-the-clock supervision as the disease progresses.

. Dementia-friendly environments thus need to promote Principles 2 and 3:

P2 - provide optimum levels of stimulation; and
P3 - provide optimum lighting and contrast.

Cognitive impairments

. Dementia can reduce the cognitive ability. This, along with difficulties in hearing, remembering and communicating, contributes to the person with dementia experiencing difficulties in finding their way around and engaging with their environment and the people in it. The consequence is reduced ability to communicate effectively and interact in social settings.

. Dementia-friendly environments thus need to promote Principles 4 to 8:

P4 - provide a non-institutional scale and environment;
P5 - support orientation;
P6 - support way-finding and navigation;
P7 - provide access to nature and the outdoors; and
P8 - promote engagement with friends, relatives and staff.

Physical impairments

. People with dementia can experience reduced mobility and balance due to changes in the cerebral cortex. Day-to-day functions such as walking, standing and sitting become increasingly difficult as the disease progresses. The person with dementia can also experience problems

eating as the ability to chew and swallow is impaired.

. Dementia-friendly environments thus need to promote Principles 9 to12 that:

P9 - provide good visibility and visual access;
P10 - promote privacy, dignity and independence;
P11 - promote physical and meaningful activities; and
P12 - support diet, nutrition and hydration.

. The following principles should be considered alongside other HBNs (see Section 2), especially on safety aspects.

. The principles have been structured in the following way:

- Rationale - To explain the reason behind each principle.
- Dementia and ageing related challenges - To explain how the dementia condition and the ageing process affect each principle.
- Supportive environmental interventions - To present design and environmental strategies that can compensate for lost abilities and support in maintaining abilities that still exist.
- Considerations for different stages and types of dementia - To present issues and potential design strategies that can support people in different stages and with different types of dementias.

Principle 1 - Provide a safe environment

Rationale

People living with dementia require health and social care environments that are safe, secure and easy to move around, so that they are to make the best of their remaining abilities.

Dementia and ageing-related challenges

Many dementia symptoms have the potential to reduce significantly the safety of people living with dementia. This can be related to sensory, cognitive and physical impairment, as summarised below. These are also covered by the remaining principles, which have been grouped under these three categories:

- **Sensory impairment** associated to he reduced ability to see, hear, taste, smell and touch. People living with dementia can find it difficult to distinguish and differentiate between simultaneous sensory stimulations and become confused. This can lead to greater risk exposure and the need for round-the-clock supervision as the disease progresses.
- **Cognitive impairment** associated with loss of memory and concentration, disorientation, and reduced time perception. This can lead to the getting lost, disoriented, or attempting to leave.
- **Physical impairments** associated with balance, gait; motor skills, increased fragility and visual-spatial difficulties. Lack of physical activities can improve the risk of obesity, diabetes, heart disease and stroke; and the risks of falls as impaired muscle strength and balance is one of the main reasons for falls.

Considerations for different stages and types of dementia

People with Lewy Bodies Dementia (LBD) can experience visual hallucinations and have difficulty with balance and judging distance; which can progress more rapidly with time.

Most of the LBD symptoms are progressive.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- be designed to reduce potential risks in unobtrusive ways as safety features and barriers can lead to frustration and agitation.

Dementia-friendly health and social care environments should include:

- appropriate design features (e.g. increased intensity of lighting and contrast, handrails that contrast with their background, appropriate walking aids, slip-resistant, matt finished flooring with no patterns and shadows, contrasting texture and/or colours at the beginning and ends of stairs, contrasting leading edges on stairs, and appropriate technology and sensors) to reduce the risk of slips, trips, and falls;
- safe storage for hazardous materials, with low contrast to de-emphasise entrances to reduce the risk of inappropriate access;
- orientation and way-finding cues to reduce the risk of getting lost and disoriented;
- appropriate visual cues to reduce the risk of malnutrition and dehydration;
- safe, level and uncluttered internal and external environments to reduce the risk of inactivity and falls;
- design features that reduce infection risks;
- slip-resistant surfaces in toilets, bathrooms, and wet-rooms.

Dementia-friendly health and social care environments should avoid:

- furniture, fixtures, fittings, unsafe tools and equipment that can lead to harm;
- poisonous plants;
- over-hot water pipes, and taps which are difficult to recognise; and
- sharp edges on fittings that could cause harm.

Principle 2 - Provide optimum levels of stimulation

Rationale

People living with dementia require optimum levels of stimulation. Dementia can reduce the ability to filter stimulation and attend only those things that are important, thus creating difficulties in dealing with multiple types and levels of stimulation. However, excessive sensory deprivation can also have negative impacts.

Dementia and ageing-related challenges

People living with dementia can often face difficulties with sensory overstimulation which can:

- increase distraction, agitation and confusion;
- result in stress thresholds being exceeded;
- aggravate the normal hearing loss associated with the ageing process and dementia; and
- be increased by visual impairments.

At the same time, sensory deprivation is common in people living with dementia and can:

- be caused by the lack of appropriate stimulation provided by the environment;
- contribute to increased confusion and agitation;
- Lead to apathy;
- reduce communication and interactions with staff; and
- reduce functional performance and attentiveness to the environment.

Considerations for different stages and types of dementia

Designers need to take into account that in different sensory stimulation strategies may be applied as the disease progresses.

Sensory stimulation is especially important during the later stages of dementia, when it may not be possible to process information or communicate through words, but the ability to respond to appropriate sensory stimulation remains.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- be designed, considering the full range of senses, to minimise exposure to stimuli that are not helpful, such as busy and crowded environments, patterned walls and flooring, unnecessary clutter, noise from televisions, alarms and so forth; and
- enhance positive stimulation to enable people living with dementia to see, touch, hear and smell things (such as sensory and tactile surfaces and walls, attractive artwork, soothing music, and planting) that give them cues about where they are and what they can do. Cues need to be carefully designed so that they do not add to clutter and become over-stimulating.

Dementia-friendly health and social care environments should include:

- multisensory environments, such as sensory rooms, that combine interior design features with ambient features to create multisensory experiences. Staff need to be provided with appropriate training to ensure such resources are used to best effect and in some cases mobile devices or flexible rooms provide a more cost effective solution;
- areas where people living with dementia can engage in purposeful and meaningful activities;
- small scale lounges and day rooms that help reduce the over-stimulation;
- quiet areas where people living with dementia can seek respite; and
- sensory gardens to stimulate the senses (e.g. enjoying various forms of sensory stimulation such as fresh air, fragrances, sights, birdsongs, sunshine and warmth); and
- more purposeful activity areas in the garden, (e.g. gardening, planting, picking flowers and feeding birds).

Principle 3 - Provide optimum lighting and contrast

Rationale

Lighting is a significant aspect of building design and one of the primary contributors to the visual environment. It has also been established that lighting design can help to define the function of the space especially for the elderly or partially sighted.

Dementia and ageing-related challenges

People with living dementia in long term facilities or spending extended periods of time in health care facilities often experience reduced exposure to light which can affect the optimal circadian rhythms and cause sleep disorders, such as:

- difficulty initiating or resuming sleep;
- sundowning;
- waking during the night;
- waking too early;
- feeling unrefreshed upon waking; and
- day-time sleepiness.

Vision deteriorates with age, and can include the following effects:

- decreased visual acuity;
- decreased natural vision;
- decline in sensitivity of visual field;
- generalised reduced colour vision (colours become less bright and the contrast between different colours less noticeable);
- decreased contrast sensitivity, which also affects the ability to perceive depth;
- difficulty in adapting to bright light and darkness; and
- inability to tolerate glare.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- provide natural light, allowing for sunlight to be present throughout the day;
- provide high levels of light to guarantee suitable illumination of all main areas;
- guarantee uniformity of light and reduce dark areas where contrast with the brighter parts of the room inhibits vision;
- reduce exposure to light at night that can be associated with depressive symptoms (e.g. dimmer controls, by the bedroom door and bedside cabinet may be useful);
- reduce glare from light fittings, direct view above bed and sitting area by carefully placing light fittings and concealing light sources;
- support independence by providing: appropriate lighting between bed and toilet in en-suite rooms, and high contrast colour in the toilet;
- support daily activities by: enhancing task visibility, and directional illumination, avoiding bright zones within the field of view around the task, increasing the luminance on the task area, and using highly contrast colours; and
- reduce the risk of access to off-limit areas by using a lack of contrast to de-emphasise entrances;

Considerations for different stages and types of dementia

Lighting designers should consider the different visual capabilities of young and older people with dementia. They should also recognise that sleeping disorders vary according to the type of disorder and may require different solutions.

Principle 4 - Provide a non-institutional scale and environment

Rationale

People living with dementia should be supported to live independently in their own homes as long as possible, and avoid early and unnecessary admission to hospital or long-term care. However, when long-term care or hospital care is required, the therapeutic environments should be as un-institutional as possible in

Dementia and ageing-related challenges

If people living with dementia are not supported in the transition from home to long-term care or hospital care, they can experience:

- great difficulties in: finding their places in the new environment; coming to terms with their new roles and the loss of their personal and social identity, control and privacy; and making sense of the unfamiliar settings and their special terms;
- behavioural and psychological symptoms, such as aggression, agitation and psychosis, delusions and hallucinations, anxiety, apathy, and depression;
- increased risk of institutionalisation and mortality after hospital admission;
- mobility issues; and
- socialisation issues.

The behaviour and feelings of people living with dementia can be affected by the scale of a building. The factors which contribute to define the scale are:

- the number of people that the person encounters;
- the overall size of the building; and
- the size of the individual components, such as doors, rooms and corridors.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- present a scale that helps the person living with dementia feel in control and not intimidated by the size of the surroundings, or confronted with a multitude of interactions and choices;
- avoid layouts and sizes that can lead to crowded conditions (high social density and spatial density) and create sensory overstimulation;
- avoid long corridors of institutional character;
- support daily activities by providing clear layouts and interior decor that provides cues on the function of a room;
- support quality of life by introducing non-institutional interior design, decoration and artworks; and

Dementia-friendly health and social care environments should include:

- small scale, homely, and welcoming lounges and day rooms to reduce over-stimulation;
- a variety of spaces to support resident/patient choices and interactions with other residents, families and staff;
- bedrooms with en-suite, designed to support personalisation of the private space; and
- single-resident/patient bedrooms to support privacy and reduce disruptions during the night.

Considerations for different stages and types of dementia

Long-term facilities should be designed based on the “home-for-life” concept, which means that residents are able to stay in the same facility for the remainder of their lives.

The environment should be designed to accommodate residents who may become more dependent and over the years.

The variation of cognitive and functional abilities during the different stages of dementia needs to be considered to inform the design requirements.

Principle 5 - Support orientation

Rationale

People living with dementia can experience difficulties with orientation, which can encompass awareness of themselves, those around them, their location, and the date and time.

Dementia and ageing-related challenges

People living with dementia, when placed in an unfamiliar environment or new surroundings (such as hospital wards, day centres, residential respite care, and care homes) and/or with new people, may feel anxious and confused and disoriented.

Disorientation to location and time might lead patients/residents to:

- walk about for what appears to be no reason;
- attempt to leave; and
- wake in the middle of the night and get dressed, ready for the next day (especially in winter).

Considerations for different stages and types of dementia

Design strategies should take into account the progressive nature of dementia. People living with dementia can suffer of increased disorientation and fail to recognise familiar surroundings.

Not all types of dementia impact orientation to the same extent as Alzheimer's disease. People living with Alzheimer's experience greater impact on both orientation and memory. Disorders in space orientation may be less pronounced in patients with Frontotemporal lobar degeneration (FTLD) and more pronounced in patients with Lewy bodies (DLB) dementia.

As dementia progresses, people may also become confused about where they are. In the very late stage of dementia, especially Alzheimer's, people may not be able to remember their name or recognise themselves in the mirror. Mirrors should be removable or coverable.

The relocation of people living with dementia can result in a significant disorientation, which may lead to deterioration in the person's behaviour. Therefore, relocation for people with dementia should be minimised by designing long-term facilities based on the "home-for-life" concept.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- avoid objects or furniture that can lead to confusion regarding the function of a space;
- avoid visual clutter (e.g. unnecessary highlighting of staff doors) by providing appropriate storage areas to avoid/reduce clutter; and
- incorporate lessons learnt from the reminiscence therapy to support personal awareness in the design approach.

Dementia-friendly health and social care environments should include:

- appropriate cues to help people living with dementia identify the function of a space. Appropriate consideration needs to be given to redundant cueing (i.e. providing a number of cues to the same thing), recognising that what is meaningful to one person may not necessarily be meaningful to another;
- external landmarks visible from circulation spaces, such as buildings, tall trees, to assist orientation within building and outside; and
- internal landmarks to support people identify date, time and location, such as large clocks, boards for large print or pictorial display of weather. Internal land marks can also include artwork and items that give positive emotions whilst supporting orientation. These should be placed in a highly visible way, supported by light and colour contrast.

Principle 6 - Support way-finding and navigation

Rationale

Impaired spatial orientation in people living with dementia is frequently reported. The reduced ability of people with dementia to reach desired destinations (way-finding) on a daily basis affects their personal autonomy and quality of life. Spatial orientation should thus be considered a basic psychological need.

Dementia and ageing-related challenges

People with dementia tend to operate on a sequential basis from one decision point (reference point) to the next.

They also tend to have reduced ability when performing the following general way-finding tasks:

- remembering what is needed to reach a destination;
- performing the procedural components of a route (e.g. hesitating when choosing where to turn);
- understanding directions and keeping a sense of direction;
- self-correcting or identifying a way out of a situation by visualizing an alternative route;
- retracing actions (e.g. the person has to solve the problem of getting out of a destination zone as if it were a new problem);
- being able to stay focused or concentrate on a task;
- distinguishing relevant from irrelevant information;
- processing locational information (i.e. localising target objects in space);
- differentiating objects from backgrounds;
- recognising that an object has depth as well as height and width (i.e. depth perception);
- remembering and learning from mistakes or avoiding the same errors;
- looking for their room in the right corridor;
- finding their room even if their name and the photo of the occupant are shown on the door; and
- remembering their own room number.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- adopt small scale and simple layouts that reduce the need for decisions based on memory and inference;
- provide direct visual access to relevant spaces and functions to enhance understanding of a given setting;
- guarantee spatial proximity of related functions, such as kitchen, dining and activity rooms;
- have clear reference points, serving as spatial anchor points, able to combine form, function and meaning;
- avoid long corridors, monotony, uniform architectural composition leading to repetitive environments;
- provide well-defined circulation routes; and
- avoid changes of direction in the circulation system.

Dementia-friendly signage should:

- provide visual cues such as pictograms, resident/patient's name, portrait photograph and photographic labels;
- have arrows close to the relevant text to help make the connection between the two;
- avoid abbreviation;
- introduce noticeable landmarks that might have special meaning to users and can be used as reference points (e.g. pictures of local area); and
- use personal items to identify personal or private space (e.g. on doors to bedrooms).

Considerations for different stages and types of dementia

Designers need to take into account that during the course of the condition the ability to navigate the environment reduces. In the early stages, people living with dementia may get lost when traveling in an unfamiliar area.

During the middle and later stages they may even get lost in familiar places. In late stage, they may eventually become disoriented in their own homes.

Principle 7 - Provide access to nature and the outdoors

Rationale

Access to nature and the outdoors are important aspects of caring for people living with dementia and can have many beneficial effects. There is increased recognition of the importance of the outdoors (e.g. plants, flowers, water and wildlife) even when viewed from indoors as part of medical treatment or as part of a therapeutic strategy.

Dementia and ageing-related challenges

A reduced access to nature and the outdoors can have the following negative effects:

- reduced exposure to natural light and vitamin D;
- sleep problems and poor circadian rhythm;
- limited opportunities for exercise, which increases stress and the risk of obesity, diabetes, heart disease and strokes;
- increased walking about for what appears to be no purpose; and
- problems with communications and verbal expression;
- agitation, stress and aggression;
- stress and reduce excessive sensory simulation;
- poor diet; and
- low morale.

Considerations for different stages and types of dementia

As dementia progresses, multisensory external environments can help stimulate those senses less impacted upon.

To support access to the outdoors by people in the later stages of dementia, design solutions need to ensure the outdoors is accessible by those in beds and wheelchairs.

Dementia-friendly care environments

Dementia-friendly gardens and outdoor environments should:

- include well-defined pathways, free of obstacles and complex decision points, that guide people past points of interest which provide opportunities to engage in activities or social interaction;
- use appropriate contrast for paths, furniture and planting to help make the outdoors more accessible;
- support connection to familiar experiences, such as a shed with safe tools for use, areas with tables and chairs for eating and having afternoon tea, a clothesline and a play area as visiting children can give stimulation and personal enjoyment;
- support more purposeful activities, such as using non-toxic plants and horticultural activities as therapeutic tools;
- provide seating and covered rest areas;
- include access to animals and pets which may have significant therapeutic benefits; and
- provide sensory experiences to stimulate the different senses, e.g. smell, sound, vision, touch and taste.

Dementia-friendly health and social care environments should include the following:

- visual access to nature and the outdoors to maintain orientation with respect to the time of day and seasons, thus helping to compensate for orientation loss;
- conservatories with solid roofs or similar lobby type spaces to provide: visual access and connectivity to the outdoors; and assistance with darkness adaptation as people move from inside to outside or vice versa; and
- indoor non-toxic plants and appropriate images, artwork and decorations, which can supplement actual access to nature, and help provide a sense of ownership.

Principle 8 - Promote engagement with friends, relatives and staff

Rationale

Engagement with friends, relatives and staff can help people living with dementia maintain their identity, which can be lost without constant reminders of who they are.

Dementia and ageing-related challenges

Having a relative admitted to a care home can be very difficult for relatives as they may find themselves on their own without the person they have been caring for. Feelings of guilt can also set in. Woods, Keady and Seddon (2008) captured the importance of involving families in care homes and described the 'dementia care triangle' as the relationship between the person with dementia, relatives and care home staff.

People living with dementia can:

- experience reduced ability to communicate and in some cases exhibit dis-inhibited behaviour which makes engagement with communities, family and staff increasingly difficult; and
- suffer from sensory overload and slow thought processing, which means relatives may have to learn new ways to communicate and engage;
- quickly become institutionalised, when admitted to care homes, hospitals, or even in relatively short-stay facilities, without sufficient engagement with relatives; and
- have great difficulty in: finding their places in long-term care facilities; coming to terms with their new roles and the loss of their personal and social identity, control and privacy; and in making sense of the unfamiliar settings and their special needs.

Considerations for different stages and types of dementia

The transition into long-term residential stay can be traumatic and stressful but can be eased by greater involvement of relatives.

In the early stage of dementia, activities can be put in place to support relatives and staff engagement. As dementia processes, more one-to-one support may be needed and the involvement of relatives can help to ensure this is provided at an appropriate level.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- blend with the existing buildings and not stand out as 'special' units, as stigmatisation remains a problem for people living with dementia. Where possible a 'bridge' should be built between the unit and the community by providing a space that is used by both the community and people with dementia; and
- provide access around the site, where the unit is a part of a larger site, so people with dementia, their families and friends can interact with other people who live there.

Dementia-friendly care facilities should include:

- a variety of spaces that enables people living with dementia to choose to be on their own or spend time with others, such as spaces for quiet conversation with one or two others, and some for larger groups;
- a variety of internal and external spaces presenting a variety of characters, e.g. a place for reading, looking out of the window or talking, to cue the person to what is available and stimulate different emotional responses;
- dining and communal rooms that encourage residents/patients, family and staff social interaction;
- spaces that enable residents/patients and visitors to use internal and external environments. These should be attractive, comfortable, and encourage visitors to spend time and engage in meaningful activities, such as gardening;
- social networking technology that enables people with dementia to communicate with friends and family who are not able to visit on a regular basis; and
- reminiscence software and hardware that encourages relatives (especially younger relatives) to help construct digital life stories that can be used to support therapy and enhance respect, dignity and self-esteem. Reminiscence software and family photos can also be used to support engagement when relatives are not physically there.

Principle 9 - Provide good visibility and visual access

Rationale

Good visibility and visual access can give the person living with dementia the confidence to explore their environment and improve opportunities for engagement. It can also enable staff to observe from where they spend most of their time. This can help to reduce patient/resident, relatives and staff anxiety.

Dementia and ageing-related challenges

People with dementia can experience:

- memory loss, which can create anxiety, stress and challenging behaviours; and
- a decline in the brain's ability to process visual information causing them to misinterpret their environment or experience hallucinations.

There may also be some non-dementia related causes of reduced vision such as:

- normal ageing of the eye;
- eye conditions, such as cataracts; and
- other health conditions.

Human vision deteriorates with age, including the following effects:

- decreased visual acuity;
- decline in sensitivity of visual field;
- generalised reduction in colour vision (colours to become less bright and the contrast between different colours less noticeable);
- decreased contrast sensitivity, which also affects the ability to perceive depth;
- increased time to adapt to dark/light thresholds;
- difficulty in adapting to bright light and darkness; and
- inability to tolerate glare.

Considerations for different stages and types of dementia

The ageing process for most people creates the need for brighter light.

Mid-stage Alzheimer's can result in the equivalent of tunnel vision.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- help people with dementia recognise where they are, where they have come from and what they will find if they head in a certain direction;
- help people with dementia make choices and find where they want to go, by making key places, such as a lounge, dining room, bedroom, kitchen and outdoor areas easily identifiable;
- provide uninterrupted lines of sight to provide reassurance that care providers are nearby;
- use high contrast, anti-glare flooring and walls to improve visual clarity; and
- have good (bright and even) natural and artificial light.

Dementia-friendly health and social care environments should include:

- contrasting texture and/or colours at the beginning and end of stairs and contrasting leading edge to stairs;
- sensory aids and visual cues to support visibility and visual access, such as surface textures, signage and sounds;
- de-cluttered environments to avoid over stimulation of the senses;
- furniture with transparent door panels that provide visual cues (e.g. to see clothes or personal possessions);
- visual clues and high contrasting crockery and tableware to support nutrition and hydration; and
- curtains and blinds or other design features that help reduce sundowning (e.g. reduced shadows) and reflections from windows at night.

Principle 10 - Promote privacy, dignity and independence

Rationale

Dementia can significantly impact privacy, dignity and independence which are key quality of life measures. Although mood and behaviour may change as dementia progresses, the individual remains a unique and valuable person that deserves to be treated with respect for who they were and are. Feeling independent can be just as important as actual independence and people living with dementia are often

Dementia and ageing-related challenges

Dementia can:

- affect a person's memory, speech, and ability to complete daily activities;
- have considerable impact on privacy, dignity and independence as the need for support with daily tasks increases;
- result in memory loss which can lead to feelings of reduced personal identity and self-esteem;
- reduce communication skills; and
- reduce visual and/or physical ability thus making bathing and going to the toilet very difficult without assistance.

Considerations for different stages and types of dementia

Cognitive and physical abilities during the different stages of dementia need to be considered and inform design requirements.

Bedrooms should be capable of accommodating two bed positions - one against a wall and one with three sided access as a resident declines. There should also be space for a hoist and wheelchair. The number of physical turns required transferring a resident into their room in a large wheelchair should be minimised.

With the increasing effects of dementia, the person can become more disoriented, less independent and the ability to perform self-care activities may decrease.

Private bathrooms will need to be increasingly wheelchair-accessible.

Basins should be ergonomically designed to support the reduced mobility of elderly people, and allow carers to help with personal grooming.

Designers should also consider that reduced independency can increase the risk of infections.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- afford people with dementia the opportunity to maintain their independence by using familiar building design, furniture, fittings and colours;
- provide opportunities for personalisation of the environment by the use of personal and familiar objects;
- be easy to navigate and understand thus helping with daily activities with as much independence as possible;
- support independence by making toilets easily identifiable and reachable from public spaces and from the bed; and
- provide appropriate lighting between bed and toilet in rooms with en-suite facilities.

Dementia-friendly health and social care environments should include:

- bedrooms with en-suite, designed to support personalisation of the private space;
- good visual access and circular routes which encourage mobility, thus supporting the feeling of independence;
- appropriate space and technologies that support therapeutic and meaningful activities;
- spaces such as dining areas and communal rooms that provide flexibility and choice, and support the feeling of independence;
- facilities for grooming, hairdressing and washing that people with dementia can use independently;
- wet rooms that make bathing a safer and less intrusive activity;
- sensory rooms which have the potential to provide calming environments and minimise potentially distressing care activities; and
- activity areas for reminiscence which can improve mood and wellbeing, and promote social inclusion and the person as an individual with a unique life experience.

Principle 11 - Promote physical and meaningful activities

Rationale

Being involved in meaningful activities is important for the quality of life for people living with dementia. It can: provide structure, purpose and pleasurable experiences; support the feeling of belonging in the world; and provide a sense of autonomy and identity; and encourage social interaction.

Dementia and ageing-related challenges

The ability of people living with dementia to perform basic daily activities and partake in meaningful activities can be reduced by:

- the increasing dependency developed in long-term care and acute facilities; and
- cognitive degeneration, which causes problems with communication, memory, planning and motor functioning.

The ability of people living with dementia to perform physical activities can be reduced by:

- rigidity;
- slowness;
- gait impairment; and
- other disorders of movement.

The lack of meaningful activities can:

- accelerate a decrease in functional ability;
- increase the tendency to walk about for no apparent reason;
- increase behavioural problems, apathy and social isolation; and
- lead to poor quality of life, which can affect mortality and depression.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- provide small scale areas that support person-centred activities, in addition to group activities;
- have an interior design that is non-institutional and stimulates interaction; and
- incorporate universal design features: all the activity areas should be made wheelchair-accessible, allowing enough space to facilitate wheelchair manoeuvrability, and be provided with handrails.

Dementia-friendly health and social care environments should include:

- well-defined circulation routes, free of obstacles and complex decision points, that guide people past points of interest.
- spaces for reminiscence activities;
- spaces for expressive activities, such as music and singing;
- spaces for leisure activities, such as looking at magazines, reading or knitting;
- socialising especially when family members are involved;
- spaces for physical exercise;
- spaces ordinary domestic activities, such as therapeutic kitchens; and
- work areas that reflect past interests and jobs, based on residents' life stories.

Considerations for different stages and types of dementia

The cognitive and physical ability of a person with dementia tends to deteriorate through the different stages of the illness; therefore, strategies for engagement in meaningful and physical activity need to change accordingly. Because of the loss of skills to initiate activities and the increasing need for visual or verbal prompting to start an occupation, people living with dementia may become increasingly dependent on their environment for clear cues.

Designers need to work with staff, especially occupational therapists, to identify how the built environment can be best used to support physical and meaningful activities according to patient and resident needs .

Principle 12 - Support diet, nutrition and hydration

Rationale

People living with dementia often experience diet, nutrition and hydration problems. They may suffer from: anorexia, poor nutrition and involuntary weight loss.

Dementia and ageing-related challenges

People living with dementia can demonstrate the following eating difficulties:

- partial or complete inability to initiate or maintain attention to eating tasks, get food into the mouth, chew or swallow, and recognise food;
- mealtime behavioural problems, such as walking about, pacing, refusal, apathy or indifference;
- difficulty in handling cutlery or crockery and getting food from the plate to their mouth;
- difficulty in opening their mouth as food approaches and may need reminding to do so;
- reduced or lost sense of smell and taste, because of the age, medication and illness; and
- inability to judge food temperature.

Dementia-friendly care environments

Dementia-friendly health and social care environments should:

- have appropriate lighting levels;
- include visual cues and appropriate environmental stimuli (e.g. pleasant food smells able to encourage appetite); and
- remove distractions, especially noise.

Dementia-friendly health and social care environments should include:

- dining rooms with family-style layout and interior design;
- socialising spaces;
- beverage facilities (e.g. trolley system) for relatives, visitors and patients to encourage dinking and improve hydration;
- contrasting colour for tableware and placemats;
- appropriate assistive devices;
- proper chairs (not wheelchairs) with good posture;
- homelike meal provision; and
- in the case of hospital wards appropriate bed spacing and the provision of a dining room away from the bedside to enable relatives to support care needs including nutrition.

Considerations for different stages and types of dementia

Designers should take into account that due to the degenerative nature of dementia, the impact on diet, nutrition and hydration may increase with time. Therefore, the need for the environment to support nutrition and hydration may also change and increase with time.

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Section 5:
Core design features

5. CORE DESIGN FEATURES

Introduction

. Section 5 is related to the previous section through the core dementia-friendly design features matrix represented in Figure 5.1. The matrix mainly draws upon the findings from the DH recent Capital Investment Programme: 'Improving the environment of care for people with dementia' to identify design features that are highly relevant to the design and operation of dementia-friendly environments.

. The Programme has provided evidence of which types of settings, types of spaces, types of interventions should be implemented. Across health and scoial care settings, the focus was largely on public and circulation spaces, where people spend most of their time. Interventions in sanitary spaces and individual spaces such as bedrooms were also delivered to enhance Quality of Life (QoL).

. As reported in the Dementia Friendly Environments Final Recommendations Report, the types of interventions on which the organisations focused are:

1. acoustics;
2. artwork;
3. ceilings;
4. colour;
5. decoration;
6. doors;
7. fixtures;
8. flooring;
9. furniture and fittings;
10. lighting;
11. reminiscence hardware and software;
12. signage;
13. walls; and
14. windows and transparent panels.

. This Section is structured in such a way to provide easy access to the specific information through the matrix and clear navigation through those elements of intervention with photographic reference to successful examples from the Dementia Capital Programme.

Matrix principle-design feature

. The matrix represents which design feature could lead to the satisfaction of each defined Principle, as described in Section 4. It can be used to identify the elements of the built environment on which a specific intervention can contribute to the achievement of one of the 12 identified principles to guide the development of dementia-friendly environments. It can also be used to comprehend how a design principle can be achieved through a physical intervention in the built environment.

. The matrix can be used at various design and operational stages in order to implement design choices against the optimum level of care provision for people living with dementia. Each of the design principles may apply in different ranges to different settings. Similarly, each of the described design features can be declined in different ways and applied specifically to health and social care settings.

. The design features in Section 5 provide details regarding potential interventions, based on the extensive data gathering and analysis of the 2013/14 DH funded Dementia Capital Programme. Provided are details of: what each feature aims to do; which of the principles it supports; how specific components can be designed and implemented; and where the feature can be applied within a specific space and setting.

. The format should enable: staff and carers to identify how the built environment can support their provision of care; and designers and managers to use the built environment to better meet the needs of people living with dementia. Families and relatives could also find it useful as the same principles will apply in some measures to their home. Specific design features can be easily and efficiently replicated at home to offer a more responsive environment in which people living with dementia can live can live independently and safely.

Design feature layout

. Most of the 14 design features are presented on a two-page layout which offers some generic information on the individual feature and the aim of its use within the physical environment, and some specific guidance for its application within spaces and settings. Four design features have used a four-page layout to accommodate the available information and provide additional reference pictures.

.1 . The design features comprise different elements including:

- construction elements (i.e. ceilings, doors, fixtures, flooring, walls, and windows and transparent panels);
- elements that can enrich the built environment (i.e. artwork, decoration, furniture and fittings, reminiscence hardware and software, and signage); and
- technical aspects (i.e. acoustics, colour and lighting) that could potentially be applied cross-construction element and to other elements that might have not been included in this selection.

.1 . The first page provides a definition of what each feature covers, an overview of the problems that people living with dementia might face and possible high-level solutions to be taken into account. How each design feature can respond to the named principles and possible differences between health and social care settings.

.1 . The second page provides more specific guidance on how different components and spaces can be addressed and on when due consideration should be required to deliver enabling and supportive environments for people living with dementia.

.1 . Page three follows the same layout as page two for those design features with more details on components and spaces, while page four provides additional reference pictures from the Dementia Capital Programme.

.1 . Some elements should be designed to enable a greater degree of flexibility (e.g. being highly visible or more hidden) to enable their use by different people at different stages of dementia and with different types of dementia.

Compliance with regulation

.1 . This section needs to be read in conjunction with the relevant specific regulation on infection control, fire and safety and disability, as reported in Section 1 and 2. Descriptions of the use of specific components in this section (e.g. materials as carpets, fixtures as taps, finishes as paintings) should account of statutory requirements and national regulation and appropriate cleaning, maintenance and upgrade.

DEMENTIA FRIENDLY DESIGN PRINCIPLES	DEMENTIA FRIENDLY DESIGN FEATURES													
	A	B	C	D	F	G	H	I	J	K	L	M	N	O
	Acoustics	Artwork	Ceilings	Colour	Decoration	Doors	Fixtures	Flooring	Furiture and fittings	Lighting	Reminiscence hardware and software	Signage	Walls	Windows and transparent panels
1 Promote a safe environment				X		X	X	X	X	X		X	X	X
2 Provide optimum levels of stimulation	X	X	X		X			X		X	X		X	
3 Provide optimum lighting and contrast			X	X		X		X		X		X	X	X
4 Provide a non-institutional scale and environment	X	X	X	X	X		X	X	X				X	
5 Support orientation	X		X		X					X	X	X	X	X
6 Support way-finding and navigation		X		X	X	X	X	X				X	X	X
7 Provide access to nature and the outdoors						X								X
8 Promote engagement with friends, relatives and staff	X	X			X		X		X		X			
9 Provide good visibility and visual access				X		X			X			X		X
10 Promote privacy, dignity and independence	X		X	X	X	X	X		X	X	X	X		X
11 Promote physical and meaningful activities	X	X					X	X	X		X			
12 Support diet, nutrition and hydration	X	X		X					X		X			

Figure 5.1: Core dementia-friendly design features

ACOUSTICS

Acoustics deals with the production, control, transmission, receipt and impact of sound. Dementia-friendly acoustics should consider locations where clear speech is important and where noise (unwanted sound) needs to be reduced or absorbed to ensure that distress and anxiety are minimised. Dementia-friendly environments need to take account of: the frequencies (Hrz) that are most commonly impaired due to ageing; the confusion and sensory overload caused by noise; and the positive impact that certain sounds can have on people living with dementia. Acoustic privacy can be achieved by providing separate spaces/rooms and using sound absorbent construction materials and finishes. Due consideration should be given to whether the noise travels horizontally or vertically, and from where it originates. Sound absorbent materials should be used for surfaces, fixtures and fittings whenever possible as they can contribute to quieter, peaceful and restful environments. Noise reducing design solutions and sound-effect technologies must be integrated within the built environment.

To support P2 'Provide optimum levels of stimulation': *Use spatial layouts and adjacencies that minimise unwanted sound transmission during the day and at night.*

To support P4 'Provide a non-institutional scale and environment': *Include quiet spaces with easy access to music or other positive sounds.*

To support P5 'Support orientation': *Introduce sound effects throughout the building and outside to promote orientation to time or activity.*

To support P8 'Promote engagement with friends, relatives and staff': *Use a combination of memory stimulating sounds, sound absorbent materials and sound diffusion system technologies to enhance communications.*

To support P10 'Promote privacy, dignity and independence': *Employ sound absorbent materials and noise reduction strategies.*

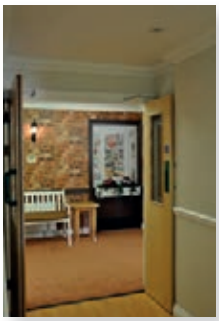
To support P11 'Promote physical and meaningful activities': *Use music and other meaningful sound effects to encourage reminiscence and interaction.*

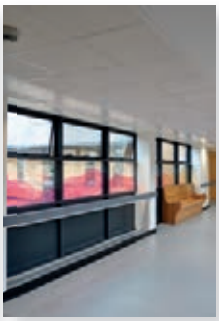
To support P12 'Support diet, nutrition and hydration: *Use sound effects to encourage eating and drinking. Use noise reduction strategies to reduce distraction.*

Notes on different settings – In health care settings, dementia-friendly acoustics should take due account of the potential background noise originating from clinical practice. Specific consideration should be given to patients' individual and communal areas. In social care settings, consider the impact of potential noise transition between the facility and adjacent buildings and/or external environment to prevent distraction and aspiration to suddenly leave.

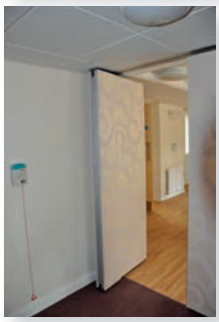
Acoustics components and spaces

Materials – Soundproof walls and acoustic tiles can help to diminish undesirable noise that travels horizontally throughout the same floor, especially where adjacent rooms have different functions. Acoustic flooring can be used to reduce noise travelling vertically through different spaces. Acoustic linoleum can reduce noise levels through an insulating layer laminated to the linoleum sheet. Some types of vinyl flooring have shock absorbing acoustic qualities, which can reduce noise transference in relation to thickness. Carpets can also be used to absorb sound and decrease noise diffusion where appropriate.



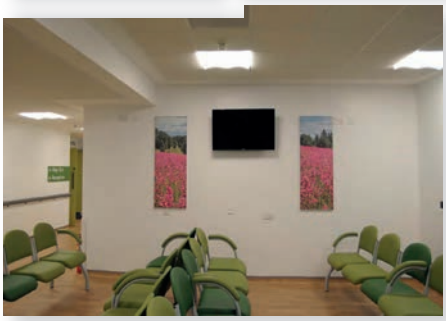


Elements – Internal partitions, screens and curtains can be designed to reduce noise and achieve appropriate sound levels for people living with dementia. Automatic door closures can help to reduce stress levels caused by unexpected noise. Furnishings can absorb sound; however, excessive clutter and confusion should be avoided. Silent call bell systems can help minimise overall noise levels. Ceiling heights can be adjusted to improve the acoustic performance of space and due consideration should be given to reducing height in non-clinical rooms and areas.



Spaces – Quiet rooms within acute, social and community care settings can help to create more relaxed environments for people living with dementia, who should be able to access such spaces as freely and independently as possible. Quiet spaces and rooms can be conducive to reminiscence therapy and interaction. They should be introduced in the design of different care settings (e.g. acute wards, residential care homes, community day centres), where meetings with families, carers and visitors can be held in a confidential environment. Alternative technical solutions can be introduced where space is limited.

Systems – Good quality sound systems should be installed in indoor areas to provide sound effects that help reduce distress and anxiety (e.g. sounds of nature, familiar sounds). Their use in wet rooms and other rooms where people living with dementia might feel uncomfortable can make them feel more at ease. Due consideration should be given to cultural differences and personal experiences, thus providing flexibility and personalisation. Gardens and outdoor areas can also benefit from sound effect systems, which can simulate the types of natural noises expected in a garden, such as birdsongs.



Sound effects – Sound effects that reflect the natural environment, such as gentle waves on a beach or birdsongs in the countryside can be made available through large push buttons to stimulate the senses and provide connection to the outdoor environment. These features can support orientation and can be used within internal and the external spaces, such as gardens and patio areas as they can be easily added onto elements of furniture and bespoke fixtures. Careful judgement should be used to avoid creating confusion, at specific dementia stages. Design such systems so their visibility and accessibility relates to the individual needs, abilities and preferences, in that care setting at a given point in time.

Layouts – Space and room layout can contribute to control and reduce noise enabling dementia-friendly acoustics. Communal spaces and individual spaces often require different solutions (e.g. mobile wall partitions can help re-size a dining room when not used at full capacity, bed pods can control noise in proximity of an individual bed). Due consideration needs to be given to the positioning of circulation, communal, dining and activity spaces as they are likely to have higher noise levels. Ceiling height reduction can help minimise levels of noise. Mechanical, electrical and plumbing systems should be located as far as possible from areas in which people living with dementia spend long periods. Furniture locations can also help to create dementia-friendly acoustics.

ARTWORK

Artwork includes all those elements of artistic work that contribute to the physical appearance of the built environment, including photographs, paintings, drawings, sculptures and other non-textual material. Artwork can support people with dementia live a life as close as possible to how they were living prior to the onset of dementia (e.g. eat, sleep, dress and do activities); objects of art can help overcome sensory, cognitive and physical impairments. Artwork can be displayed either on a permanent or temporary basis throughout public areas, treatment spaces, and individual or personal zones. Artwork selection should take into account culture, as artwork may have different connotations for people from different cultural backgrounds. Artwork can comprise traditional pieces as well as more modern elements of artistic representation, including digital photography and photo-frames, projectors with sensory animated scenes, and HD screens.

To support P2 'Provide optimum levels of stimulation': *Use recognisable traditional and original new technology-based artwork. Avoid clutter. Consider appropriate line of sight for people standing, sitting or in bed.*

To support P4 'Provide a non-institutional scale and environment': *Use scenes of natural landscapes, local heritage and elements of interest to the people who are likely to access the facility.*

To support P6 'Support way-finding and navigation': *Locate photographs, paintings, drawings, sculptures and audio-visuals where people need to make decisions about which way to go. Train caregivers to use these landmarks as orientation cues.*

To support P8 'Promote engagement with friends, relatives and staff': *Provide individual choice trough moveable elements and supportive technologies. Place artwork to support conversation where people gather.*

To support P11 'Promote physical and meaningful activities': *Introduce elements of art in public areas and allow personalised artwork in spaces that provide opportunities for promoting self-esteem and personal identity.*

To support P12 'Support diet, nutrition and hydration': *Select types of artwork and chose specific themes to help recall memories of food and drinks.*

Notes on different settings – Consideration should be given to personalised artwork in any setting aimed at promoting self-esteem and personal identity. The choice and design of artwork in health care settings should consider the shorter length of stay compared to social care settings, and provide flexibility and adaptability.

Artwork components and spaces

Traditional types – Artwork can include: traditional paintings; high quality prints and photographs; original handcrafted pieces; bespoke art murals; and collages of local pictures of the past. Changeable panels can provide cost-effective solutions where flexibility is needed. Clear and easily identifiable images should be used, however, some bright images can be difficult to identify by people with dementia. Due consideration should be given to avoid potential confusion caused by the use of abstract artwork, especially in public areas accessible to people with different levels of dementia.

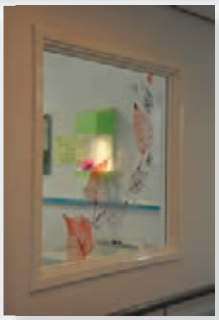
Innovative types – Artwork can take the form of: digital photo-frames; slideshows; tactile representations; projected audio-visuals; and interactive features. This use of innovative technologies can be helpful to accommodate variations in preferences between different patients/residents. Vinyl or translucent artwork can be used for windows/screens to increase privacy and to represent the outside (where appropriate to do so). Reminiscence artwork should carefully consider type and level of dementia.

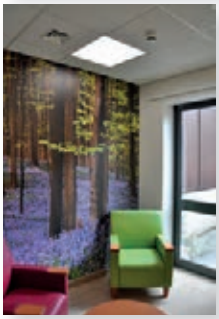
Themes – Natural themes with mood calming images of landscapes, farmlands and coastal areas, including representations of flowers, fruits, plants and trees should be used. However, care needs to be taken as certain types of flowers, plants and animals can convey different meanings to different cultures e.g. Chrysanthemum can mean: life and are used at weddings in China; or death and used for funerals in Italy. Attention should be paid when using images of living things, as they can be offensive to some minorities and ethnic groups. Pictures/images of the seasons can relate to personal preferences but caution is needed depending on the context. Historic themes can support long-term memory and prompt interaction. The choice of themes should reflect the activities that happen in a space (e.g. images of food in a dining room).

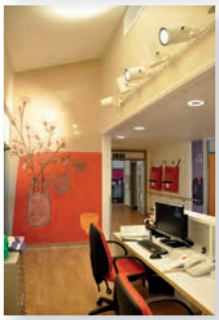
Scale – Images of familiar objects can be used to improve personal identity within the built environment. Local landmarks and heritage sites can provide memory aids and elements of interest, and bring nature into the environment of care. Individuals living with dementia should be actively involved in the choice and/or production of objects of art. Relatives and friends could also provide useful advice.

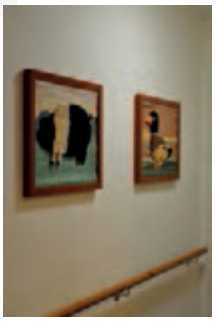
Location – Graphic artwork should be used to: create an individual identity for each space, ward, bedroom and bed bay; and help with navigation through the entrance, corridors and communal areas. Artwork in corridors, break out spaces and day rooms can stimulate conversation. Wall art, pictures and/or totems and distinctive landmarks could be located at the main entrance to the setting and the entrance to each area to help with orientation and way-finding. Easily recognisable images should be placed in quiet rooms to provide a focal point for families and people with dementia. The use of artwork can help to reduce the institutional feel of the clinical spaces.

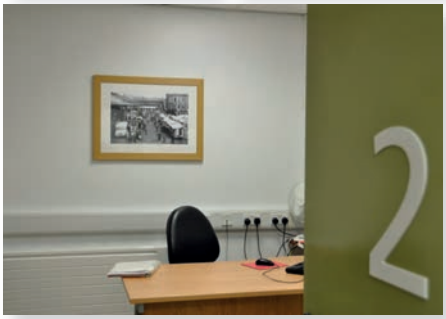
Physical position – Due consideration should be given to the physical position of objects of art in the room/space to encourage appropriate use/activities and avoid confusion. Orientation boards mounted behind bedheads can help people to identify their individual space. Height of the artwork should take into account line of sight of people standing, in wheelchairs and in beds. Installation and location should consider lighting, glare and blind corners.











CEILINGS

Ceilings provide horizontal closure of space. The finishes include all those elements that contribute to the interior lining and decoration of horizontal enclosures, including tiles, false ceiling panels and paintings. The design of ceiling finishes should take into account the need to reduce vertical sound transmission and reflection in different types of spaces. Due consideration should be given to the time patients and/or residents spend in bed or on trollies, for example: reduce glare and shadows from ceiling lights; and use ceilings that provide points of interest or locational and directional information at the line of sight and with identifiable size of fonts and pictograms. Ensure fixtures to ceilings (e.g. lighting fixtures) do not present fire hazards especially where innovative materials are being used. Ceiling heights can be adjusted to improve the acoustic performance of space and due consideration should be given to reducing height in non-clinical rooms and areas, where fixtures and space function do not require high ceiling solutions.

To support P2 'Provide optimum levels of stimulation': *Combine noise and light control design solutions according to functional requirements.*

To support P3 'Provide optimum lighting and contrast': *Use glare control materials and design solutions according to building type, spatial layout and function.*

To support P4 'Provide a non-institutional scale and environment': *Use non-institutional ceiling finishes, hide services and reduce ceiling heights.*

To support P5 'Support orientation': *Locational and directional information can be provided and integrated within ceiling fixtures.*

To support P10 'Promote privacy, dignity and independence': *Use noise-reduction design solutions and sound proofing materials and finishes.*

Notes on different settings – In health care settings, high-tech shiny ceilings with services should be concealed with appropriate solutions to reduce the institutional feeling, particularly in clinical spaces. In social care settings, ceilings can be personalised to residents' preference (e.g. changeable decorative panels and lighting projectors), ensuring flexibility options where required to be cost-effective over time.

Ceilings components and spaces

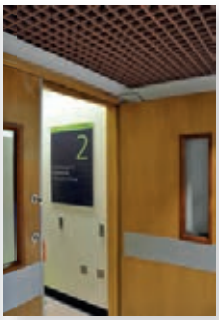
Materials – Materials used must meet infection control standards, fire regulations, cleaning regimes, how do we meet maintenance and up grades. Noise-reduction solutions (e.g. suspended acoustic decorations, bed pods) and soundproofing materials (e.g. modular tiles, textured drywall) should be used to control unwanted sound and to enhance the listening environment. Due consideration should be given to protection with blinds if glazed solutions are chosen, as people living with dementia are known to be hypo and hyper sensitive to thermal conditions.

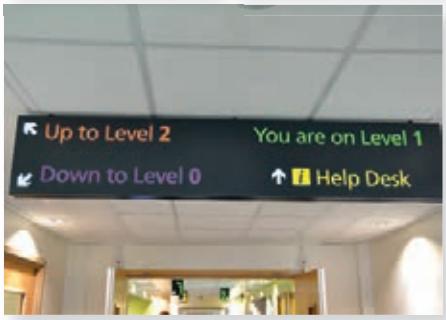
Fittings – High-tech services in clinical areas and functional rooms can be hidden by appropriate fixtures to limit the institutional feel and reduce anxiety in people living with dementia. Suspended ceiling panels can be used to reduce ceiling height to enhance sound diffusion. The use of decorative ceiling tiles can reduce the institutional feel of clinical environments. Locational and directional information can be integrated within ceiling fixtures.

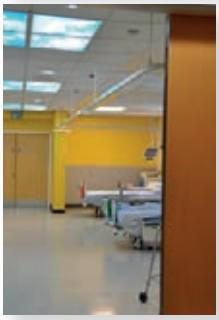
Colour – Soft white can be used as base colour. Colours in the red to yellow zone of the colour spectrum are more easily identifiable by people living with dementia than colours in the blue to green shades. Dark colours can impact the perception of the space, which may appear smaller and more enclosed, thus creating anxiety and confusion. Appropriate colour contrast should be used between ceiling and surrounding walls to help people with dementia identify where the walls finish and ceiling starts.

Themes – The choice of themes (e.g. pictures of nature) should support flexibility and variation, which can be achieved through interchangeable panels. Themed ceiling finishes should take into account the cultural background, age and personal life experience of the person living with dementia (e.g. a person might dislike a particular season as related to a negative life experience), hence flexibility options (e.g. interchangeable panels with different themes or plain panels) can be beneficial, especially within bedded areas and individual bedrooms. Themes need to be consistent with other themes in the same space to avoid confusion (e.g. decoration of ceilings should relate to decoration on the walls).

Sound effects – Within bed areas, ceiling tiles can provide elements of interest. Images projected onto the ceiling can prompt discussion when people are in bed. Due consideration should be given to avoiding elements that may confuse people living with dementia. Ceiling lighting which includes artwork can help create calmer and more interesting environments in both individual and communal spaces. Themed lighting and/or artwork used on ceilings in corridors and circulation spaces can result in people standing in other people's way, therefore, when deciding where to locate such features, carefully consider the width of corridors and door openings.







COLOUR

Colour is a visual perception of light reflected by surfaces, fixtures, decoration, fittings, furniture and signage within the built environment. The aging eye has reduced ability to perceive saturation of colour, therefore colour is less vivid (e.g. red can appear to be pink) and a yellowing of the lens tends to make colours appear muddy. Contrast sensitivity is the most consistent visual deficit in people living with dementia. Colour design is a fundamental element in dementia-friendly environments, as in particular types of dementia (e.g. semantic dementia) people may have to rely on their conceptual knowledge to identify individual items and thus use size and orientation in combination with colour. Cultural background and personal life experience can affect the individual's perception (i.e. like or dislike) of a colour. The use of colours should take into account visual impairments and the need to provide high-level contrast between the different built environment elements. Colour should also be used to support orientation, way-finding and creation of calm environments.

To support P1 'Provide a safe environment': *Ensure clear colour contrast between surfaces and among objects within the built environment, particularly elements that are of functional value to the person living with dementia.*

To support P3 'Provide optimum lighting and contrast': *Ensure lighting and shadow effects in day and night conditions do not unduly impact on colour contrast.*

To support P4 'Provide a non-institutional scale and environment': *Use different colour schemes between clinical areas and non-clinical areas. Provide wall treatments that enable people living with dementia to select their preferred colour scheme in their personal environment.*

To support P6 'Support way-finding and navigation': *Choose colours that are visible to the eye of people living with dementia.*

To support P9 'Provide good visibility and visual access': *Consider visual impairments and light reflectance when selecting the colour palette for specific areas.*

To support P10 'Promote privacy, dignity and independence': *Use consistently across the building identifiable high contrasting colours for sanitary spaces and fixtures.*

To support P12 'Support diet, nutrition and hydration': *Use: colour accents that promote appetite; contrasting crockery to improve visibility; and furniture needs to be clearly visible.*

Notes on different settings – In health care settings, use colour to promote a non-institutional feel to the environment. In social care settings, colour should be used to provide personal choice and inspire more home-like feelings.

Colour components and spaces

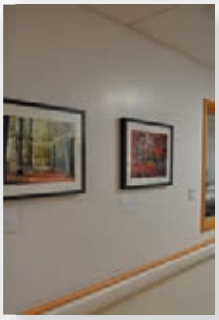
Colours – During the selection of colour schemes, due consideration should be given to colour blindness, visual impairments and light reflectance values. Colours in the red to yellow zone of the colour spectrum are more easily identifiable by people living with dementia than colours in the blue to green zone. Older adults tend to perceive colours as having increased yellowing shades. Pastel colours can be used, but they are difficult to distinguish for the ageing eye and strong vibrant colours are easier to remember. Ensure strong colour accents (e.g. bold colours) are used to highlight important elements in the environment, as people with dementia note them, but avoid brash colours. LRV colour schemes should be taken into account. Light projected onto walls can be used to change the colours schemes of walls to support personalisation and create different moods.

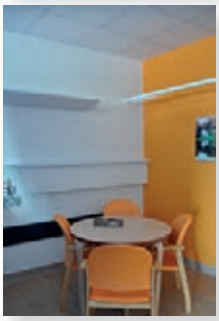
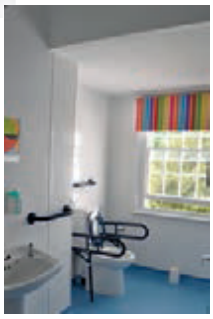
Contrast – Colour contrast should be pursued between floors, walls and ceilings with effective use of colour and lighting. Contrasting wall handrails should be used to support mobility and reduce the risk of falls (e.g. grey, yellow and red). Toilet seats that contrast with the colour of the flooring and toilet bowl support independence and dignity. Contrasting furniture, crockery and objects used on a day-to-day basis can help people living with dementia to identify chairs and tables, food on the plate and books on a bookshelf, and encourage them to: sit around a table; see and eat more food; and be more independent, active and healthier. Contrast should be achieved between frames of pictures/artwork and wall colour and between handles and doors/windows.

Coding – Coordinated colour schemes can be used to: distinguish between floors, wards, departments, rooms, areas and functions; and support orientation and way-finding. The use of colour should be used in combination with other elements such as artwork to provide visual cues to people who cannot rely on colour recognition. Colour coded areas, rooms and bays can be used to aid people with cognitive and sensory impairments to navigate around the environment and return to their bedrooms and beds. A colour referencing system helps in the identification of room function, and especially to depict toilets and shower rooms.

Spaces – Calming colours should be used in bedrooms and bedded areas, and colour accents should help in spatial recognition and identification. Strong colours are often required to assist with identification of an area, but the main pointers should be objects and landmarks, as not every person with dementia will perceive colour in the same way. Bright and energetic colours in living areas and activity spaces can encourage movement, activity and interaction away from the bedded areas. Colours can promote appetite (e.g. red and orange) in kitchens and dining areas. Within the same room/area different colours should be used as a cue to the expected function (e.g. where food is served or where food is eaten).

Navigation – Colour blocks can breakup clinical spaces and create a non-institutional feeling of the environment, thus improving wellbeing, reducing stress and encouraging mobility. Colour can help to identify space function: e.g. the ward and the bed bays within it (e.g. colour coded cubicles within each bay). Colours can be located inside and outside of the rooms, thus enabling patients/residents to identify the room they are in when they are out of or in the same room. Avoid using too many colours and patterns at once, which could cause confusion and disorientation in people living with dementia.



DECORATION

Decoration refers to decorative finishes and comprises elements and ornaments that enhance the visual and textual appearance of the built environment, generally enriching the level details within a space. Such decorative details can help people living with dementia to: orientate where they are in the building; navigate around the building; and identify and/or separate different elements. People with living dementia often have reduced sensory, cognitive and physical capabilities, and thus require a steady stream of information to compensate for reduced short-term memory loss; however, care should be taken to avoid excessive information that needs to be processed. Decoration can enhance lighting and provide good colour contrast and a non-institutional homely environment, with elements of soothing décor. Themes for decorative finishes should flow through all areas and across all spaces to avoid confusion and distress, and enhance the journey and personal experience whilst navigating the built environment.

To support P2 'Provide optimum levels of stimulation': *Avoid excessive use of patterns and ensure consistent choice of decoration themes across spaces.*

To support P4 'Provide a non-institutional scale and environment': *Use non-institutional décor and encourage personal aspects of decoration.*

To support P5 'Support orientation': *Use textured and visual cues within circulation spaces. Décor should clearly reflect activities associated with specific rooms and/or spaces.*

To support P6 'Support way-finding and navigation': *Integrate elements of decoration into the overall way finding strategy. Themed decoration should support the creation of a journey/flow through the spaces to encourage physical and meaningful activities.*

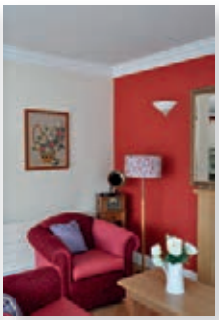
To support P8 'Promote engagement with friends, relatives and staff': *Provide interactive décor and encourage personalisation of individual spaces and/or rooms.*

To support P10 'Promote privacy, dignity and independence': *Design for flexibility and personalisation based on different cultural backgrounds, personal experiences and individual impairments.*

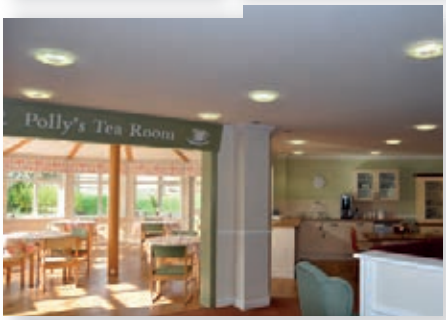
Notes on different settings – Avoid excessive use of patterns and clutter in all settings. In health care settings, the choice of decorative objects and finishes can help reduce the institutional feel of the environment. In social care settings, consistent use of décor across spaces and areas can improve independence, personalisation and self-confidence.

Decoration components and spaces

Décor – Decoration should enhance lighting, provide good colour contrast and create a non-institutional homely environment with elements of soothing décor. General décor can enhance way-finding and navigation across the built environment; and it can also provide a means to engage with friends, relatives and staff. Due consideration should be given to cultural differences, especially in public areas, entrances and circulation spaces.



Colour – Colour scheme selection should take due account of and enhance natural and artificial lighting levels, during the day and at night. People living with dementia may have problems with visual acuity, contrast sensitivity and colour vision. High colour contrast and non-institutional colour schemes can improve the perception of the environment, influence mood and improve the individual experience of people living with dementia, staff, carers and visitors.

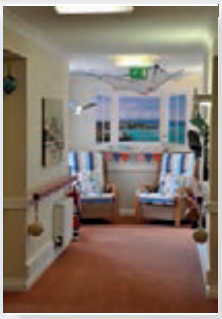


Finishes – Decorative finishes should be used consistently across all spaces within the building, areas and rooms, based on function. Consistent elements of décor can be applied to define individual rooms. Personalisation of space in individual bedrooms and above beds in multi-bed bays can help de-institutionalise and individualise space and support way-finding. Floor, wall and ceiling finishes should be clearly distinguished to ease identification of where the floor finishes and the wall starts.

Fittings – The choice of fittings should be consistent across areas and rooms with similar functions (e.g. clocks, calendars, cutlery and crockery, curtains) to minimise the distress of changing environments. Non-institutional fittings should be used in non-clinical areas, in compliance with infection control and fire regulations. Due consideration needs to be given to people living with different stages of dementia in the same environment, as they may require different and/or more flexible solutions to accommodate different needs.

Spaces – Decorative finishes should create and clearly reflect activities associated with specific rooms and/or spaces. This helps to: create destination points; encourage mobility, activity and interaction; and reduce anxiety, violence and aggression. Themes should represent: social activities, such as tea rooms and pubs; traditional activities such as knitting and gardening; and external activities, such as hairdressers, barber shops, cinemas and libraries.

Circulation areas – Decorative finishes should support the creation of a journey/flow through spaces to encourage physical and meaningful activities. Appropriate themed decoration can help distinguish between main circulation areas and inner circulation spaces, and different areas within the same space/room. To create interest and encourage mobility, décor can be used to provide themed corridors, such as: historical locations; sport; seasons of the year; and music and/or films related to specific decades relevant to the people who will access them. Circulation areas need to be clearly signposted with landmarks, totems, colours and elements that can be identified and recalled by people living with dementia.



DOORS

Doors include all types of internal and external closure elements used to separate different functional areas within the same building. Doors are also essential elements that can: insulate; improve acoustics; address infection control; reduce fire egress; and support privacy and dignity. The design and specification of doors and door components need to: take due account of vision and touch impairments; enable people living with dementia to independently orientate, way-find and navigate space; and be of appropriate material, weight, size, colour and finishes. Door closure systems should be designed to ensure smooth and quiet closures, to avoid unintended noise that could cause distress and anxiety to patients and residents when doors are operated, especially at night. Efficient technical solutions such as re-facing existing doors or painting the doorframe should be used where appropriate.

To support P1 'Provide a safe environment': *Use lightweight and traditional door handles for interior spaces; install motion sensors or automatic door opening devices on doors to courtyards; and consider alarm sensors on external doors that lead to potentially unsafe areas.*

To support P3 'Provide optimum lighting and contrast': *Design to reduce undesirable reflections, glare, lights effect, and wear and tear on the doors.*

To support P6 'Support way-finding and navigation': *Use colour-coded doors or doorframes, to differentiate and improve visibility, in combination with doors that blend in, to hide.*

To support P7 'Provide access to nature and the outdoors': *Consider using glazed external doors, particularly if there are accessible gardens, courtyards or patio areas in the proximity.*

To support P9 'Provide good visibility and visual access': *Consider using: glazed doors in communal areas; and solid, partially glazed or opaque doors with in bedrooms and bed areas.*

To support P10 'Promote privacy, dignity and independence': *Consider design, colour contrast, signage and manoeuvrability of doors. Split doors provide a degree of privacy when doors need to be left open for visual orientation and recognition purposes.*

Notes on different settings – A greater degree of personalisation can be achieved in social care settings to enhance way-finding and independence. In health care settings, consistency across departments can enhance patients' experience through the journey, and solutions such as re-facing or door protection can prove to be cost and time efficient.

Doors components and spaces

Materials and finishes – Wood and wood effect finishes should be installed where possible to help create a non-institutional feel. Vinyl finishes and/or laminates applied to doors can be an efficient cost-effective refurbishment solution rather than installing new doors. Clearly visible glazed doors (subject to safety and fire standards) can be used within internal areas, where visual privacy is not an issue. Glazed external doors can: help with orientation (time of day or season); provide clear lines of sight; and provide external and gardens views. The type of transparent vision panel solution to be used will need to reflect the function of the spaces on both sides as well as other safety, acoustic and privacy issues.

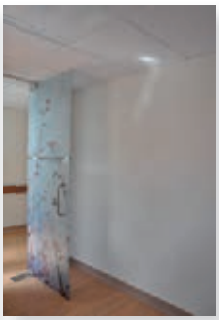
Types – Lightweight and traditional doors should be used. French windows (or similar) can be installed in the rooms overviewing a garden or patio to bring fresh air inside and ease access to the outdoor space. Split doors provide a degree of privacy when doors need to be open for visual orientation and recognition purposes. Non-institutional design solutions for observation/glazed panels can be used in doors to activity rooms to allow visual access and encourage participation. Sliding doors can be operated by push buttons or motion sensors which can be switched on to manual operation and/or locked in a preferred position.

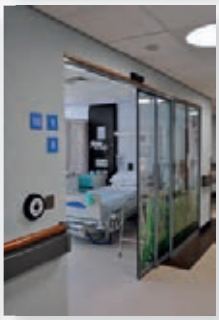
Colour – Doors to be accessed by people living with dementia should be finished in dementia-friendly colours. Usable entrance/exit doors can be more prominent with the use of additional contrasting colours. Uniformity should dominate the colour coding of all toilet doors. Consistent colours and images that relate to room/space function should be used for doors to the rooms and bays. Strong vibrant colours should be preferred and due consideration given to colour blindness and visual impairments. Ensure colour contrast between door and its handle.

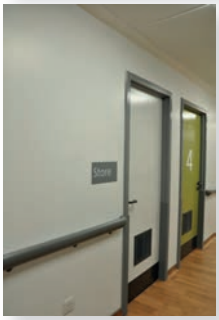
Restricted access – Camouflage can be used to hide restricted access doors (e.g. high impact colour co-ordinated plastic sheet). Doors covered with colour matching protection panels that merge in with the adjacent wall can also help with to prevent inappropriate access, e.g. to staff or service rooms. Due attention should be given to the choice of the images on the doors to ensure they do not cause confusion, distress and frustration.

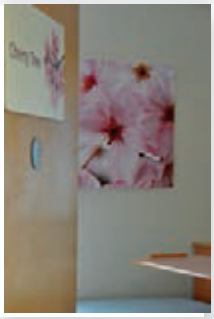
Fixtures – Doors with integrated artwork can help hide fixtures, equipment and activities, thus creating calmer environments and reducing sensory overload. Bold colour-coded door protection can be used either half height or full height, in a consistent arrangement throughout the entire building if possible. When the door does not have a high contrast colour, the head/casing/frame can be colour-coded to define the doorway. Colour co-ordinated architraves can match the door's leading edge and the room colour. Manoeuvrability of door handles should take into account that people living with dementia can have limited mobility and reduced strength.

Signs – Coloured door signs may contain different slots where a name, meaningful photograph and/or room/house number can be placed to enhance room identification and individual orientation. A picture or image relating to the function of the room should be placed on doors to provide a visual cue that prompts use, for example, toilet and shower doors should be prominent. Signage applied to both sides of the door can ensure that the sign is visible even if the door is open, thus helping with way-finding and navigation and reducing confusion. Height of the signs should take into account the line of sight of people who might not be in an upright position or are in a wheelchair or in bed. Care should be taken to avoid information overload which might lead to confusion.





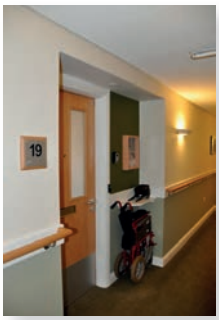




Doors components and spaces

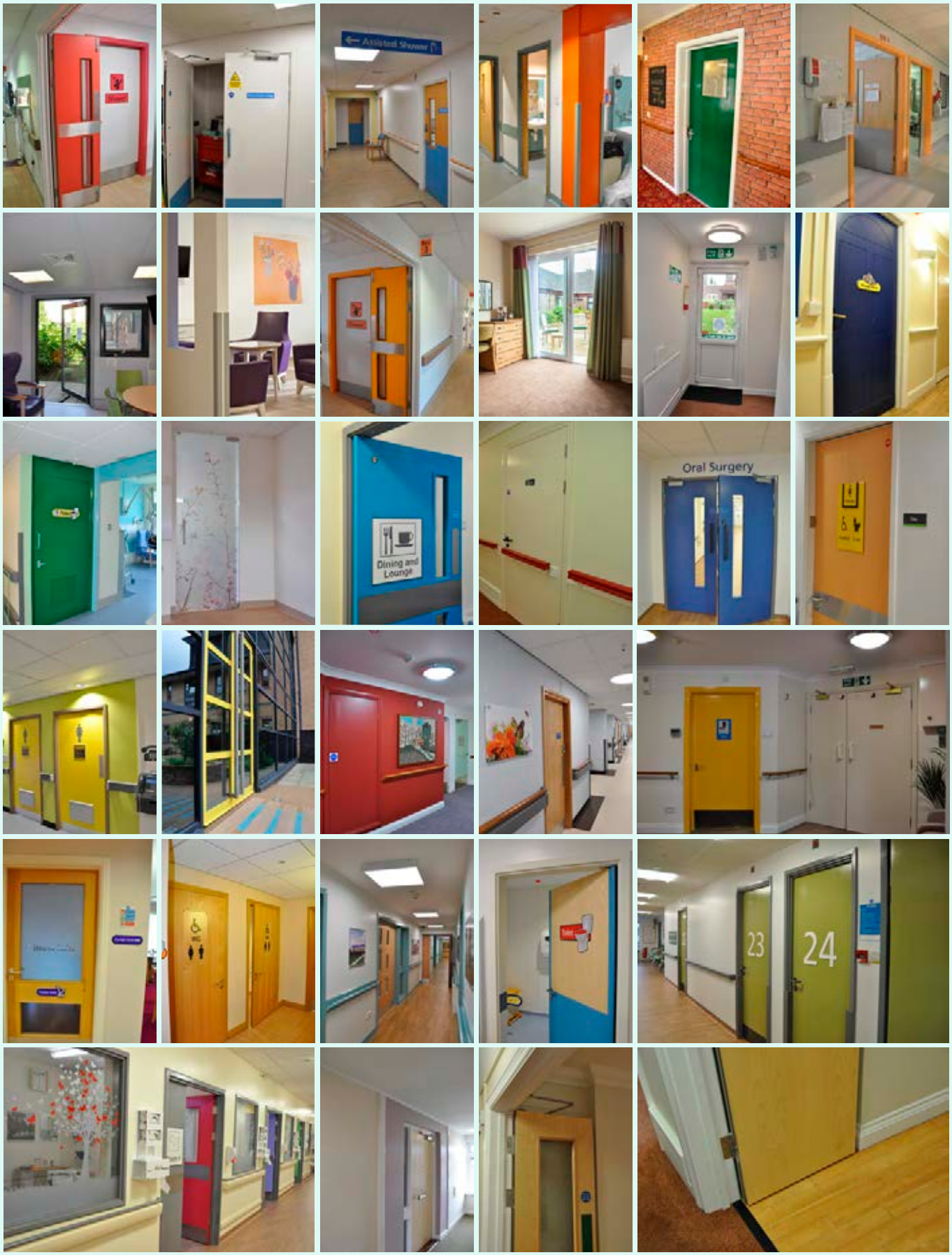
Personalisation – Doors should be personalised to improve navigation and way-finding, thus enhancing independence. Coverings, artwork and personal objects can be positioned on doors to bays, single rooms and apartment doors in acute and social care settings, and extra-care houses where the door provides access to a personal space. Due consideration needs to be given to patients' and residents' cultural background to avoid upsetting personal feelings and beliefs.

Health and safety – Additional health and safety features should be considered in relation to the level and type of dementia of people operating specific doors. Locational and acceleration devices (e.g. disguised as watches or other objects of daily use) and alarm sensors on external doors can be used to support independence but ensure safety (e.g. in case of a fall in a different area to where the person is expected to be). Hand trapping guards can be added as appropriate to doors that are manually operated. Safety systems should be installed on automatic swing doors. Due consideration needs to be given to the use of latches when required, as safety and security access and egress should always be considered.



Reference pictures

This page offers additional examples of dementia-friendly design of doors, across a variety of settings (e.g. acute hospital sites, care-homes, extra-care houses and day-centres) and for different types of indoor and outdoor spaces (e.g. bedrooms, bathrooms, toilets, activity rooms, lounges, dining rooms, gardens, terraces and patios).



FIXTURES

Fixtures include items such as equipment, units and furniture fixed in position and require specific tools to be removed. The design and specification of fixtures needs to take due account of dementia-related impairments, while enabling people living with dementia to safely orientate and interact with the built environment. Fixtures must comply with current regulations and should be of traditional and/or familiar appearance. High contrasting colours should be used and visible during the both day and night needs to reflect potential use. Where appropriate and desirable people living with dementia should be able to use fixtures safely and independently (e.g. use of plug sockets needs to be supervised where it may be desirable for lights to be use independently depending on the context). Where appropriate, fixtures should be accessible (e.g. at an appropriate height), adjustable and flexible according to the needs of people living with dementia. Due consideration should be given to the use of anti-ligature fixtures to avoid/reduce the risk of self-harm and other incidents.

To support P1 'Promote a safe environment': *Use handrails and safety devices in public spaces and circulation areas. Use traditional colour coded taps.*

To support P4 'Provide a non-institutional scale and environment': *Conceal medical equipment and introduce traditional and/or familiar fixtures where appropriate.*

To support P6 'Support way-finding and navigation': *Use traditional fixtures including memory boxes in personal and public spaces, and differently from circulation spaces.*

To support P8 'Promote engagement with friends, relatives and staff': *Use memory boxes and memory storyboards with personal objects and/or images.*

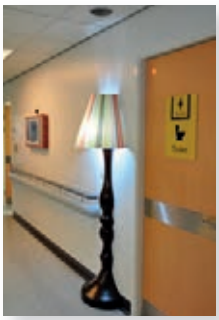
To support P10 'Promote privacy, dignity and independence': *Ensure that fixtures can be recognised and safely operated by people living with dementia, where appropriate.*

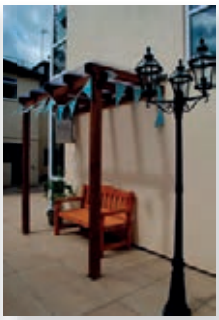
To support P11 'Promote physical and meaningful activities': *Traditional items are useful cues in public and circulation spaces, however, if installed they should be functional.*

Notes on different settings – Compliance with infection control, fire and safety, and disability regulations is essential. It may be possible in social care settings to: introduce more home-like and domestic fixtures to reduce the institutional feel and provide a greater degree of personalisation. This may not be possible in health care settings where different approaches to de-institutionalise and personalisation may be needed.

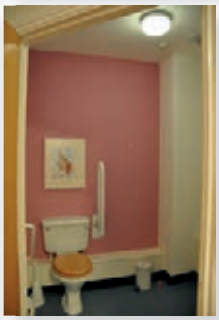
Fixtures components and spaces

Lighting – Use non-institutional style wall lights, lamps and lampshades where appropriate. Clear and high contrasting switches can help people living with dementia to locate and operate them independently. Low colour contrast (similar colours) sockets should be used to help ensure that people living with dementia do not access them independently. Pseudo light box windows (and/or ceilings) that can be viewed from the bed can help to bring the outside in, especially when going outside is no longer an option or rooms have no external windows. Due attention is required for end-of-life care and the lighting features adopted.



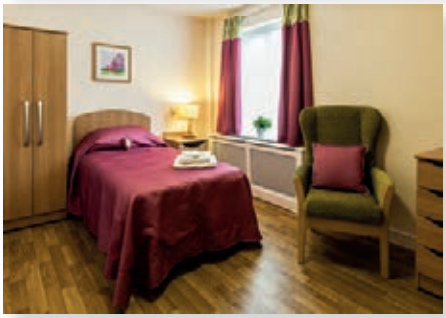


Bathrooms and toilets – Recognisable sanitary ware (e.g. familiar style lever flush handles) should be installed. DDA fixtures in bathrooms and toilets, differentiated by suitable and clear contrast, should be used to encourage independence and dignity. Taps and other water control fittings should ideally be clearly colour coded to show hot (red) and cold (blue). Contrasting colour toilet seats and sinks (e.g. blue, red) should be applied to improve dignity and promote independence. Walk-in shower areas should take due consideration of: safety, mobility impairments, dignity and independence (e.g. non-slip flooring, handrails, high colour contrast and appropriate seating).

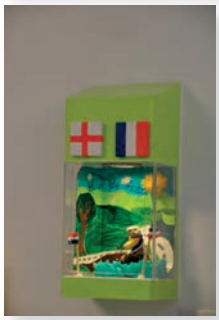


Kitchens – Taps and other water control fittings should of a familiar and/or traditional style, DDA compliant and colour coded to clearly show hot (red) and cold (blue). Inclusive design solutions should be adopted to help people living with dementia navigate and operate the fixtures independently. Worktop systems and sinks should be height adjustable to facilitate wheelchair access. Pull down-shelves and accessories should be height adjustable (e.g. capable of being raised or lowered depending on individual requirements). Transparent cupboard and appliance doors can be used to prompt memory.

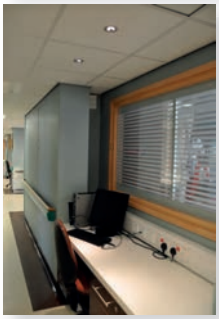
Bedroom – Where possible, conceal or box in building and medical services to reduce visual clutter. This can comprise sliding panels or removable panels, possibly with integrated artwork. Bedrooms and bed spaces should include a shelf for people living with dementia to use for enhanced personalisation, navigation and reminiscence. Built in furniture (e.g. dressers, cupboards, shelves) should contrast with the surrounding walls and floors to enhance visibility and safety.

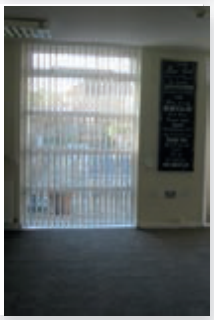


Memory boxes – Memory boxes and reminiscence cabinets are useful fixtures to prompt memory, act as a focus for conversation, support familiarity and aid orientation. Typically, personalised memory boxes should be adjacent to the bed in a hospital or at the bedroom door in a care home. Memory boxes can be outside activity rooms to help visualisation of activities. Due consideration needs to be given to memory boxes can be opened or easy to open (i.e. one face is sliding) by people living with dementia as they could feel restricted and discouraged if they are not able to physically access the objects inside.



Blinds and shutters – Blinds and shutters can create a homely feel to the environment. They should be used to increase privacy and prevent over heating in the summer season. Ease of use (e.g. familiar and/or traditional) technologies and high contrast elements can help people living with dementia to identify and operate them according to individual preferences.



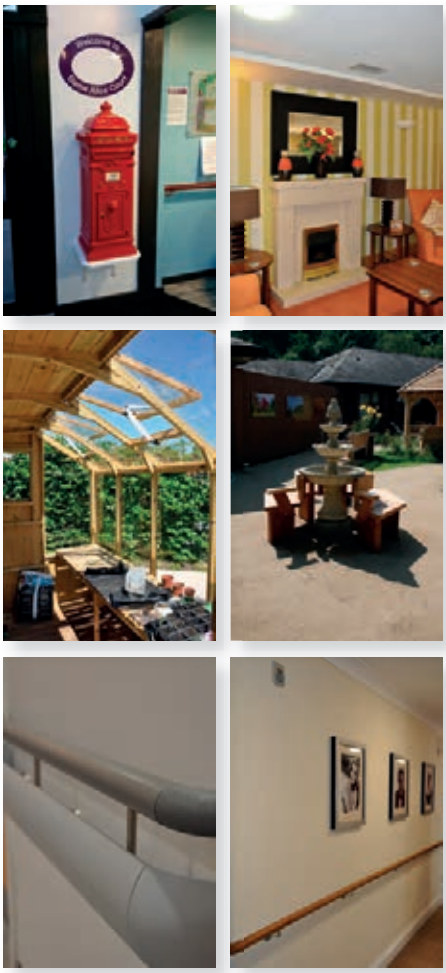


Fixtures components and spaces

Traditional items – Familiar and traditional items are useful way-finding features in public and circulation spaces, however, if installed they should be fully functional (i.e. the post-box or letterbox should be able to have letters posted into it and they must be delivered; and the telephone-box should allow phone calls get through). Other familiar and traditional style (e.g. domestic in social care environments) fixtures, such as fireplaces and electric fires, can be used (when appropriate and compliant to current regulations) to help create a non-institutional feel to the environment.

Outdoor spaces – The installation of tactile way-finding trails can be used both indoors and outdoors. The use of raised flowerbeds in gardens should be designed for wheelchair access and for people who are not able to stand upright. The design and use of activity-related fixtures (e.g. sheds and planters) should take into account: reduced memory, cognition, mobility, balance, strength and dexterity of people living with dementia. Traditional lampposts and water features (e.g. fountains) installed in outdoor spaces aid way-finding and orientation.

Health and safety fixtures – Reassuring-to-grip and high contrast handrails should be used in circulation spaces throughout the unit to promote mobility and independence. Manoeuvrability of fixture handles should take into account people living with dementia with limited mobility and reduced strength. To improve the safety of people with a tendency to walk about, safety devices and systems (e.g. patient tracking devices, call bell systems and patient wander systems) should be installed within all public and circulation areas, including toilets. Where gym and activity rooms are provide, these should include specialist fitness equipment for the elderly. Ceiling mounted hoists can be used to improve safety.



Reference pictures

This page offers additional reference of dementia-friendly fixtures, across a variety of settings (e.g. hospital sites, care-homes, extra-care houses and day-centres) and for different types of indoor and outdoor spaces (e.g. bedrooms, bathrooms, toilets, activity rooms, lounges, dining rooms, gardens, terraces and patios).

FLOORING

Flooring includes materials and finishes applied to the floor structure. Flooring selection should take into account vision and touch impairments, and support safe kinaesthesia, balance and movement. Consistent, matt, non-reflective and non-patterned floor finishes should be present throughout the building to avoid confusion and encourage movement. Changes in flooring (e.g. textures, materials, finishes and colours) can improve contrast and create different spaces, especially within large areas, thus encouraging mobility and promoting meaningful activity. Internal flooring should have a non-slip and non-shiny texture to reduce slips, trips and falls, and provide reassurance especially to people with particular types of dementia (e.g. Lewy bodies) and/or experience visual hallucinations and difficulties with balance and judging distance. Selection of flooring and floor covering (e.g. hard or soft flooring) should reduce injurious falls without causing confusion due to sudden and unexpected changes in flooring type and/or feel.

To support P1 'Promote a safe environment': *Use matt, non-patterned and seamless flooring. Avoid steps or misperception of steps.*

To support P2 'Provide optimum levels of stimulation': *Use consistent flooring materials and finishes across individual, public, activity and circulation spaces. Avoid unnecessary clutter.*

To support P3 'Provide optimum lighting and contrast': *Ensure lighting, cleaning and maintenance do not alter the desired appearance of floor finishes.*

To support P4 'Provide a non-institutional scale and environment': *Use non-institutional flooring solutions in non-functional rooms.*

To support P6 'Support way-finding and navigation: *Use materials, finishes and colours consistently to differentiate room and space function.*

To support P11 'Promote physical and meaningful activities': *Ensure consistent flooring colours and solutions in indoor and outdoor spaces. Use safe circular therapeutic garden footpaths.*

Notes on different settings – In health care settings, clinical flooring should be limited to functional rooms to reduce the institutional feel. In social care settings, flooring can be personalised to residents' preference, using flexible solutions that are cost-effective over time.

Flooring components and spaces

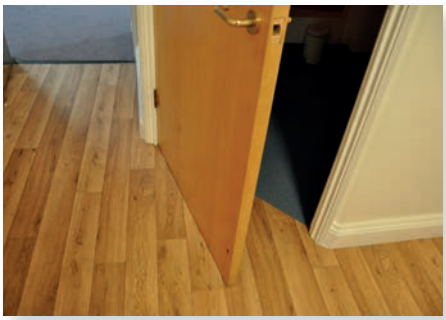
Materials – Acoustic materials should be used to reduce noise levels through insulating layers (e.g. acoustic linoleum has insulating layers laminated to the linoleum sheet). The use of additional underlay (i.e. floor-plate) can reduce noise. Materials can include laminate and carpets to diminish the impact of falls and reduce slips. Flooring solutions should take into account the movement of trolleys, wheelchairs and beds. Due consideration needs to be given to infection control, fire regulation and ease of cleaning/replacement with specific materials such as carpets. Bespoke materials designed to reduce glare and subtle patterns can improve way-finding and independence, with a consequent reduction in anxiety and distress.

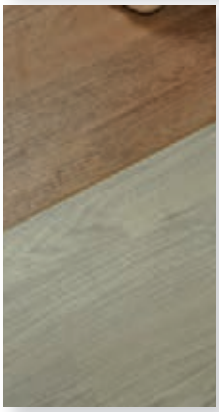
Finishes – Matt flooring finishes can promote movement and independence. Finishes, especially in the outdoors, can provide a cushioning effect to reduce the risk of harm from falls. However, integration of safety surfaces (e.g. soft flooring) can result in confusion when people living with dementia walk on them when they are expecting a solid surface. Non-slip finishes that support easy rotation, turning, forward and reverse wheelchair movement should be applied. Changes in flooring appearance should be used to create different spaces within large areas and encourage mobility, interaction and meaningful activities; however, caution is needed as people living with dementia might perceive these as steps. Threshold strips can also be identified as a barrier and should be avoided. Domestic style wood laminate effect flooring (e.g. oak effect colouring) or ceramic tiles can be used to create a less institutional feel, however, the hard floors (e.g. ceramic tiles) can increase risk of harm from slips, trips and falls.

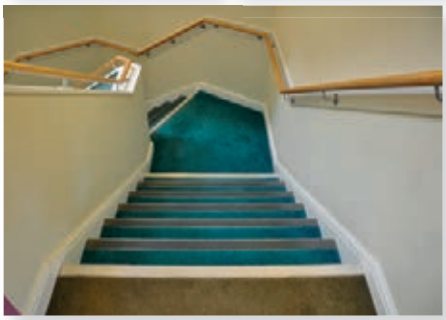
Colour – There is a range of solutions that provide contrasting colours for flooring finishes. Bright colours should be avoided as they may not clearly seen by ageing eyes, however, dark surfaces may require extra care in cleaning. Colour solutions should be non-patterned (plain) and avoid the use of small flecks. Different coloured skirting can help people living with dementia and visual impairments to distinguish between the wall and floor. Border details placed in the proximity of doors can create visual barriers that discourage access. Similarly, access through doorways can be encouraged by omitting floor border details and carrying the main flooring through.

Spaces – The consistent use of materials, finishes, colours and design solutions across spaces can enhance mobility and independence of people with dementia, who will be able to better physically orientate themselves and navigate the space safely. Matt flooring with a reduced shine should be applied in circulation spaces to eliminate glare. In sanitary spaces (i.e. bathrooms and wet-rooms), the flooring should have good slip resistance and low impact qualities. In kitchens, flooring should be of familiar or traditional appearance (e.g. vinyl flooring with a ceramic tiles or marble effect) to provide a non-institutional feel. For improved zoning, vinyl padded sports flooring can be used were people with dementia only spend a limited amount of time (e.g. public and circulation spaces). Safe circular therapeutic garden walks and footpaths should have low glare, reduce reflection and avoid sun overexposure.

Health and Safety – Colour contrasting skirting can help people living with dementia to distinguish between where floors start and finish in accordance with DDA guidance. Changes in flooring colour can be perceived as a step. Laminate flooring should be seamlessly laid from bays through into the corridors and bathrooms to address Health and Safety issues. Due consideration needs to be taken to ensure that lighting solutions (including natural light) do not unduly alter the appearance of floor finishes.







FURNITURE AND FITTINGS

Furniture design and specification should: take due account of sensory and mobility impairments; and promote safety, independence and interaction. Uncluttered and safe space should guide furniture design, selection and layout. Colour-coordinated furniture and fittings can support recognition and orientation however, traditional and/or familiar shapes and sizes should be used to facilitate recognition and identification, as in people living with particular types of dementia (e.g. semantic dementia) may not be able to rely on colour alone. Bright, simple and non-institutional furnishings should be used where possible, with due consideration given to: softness (e.g. allow people to stand up independently); and brightness (e.g. enable people to see furniture and fittings). Fittings are usually small elements attached to fixtures but can be easily removed and changed. They should be adjustable and flexible to the needs of people living with dementia. Sharp edges should be avoided in furniture and fittings (e.g. bedside table and light fittings) to minimise risks of harm for people with dementia.

To support P1 'Provide a safe environment': *Use adjustable and colour contrasting furniture and fittings that can be easily identified. Reduce clutter.*

To support P4 'Provide a non-institutional scale and environment': *Choose colour-coded and recognisable furniture and fittings.*

To support P8 'Promote engagement with friends, relatives and staff': *Arrange furniture in small non-institutional clusters and provide a choice of fittings.*

To support P9 'Provide good visibility and visual access': *Use of furniture with transparent doors and panels where appropriate.*

To support P10 'Promote privacy, dignity and independence': *Support personalisation in the arrangement of furniture and the choice of fittings.*

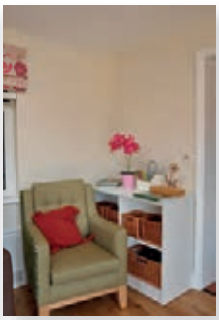
To support P11 'Promote physical and meaningful activities': *Use furniture that enables people to accomplish daily activities safely and independently.*

To support P12 'Support diet, nutrition and hydration': *Use traditional and familiar colour contrasting cutlery and crockery.*

Notes on different settings – In health care settings, furniture and fittings should help to minimise space clutter, thus reducing anxiety and creating a non-institutional feel to the environment. In social care settings, furniture and fittings should support people living with dementia with their daily activities and minimise distress, anxiety and frustration.

Furniture and Fittings components and spaces

Seating – A variety of seating (e.g. bariatric, reclining, and of various heights and sizes) should be appropriately located to provide flexibility and comfort. Armrests can ease sitting down and standing up. Chairs should be stable and not tip over when people sit down, get up, or walk by and use them for support. Clear contrast between the seat and the floor can help prevent falls and improve the identification of chairs, sofas and corridor seating. Familiar and/or traditional shapes and sizes can support the identification of the items as seating elements, where colour-coded seating is not enough to allow easy object recognition. Seating elements should be comfortable and soft, but ensure that people living with dementia can sit and stand up independently.



Beds – Beds can be identified by a colour and/or picture, which might be carried on a card as a reminder to the person living with dementia. Measures should be taken to reduce the risk and consequence of falls which can include: profiling beds (e.g. can be adjusted to suit medical and personal requirements); adjustable bed-height (e.g. lowering when the risk of falls is higher); bedroom layout (e.g. bed placed in such a way that two or three sides are protected by walls or panels). State-of-the-art beds with sensor technology can help to reduce risks but can prove to be too expensive to use universally. Cost effective solutions include low beds to reduce impact of falling out of bed, depending upon the specific context.

Wardrobes and other doors – Enhanced visibility and transparency (e.g. see-through wardrobes, fridges with glass doors, be-spoke open furniture) can reduce the impact of memory loss thus helping self-confidence and independence. Due consideration is needed to ensure wheelchair users' independent access to wardrobes and other doors. Ensure that wardrobes are secure and stable (i.e. to avoid furniture falling onto or trapping people) and that doors do not present hazards (e.g. hinges do not trap fingers).

Tables – The use of coffee tables in day rooms and dining tables in dining rooms can be support orientation, independence and meaningful activities. They should have high contrast with the surrounding floor and furniture to provide high visibility. Where there are spatial constraints, adjustable multi-purpose tables differentiate between eating and other activities. Table heights need to take due account of reduced mobility. The shape can vary but edges should always be well defined and recognisable (e.g. square, rectangle, other polygon). Chair arms should fit under the table so people can sit close to the table if desired. The size should promote home-like engagement and communication (e.g. accommodate four to six people). Lower desk sides can make staff more visible and integrated seating for people who walk about can help them to feel part of the activity.

Indoor space – Seating areas along circulation routes should be positioned at frequent intervals to: encourage movement and independence whilst enabling frail people to stop and rest. Seating can be arranged in comfortable small and domestic clusters or as window seating to facilitate patient/staff interaction. Seating for dining can be located away from the bed space to encourage movement and enable recognition of two different activities (i.e. eating and sleeping). Seating for people with walking about tendencies can be located near activity spaces to encourage engagement. Different styles of seating configuration and colour coding can be used at the end of corridors and in large rooms to assist with orientation and promote way-finding.

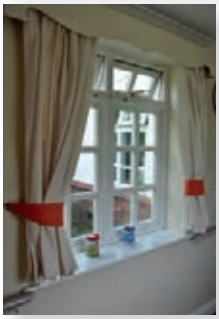
Outdoor space – Furniture for outdoor space selection should consider the same principles described for furniture for indoor space, with extra care taken to the stimuli coming from the external and/or natural environment (e.g. a chair might be moved onto the grass and increase instability and risk of tipping). People living with dementia should be provided individual freedom in safe and energetic environments. Outdoor furniture (e.g. garden furniture) can include be-spoke design to accommodate specific age groups (e.g. decades carved seats), thus offering elements of interest and prompting memory and promoting meaningful activities.

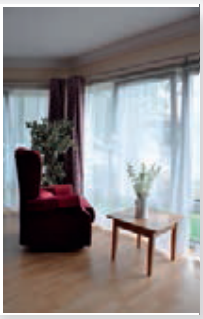
Furniture and Fittings components and spaces

Clocks and calendars – Clocks and calendars in bedrooms and bedded areas can help with time orientation for people who are in bed. They are also useful within day spaces (i.e. dining rooms and activity spaces) and circulation areas. Clocks need to be large and clear to enable people living with dementia to read time: they can be traditional or digital. Due consideration is required for size, type and colour of the fonts chosen. Text should include large fonts using lower-case and upper-case. Clear contrast between text and background is essential, and consideration should be given to wall colours and light reflection on the surfaces of clocks and calendars. The use of pictorial images for calendars (e.g. sun, moon and cloud) can support the relationship with external environment and everyday activities.

Cutlery and crockery – Traditional and familiar cutlery and crockery (e.g. cups, beakers and saucers) with high colour contrast (e.g. red and blue) can help hydration and nutrition. Cutlery and crockery should aid independent eating and manually adjusted cutlery suited to individual needs should be available. Snacking stations with finger foods, refreshments and snack trolleys (e.g. identified as cafes) should be available to support hydration and nutrition, especially for people living with mild dementia.

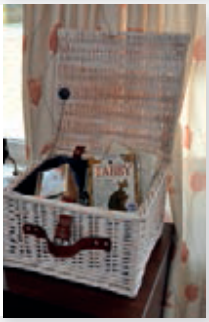
Curtains – Curtains can create human scale and hide medical equipment. Individual choice of colours and themes should be encouraged, but busy patterns and brush colours should be avoided. Operability of curtains needs to be considered, to reduce frustration and anxiety in people living with dementia when they try open or close them (e.g. easily detectable curtain holders). If curtains are intended to only be operated by staff or carers, camouflage and concealment measures should be adopted. Due consideration should be paid to cleaning, maintenance and replacement to comply with current regulations.





Mirrors – Mirrors can be used in bathrooms, bedrooms and private spaces to help people living with dementia with daily activities. In specific types and levels of dementia people might experience distress, anxiety and frustration when recognising (or not) themselves in mirrors and other reflective surfaces, which should thus be easily removable and/or concealable (by staff, carers and relatives) with reminiscence images or other elements of stimulation/decoration.

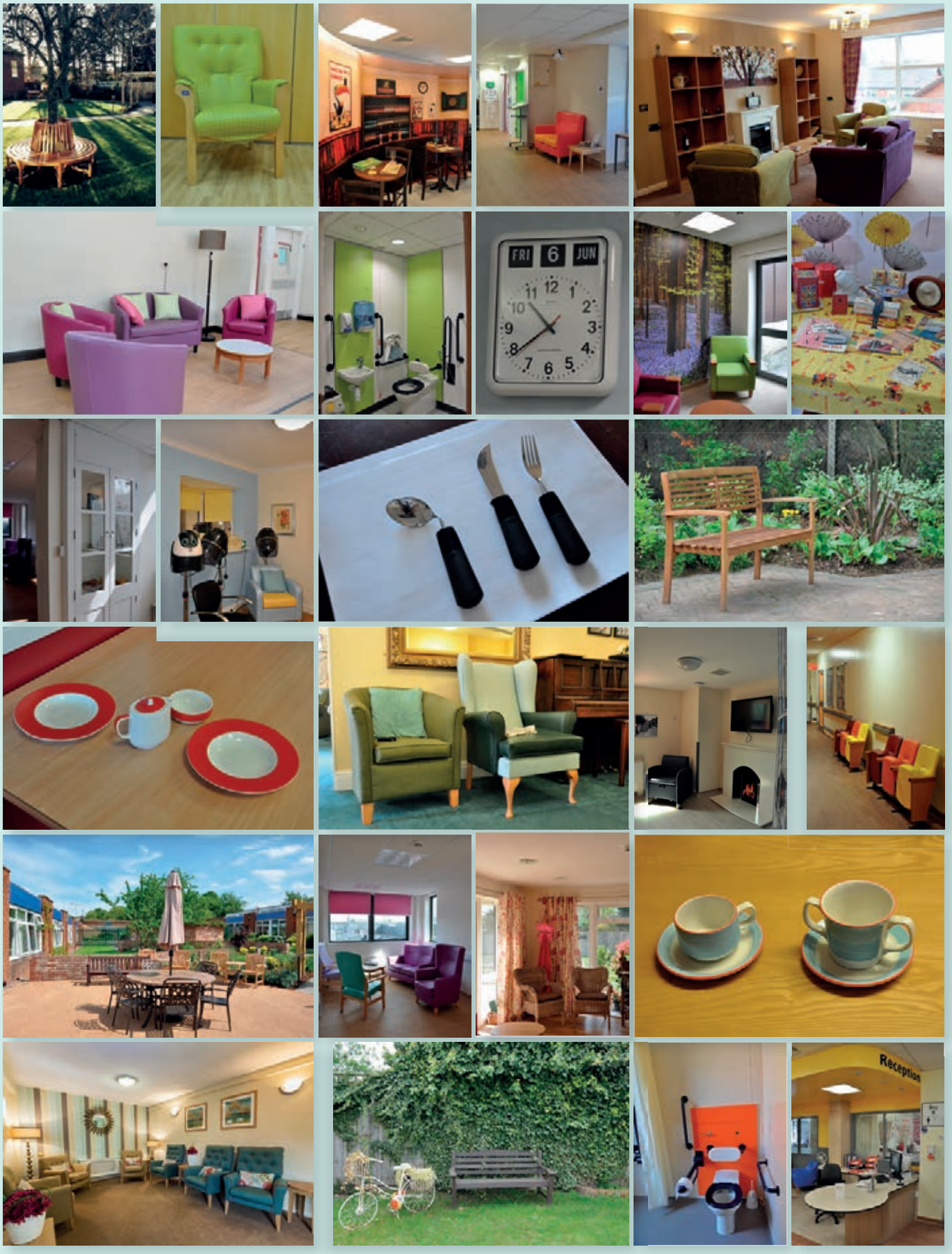
Indoor space – Memorabilia in display cases can be located in different areas and spaces to prompt memories and encourage engagement and meaningful activities. Televisions, screens, radios, portable music systems and telephones can be used as elements of interest and support interaction. These need to be of appropriate size and operability, and securely mounted. Installation of fish tanks, real or virtual, can also provide an element of interest and promote physical and meaningful activities.



Outdoor space – Furniture and fittings can be used in outdoor spaces to stimulate people living with dementia and promote physical and meaningful activities. Location of chairs, benches and tables should encourage interaction, prompt conversation and encourage group activities. Wind chimes and playable jumbo wall chimes can provide elements of sensory stimulation and attraction to for people living with dementia. Where safe to do so, garden tools can be used to encourage daily activities, taking into account strength and balance reduction.

Reference pictures

This page offers additional reference of dementia-friendly furniture and fittings, across a variety of settings (e.g. hospital sites, care-homes, extra-care houses and day-centres) and for different types of indoor and outdoor spaces (e.g. bedrooms, bathrooms, toilets, activity rooms, lounges, dining rooms, gardens, terraces and patios).



LIGHTING

Lighting refers to all those elements used to achieve an illumination effect with natural and artificial sources. Light is a fundamental factor that needs to be taken into account in the design of dementia-friendly health and social care environments as it regulates the human circadian system on to a 24-hour light-dark pattern. Dementia-friendly lighting should be designed to provide control, create different moods and create calming environments, specifically to people with particular types of dementia (e.g. Lewy bodies) who might have visual hallucinations and have a tendency to sleep during the daytime. Visual impairments and colour-blindness should be also taken into account. Due consideration should be given to the required: type of light, colour of light, level of luminance, direction of lighting sources, reflection and diffusion, glare, system operability, flexibility of switching between different uses, fixtures, maintenance and upgrades, and energy consumption.

To support P1 'Promote a safe envi
Increase lighting levels, use dispers
different areas, and allow them adju
during the day and night.

To support P2 'Provide optim levels of stimulation': *Use mo and biorhythm lighting feature control light pooling and shading and reduce reflection and glare.*

To support P3 'Provide optimum lighting and contrast': *Consider the coexistence of different lighting sources, increase lux levels and ensure good contrast.*

To support P5 'Suppo orientation': *Use different lighti colours and contrast in public a individual spaces.*

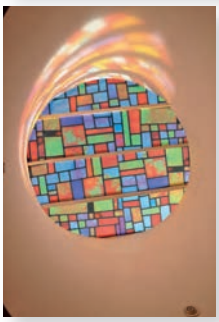
To support P10 'Promote privacy, dignity and independence': *Combine motion sensors, digital and manua and adjustable and automated light*

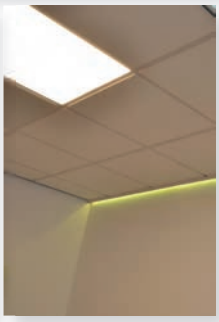
Notes on different settings – In health care settings, adjustable lighting systems can significantly improve patient experience, especially in multi-bedded areas where design solutions should provide a degree of individual control. In social care settings, dementia-friendly lighting should accommodate individual preferences and group activities.

Lighting components and spaces

Natural – Natural light sources should be used in deep plan and high-rise buildings. Where access to natural light is limited, sun tunnels, skylights and roof windows can help. Window designs should assist people living with dementia in terms of light and depth perception. Lowering window sills can enhance natural lighting. Choosing dividers not at full ceiling height can allow views of the entire room whilst providing a break between different sides of the room for families to relax away from the ward environment.

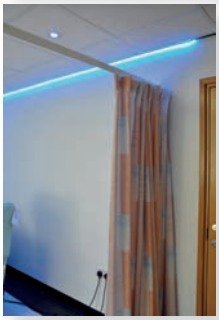
Artificial – Lighting which mimics normal daylight variation and promotes maintenance of diurnal body rhythm and associated normal sleep patterns should be introduced. Sky-panels in the form of lighting can be used to provide the impression of blue skies even during winter months and help provide elements of positive distraction. Features to reduce glare from overhead lighting, prevent light shadows and pooling, and provide even distribution can help increase confidence and calmness.

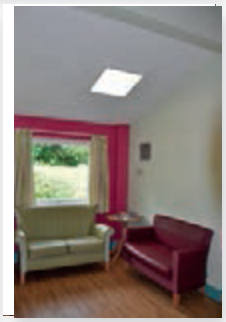




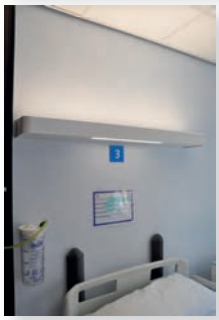
Colour – A choice of light colour should accommodate individual preferences and cultural preferences. Colour temperature that goes from warm white to cool white with RGB (red, green or blue) colour can offer choice to people living with dementia and flexibility in the use of space. Appropriate exposure to bright light affects stimulus for synchronising the biological clock. Due consideration should be given to the internal décor, finishes, furniture and accessories that influence the perception of colour.

Performance – Lighting levels should be increased to enable adequate vision for elderly people (note that lux levels drop across the lifetime of the bulb/ luminaire). High-intensity white light (i.e. over 1000 lux) with a high output in the short-wavelength part of the spectrum can improve cognitive functions. A minimum of 300 lux should be considered. Tuneable lighting, which can provide choice from the light spectrum (e.g. to mimic natural light in the morning, afternoon and evening) should be installed where appropriate. LRV over 30 points should be used between adjacent critical surfaces. To improve safety, bright and dispersed lighting should be available during the daytime (i.e. to reduce slips, trips and falls) along with reduced night lighting (i.e. to show the way to toilet and medical care at night).





Control – Lighting should be controllable and dimmable (i.e. dimmer switches) to provide lighting levels depending on the time of day or individual preference. Adjustable lighting can create different colours/moods, and support normal sleep and wake patterns. Digital switches can be used in dining areas/rooms, independent for wall lights in corridors. Normal light switches are preferred in bathrooms instead of motion sensors, which can be of added value in corridors and circulation spaces. Backlit switches and bedside lights should be used in en-suite bedrooms.



Location – Different solutions and appropriate lighting levels are required in different areas depending on space function and actual use. Dynamic lighting installations should be used in bedded areas and over bed spaces to improve sleeping patterns and adjust the circadian rhythm. LED lighting can be used in rooms and entrance areas (e.g. backlit strip signs) to: define themed areas and elements of interest; contain energy costs; and reduce risks. Task lights are recommended for each bed and dimmable lights should accommodate individual preferences. Stimulating lighting schemes can be installed in therapeutic gardens and outdoor areas.

REMINISCENCE HARDWARE AND SOFTWARE

Reminiscence hardware includes electronic and ICT devices such as screens, monitors, computers, tablets, radios and projectors that can be used to display reminiscence software. This software comprises be-spoke designed and built solutions to provide memory stimulation through images and sounds. Due consideration needs to be given to the use of the above listed features, which may or may not be appropriate at specific dementia stages. Staff, carers and relatives might be required to guide people living with dementia in operating modern technologies and ensure they are used appropriately. Reminiscence hardware and software embedded within the built environment can be used to enhance sensory perceptions and enable people living with dementia to collect, promote and organise information in an individual and personal way. Friends and relatives should be actively engaged and provide material (e.g. videos and photographs) to develop life stories aimed at prompting recall of positive personal life events, experiences and achievements which can be used to inform carers and enable person-centred care delivery.

To support P2 'Provide optimum levels of stimulation': *Reminiscence hardware and software can be used alongside other devices to stimulate the senses tailored to the needs of the individual.*

To support P5 'Support orientation': *Use images and sounds to enable people recall life events and personal experiences.*

To support P8 'Promote engagement with friends, relatives and staff': *Develop and use life stories with the support of carers, families and communities.*

To support P10 'Promote privacy, dignity and independence': *Use images and sounds to: prompt, recall and inform carers of positive personal life events, experiences and achievements.*

To support P11 'Promote physical and meaningful activities': *Combine with other forms of therapy (e.g. physical) or use to encourage activities (e.g. gardening).*

To support P12 'Support diet, nutrition and hydration': *Use images, sounds and odours to encourage diet, nutrition and hydration.*

Notes on different settings – In health care settings, the use of reminiscence software can be enabled with mobile hardware solutions, such as mobile trolleys, laptops and tablets. In social care settings, appropriate rooms can be designated to the use of reminiscence software and fixed reminiscence devices.

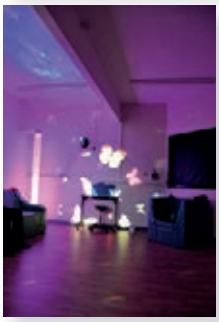
Reminiscence Hardware and Software components and spaces

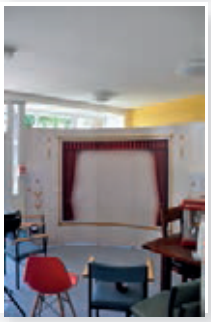
Interactive devices – Interactive reminiscence devices can promote the active stimulation of memories by using music, photographs and other media activities. Innovative interactive screens (activated by motion sensors or manually) can be placed in communal and activity spaces to supplement personal recall of individual and historical events. The screens can display slideshows of natural scenes, local landscapes and historical events. They can also be used to display be-spoke collection of personal life stories through personal photographs and preferred soundtracks.

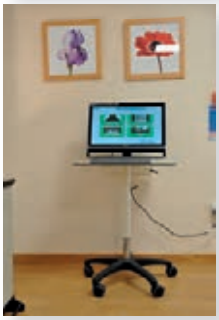
Mobile devices – Mobile sensory audio-light equipment (e.g. trolley which includes music and visual aids) can promote the active stimulation of memories by using music, photographs and other media. Due consideration should be given to the use of mobile devices in multi-bedded wards or in communal spaces, in order to minimise the discomfort for other people who may be present. The use of tablets can provide a greater degree of flexibility and enable multiple users to benefit from the reminiscence software.

Fixed devices – Good quality and high resolution fixed projector and interactive live screens can be used in communal spaces (e.g. system to support use of movie projection with choice of clips and films from a range of eras). Small areas in a room (or entire rooms) can be converted/ camouflaged as cinemas either for showing old films or for showing a family film that has been converted onto digital media. Communal computers should be provided, especially to specific age-groups who will be able to recognise this technology. Colour-changing lights and multimedia equipment featuring fibre optic strings can provide visual and auditory stimulation.

Software – Reminiscence and wellbeing therapy software can help people living with dementia to recall their personal life stories. DRTS software can support communication and memory stimulation. Cognitive stimulation therapy supports orientation, engagement and activities. Individual life stories can be produced, with interactive features to enable people living with dementia to listen and watch them with the help of carers, families and friends. Call systems and internet Skype can provide a way to connect with family and friends and control distress and anxiety.







SIGNAGE

Signage is something that indicates or conveys information on a space, room or activity. Signage should be purposefully designed to promote independence, orientation, way-finding and ensure inclusive access for everyone. Its installation should take due account of people with reduced mobility and vision. Care should be taken to avoid clutter and an overload of information that could confuse. Clear contrast and consistency should guide the design and choice of signage. Directional and locational signage should use clear symbols for people who do not read English or are unable to read or decipher words. Tactile signage can help those with visual impairments. Text should include large fonts using lower-case and upper-case. Its positioning should take into account visual (e.g. both standing and from bed) and tactile (e.g. both standing and on a wheelchair) accessibility. Specific signage should be located outside doors to indicate the function of that particular room.

To support P1 'Promote a safe environment': *Use clear, visible and legible signage, avoiding information overload.*

To support P3 'Provide optimum lighting and contrast': *Consider high colour contrast with surface/element where signage is applied, and reflection of natural and artificial light.*

To support P5 'Support orientation': *Use consistent signage and visual cues across different areas of the same building and for alike room functions.*

To support P6 'Support way-finding and navigation': *Strategically locate and integrate pictorial and tactile signage with visual cues where people need to make decisions about which way to go.*

To support P9 'Provide good visibility and visual access': *Use colours and fonts appropriate for day and night visibility. Avoid visual clutter.*

To support P10 'Promote privacy, dignity and independence': *Locate signage in such a way that people can independently identify where to go to fulfil basic needs.*

Notes on different settings – Signage in social care settings can allow a higher degree of personalisation, although consistency across settings it is advocated to reduce distress. In health care settings, the co-existence of clinical and social activities might require different design solutions in order to reduce excess use of signage (e.g. sign for patients and sign for staff on the same door).

Design Features

Types – The use of traditional and familiar signage can help people living with dementia. Pictorial and written signage with words, icons, images and symbols displayed prominently can be used to enhance clarity. Directional signage should include symbols for those unable to read or decipher words. Tactile signage can help those with visual impairments. Signs with changeable inserts can allow personalisation and/or change in room function. Door signage should follow the same principles of the general signage, but can allow a higher degree of details and personalisation, if consistency is ensured with general signage. Door signage is better applied on the actual door rather than on the adjacent walls to reduce confusion (further details in “doors”).

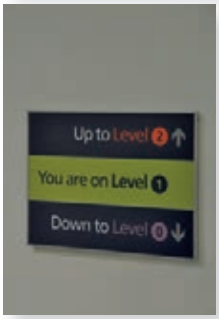
Colour and contrast – White pictograms and lettering on coloured background (e.g. red, blue, green, yellow and orange) and dark pictograms and lettering on a light background (e.g. black pictograms and lettering on a yellow background) can provide good visual contrast between text/symbols and background. The colour of the surface/element where signage may be applied and the reflection of natural and artificial light sources should ensure that the effectiveness of the colour used for text and background is not reduced at any time. Due consideration should be given to daytime and night-time visibility, and appropriate lighting systems should be considered in order to ensure that signage can be easily read.

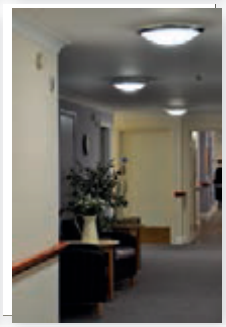
Size and font – Size of signage should consider the reduction in eyesight of people living with dementia. Clear distinction in the size of the letters enables people living with different visual acuities and visual impairments to better identify the text. An appropriate combination of text and image should be displayed on signs. Large and traditional fonts should be used with regular text rather than capital letters. Both upper-case and lower-case letters should be used to support legibility, especially for people with types of dementia which they recognise the shape of a word. Sans serif font can help identify the letters.

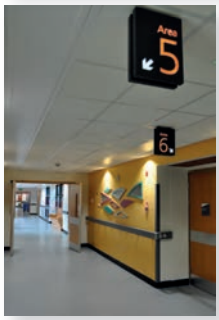
Cues – Clear orientation and way-finding cues can implement pictorial signage, especially in specific types and levels of dementia types of dementia (e.g. semantic dementia) when people may rely on their conceptual knowledge to identify individual items and use size in combination with colour. Traditional objects can be used in public and circulation spaces (e.g. traditional frames or objects), while personal objects can be allowed in bedrooms, bays and individual spaces (e.g. family pictures, objects related to hobbies and life experiences).

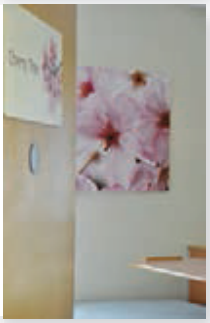
Spaces – The use of standardised signage across different areas of the same building can help people when navigating the space. In particular, bathroom and toilet symbols should be used consistently across all areas. Toilet and WC signage should be designed to be functional with regard to materials being easy to clean and suitably robust. Automatic ‘engaged’ and ‘free signs’ can be used outside toilets to aid privacy and dignity for people living with dementia who may forget to lock doors or even where locks are not provided. Double-sided toilet/bathroom signs can be introduced, with changeable inserts, so that staff and carers could quickly and easily change the designation from male to female and vice versa.

Physical position – Signage should be positioned outside each room, but they can also be incorporated within rooms (e.g. bathrooms) to support orientation. In some circumstances, it might be appropriate to duplicate so that people living with dementia can be enabled to orientate whether they are in or outside the room (e.g. bay and WC, corridor and dining room). Height of signage should take into account visual and tactile accessibility by people living with dementia on wheelchairs and by those who might not be in a complete upright position. The advised height to position signs for people living with dementia can vary between 1100mm and 1400mm. Ceiling signage should take into account line of sight of people who may lie in bed (e.g. toilet signage). ‘Non-patient’ area signage should be differentiated to avoid confusion (e.g. located discreetly in the top corner of the door).



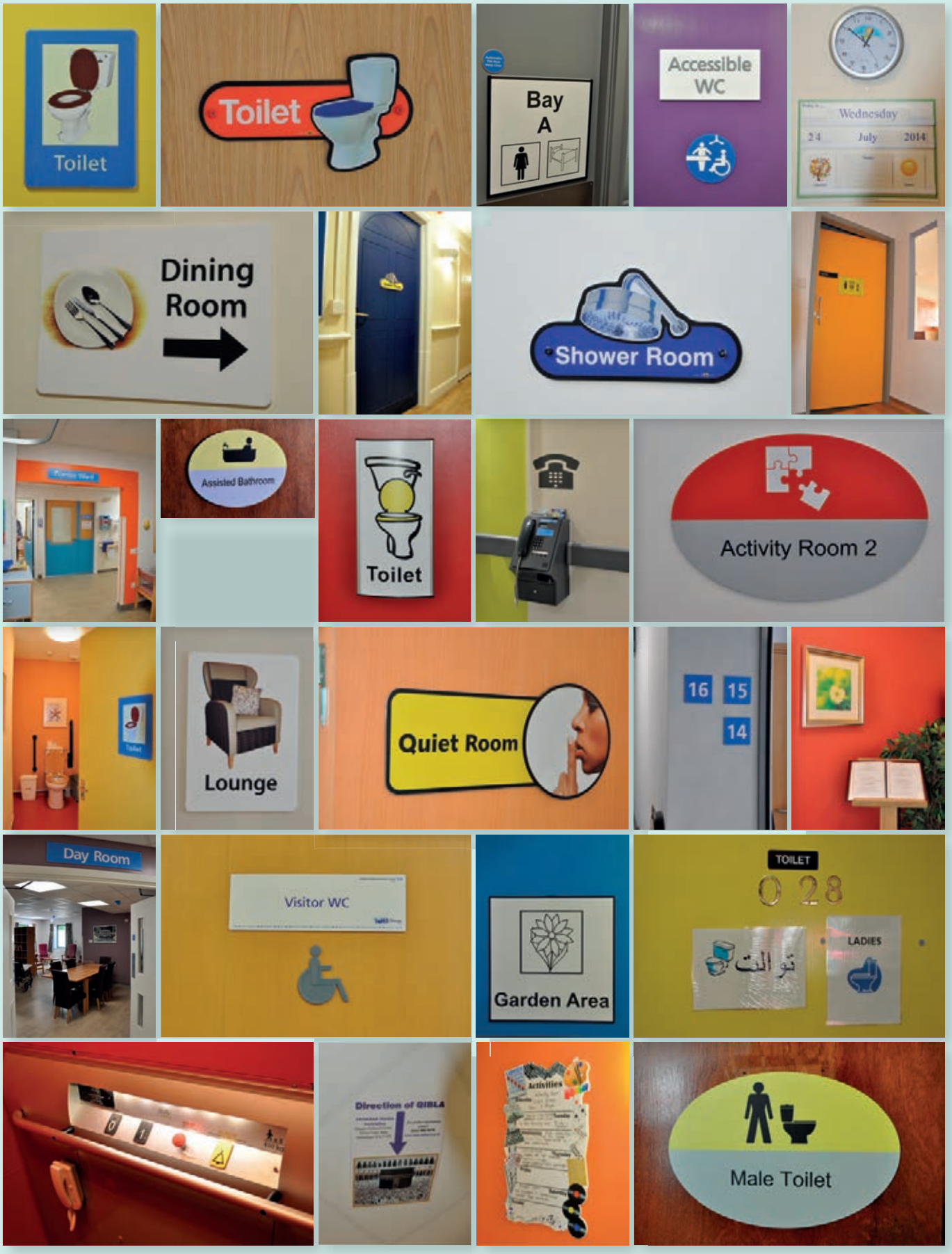






Reference pictures

This page offers additional reference of dementia-friendly signage, across a variety of settings (e.g. hospital sites, care-homes, extra-care houses and day-centres) and for different types of spaces (e.g. bedrooms, bathrooms, toilets, activity rooms, lounges, dining rooms, gardens, terraces and patios). There are examples of general signage and door signage.



WALLS

Walls are continuous vertical closure of the space including surface finishes. Walls are used to; support loads from above; divide spaces that have different functions and consequently different requirements; and provide privacy. The design of Dementia-friendly wall finish design should: take due account of vision and touch impairments; and enable kinaesthesia, balance and action. Non-patterned, matt and anti-glare finishes should be applied, with colour accents and feature walls used to promote calm and safe environments. The choice of materials and finishes should accommodate the needs of people living with dementia, in compliance with statutory regulations, and reduce the non-institutional feeling of the built environment.

To support P1 'Promote a safe environment': *Ensure clear contrast between walls and flooring and install handrails.*

To support P2 'Provide optimum levels of stimulation': *Use of the acoustic properties of wall materials and finishes to reduce excessive noise. Avoid visual clutter.*

To support P3 'Provide optimum lighting and contrast': *Use matt and anti-glare finishes.*

To support P4 'Provide a non-institutional scale and environment': *Use non-institutional materials, finishes and colours for individual and public spaces.*

To support P5 'Support orientation': *Use wall finishes and colours consistently across the space.*

To support P6 'Support way-finding and navigation': *Introduce bedhead colours and feature walls appropriately.*

Notes on different settings – Acoustic properties of internal walls should be taken into account especially in health care settings, where walls can separate high-tech spaces from less technological areas. In social care settings more attention might be required for external walls as unwanted sounds are more likely to come from the road traffic or a different property.

Walls components and spaces

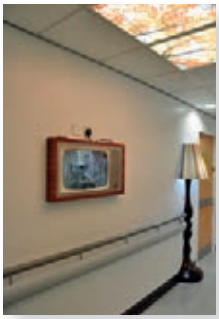
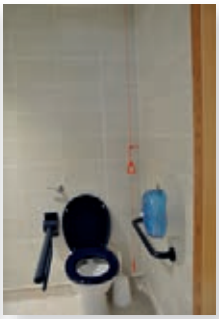
Materials – Acoustic wall solutions (e.g. wall panels) and wall soundproofing materials (e.g. plaster, fabric) should be used to: control unwanted sound circulating from one space to another (e.g. between a bedroom and a corridor); and enhance the listening environment in a specific space (e.g. a sensory room or a family meeting room). Wall tiles in bathrooms and shower can help to provide a non-institutional feeling. Tactile wall panels can help people maintain their fine mobility skills as well as their sensory skills. Materials should meet infection control standards, fire regulations, cleaning regimes and adequate routine maintenance and upgrade.

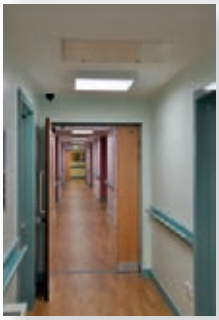
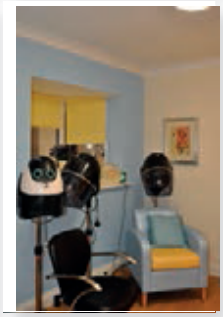
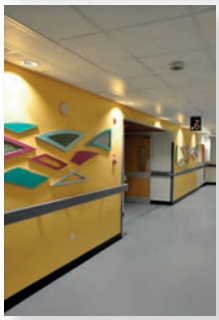
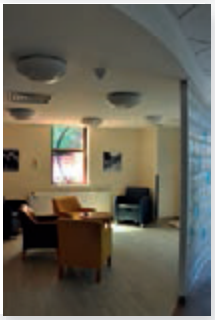
Finishes – Non-glare paint can reduce reflection of natural and artificial light. Feature walls with historic and natural images, combined with familiar everyday objects can provide reassuring elements to support navigation and way-finding. Be-spoke graphics applied to walls selected by people living with dementia can help achieve a degree of personalisation. The use of wallpaper and photo-wall paper can help to enhance homely and non-institutional environment with mood calming effects. However, due consideration needs to be taken in the choice of the subjects represented (e.g. a large wall print showing a path disappearing into a landscape might be perceived as a real path and a person might walk into the wall).

Colour – Walls can be painted in dementia-friendly colour tones and/or hues to support colour zoning. Colours in the red to yellow zone of the colour spectrum are more easily identifiable than colours in the blue to green shades by people living with dementia . Soft white can be used as base main colour. Clear colour contrast between walls and floors can help people living with dementia identify walls as walls. Busy patterns and abstract graphics should be avoided to prevent confusion and reduce frustration. Colour bedhead walls can support orientation, navigation and independence, and can help a person with dementia to recognise individual bed space.

Spaces – Comfortable to grip, properly contrasting handrails can be used in appropriate areas, particularly corridors, to assist people with mobility issues move independently from space to space. Designated space for photographs and personal memorabilia on walls and shelves can help a person with dementia to remember important moments in their lives. Non-clinical spaces should achieve a greater level of de-institutionalisation with the use of material and finishes.

Health and safety – Colour contrasting skirting can help people living with dementia distinguish between where floors finish and walls start, in accordance with DDA guidance. Due consideration needs to be taken as lighting solutions and natural light can considerably alter the appearance of wall finishes. Water-based paints rather than solvent-based paints should be used for indoor spaces where moisture is not excessive.

WINDOWS AND TRANSPARENT PANELS

Windows and transparent panels include openings in the walls or ceilings that could be fitted with glass or non-glass panels to let light or air into enclosed spaces and enable people to see out of enclosed space. The design and installation of glazing should take into account reduced hearing, vision and smell, and the need to minimise potential distress resulting from external factors and on-going activities. Glazing design should not compromise privacy and dignity. External glazing solutions should maximise views of natural outdoors and the skyline. Window openings should provide: fresh air, which can improve wellbeing; and suitable illumination and ventilation of all main areas. Consideration should be given to providing as much natural light as possible through large windows, roof-lights and sun-pipes with attention being paid to avoiding overheating (solar gain) during the summer or particular hours of the day.

To support P1 'Provide a safe environment': *Use anti-ligature and easy-to-grip handles and provide shadowing systems to avoid over-heating due to excessive solar gain, with restricted opening where necessary.*

To support P3 'Provide optimum lighting and contrast': *Ensure maximum natural lighting and consider reflection, glare and impact of artificial lighting.*

To support P5 'Support orientation': *Provide views of adjacent and external spaces by using large windows, lower windowsills and introduce internal windows and screens.*

To support P6 'Support way-finding and navigation': *Use transparent panels especially in circulation and public areas.*

To support P7 'Provide access to nature and the outdoors': *Use large windows and lower windowsills to enhance external views.*

To support P9 'Provide good visibility and visual access': *Integrate internal windows and transparent panels in the layout, in relation to room functions.*

To support P10 'Promote privacy, dignity and independence': *Use Privacy non-transparent glazing to protect privacy.*

Notes on different settings – Fresh air and natural lighting can improve wellbeing. The use of windows and transparent panels can reduce distress and anxiety as they can enhance sight of activities in adjacent spaces. In health care settings, privacy screens or internal partitions can be used to separate private and public spaces. In social care settings, windows and transparent panels can be used to reduce the institutional feel.

Windows and Transparent panels components and spaces

Types – External windows, skylights, roof windows and sun tunnels can contribute to: increased levels of daylight and natural ventilation; and provide views of the surrounding environment and elements of interest, especially `to the people with limited access to the outdoors. Internal windows and transparent panels can offer continuity of space and allow people living with dementia to recognise the surrounding environment, and interact with and/or observe on-going activities, where appropriate. Privacy screens in non-transparent glazing can be inserted on internal partitions that separate private spaces from public spaces.

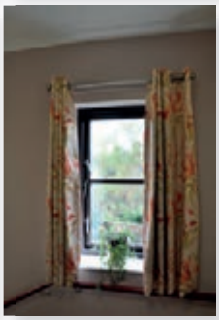
Design – The design of windows should maximize the amount of daylight, which can enter the space, e.g. keeping sills as low as possible. This also helps to ensure greater connection with external spaces. Large windows should be used where there are no issues on privacy and may be only partially opened for safety reasons. Opening windows lights should be used to provide natural ventilation, unless high noise, pollution and dust levels are a potential problem. Non-transparent glass can be used where there are privacy issues of privacy to provide natural lighting. Due consideration needs to be given to reflections provided by shiny surfaces, which might cause confusion, distress and anxiety.

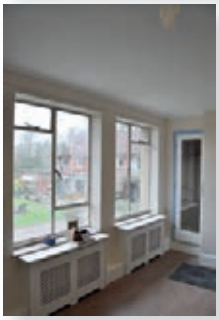
Themes – Decorative window films can help to enhance privacy and reduce glare if other solutions are not available. Suitable scenic images can be used on the corridor windows (observation glaze art) to improve privacy, but 'line of sight' should be always maintained for nursing staff, carers and visitors, to reduce distress and anxiety and to ensure safety and observation. Vinyl images can be applied to window interiors to provide points of interest. These can also be used to reduce glare and sundowning, and enhance privacy. Natural and historic themes can result in a calmer, non-institutional environment and can act as reminiscent aids.

Fittings and fixtures – Manoeuvrability of window handles should take into account people with limited mobility and reduced strength, in addition to right-handed and left-handed people. Anti-ligature, tamper resistant and easy to grip handles should be installed. Window frames can be colour-coded to define the window. Colour-coordinated curtains and blinds should be used to enhance privacy, dignity and create a non-institutional feel to the environment, especially in non-clinical spaces, but in compliance with infection control and fire regulations. Curtains and blinds can be introduced to avoid unwanted reflections especially when it is dark outside.

Spaces – The use of glazing to prevent solar glare on external and skylight windows should be taken into account, particularly in areas facing south, south-east and south-west. Conservatories with opening French windows can provide safe enclosed environments where people living with dementia can receive optimum natural lighting and access nature and the outdoors. However, due consideration should be given to protection with blinds, shutters and curtains as people living with dementia are known to be hypo and hyper sensitive to thermal conditions.

Health and safety – Additional elements for health and safety should consider in the level of dementia of the people that might operate specific windows. Design lighting schemes with zone control to allow artificial light to merge with strong natural light from windows during daylight hours, whilst still providing even artificial light in the space during the hours of darkness (not night-time) thus ensuring there are no dark zones.





Section 6:
Strategic long-term approach

6. STRATEGIC LONG-TERM APPROACH

Introduction

. A long-term strategic approach is needed given: the forecasted increase in dementia prevalence; resource constraints and competing priorities; size and condition of the NHS and social care estates; and other practicalities such as decant and access to space.

. Strategic planning should initially address the following questions.

- Where are we now?
- Where do we need to get to?
- How do we get there?

. The adopted long-term strategies should be cost-effective and quality enhancing to meet the predicted rising dementia prevalence through innovation solutions associated with:

- early diagnostics;
- improved care environments;
- supportive technologies;
- outdoor spaces and gardens;
- integrated care delivery; and
- greater involvement of volunteers or family members.

. The implementation of innovation and change oriented improvements need to ensure that the following (see Figure 6.1) are compatible and work in harmony, failure to do so can lead to a failure in the change process.

- demand and need;
- organisational structures (e.g. integrated NHS and LA networked with others to defuse the innovation);
- organisational culture;
- processes (e.g. care pathways);
- technology; and
- physical environments.

. The remainder of this section has been structured around the above and provides guidance for adopting a long-term strategic approach based on the previously discussed dementia-friendly design principles.

Figure: 6.1: Implementation of innovation and change oriented improvements

Forecasting demand and need

Dementia prevalence

. Dementia prevalence is a global challenge and forecast to grow. The size of the challenge and diversity of settings make optioneering highly complex and requires a long-term strategic response.

. Tools such as SHAPE can be used to support demand forecasting.

. Dementia is one of the most important issues we face as the population ages. There are currently estimated to be 850,000 people living with dementia in the UK and numbers are expected to double in the next 30 years.

. Dementia costs society an estimated £19 billion a year and this is expected to rise to over £50 billion a year in the next 30 years. The scale of the problem now and its consequences in the future means that the impact of dementia on society cannot be underestimated.

. The National Audit Office has estimated the excess cost to be more than £6 million per year in an average general hospital.

. Levels of dementia prevalence by CCG have been obtained from SHAPE and the Dementia Atlas. Visual inspection of percentage of CCG population aged 65-84 for 2014 (see Figure 6.2a) and dementia prevalence by CCG for 2014 (see Figure 6.2a) shows that a good correlation exists between the two.

. The dementia prevalence data for 2014 and 2024 have been presented in Figure 6.3 which shows that the relative ranking of CCGs in terms of dementia prevalence is predicted to remain fairly constant over the 10 years, however, there is an upward trend with some CCG's increasing more than others especially those with the higher prevalence in 2014.

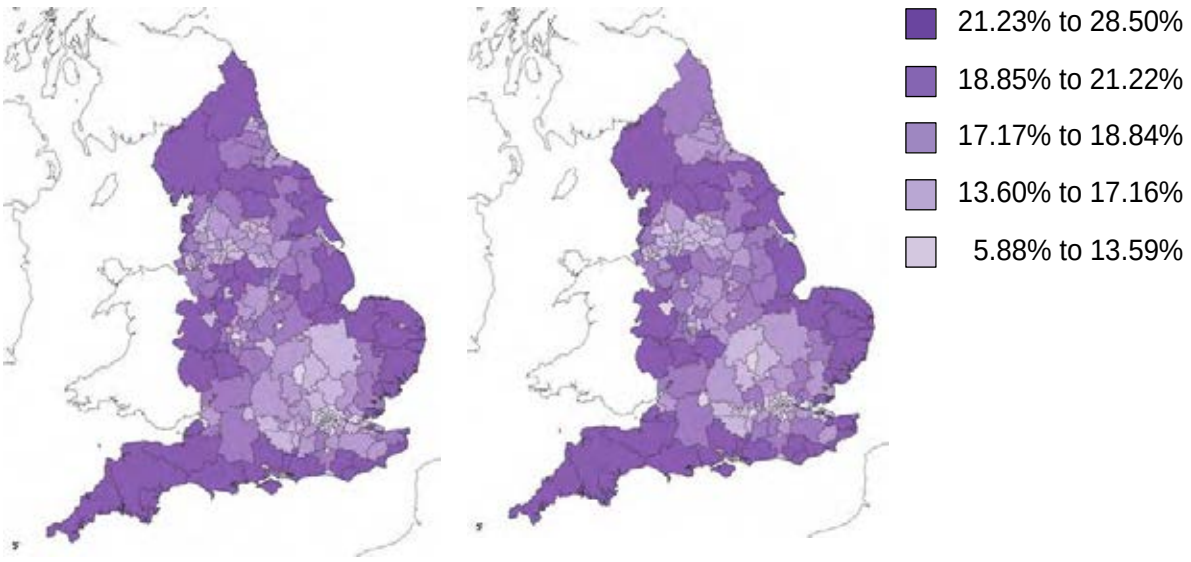


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Figure 6.2: a) Percentage of CCG population aged 65-84 for 2014; b) Dementia Prevalence by CCG for 2014

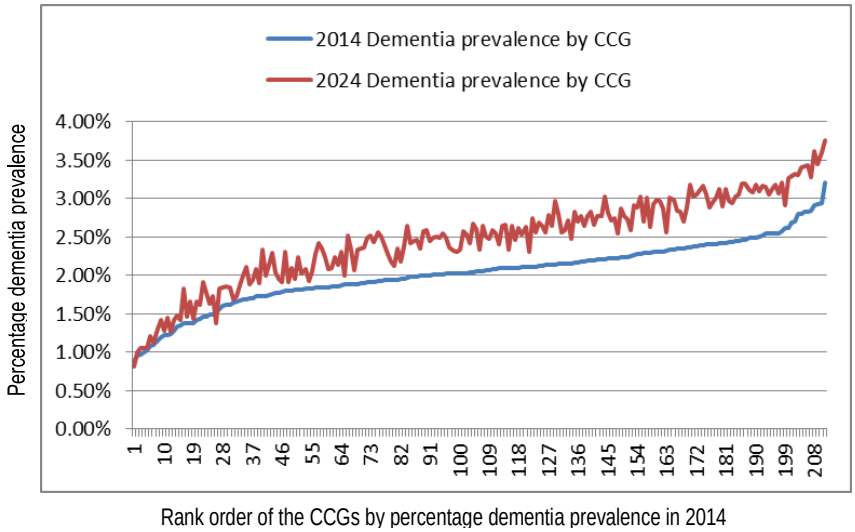

Figure 6.3: Dementia Prevalence data (%) for 2014 and 2024

Scenario planning

. Scenarios need to be developed by asking 'What if?' and 'What happens if?'

. To better understand and forecast future need, due consideration should be given to the use of scenario planning workshops with key stakeholder groups to draw a consensus on potential scenarios that a facility may to need to respond.

. Developed future scenarios should give due consideration to potential changes in demand being driven by:

- demographic trends (in particular, an aging population and the projected prevalence of dementia);
- shorter lengths of stay in hospitals;
- care closer to home;
- potential shifts towards integrated care delivery;
- potential increase in ambulatory care and surgery via community settings;
- technological advances (for example, in surgical techniques and diagnostic imaging); and
- increased hospital acuity due to technology enabling people with high acuity to be treated in their own home.

Flexibility and adaptability

. The design process needs to take due account of flexibility and continuous change by allowing for changes in spatial layout, function and patient volume.

. Where possible, enhance flexibility to meet future demand scenarios through the provision of standardised space and components as much as possible. As well as improved patient outcomes, this should also help to reduce costs.

Organisational structures: integrated health and social care delivery

. The development of integrated health and social care delivery can impact on the type of organisational structures and offers many potential benefits, such as:

- better coordination of supportive interventions for people living with dementia and their carers in the community;
- improved dementia care providers' ability to meet multiple complex needs;
- ease transfer across different settings as the disease progresses and/or the acute nature of other conditions changes;
- reduced number of settings visited to receive diagnosis and treatment; and
- improved knowledge sharing across health and social care providers.

. The adoption of integrated health and social care needs to be part of a long-term strategy designed around a prioitiseation of the above potential benefits.

. Integerated health and social working may be needed to improve knowledge transfer across regions with respect to dementia-friendly design principles and scheme development.

. The shift towards care in the home and community care with fewer resources for institutional care requires a coordinated approach to support people living with dementia in the community.

. The planning and design of environments to support integrated health and social care processes have to deal with a complex set of performance parameters, therefore:

- appoint a multidisciplinary project delivery team including built environment, technical, clinical and social care expertise;
- obtain input from specialists;
- engage with a wide range of stakeholders;
- work with research institutions and education sector to support the innovation process;
- use improved health and social care environments as catalysts for the development of dementia-friendly approaches within and across the communities; and
- use workshops to enhance knowledge transfer and engage with different organisations to develop a comprehensive view on the different aspects that might be relevant.

Organisational culture: attitudes, perceptions, knowledge, competencies and awareness

. Organisational culture, attitudes, perceptions and awareness all have crucial roles to play in delivering high quality care and should be key outputs of long-term change strategies aimed at environmental improvements. Key aspects of organisational culture that need to be considered during the development of a long-term strategy have been highlighted below.

Knowledge and competencies

. New knowledge and competencies should be developed as part of any innovation process and embedded as Continuous Professional Development (CPD) with accredited professional institutions.

. Improve awareness of: dementia-friendly design principles and their potential impact on quality of life and cost effective care delivery; social value assessment and determination of Social Return on Investment (SROI), as discussed in the next section; and the relative impacts and cost savings that can result from different interventions.

. Develop and apply effective impact assessment and reporting practices and cultures.

Empowerment

. Empower carers through: early consultation; and the adoption of community-based settings, such as extra-care houses and day centres.

Processes: person-centric care

. Due consideration needs to be given to the trend towards person-centric health and social care delivery in general and how this can make a significant contribution to improved quality care and QoL for a person living with dementia.

. Develop and apply strategies and processes to support early diagnosis and understanding of individuals' changing symptoms and needs.

. Ensure there is good understanding of patients' and residents' life story to ensure patient-centric care and encourage the use of technology and family to develop these.

. Develop personas or dementia categories to underpin dementia-friendly design solutions.

Supportive technologies

. Use emerging technologies to:

- help meet future demand through personalised care delivery; and
- enable dementia care providers to be more responsive to the needs of all people using their services.

. Make effective use of supportive technologies to:

- improve quality of life;

- encourage independence and better nutrition;
- reduce slips and falls; and
- promote dignity and relationships.

Physical environment

Long-term strategic approach

. Adopt a long-term strategic approach, focusing on:

- the dementia-friendly design principles;
- facilities with high critical infrastructure backlog maintenance and potential for increased space utilisation; and
- projects with significant rollout potential within their own organisations and the local community.

Person-centric design

. Twenty-five per cent of acute hospital beds are occupied by people with dementia. General hospitals are particularly challenging environments for people with memory impairments and communication problems, with cluttered ward layouts, poor signage and other hazards. These are important factors in influencing the fact that people living with dementia have worse outcomes in terms of length of stay (LoS), mortality and institutionalisation rates.

. The physical environment is equally important in care homes, where an estimated two thirds of residents have dementia. Those homes, seen as providing the best quality care for people with dementia, generally pay close attention to, amongst other things, providing a physical environment that enables people living with dementia to move around the home safely, reducing the potential for confusion; and supporting them to live well with the condition.

. Design solutions need to take due account of the individual's dementia condition, symptoms and rate of progression. This requires good understanding of:

- the different types of dementia, the associated symptoms, and the progressive nature of the condition; and
- that symptoms and rates of progression differ from person to person.

. As dementia mainly affects older people, dementia-friendly environments need to take due account of the needs of frail and elderly people with or without dementia.

. Many people living with dementia have other health issues and design solutions need to take account of the complex needs that can arise from comorbidity.

. Flexible and/or adaptable solutions need to be adopted to accommodate individual needs and changing symptoms.

Evidence-based therapeutic and dementia-friendly environments

. The project team should refer to the growing body of research material that provides evidence on how high quality therapeutic health and social care environments can impact on patient recovery, QoL, and staff performance and retention..

. The concept of designing therapeutic environments is not new. The relationships between environmental stimulus and response are complex and not fully understood. However, it is well recognised that the physical characteristics of health and care facilities can: have positive impacts on the occupants by reducing the level of anxiety and stress; aid patient recovery; and improve quality of life.

. Health and social care facilities should provide therapeutic environments where the overall design of the building contributes to the process of healing and reduces the risk of healthcare-associated infections rather than simply being a place where treatment takes place.

. Health and social care facilities that have been appropriately designed with specific reference to the needs of patients, residents and staff and visitors can deliver positive outcomes. Nevertheless, there is a high degree of complexity involved with many often conflicting environmental parameters that need to be considered and reconciled.

. Health and social care planning and design processes thus need to be broad

enough to include not only the issues surrounding the treatment of condition, but also promote health and prevention of disease – essentially safe and therapeutic health and social care environments.

. Encourage therapeutic intervention, such as gardens, pathways and conservatories to make greater connection to external environments

Effective environmental configurations

. Develop more strategic insights as to the most effective environmental configurations (e.g. acute hospitals; care home; day centres) needed to provide integrated care delivery from a regional perspective.

Section 7:
Benefits realisation

7. BENEFITS REALISATION

Introduction

. This section provides guidance on purposeful stakeholder engagement, benefits realisation and whole-life value relevant to the planning and design of dementia-friendly health and social care environments.

. Securing approval and funding for any project in today's economic climate requires value justification in terms of discounted whole life costs and benefits.

. Failure to demonstrate that a project will lead to worthwhile benefits may result in the project not being approved. Also, future projects can be jeopardised, when projects that do go ahead fail to fully realise the anticipated benefits.

. The DH Capital Programme, which included 115 projects led by NHS and social care organisations, provides a large scale demonstration of the stakeholders and purposeful engagement events that can be part of the consultation process.

. The creation of dementia-friendly health and social care environments can be of significant benefit to multiple stakeholders. However, many of the benefits are subjective and difficult to quantify.

. Potential benefits will only be fully realised through effective stakeholder engagement and subsequent buy-in to the project and alignment of stakeholder objectives.

. Stakeholder engagement is also critical to the effective identification and prioritisation (or weighting) of potential benefits

Stakeholders

. A project stakeholder is a person or organisation who may or may not be directly involved with the project but has an interest in its activities.

. Stakeholders are not usually 'homogenous' and may contain a variety of sub-groups. See Table 7.1 for categorisation of the stakeholders involved in the DH Dementia Capital Programme which could be used to guide future stakeholder engagement processes.

7.1 . Table 7.1 provides a potential list of stakeholder organisations, groups and individuals, with whom health, social and community care organisations could engage with, when developing projects to deliver dementia-friendly health and social care enviromentals.

Purposeful Stakeholder engagement

7.1 . The implementation of innovation and change needs to managed and should in most cases include purposeful stakeholder engagement which can take many different forms and should be proportionate to the cost and value of the project. Table 7.2 categorises the different types of engagement used by individual pilot projects during the DH Dementia Capital Programme. It can be used by health, social and community care organisation to decide which type of events they should organise or attend when developing dementia-friendly health and social care enviromentals.

7.1 . Stakeholders should be consulted on issues that they can contribute to and care needs to be taken not to unduly raise expectations that cannot be met.

7.1 . Stakeholder engagement plays a critical role in benefits realisation especially on complex projects as it:

- helps to ensure, and demonstrate that, the views and needs of key stakeholders are accounted for;
- helps to achieve buy-in and create a feeling of change ownership;
- enables early engagement of appropriate expertise; and
- facilitates knowledge exchange.

7.1 . Stakeholders need to be engaged throughout the project lifecycle:

- during concept development and detailed design to ensure key expertise is made best use of and to encourage stakeholder ownership of the delivered project;

- early on in the project to ensure the project is aligned to users' needs; and
- through knowledge sharing activities during project delivery and after project completion to encourage adoption of best practice and to learn lessons.

7.1 . The engagement process should:

- include people living with dementia, carers and staff in the design process which can also: promote dignity; improve privacy; support cultural diversity; and reduce inequalities; and
- encourage direct involvement of key organisations at different levels to ensure comprehensive discussion of the results from different perspectives.

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Stakeholder categories	Stakeholder organisations, groups and individuals
Academics, researchers and specialists	Academics; Colleges, School of Health Studies; Subject experts.
National bodies	Age UK; Alzheimer's Society; Dementia Action Alliance.
Commissioners	Care Development Agency; Boroughs; CCG; Councils; Dementia Partnership; Director of Adults and Communities; Local Clinical Commissioning Group; NE Sector Clinical Quality Leads Group; Statutory organisations; the Portfolio for Health and Well-being.
Department of Health	Secretary of State for Health: policy team.
Family, friends and carers	Relatives; Carers; Friends; Partners from the voluntary and community sector.
Local communities	City museum; Community representatives; Fundraisers; Local schools; Local businesses; Local public.
People living with dementia	Residents; Patients; Clients; Dementia representatives.
Providers	Board of Governors; Community health service providers; Community service providers; Wellbeing Centres; Health organisations; Other NHS organisations and Trusts; Directors; Mental health provider; Private organisations.
Staff	Clinicians, Dementia Lead Nurse; Allied Professionals; Clinical leadership; Clinical staff; Dementia Champions; Dementia Lead; Estates staff; Senior Management Team; Healthcare professionals; Members of the Trust's Executive Team; Older People Specialist Nurse; Other healthcare professionals; Other Trust staff; Primary care representatives Trust officers; Ward managers; Care home representatives; GPs; Reference groups; House schemes; Hospice; Dementia Commissioners Network; Housing partnership; Health organisations; Memory Assessment Services.
Supply chain partners	Architects; Contractors; Design teams; Local businesses; Local dignitaries; Local suppliers; My Life Software; Professional photographer
Support Networks	Local Dementia Empowerment Group; Arts & Health Action Learning Group; Black and Ethnic Minority Group; Care Group Board; Carer groups; Carers' Council; Dementia-friendly community; Dementia Care Action Group; Dementia Friends; Elders Council; Local Health Watch Representatives; Mental Health User Group members; Patient and Public Involvement (PPI) Group; Service User Council; The Women's Royal Volunteer Service; Advocacy for Older People Services; Older People's and Carers Partnership Boards; Older Persons Resource Group; Chorus; Older People Mental Health Strategy Group; Dementia Patient and Carer Group; Older People Mental Health Board; Dementia Support Groups; Care Specialist Consultancy; Dementia Champions Group; Communications Health Initiative; Dementia Collaborative; Dementia Friendly Communities; Community Reference Group; Black and Minority Ethnic Forum; Learning Disabilities; Older People's Housing and Support Forum.

Table 7.1: Stakeholder categories used by DH Dementia Capital Programme's pilot projects

Engagement categories	Type of events
Dementia knowledge sharing and networking activities	Alzheimer's Society Local Dementia Forums; Building Better Healthcare Awards; Carer forums; Clinical Governance Forum; Cooperate inductions; Dementia Carers forums; Dementia Champions network forums; Dementia conferences; Dementia Theatres; Feedback sessions; Forget Me Not Campaign; Formal presentations; Provider Forums; Health Fairs; Health Service Journal Awards; Kings Fund conference; Launch of Dementia events; Lectures; Local stakeholder dementia forum ; National Conference; Network forums; Open forums; Patient Safety and Quality Awards; Public exhibitions; Quality forums.
Dementia related events	Carers events; Community dementia events; Dementia Awareness events; Dementia Café events; Dementia Care Week; Dementia friendly communities events; Listening into Action event; Local events; Multi agency dementia ; Open consultation event; Patient/Staff experience event ; Trust member events; Trust wide dissemination events; Trust wide launch events.
Informal discussions	Comments; Dialogues; Discussions; Informal ward engagement; Letters of complaint; Memory cafés.
Media exposure	Articles; BBC local news; BBC radio; British Geriatric Society newsletter; Facebook; Film footage; Festivals; GP Newsletters; Guidance sheets; Local papers; Local press release articles; Newspapers; Photos and video footage; Quality award video; Radio interviews; Research papers; Trust's communication briefings; Tweeter; Various media publicity; Video evidence; Websites; Radio; Press articles; GP notice boards; Town notice boards; Village notice boards.
Meetings	Annual Public Meetings; Foundation Trust's Governors meetings; Local meetings; one-on-one meetings; Service meetings; Trust annual members meetings; Trust meetings; Ward meetings; Carer meetings; Regional Dementia Leads Meeting; Resident Support Group Meetings; Resident and Relative Meetings; Regional Dementia Collaborative Event.
Open days and visits	Formal opening events; Invitations; Open afternoons; Open days; Site visits.
Project development and consultation activities	Artist workshops; Briefings; Case studies, Collaborations; Consultation events; Consultation sessions; Reports; Dementia care mapping; Dementia workshops; Design workshops; Email conversations; Environment subgroup; Focus groups; Information displays and feedback boards; Local Joint Strategic Health Needs Assessment; Mood boards; Online surveys; PLACE assessment; Plant books; Workshops.
Multidisciplinary team meetings	Steering Groups
Strategic and regional boards and groups	Dementia strategic partnership; Joint working groups; Partnerships; Patients Experience Committees; Trust Boards; Trust Clinical Excellence Committees; Trust's Capital Project Programme Groups
Training sessions	Dementia Friends Sessions; Exercises; Seminar room; Training days; Webinars; Joint Training.

Table 7.2: Engagement categories used by DH Dementia Capital Programme's pilot projects

Stakeholder consultation

7.1 . Stakeholder consultation and public involvement in the healthcare planning process is significantly driven by legislation at NHS Trust board level.

7.1 . The Health and Social Care Act (2001), specifies the need for NHS organisations to obtain approval from the appropriate Local Authority Overview and Scrutiny Committees (OSC) on substantial change proposals.

7.1 . Section 242 of the Local Government and Public Involvement in Health Act (2006) requires that Trusts involve, consult and respond to users and the public and make explicit the decision making framework and the trade-off between: affordability, acceptability and clinically safe and effective outcomes (Figure 7.1).

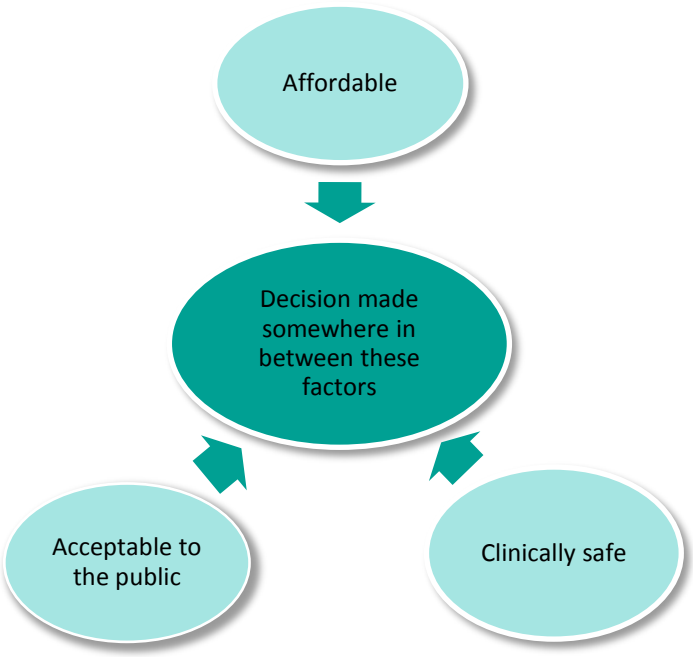


Figure 7.1: Adapted from the Guidance for NHS organisations on Section 242 (1B) of the NHS Act 2006 (DH 2008)

7.1 . The NHS Act 2006 required NHS Trusts and NHS Foundation Trusts to: "make arrangements with a view to securing, health services for which it is responsible, that persons to whom those services are being or may be provided are, directly or through representatives, involved in and consulted on:

- the planning of the provision of those services;
- the development and consideration of proposals for changes in the way those services are provided; and
- decisions to be made by that body affecting the operation of those services"

7.2 . The duty placed on Trusts to involve patients was further strengthened after Royal Assent on 30th October 2007 (DH, 2006, DH, 2007a). This require changes to the way NHS bodies are expected to involve and consult communities in the planning and development of services that came into force 1st April 2008. Further to the previous statement: "everybody that is responsible for delivering health and social care services (commissioners and providers) to involve, consult and respond to users and the public in:

a) the assessment of needs and preferences of their user population;
b) setting local priorities and deciding what services are commissioned;
c) the decision making process of commissioners;
d) the reconfiguration of services and significant structural change; and

e) the ongoing quality improvement process as a result of feedback."

7.2 . According to the Alzheimer's Society, during the past 20 years the profile of people in care homes has significantly changed with over two thirds of people in care homes now having dementia with increased provision of late stage dementia care (National Audit Office, 2007).

7.2 . The Health and Social Care Act 2012 established Clinical Commissioning Groups (CCGs) which are statutory bodies that commission services for the purposes of the health service in England. CCGs are treated as NHS bodies for the purposes of the National Health Service Act 2006.

7.2 . As health and social care moves towards integrated service provision, the social care consultation process becomes more embedded processes joint with the NHS.

7.2 . Consultation on changes to social care provision can take place at different scales: national; regonal; and individual.

7.2 . National consulation mainly relates to the development of new policies such as the consulation for the Care and Support Bill aimed at making care and support more consistent across England from 1 April 2015. The Prime Minister, in his Challenge on Dementia (2012), stated that the Bill "will benefit people with dementia and their carers, giving them more choice and control over their care, better information, and a greater assurance of quality". The Mental Health Foundation's response during the consutlation can be found here.

7.2 . Regional consulation could relate to changes in how regional services are delivered, such as the move towards integrated care provision. For example, The Wiltshire Dementia Strategy 2014 – 2021 was developed by "Wiltshire Council and the NHS Wiltshire Clinical Commissioning Group (CCG) in conjunction with various local partners from the statutory and voluntary sector, as well as through talking to people with dementia and their carers and families about their experiences in Wiltshire".

7.2 . Individual consultation could relate to individual projects such as the refurbishment of a care home or the décor of a resident's own bedroom, as demonstrated by many of the 115 pilot projects on the DH Dementia Capital Programme.

7.2 . The Dementia Action Alliance (DAA) brings together organisations across England committed to transforming the lives of people with dementia and their carers.

7.2 . To become a member of the DAA, organisations have to sign up to the National Dementia Declaration for England which has been created by people living with dementia and their family carers. It is based on seven core outcomes expressed as statements

- "I have personal choice and control or influence over decisions about me
- I know that services are designed around me and my needs
- I have support that helps me live my life
- I have the knowledge and know-how to get what I need
- I live in an enabling and supportive environment where I feel valued and understood
- I have a sense of belonging and of being a valued part of family, community and civic life
- I know there is research going on which delivers a better life for me now and hope for the future".

7.3 . These statements align well with the dementia-friendly design principles set out in this HBN. They also emphasise the importance of engagement. Given that these seven core outcomes were derived through consulation and have been signed up to being members of DAA, they could be used as an initial step to identifying stakeholder needs prior to purposeful engagement.

7.3 . Further details on the above seven outcomes can be found here.

Benefits identification and prioritisation

7.3 . There is increasing evidence that demonstrates the benefits of designing health and social care facilities around the patient or resident, family, and staff needs

and preferences. Benefits may be seen as cash releasing or non-cash releasing.

7.3 . The development of dementia-friendly health and social care environments across health, social, and community care organisations can have the following potential cost and economic benefits:

- reduced length of stay and bed-days;
- reduced anti-psychotic medication;
- reduced slip, trips and falls and unit costs of these;
- reduced staffing costs (sickness, attendance, absences, recruitment, efficiency, agency staff);
- reduced violence and aggression incidents (injuries for staff and their cost implications);
- reduced hospital admission and readmission;
- reduced ambulance calls;
- reduced infections;
- reduced complaints from patients/residents, relatives or staff;
- reduced patient/resident stress and anxiety;
- reduced energy costs;
- improved patient/resident outcomes;
- improved location and timing of discharge (e.g. patients leave hospital quicker, and return to their home rather than residential care);
- improved patients/residents, carers, staff experience;
- improved patient/residents and families satisfaction;
- increased patient/resident safety;
- improved staff morale satisfaction and retention;
- improved efficient staff workflow patterns and processes;
- improved effects and impacts upon other patients/residents in shared environments;
- improved multiplier effect of impact on local economy; and
- improved consistency across sites (greater value for investment, flexibility for staff and patients and residents).

7.3 . The above list, although quite large, is not exhaustive but serves to demonstrate that there are many potential benefits. These benefits are very different, hence determining the total cost benefit could prove to be extremely time consuming. Simplified approaches to benefits, focusing on the major items, thus need to be developed.

Best Economic, Social and Environmental Value

7.3 . There has been a significant shift in public sector procurement away from awarding tenders based on a Lowest Price, Technically Acceptable (LPTA) approach to Best Value evaluation which takes a more holistic approach giving due consideration to whole life issues including sustainability (i.e. economic, social and environmental value).

7.3 . The EU's Public Procurement Directive embraces life-cycle costs, and economic, environmental and social value.

- Economic Value can include: health and social care activities; staff expenditure; clinical supplies; research and development; education and training; partnership working; capital investment; specialist services; and establishment and transport costs.
- Social Value can include: employee initiatives and staff engagement; patient and service user engagement; integrated and co-ordinated care across different services; health promotion and well-being; and accessibility to services.
- Environmental Value can include: energy savings; and carbon reduction.

Quality of Life

7.3 . Dementia-friendly health and social environments should aim to improve the quality of life for people living with dementia.

7.3 . Quality-Adjusted Life-Year **(QALYs)** takes into account both the quantity and quality of life generated by healthcare interventions. It is the arithmetic product of life expectancy and a measure of the quality of the remaining life-years.

Benefits realisation plan

7.3 . A benefits realisation (BR) plan needs to be developed and used throughout the life of any significant improvement project. An effective BR plan enhances delivery of intended benefits and helps to ensure that resources are fully utilised.

7.4 . The NHS Institute for Innovation and Improvement has developed a tool to help ensure that projects' intended benefits are realised for local service improvement projects.

7.4 . A BR plan can help determine if the intended benefits have been realised and sustained. It can also help to clarify who is responsible for benefits delivery.

7.4 . The first step is to develop the basis for BR under the following headings. These should be reviewed as the project progresses with corrective action being applied where required.

- desired benefit;
- stakeholders impacted;
- enablers required to be realised;
- outcomes displayed if benefit is to be realised;
- current baseline measures;
- who is responsible; and
- target dates.

7.4 . The Office of Government provides additional BR resources, including a PRojects in Controlled Environments version 2 (PRINCE2) BR approach.

Value for Money and Social Return on Investment

7.4 . The Social Return on Investment Network provides details and tools for determining the social value or return of an investment over a period of time.

7.4 . In 2009, the Cabinet Office published A Guide to Social Return on Investment (SRoI).

7.4 . The Social Value Act, 31 Jan 2013 requires commissioners to think about how they can secure wider social, economic and environmental benefits when procuring services.

7.4 . Social value and sustainable procurement are also embedded in the NHS Standards of Procurement as well as NHS England Procurement Guidance.

7.4 . SRoI takes the BR approach further by identifying, monitoring, quantifying and assessing the social value of the planned benefits.

Strategies for realising benefits

7.4 . Use emerging technologies to: meet future demand through personalised care delivery; and enable dementia care providers to be more responsive to the needs of all people using their services.

7.5 . Use improved care environment as catalysts for the development of dementia-friendly approaches within and across communities.

7.5 . Apply tools, and data driven and evidence based decision for assessing Demand, QoL and VfM to maximise social impact and value of capital projects through effective optioneering.

7.5 . Create environments where staff can work differently from how acute hospitals normally operate, supported by a deinstitutionalisation of health and social care environments and integrated delivery throughout the dementia care pathway.

7.5 . Re-think the use of underutilised spaces by: redecorating corridors to create spaces where patients/residents can relax; transforming disused courtyard spaces into useable spaces; and refurbishing disused wards.

7.5 . Encourage the use of environment enabled therapy such as sensory/ therapy rooms, garden areas and outdoor spaces for dealing with challenging care tasks and as part of the therapeutic package where appropriate.

Section 8:
Health care settings case studies

8. HEALTH CARE SETTINGS CASE STUDIES

Introduction

. The pilot projects funded by the recent DH Dementia Capital Programme highlighted the diversity in NHS settings and spaces that need to be considered when creating dementia-friendly environments.

. The four case studies reported in this section present a sample of the 42 Health Care projects involved in the Capital Investment Programme. They present exemplar of how it is possible to achieve dementia-friendly:

- acute wards;
- long-term wards;
- out-patient departments; and
- hospital gardens.

. The case studies are structured to present:

- the challenges that have moved the project;
- the project aim and objectives;
- the key areas and interventions and their innovative nature;
- the contribution to the 12 design principles; and
- the benefits of the interventions.

. The four case studies provide an invaluable source of information for Health Care organisations who are undertaking projects to make the care environment more dementia-friendly. The case studies not only provide example of innovative design features that can be implemented in different settings and spaces, but also demonstrate how the 12 design principles have been applied.

Case studies selection

. The criteria that were used to select the case studies were:

- quality of the project;
- quality of the information reported at the of the DH Dementia Capital Programme;
- quality of the impact and benefits.

. The four case studies were selected in order to cover different hospital areas and to reflect the variety of areas addressed during the DH Dementia Capital Programme. These are illustarted in Figure 8.1.

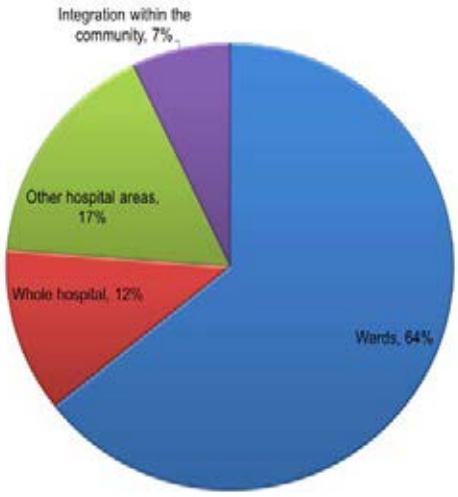


Figure 8.1: NHS pilot project settings

WARD C5 – "YOUR HOME IN HOSPITAL"

Organisations

East Lancashire Hospitals NHS Trust

Royal Blackburn Hospital

Ward 5 staff members

Dr Roberts, Consultant Physician and Geriatrician

Gillian Currie, Ward Sister

Sandra Nuttall, Dementia Lead Nurse

Consort HealthCare Limited and project team

EHE Project Working Group members

Jimmy Maguire, Head of Estates

Lisa Grendall, Patient Environment Manager

John Dean, Director of Service Integration / Associate Medical Director

Christopher Pickup, Matron for Elderly Medicine

Project team

Diamond Business Interior Limited

Douglas signs

New Vision

Corridor pre-intervention

Corridor post-intervention

The Challenge

East Lancashire Hospitals offers health services at five hospital sites throughout Pennine Lancashire and deliver community health services across six localities. It is estimated that there are 6,000 people currently living with Dementia in Pennine Lancashire. With those figures set to double over the next 30 years, East Lancashire Hospitals has recognised the need to make the care environment more dementia-friendly and equipped staff with the skills and knowledge to support people living with dementia.

Prior to opening Ward C5, the majority of patients having a diagnosis of dementia or cognitive impairment were cared for in Ward B8. This ward functioned as an acute elderly medical and complex needs ward and the patient group comprised frail elderly patients with acute cognitive impairment. However, Ward B8 was a traditional clinical environment with 25 beds, incorporating separate male and female patient areas, and not designed for supporting people living with dementia through their experience in hospital.

Aim and objectives

The project "Your Home in Hospital" aimed to develop an exemplar physical environment for people living with dementia and their carers in a general hospital. This environment was planned to enable exemplary care and support, and linkage to on-going support. The intention was to enable learning and best practice that can be spread throughout the Trust to improve the care of people living with dementia. The Ward was designed and developed as a 14 bedded acute elderly medical and complex needs ward within an acute Trust. The primary function of the Ward is to provide an enhanced environment for patients living with dementia or acute cognitive impairment, who require an acute hospital admission for treatment and management of medical conditions.

The objectives of the project were to:

- create an exemplar environment of care for people with dementia in an acute hospital;
- catalyse and inform facilities work across all clinical areas;
- accelerate the cultural care changes for people living with dementia and their carers across the Trust and partner organisations in hospital, community and clinics;
- increase ownership of the health care environment and a greater awareness of its impact on patients, staff and the public;
- reduce aggressive behaviour and prevent/reduce slips, trips and falls;
- increase engagement in meaningful activities;
- improve nutrition and hydration;
- promote independence;
- encourage greater carer involvement;
- improve patient and carer experience; and
- improve staff experience.

The multidisciplinary project team (inclusive of carers and families) engaged with staff who worked on the elderly medicine wards to influence the design of the ward including interior design.

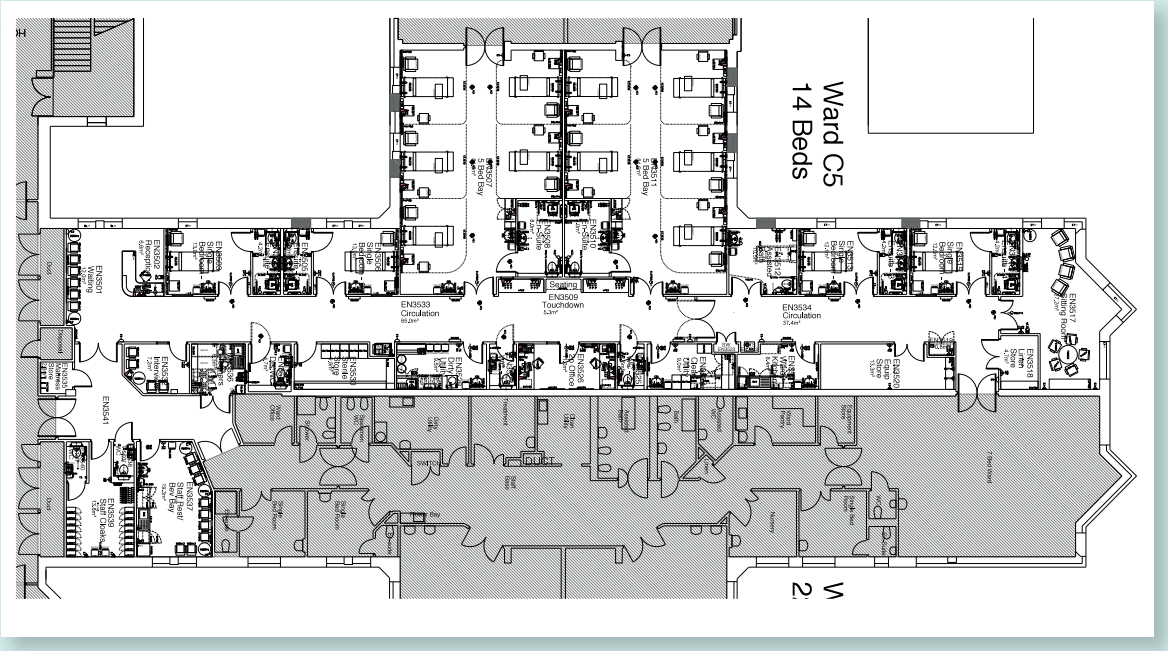
Key spaces

The Ward was refurbished to high standards to provide a supervised reception and a large open social area that enables a calm, caring environment, maximising safety and dignity. The Ward provides a mix of single and small multi-bed areas (14 beds in total) with identifiable wet rooms, bathrooms and toilets all providing a suitable provision on the basis that all patients matter. The welcoming reception area provided a base to welcome people to the Ward, has been used as a social hub for patient interaction and as a relaxed environment for staff communications, such as patient handovers. Developments are being considered to increase the staffing of this area to provide reception in the evenings as well as during the day. Communal dining facilities were created to increase dietary intake and socialisation with families, for example by organising a buffet on Sundays, which has been positively received by patients. A quiet room was created for family, carers to spend time with the patients. The design of more patient-friendly areas such as day rooms and sitting areas in ward and hospital corridors has been championed by the design and implantation project group.

Key interventions and their innovative nature

The following interventions were implemented to make the environment more supportive for people living with dementia:

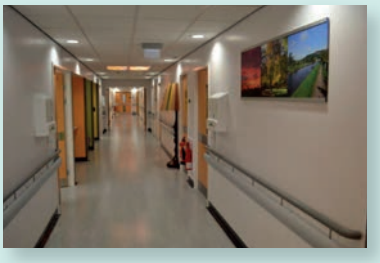
- increased bed spacing to meet needs more flexibly and to enable family members to support care needs, including nutrition;
- memory box fixtures, colour, feature walls and art in bedded areas to support familiarity, coordination and orientation;
- colour to create a warm, safe, calm and welcoming environment;
- appropriate use of flooring, colour and finishes to reduce slips, trips and falls;
- appropriate signage on toilets, bathrooms etc.;
- DDA fixtures in bathrooms and toilets differentiated by colour to improve use of the facilities;
- beverage facilities (i.e. trolley system) for relatives, visitors and patients to encourage independence and nutrition;
- a system to support movie projection with choice of clips and films from a range of eras;
- dynamic lighting in bedded areas;
- ceiling lighting projection of pictures within the bedded areas (natural pictures);
- artwork to introduce the natural outdoors, indoors;
- artwork to bring familiar surroundings into the clinical environment thus supporting cultural diversity;
- safety handrails in corridor areas to help patients with balance and proprioception; and
- appropriate clocks within the areas to improve orientation.



Proposed equipment layout

Contribution to the 12 principles

P1. Provide a safe environment. The project implemented the appropriate use of non-slip matt flooring, colour and finishes to reduce slips, trips and falls resulting in serious injury, and safety handrails in contrasting colours to help patients with balance in corridor areas. Storage space was increased to reduce clutter on the Ward and create a calmer atmosphere and a safer space for patients to walk in. Colour contrast toilet seats were used to reduce risk of falls in the bathroom. The central nurses' station was removed and nursing care is now in the patient bay area, which provides a safer and higher quality provision of nursing care.



P2. Provide optimum levels of stimulation. The project developed a good sensory environment by providing: lighting free of shadows or glare; improved storage area to de-clutter the Ward; and an activity room. The new lounge and the quiet room provide a calmer, quieter space for patients to retreat to in times of their choosing. This has contributed to reduce stress and anxiety in patients living with dementia for whom over stimulation is detrimental.

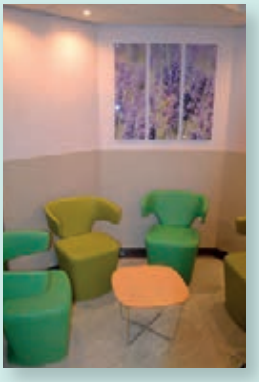
P3. Provide optimum lighting and contrast. The project has pioneered a dynamic lighting scheme in the Ward. This system mimics the natural patterns of daylight with almost imperceptibly changing light intensity and colour across the day to help in regulating sleep and wake cycles/diurnal rhythms of patients.

P4. Provide a non-institutional scale and environment. The environment was refurbished: to look and feel less institutional, whilst maintaining a functional clinical purpose to meet the needs of patients and relatives; and to be more conductive to patient and staff wellbeing. The project implemented a welcoming reception area with wall art and a relaxing seating area. Having a welcoming reception area, where visitors can be greeted onto the ward and directed towards their loved ones, rather than a larger nurses' station, helps to reduce carer stress and anxiety. Additionally, the removal of the nurses' station improves communication with staff, as they are no longer congregating round the nurses' station, but more available in the bay. The new lounge area enables carers to better communicate and support each other, and also talk about the feelings that they are experiencing.

P6. Support way-finding and navigation. To help patients navigate the Ward: different colours were used to define bay doorways; easily recognisable signs were used for the bathrooms; and each bed space was provided with a unique picture. A selection of different flowers was chosen for the pictures on the bed to avoid images that may be offensive to some minority and ethnic groups.

P7. Provide access to nature and the outdoors. The position of the ward does not allow direct access to nature and the outdoors. The project has adopted ceiling lighting projection of natural pictures within the bedded areas and corridors and use of art, to introduce the natural outdoors.

P8. Promote engagement with friends, relatives and staff. The layout was changed to create reception space at front of the Ward, creating focus for families and carers. The lounge was refurbished with non-institutional furniture, and specialist seating were introduced in the corridors to create a point of destination. The aim was to: create an inviting place for families to visit more often and stay longer; increase levels of wellbeing; and reduce stress. Local landmark photographs and window art were introduced to: create points of interest and distraction; promote conversation between people living with dementia and their families and carers.



P10. Promote privacy dignity and independence. New signage, environmental cues and DDA fixtures in bathroom / toilets, and blue toilet seats were introduced to support independence with self-care and toileting. A calming quiet room was introduced for patients and relatives to have private reunions.

P11. Promote physical and meaningful activities. Creating activity room for patients, family, carer and professional interactions increased the range of therapeutic opportunities to meet multiple and complex needs. The provision of these spaces has provided patients with another destination to walk to, and supported patients to maintain their pre-hospitalisation level of functioning, which is pivotal to an early supportive discharge for dementia patients. Activity Coordinators have been introduced on the Ward to engage with patients and encourage stimulation and communication.

P12. Support diet, nutrition and hydration. It is envisaged that an improved daily patterns of sleep and wakefulness through the implementation of a dynamic lighting schemes will increase activity levels leading to improved appetite. The increased bed spacing and the provision of a dining room away from the bedside enables relatives to support care needs including nutrition. Beverage facilities (i.e. trolley system) for relatives, visitors and patients were introduced to encourage dinking and improve hydration.

Benefits of the intervention

"Your Home in Hospital" Ward C5 was opened in February 2014 to the patients in the care of East Lancashire Hospitals NHS Trust. The exemplar ward has provided the Trust with best practice that can be spread throughout the organisation to improve the care of people living with dementia, by "Putting Patients First". It has provided foundation for future developments within East Lancashire Hospitals NHS Trust Estates Strategy around Dementia-friendly Environments.

East Lancashire Hospitals NHS Trust (ELHT) developed a three-year Dementia Strategy "Our shared vision" which was launched on the 6th March 2015. By 2017, ELHT will be a "Dementia Friendly" organisation recognised as delivering safe, personal and effective care for the population of Pennine Lancashire.

The health care environment has created and encouraged patients and those who care for them to feel welcomed, looked after and cared for in a safe, more personalised environment that meets individual care needs. Staff feel much more valued and able to deliver best care for the people living with dementia and complex needs that are in our care.

Although the Trust is still evaluating the benefits of the intervention of the dementia-friendly environment, strong qualitative and quantitate data and information have been gathered. Metrics and improvement measures, identified within the "Your Home in Hospital" case study report, have shown great improvement. Patient and carers experience feedback, relating to the level of care, hard work and commitment of the nursing teams, has been very complimentary. The new environment has also been described as safe, non-institutional, calming, welcoming, and supportive of independence, more suitable to involve family / career in patients' care and nutrition.

The "Your Home in Hospital" Ward C5 has supported other hospitals by sharing best practice and learning over the last 12 months. Several hospitals have visited the Ward and viewed the physical environment, and spoken with the staff team.

Bed ward layout

BEACONSFIELD EAST DEMENTIA-FRIENDLY IMPROVEMENT PROJECT

Organisation

The Hillingdon Hospitals NHS Foundation Trust

Acknowledgements

Architect – Gray, Baynes + Shew

Art Strategy – Artinsite

Engineering – ETA Projects

Quantity Surveyor – Woodeson Drury

Main Contractor – Storm Building Ltd

Furnishings – Hitch Mylius, Teal Healthcare, Knightsbridge, Beaver Healthcare

Sensory Equipment – Rompa

Photographer - Matt Livey

Poole Hospital NHS Foundation Trust

King's College Hospital

The Challenge

Beaconsfield East is a 26 bedded rehabilitation ward for older adults, organised into 3x 6-bedded bays, 1x 4-bedded bay and 4 side rooms. In 2011/12, the ward had a 98% occupancy level with a 20 day average length of stay. Patients are either admitted directly to the ward or transferred from other wards once they are stabilised. With its re-enablement focus, including a ward based therapy team and its ground floor location, it is the ward of choice for patients living with dementia.

Prior to refurbishment, the ward had a shiny blue linoleum floor, no distinguishing decorative features or any communal areas away from the bed spaces for patients to socialise and receive therapy. The most significant transformation was the refurbishment of an unloved and unused garden adjacent to the ward.

The challenge was to create a comprehensive dementia-friendly environment within an acute care setting for the rehabilitation of elderly adults. The project also enabled the Trust to address the deficits identified on Beaconsfield East following: assessment with the King's Fund EHE Environmental Assessment Tool; and feedback from patients and carers; and advice from the Alzheimer's Society and AgeUK.

Aim and objectives

The project's aim was to create a dementia–friendly physical environment supported by a sound infrastructure that would enhance the experience of patients and their carers through the provision of both quiet and stimulating inside and outdoor areas that maximise patient choice and independence.

The environmental improvements were **SMART** measured for each of the project objectives, as listed below.

1. Patients and carers will feel welcome and valued.
2. Patients and carers will feel their privacy and dignity are respected.
3. Patients and carers will feel involved in decisions about care.
4. Patients will be supported to be independent to the maximum of their ability.
5. Staff will be knowledgeable and feel empowered to support their patients and carers.
6. Staff will feel safe and valued.
7. Patients, carers and staff will perceive the ward as a positive, healing environment

From bid through to completion, the project was developed in consultation with clinical staff and patient and carer representatives through a series of focus groups and an open day. For example, carers at the local dementia-friendly café talked about needing strong colour in the ward and improving the environment. One carer said *"patients would feel secure surrounded by the images with their warm use of colour and textured layers of pastel, and that the floral theme was ideal for hospitals where you can no longer bring flowers as gifts".*

Nurse base pre-intervention

Nurse base post-intervention

Key spaces

The design for Beaconsfield East focussed on patient areas: four multi-bed bays, four single rooms, assisted shower room, day room, occupational therapy kitchen, reception and staff base, sensory room, and sensory garden.

Prior to the intervention, the multi-bed bays were identical to each other and overtly clinical. There was no social space on the ward and little of interest to stimulate patients. The garden was unsafe to use and drab to look at. With shiny floors and gloomy lighting, the ward was far from dementia friendly.

Each bay and its corresponding side-room now have a feature colour: green, purple, magenta and blue. A mural with original artwork featuring homely objects and familiar garden plants, with distinct images over each bed, not only enhances the ambience in the bay but also helps patients to recognise their bed-space. Art totems at the entrance to each bay also support way-finding.

Provision of a social space means patients can now have their meals around a table then sit and relax with each other or their visitors in the easy chairs. During the day, the therapists hold activity classes here.

Fragrant and tactile plants in the garden provide sensory stimulation and evoke pleasant memories from patients' earlier lives. The upper terrace links with the patient bed bays via a series of French doors, whilst the lower garden has grassed areas and safe, returning pathways. Canopied areas facilitate use in all seasons.

Floor plan layout

Key interventions and their innovative nature

The interventions were designed to support patients living with varying levels of cognitive impairment including those with no deficit.

Social Space – The new day room, with a dining area and kitchen, facilitates social dining and provides a more comfortable environment for patients and their families. The kitchen facilitates occupational therapy and provides patients and carers access to refreshments.

Decoration – Colour-coded walls, furniture and art are used to give bed bays, side rooms and other key areas their own distinctive features to assist with way-finding and orientation.

Artwork – Original 'timeless' artwork in vibrant colours take the theme of plants from the new sensory garden. These were: cleverly used to soften the ward environment and provide some level of familiarity, reassurance and calmness; and implemented through the use of colour and drawing of objects familiar to patients' life experiences such as classic renditions of glasses, vases and teapots which it is hoped will elicit specific memories from the past.

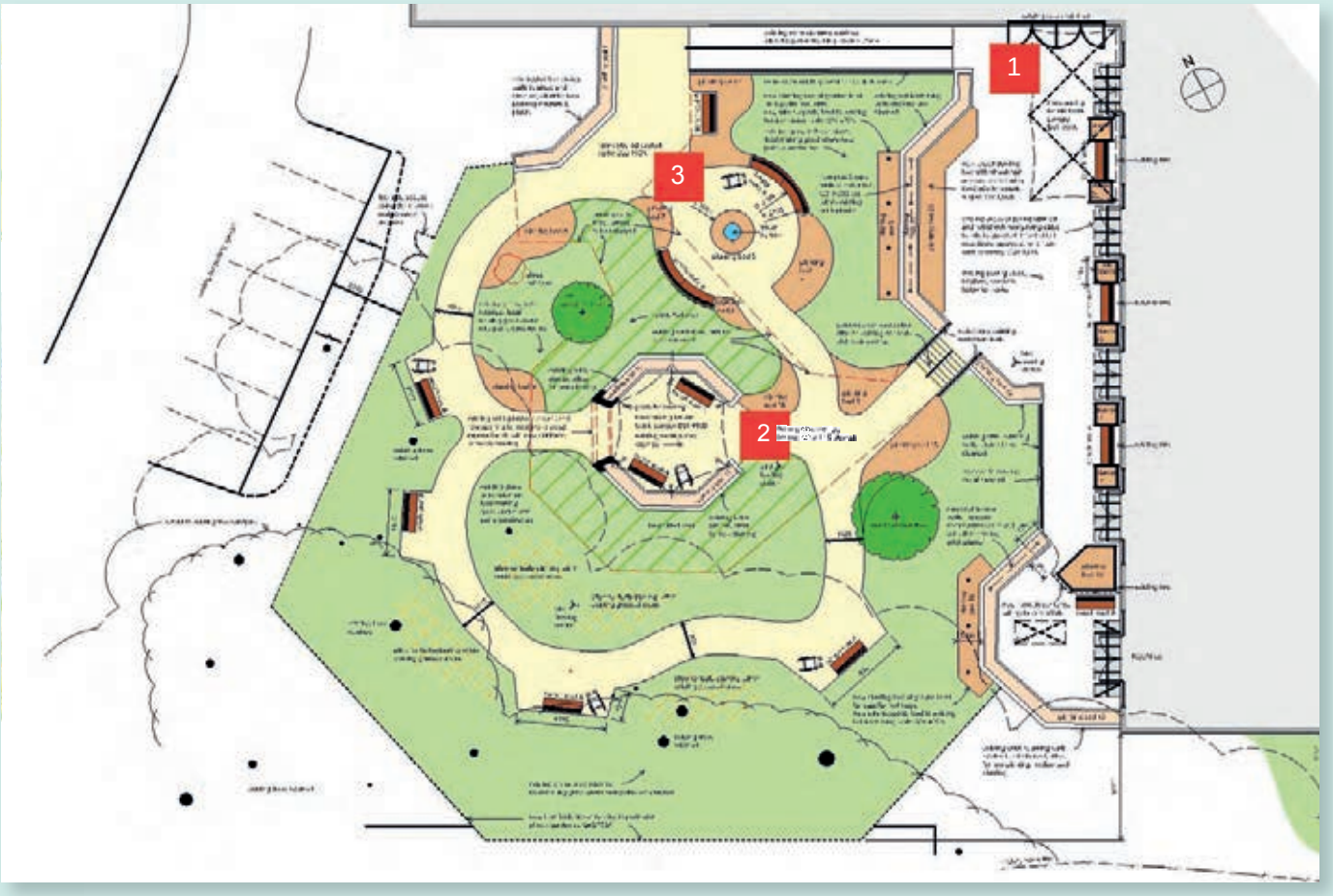
Flooring Finishes – The shiny floor was replaced with a non-slip cushioned covering in a matt finish combined with new handrails to increase independence and reduce falls.

Signage – Clear pictogram signage appears throughout patient areas, whilst staff areas have subtle signage. This promotes independence and increases patient safety.

Lighting – Even LUX levels throughout with dimming capabilities: prevents shadows, which can be confusing and cause anxiety; and supports high light levels for patients with reducing visual acuity. The separate controls over bed spaces support comfort at night.

Reminiscence Software – A sensory room provides many opportunities to explore non-pharmaceutical methods for calming agitated or disturbed patients or stimulating reminiscence through use of films, visual effects, music and fragrance.

Sensory Garden – All plants were selected based on their familiarity to patients. The internal and external spaces seamlessly interact, whilst weaving returning pathways and seating ensure patients remain well-orientated and rested.



Garden plan layout

Contribution to the 12 principles

P1. Provide a safe environment. Patient safety is paramount and consideration was given to ensure there is good observation to all bed bays and the garden from the staff base and reception area. Safer non-slip flooring in a neutral tone and low thresholds on the new French doors support safe mobility. Doors for non-patient areas (such as the clinical room) are painted the same colour as the surrounding wall, whereas doors to patient facilities such as toilets are in a bright, contrasting yellow.

The garden has a new perimeter fence to provide containment without a sense of restriction and a sloped path with handrail from the upper terrace to the lower garden; the stepped access is safely gated.

Overall falls incidents did not increase during the comparative study period, despite the increased footprint of ward and open access to garden, and there is also no increase in reported incidents of violence and aggression.

P2. Provide optimum levels of stimulation. The artwork features mid-century objects and flowers drawn from the sensory garden, both of which connect with patients' life experiences, and which will elicit specific memories from the past: 'tea with friends'; 'my mother's silver cream jug'; and 'flowers from my garden'. One carer said patients would feel secure surrounded by the images with their warm use of colour and textured layers of pastel, and that the floral theme was ideal for hospitals where you can no longer bring flowers as gifts.

Close collaboration with suppliers has created a sensory room environment tailored to suit older adults with a range of occupational therapy equipment including: comfortable seating; and fibre optic strings and multimedia equipment to provide visual and auditory stimulation and personalised reminiscence therapy.

The views to the garden throughout the ward provide constant stimulation for all. The dayroom has provided a base for group-based physio and occupational therapy sessions. It is also used for social activities such as bingo, card games and sing-alongs.

P3. Provide optimum lighting and contrast. An abundance of lights ensures there are no shadows or dark corners, which could cause anxiety or visual confusion. Prior to the project the ward was often gloomy, now light levels are kept high in recognition that people over seventy-five years of age are likely to need four times as much light as a twenty year old

The lighting system is highly flexible, with all lights being on dimmer switches. In addition to the main lights, each bed has a ceiling light panel which can be operated individually if, for instance, the patient needs medical care at night. Each bed also has a task light for reading, which can now be operated by the patient from the nurse-call hand-piece, whereas previously this had to be switched from the light itself which usually meant having to ask someone else to do so.

P4. Provide a non-institutional scale and environment. The overall feeling of the décor encourages a more homely scale to the building, subtly split into zoned areas of care and social and therapeutic activity. With elegant artwork, quality finishes and careful furniture selection, the ambience is almost like a boutique hotel to reduce the senses of fear and apprehension for arriving patients.

In the bed bays and side rooms, the visual impact of the space is provided by the bold artwork and views out to the garden which diminish the visibility of the medical equipment.

Various furnishings and colours create a series of intimate spaces within the Day Room with seating arranged in small groups as at home; the kitchen area can be separated by a folding screen. The flooring has the appearance of a domestic laminate or wooden finish. Each of the bed-bays has patio doors opening onto the garden, thus maintaining contact with the natural world.

The artwork is similar in size and design to pictures one might hang on a wall at home, so as to maintain the sense of domestic scale.

P5. Promote orientation. The zoning of different areas of the ward assists patients to orientate with their surroundings as activities are commensurate with setting – for instance dining in the day room rather than at the bedside. The use of colour and artwork further supports orientation within the ward.

Use of the social spaces during the day supports patients orientate to time. Orientation to both time and season are facilitated by the views across the garden. Clocks in each of the patient bays are large, traditional analogue and easy-read in design, and include the date as well as the time.

The decorative design of the ward deliberately avoided creating false realities – there are no murals depicting life-size street scenes, or telephone kiosks or bus stops. While such features may be welcome and appropriate in other settings, it was felt that in an acute hospital the aim should be to create a welcoming, non-clinical environment that still acknowledges it is within a transitional care environment.

P6. Support way-finding and navigation. Part of the design process for the refurbishment included emotional mapping and discussions on reconfiguring key service areas. For example, visitors are now met by a “front of house” receptionist and there is more clarity between the spaces for care and social interaction. Each area was designed to promote a sense of wellbeing, encouraging dignity and familiarity, whilst observing independence and security.

The ward is linear in design, with the day room at one end and a small seating area at the other, to provide a ‘destination’ point for patients.

Art totems on the corridor and murals on either side of the bed bays, with a distinct image above each bed, help patients navigate around the ward and identify with their space. Using artwork, rather than photo images, to identify patient bed spaces and assist way-finding is a new concept, and one that is not subject to an aesthetic shelf life because art is generally perceived to be timeless.

Clear, pictogram signage has been used for toilet and bathroom doors in highly visible black font/yellow background. Similarly, the doors for these rooms are faced in yellow to ensure they are distinct and easy to locate.

The lower garden has a looped pathway to ensure patients cannot get lost and will always return back to the point they started, whilst and abundance of shaded seating areas provides resting points and opportunities to re-orientate themselves or wait for assistance in comfort.

P7. Provide access to nature and the outdoors. Containing the garden with an attractive fence and installing wide looped, returning pathways and shady seating areas has made it safe for patients and visitors to use. The fence is of an attractive and unusual design which reduces the institutional feel and allows one to see it as part of the garden rather than a means of containment.

All the ward bays open out to the garden via wide French doors with low thresholds and during the summer there is a real sense of bringing the outside in, as well the benefits of fresh air and pleasant and familiar floral scents sweeping through the ward. The buff paving on the garden terrace tones in colour with the flooring in the ward to provide a smooth visual transition between the internal and external spaces.

The inviting design has been positively evaluated in all patients/visitor feedback: “A beautiful setting and Dad is really enjoying being able to go outside.”

P8. Promote engagement with friends, relatives and staff. The new social and therapy spaces are transforming methods of care with social dining, such as ‘breakfast clubs’, group exercise classes and sing-a-longs. The female patients are delighted to spend time mixing socially with the male patients in the social spaces whilst still enjoying privacy and dignity within their bedded areas.

When discussing the exercise classes and the sing-a-long that followed, Matron commented: “The ladies in the blue bay told me that they thoroughly enjoyed both activities. In particular, they enjoyed meeting the male patients….they had a good chat with the men…They said being at the far end they hadn’t met the men before today but it had made their day”.
Socialisation with other patients and with family members is integral to this design, with a communal dining area and spaces both inside and out where patients can speak with visitors away from the bedside. This allows carers and family members to spend longer with them, helping to prevent distress, disorientation and delirium, and aid reintegration into the community.

Easy chairs of varying designs are arranged in small groups around coffee tables, including a sofa group by a discreetly sized television and a sideboard holding games, puzzles, bingo and a rummage box. People living with dementia and their carers at the local dementia-friendly café highlighted the importance of providing plenty of things to occupy the patients during their stay.

P9. Provide good visibility and visual access. The clean decorative finishes and removal of clutter have opened up the main ward corridor to improve sight lines and general navigation. The reception desk and Charge Nurse Office were relocated to front of the ward to provide a sense of welcome, and there are clear sight lines through the social spaces through to the garden beyond upon arrival at reception.

During one consultation at the local dementia-friendly café, people living with dementia and their carers talked about needing strong colour in the ward. Colour has been used throughout the ward to create zoning and clear orientation, which is accented by bold feature walls and co-ordinated tones in the artwork.

The toilet and shower room have bold yellow doors with signs that use pictures to clearly show their function, providing a visual cue for people who can no longer read or for whom English is not their language. The signs are black font on a yellow background to ensure clarity for those with diminishing eye sight, and also to continue the yellow theme for toilet areas.

P10. Promote privacy, dignity and independence. The reconfigured layout ensures personal care takes place away from social and therapy activity. The number of beds in each bay was reduced from six to four to increase space between beds and reduce the number of people in a bay, thus enhancing the privacy of patients. This also supports confidentiality for discussions between doctors and their patients.

Confidential discussion between staff, patients and carers can also take place in the sensory room. This room has adjustable lighting and climate control to create a comfortable environment. Its location provides discreet access to the main ward exit and garden should someone need to quietly slip away to gather their thoughts. Clinicians have also found that they use the garden a lot during the summer to have sensitive conversations as there are a number of seating areas to provide a peaceful retreat.

The far end of the ward has been designed with enhanced privacy for sicker patients and end of life care. The last bed bay opens out to a private, screened terrace area, which could support a bed-bound patient's wish to go outside. The last side room has its own private courtyard garden and a seating area outside the room on the ward, to provide peace and dignity for both the patient and their loved ones.

The new flooring and handrails support independent mobility.

P11. Promote physical and meaningful activities. The introduction of communal areas on the ward means patients now have choice about whether to stay at their bedside or to use the social spaces for dining, relaxation, meeting with visitors and participating in group-based therapy sessions.

The day room is a flexible space with collapsible, space-saving tables to allow the therapists and nursing staff to create more space for activities when required. The Therapies Kitchen is enabling 'home ready' assessments to be undertaken and has a domestic feel with a mix of eye-level, glass-fronted cupboards and locking base cupboards, topped by a highly contrasting work-top.

There are new handrails running the length of the ward corridor and the occupational therapists use these extensively with various exercises and routines to help patients become more mobile and independent. The cushioned non-slip flooring further supports these activities.

P12. Support diet, nutrition and hydration. The day room has provided a venue for patients to dine together if they so wish. By dining together, the patients encourage each other to eat within a natural setting. Patients have also been seen helping each other make menu selections in the day room and this in itself provides mental stimulation and companionship.

Tea/coffee making facilities are accessible to visitors in the kitchen area and this facilitates patients and visitors having a drink together in a comfortable, domestic setting.

Benefits of the intervention

The improvements on Beaconsfield East have enhanced the patient and carer experience, evidenced through positive evaluation by patients, visitors and staff. Comments from patients and carers include:

- "Lovely new premises; feels more like home, less like a hospital ward…."
- "A lovely light and bright space with friendly staff. Very like home from home".
- "A beautiful setting and Dad is really enjoying being able to go outside"

Matron noted:

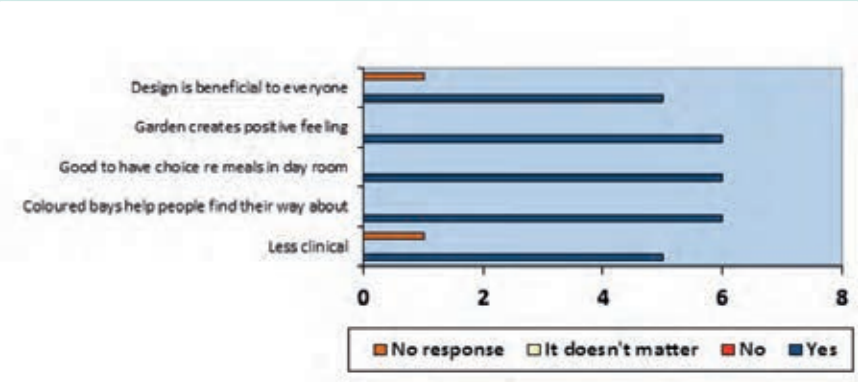
- "The ladies in the blue bay told me that they thoroughly enjoyed both activities. In particular they enjoyed meeting the male patients….they had a good chat with the men…They said being at the far end they hadn't met the men before today but it had "made their day".
- A patient living with dementia who had been exhibiting challenging behaviour when on another ward relaxed and engaged positively when he transferred to Beaconsfield East. He particularly commented that he enjoyed watching the films in the sensory room. He also joined in the singing sessions.

Staff comments include:

- "Really enjoying working on the new ward. Having a kitchen and lounge area so close to the bays has really improved our service for the patients."
- Lovely environment to learn and work in, loads of space for Rehab, all patients seem to be enjoying the new ward."
- A small-scale survey of patient and staff views regarding specific aspects of the project also demonstrated positive outcomes, as shown below.

Outcome data for the three months following the redesign were compared with the same time period the previous year. There were improvements in metrics such as length of stay, discharges to usual residence and staff sickness; however these may have been influenced by other variables such as service model developments. Monitoring over a longer period of time is needed before direct correlation with the environmental improvements can be safely made.

The change in environment has been a catalyst for the multidisciplinary team reviewing their models of care to maximise benefits of the new environment.



Patient/carer responses on improvement benefits

Staff responses on improvement benefits

IMPROVING THE ENVIRONMENT OF CARE FOR PEOPLE WITH DEMENTIA IN THE GENERAL OUT PATIENTS DEPARTMENT OF DARLINGTON MEMORIAL HOSPITAL

Organisation

County Durham and Darlington NHS Foundation Trust

Darlington Memorial Hospital (DMH)

Hollyhurst Road

Darlington DL3 6HX

Acknowledgments

Stakeholders' Groups:

GOLD (Growing Old Living in Darlington);

Age UK Darlington;

The Alzheimers Society;

Tees ESkValley and Wear Mental Health User Group members;

Darlington Association on Disability;

The Friends of Darlington Hospital;

Staff and users of the Department.

The Challenge

Any hospital appointment can be very stressful, especially for: people living with dementia, who may find unfamiliar environments disorientating and frightening; and carers or family members, who may be accompanying them. The project benefits people living with dementia, their carers and families by ensuring that there is clear way-finding in place; so that no matter which approach is used to enter the hospital site, the Outpatient Department is easy to find, welcoming and fit for purpose when people arrive, and offerings an environment conducive to their often complex needs.

DMH Outpatient Department has a large footfall of patients (227,554 in 2012/13). Approximately 60% of all people attending the hospital are aged 65 plus and 40% of those have some form of cognitive impairment. This patient group is well represented by this project.

Aim and objectives

The project aimed to physically improve the DMH Outpatient Department to create a dementia-friendly environment and improve the experience of patients and/or their relatives who use the facilities. The objectives were to:

- ensure a safe, calm and functional space, which promotes and supports independence;
- reduce agitated or aggressive behaviour due to stress or frustration;
- provide a comfortable and pleasant experience; and
- reduce any inequities.

By providing a department which has been sensitively designed for people living with dementia and by actively seeking stakeholder involvement at every stage of the project, the Trust has demonstrated that it is responsive to the needs of all people using the service and supporting cultural diversity. There were two consultation events with completed questionnaires held on Saturday 20th and Monday 22nd April 2013 to engage stakeholders and assess which areas and interventions were most important to people living with dementia and their carers/family. The results of the questionnaire guided the design choices. A third listening event was held on Tuesday 15th July 2014 to again engage stakeholders to provide feedback on the completed project. Stakeholders expressed the opinion that works undertaken was excellent.

Orthopaedic sub-waiting area pre-intervention

Orthopaedic sub-waiting area post-intervention

Key spaces

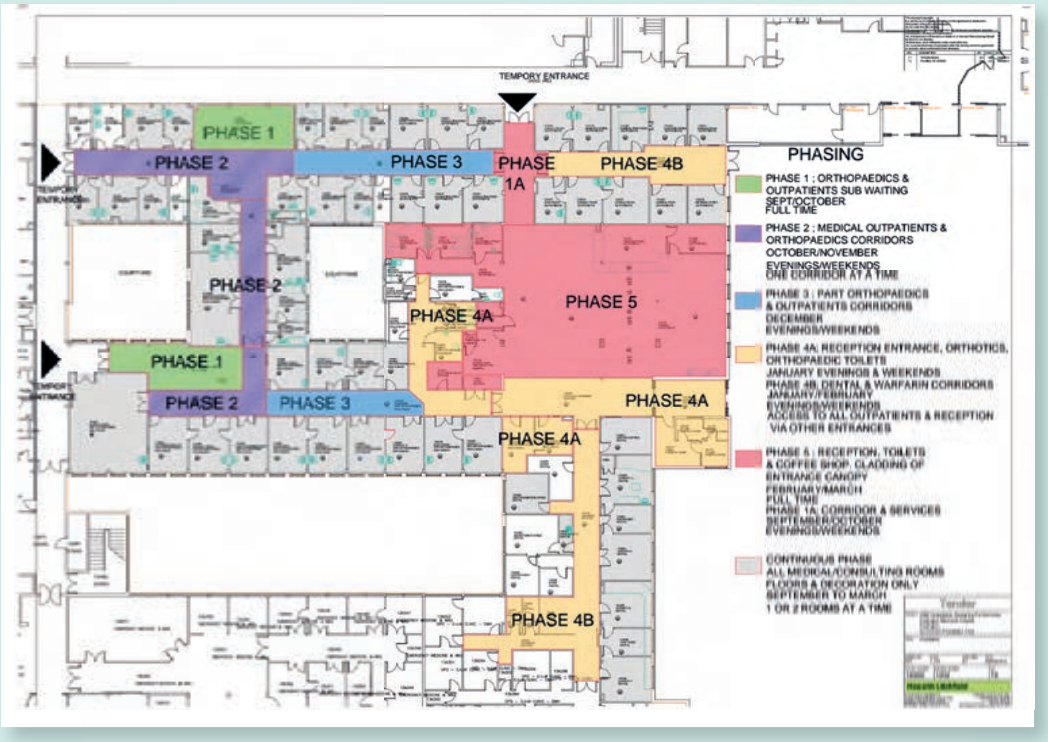
The existing Outpatient Department serves three individual services: Medical Outpatients; Orthopaedic Outpatients; and Oral Maxillofacial Outpatients.

A main reception with central waiting area is the first point of call for patients and carers. The main entrance has been refurbished to high standard with external cladding replacing worn out timber panelling. From this central area, patients are then called into the sub-waiting areas of the individual services. Consulting rooms, signage and sub-waiting areas have been colour coded to ensure continuity of the way-finding principles. A fully accessible toilet, equipped with extra features and more space to meet the needs of people living with profound and multiple disabilities, who often need extra facilities to allow them to use the toilets comfortably.

Key interventions and their innovative nature

The following interventions were implemented to make the environment more supportive for people living with dementia:

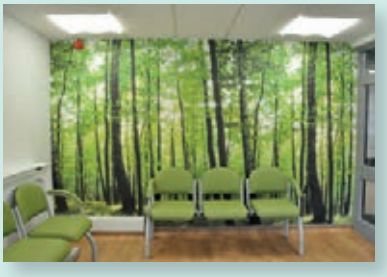
- improving way-finding from the public car park and public transport drop off points to the Department;
- redesigning the main entrance to the Department;
- redesigning the internal corridors to the treatment rooms within the Department, ensuring that all corridors lead to meaningful places, where required, and are wheelchair accessible;
- replacing flooring and furniture to provide appropriate contrasts;
- replacing lighting, including as much natural lighting as possible;
- full-height murals in the sub-waiting areas enhance patient experience;
- complete redecoration of the Department with a colour scheme which meets the specific needs of dementia patients - individual departments have had their own specific colour-way, introduced to aid the flow of the patient experience from reception to consulting room;
- revising the layout to ensure waiting areas can be easily and unobtrusively supervised from the reception desk;
- replacing sanitary facilities and fittings with easily identified toilet seats and grab-rails;
- replacing signage – using visual and pictorial images at appropriate heights and with appropriate contrast;
- introducing sun-tubes in deep-plan rooms to provide natural light in place of permanent artificial lighting;
- replacing doors and door furniture with easy accessible and colour contrasting patterns, and including concealed doors to staff areas;
- installing full-height wall murals in the waiting areas ensure a calming effect by “bringing the outside in”; and
- installing artwork that blends in and has heritage links to the locality; each consulting room has a local photograph which stimulates conversation with patients and carers.



Project plan facing

Contribution to the 12 design principles

P1. Provide a safe environment. The calming environment with colour coded departmental seating and signage along with consistent flooring and improved lighting has resulted in a user-friendly experience which is reflected in the data compiled on slips, trips and falls. All patient areas are designed to be wheelchair accessible with bariatric access to certain consulting rooms.



P2. Provide optimum levels of stimulation. Artwork has been installed that blends in and has heritage links to the locality. Each consulting room has a local photograph which stimulates conversation with patients and carers. The full height murals have been chosen to link outdoor scenes and blend in with colour palettes chosen for the individual areas.

P3. Provide optimum lighting and contrast. A major improvement to the Outpatient Department has been the increased lighting levels which are important for both elderly and patients with reduced visibility, as the ageing eye requires more light to see. Tying this in with the sharp contrasts between walls and between ceilings and doors and frames, the overall effect is one of easily identifiable spaces.

"If it is a nice place to come, people behave differently; they treat the environment with respect and in turn the people within it. It is lovely, like a hotel but you still know it is a hospital."

P4. Provide a non-institutional scale and environment. The introduction of modern seating and décor has resulted in an environment that is both bright and welcoming. The artwork and full-height murals have contributed to a feeling of quality which is reflected in patient and visitor comments.

P5. Support orientation. The signage and clear visual links to the individual departments have ensured that the patient and carer can easily identify the areas where they wish to be. The reception desk is clearly visible from all entry points to the main waiting area. The individual departments' waiting areas are distinct and easily seen from the reception desk. An open-plan main waiting area directs the patient into the required department via colour-coded doors, walls and signage.

P6. Support way-finding and navigation. Improved visual recognition and benefits of colour-coordinated departmental signage has led to reduced confusion and stress. Some individuals had previously expressed concern over missing their appointment if they were sitting in the wrong place, or not being able to find their way through the large Department independently. A new large format external signage on the main entrance, and internal eye-level signs and large numerals on consulting room doors have been introduced. These signs are also tactile.

P7. Provide access to nature and the outdoors. The installation of sun-tubes to the deep-plan rooms in Orthotics has brought natural daylight into the built environment, and has enhanced both staff and patient experience. The efficiency of this design feature in providing natural daylighting has meant that the artificial lighting is not used as much, which will have a consequent revenue saving. It should be noted that this type of lighting was possible due to the building being of a single storey construction.

P8. Promote engagement with friends, relatives and staff. The introduction of historical photographs with local scenes work as a link between staff and patients as a common area for discussion. This can put the patient and carer at ease and lead to better engagement. The quality of the refurbishment is also a topic for conversation and, during the refurbishment, many comments were received praising the contractors and their staff.

P9. Provide good visibility and visual access. The significantly improved levels of lighting within the Department, which has lifted the mood of the environment from what was described by one carer as ‘like a dungeon’ to one of a ‘pleasant environment to sit and wait’. Staff can see the individual waiting zones identified by their individual colour coding easily and each patient can identify easily the specialty that they are attending.

P10. Promote privacy, dignity and independence. Toilets have been made fully accessible and equipped with have extra features to support people with profound and multiple learning disabilities, including people living with dementia, to use the toilets comfortably. These has been equipped with: a height adjustable changing bench; a tracking hoist system, a toilet with room either side for the carers; a height adjustable sink; a screen; a wide tear off paper roll to cover the bench; a large waste bin for disposable pads. carer said that ‘before this addition, if a loved one became soiled then they often had to wait until they returned home to be properly cleaned which was very undignified’. Providing this space within the Department has reduced stress for carers. Wider doors to clinic rooms have reduced the need for people to decant wheelchairs to enter.

Benefits of the intervention

Staff working within the Department were asked to complete a questionnaire describing: how they thought the Department looked and felt to work in prior to the project starting; how the work affected them and the patients using the Department during the building phase; and then how it feels now.

A selection of the answers on how the Department looked and felt after the interventions are reported as follows.

Floor:

- floor flows easier; and
- continual flooring enables patients to walk through doors without a 'step'.

Colour coding:

- more confidence following coloured areas;
- the colours appear calming, areas more identifiable for patients; and
- colour co-ordinated areas help orientate patients.

Historical photographs:

- prompt discussion from people's memories, supposed to help patients.

Signs:

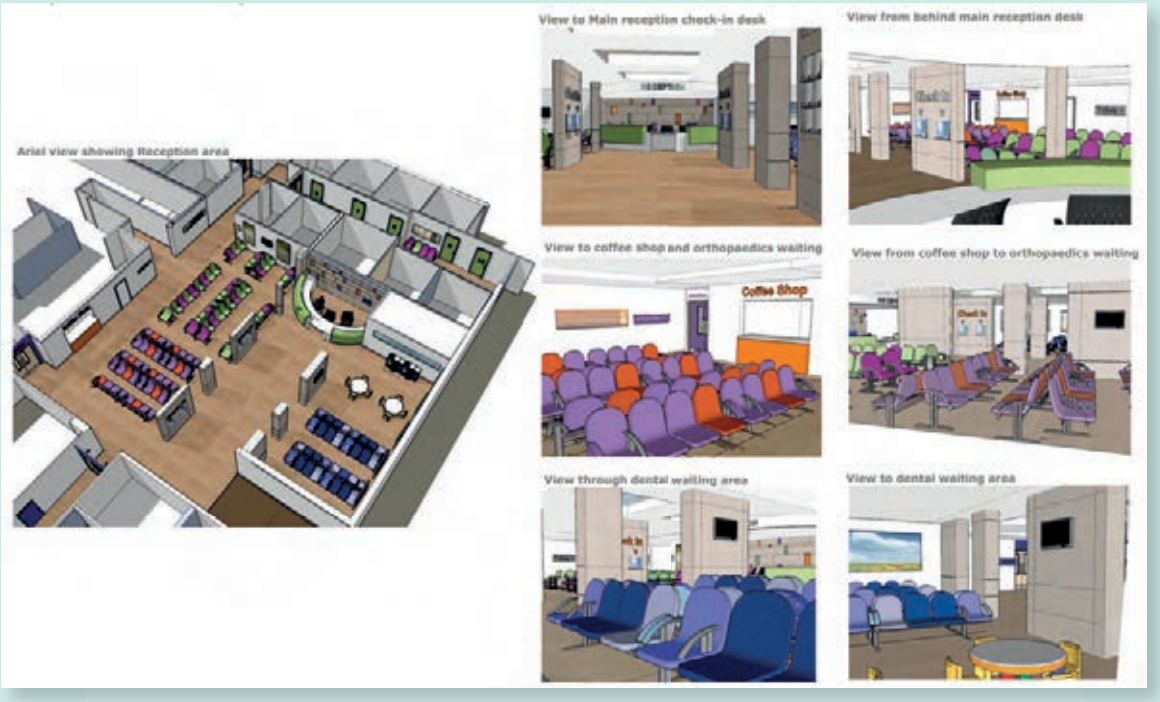
- larger numbers more independence;
- clearer signage and numbers on the doors help people living with dementia in the clinical area;
- eye level signage helps orientate patient; and
- large colourful signs make it easier to navigate, it benefits everyone not just those living with dementia.

Overall environment:

- it has created a calm environment, easier for all patients to understand.

"My wife and I came a year ago. We saw a place that was dark and forbidding. The transformation is absolutely wonderful."

Patient's relative



Concept plan

THE DEVON GARDEN & MEMORY WALK AT THE ROYAL DEVON & EXETER HOSPITAL (WONFORD)

Organisation

Royal Devon & Exeter NHS Foundation Trust

Acknowledgments

RD&E Dementia and Delirium Steering Group

Concept Design & Coordination: Stephen Pettet- Smith

Clinical consultant: Julie Vale

Project Management: Julie Blight

Landscape Design: Toby Buckland

Cabinet of Scent & audio technology: Rick Cresswell

Script writer: Helena Enright

Story collection: Jenny Lloyd

Graphic design, Memory-Walk & seat tops: Dave Saunders

Metalwork: Andrew Hall

Build: Landscape Matters (via Interserve)

Photographic Credits: Stephen Pettet-Smith, Alex Rotas

The Challenge

The Devon Garden provides a prime opportunity for Royal Devon & Exeter NHS Foundation Trust to improve its care and assessment of our patients diagnosed with dementia.

The need for a range of stimulating environments came to the fore when existing clinical areas for patients was assessed. The Dementia and Delirium Steering Group identified the priority of a garden space provision away from the clinical ward environment.

The Hospital was designed on a Nucleus plan. In some hospitals the spaces between ward areas are underused. The project gave an opportunity to make full use of one of these areas. The Trust endorsed the design team's aspiration to make a useful place, a positive distraction away from the clinical environment where therapeutic needs could be met.

The key wards for dementia care are on the second floor of the hospital. Managing access for the patients was going to be an issue; the team turned this to an advantage by producing a Memory Walk along the route consisting of panels depicting a timeline of popular culture between the 1930's and 1980's.

The project has been ambitious and was always going to be a complex project to deliver, not least because of the site being within the nucleus hospital building surrounded by wards.

Aim and objectives

The aim was to design and build a therapeutic place for peaceful interaction between patients, staff and importantly their family and friends. The group also recognised the opportunity to create a place where patients could be assessed for cognitive levels and for mobility capacity to inform onward care. Each design element has been developed to inspire and solicit memories.

The steering group consisted of nurses, clinicians and a patient representative. The outline designs were presented at a Foundation Members meeting attended by 200 stakeholders and the feedback from the event helped in the detailed planning phase.

The circular design layout was, from the outset, a key design concept to encourage engagement and anticipation of the next vista. The expectation was that this would lead to conversation which could indicate to clinical and therapeutic staff the cognitive competencies of patients and their sense of wellbeing. Conversation is of course therapeutic in its own right and provides positive distraction from the clinical nature of acute hospital care.

The measurement of mobility may be achieved using a baseline established on the first visit between the entrance and the first feature. On subsequent visits, patients will be encouraged to reach the next feature. Presently this is not routine as most patients from wards are taken there in wheelchairs, but it is anticipated that the garden will be used in this way during summer.

The measurement of cognitive levels and sense of wellbeing is facilitated by the quality of the patient interactions. This is achieved by observation and conversational questions and note taking from these.

Garden pre-intervention

Garden post-intervention

Key Spaces and interventions and their innovative nature

The route to the garden was uninspiring. Panels have been produced which take the viewer from 1930 to 1980 through a journey of popular culture via advertising images and cinema posters.

The garden layout, when viewed from above, is inspired by the leaf of a gingko tree. Many of the project's design elements came from the concept plan produced by Stephen Pettet-Smith and the Steering group. The design takes inspiration from a village green and is planted in a cottage garden style. The 'Devon Banks' divide the space to promote privacy for families.

The scale of dementia can range from mild to quite profound. Some interventions are intended to cater for patients at an early stage of dementia and who retain reading skills, as demonstrated in the incised seat tops. Patients who are further along the dementia journey benefit from the more passive experiences of music and storytelling, along with the sensory stimulation of the garden planting, water feature and cabinet of scent.

'The Decades' carved seats echo the 'memory walk'.

'The Stories' telephone box uses technology to deliver stories of bygone times, brought to wonderful life by voice actors.

The 'Tuneful' memories corner delivers historic popular music enabling patients' prime years to be recalled.

The 'Cabinet of Scent', provides drawers filled with material and objects, from cold tar soap to lavender, chosen to summon up memories.

The Pavilion is a pleasant place to sit. It is also designed to become the stage for musical and dramatic performances.

A carefully designed and built water feature naturally amplifies the sound of babbling water. Wrought iron seating continues the theme of village green.

Benefits of the intervention

Quantitative information will be sought when weather permits. However, since the project has opened qualitative feedback has been obtained.

Staff:

"Engaging and calming environment, stimulating, giving patients the opportunity to discuss memories."

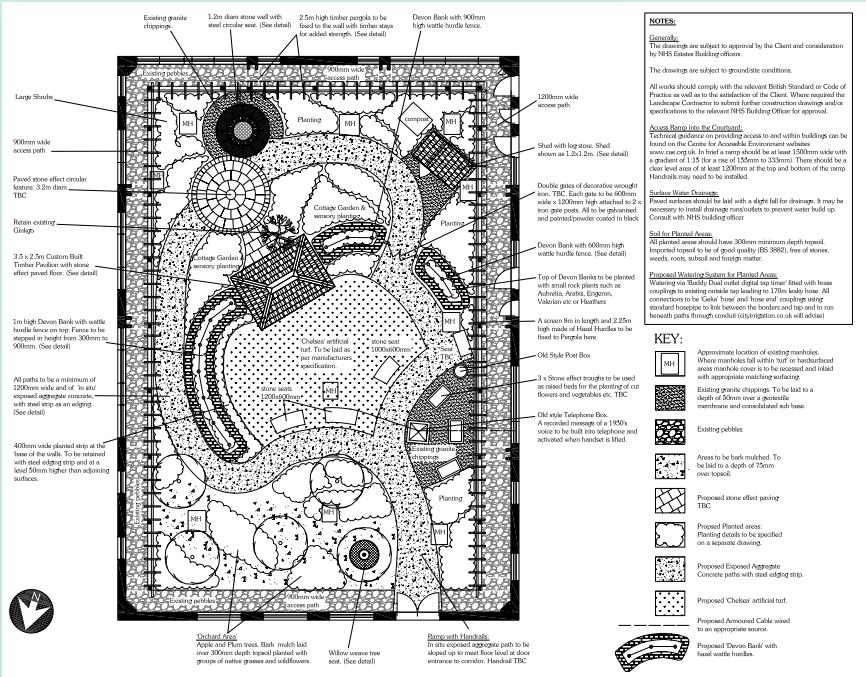
Relatives:

"It is a good opportunity to take my mum out of the clinical environment as she loved her garden. Has had an impact on how she has adjusted to being in the hospital and her overall mood."

Patients:

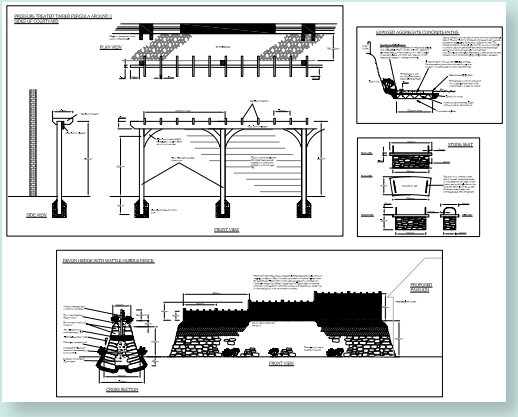
"I really enjoyed looking, smelling and talking about flowers, being outside in the nice environment having time with family and Ward staff on 1:1 basis."

"The memory-walk with all the 1960's posters/pin-ups is great for patients and visitors and very well executed.
It has improved my inpatient stay, and tested my memory – thank you."



The Devon Garden plan and features

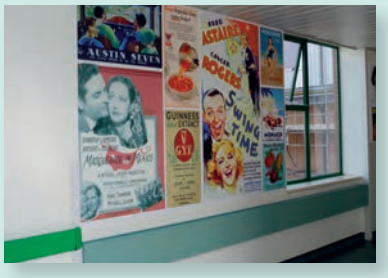
Contribution to the 12 principles



P1. Provide a safe environment. The garden provides a safe patient environment and risks have been further reduced by the installation of access control to limit access to patients and families from specific wards. Footpath surfaces in the garden are made from exposed aggregate concrete. They have been engineered to resemble those surfaces that patients will find in their daily life away from hospital. The team, including occupational therapists, suggested this approach to help patients in the rehabilitation process. However, to reduce the risk of falls, tests were carried out to ensure that the surface was non-slip. The incised seating is also designed to help reduce the risk of falls by providing wrought steel hand rails.

P2. Provide optimum levels of stimulation. The Memory Walk provides stimulation by enabling patients, staff and families opportunity to engage with the images and encourage conversations. We have observed that conversations will begin around the content of the image, perhaps a poster for a film. The discussion often moves to the context of the time: *"Who in the family were there? What were they like?".*

A garden visit may recall time sent in a village or garden – often the patient's own. Observed conversations suggest that the plants, colours, smells and textures lead to recall of other times and other places. Innovative features, such as the 'Cabinet of Scent' will provide positive stimulation and will be an invaluable resource for the occupational therapists.



P4. Provide a non-institutional scale and environment. The Memory-Walk provides meaningful distraction from the traditional stark, clinical hospital environment; a perception further challenged through the Devon Garden. This affords the opportunity of a haven from the ward, giving time away from medical devices, and the means to embrace outside stimulation through horticulture and the use of familiar items and smells. We sought a palette of colour, form and materials usually found in the countryside. Footpath surfaces have been engineered to resemble those found away from hospital whilst being non slip. The water feature was designed and built to provide the soothing sound of flowing water. The presence of a vintage post box and the telephone box takes the garden further from the institutional. The shed, a classic 'place maker', provides a home for the 'Cabinet of Scent'. The pavilion, based on a rural bus shelter, provides a venue for performing arts.

P5. Support orientation. The Memory Walk aids orientation; for example you are next to Batman and Robin – so the next wards are Yeo and Torridge. The design of the garden is based on a circular route with a succession of visual events and features leading the visitor to the garden gently onwards to seek out new vistas and experience. The stone structures within the garden provide smaller spaces, made into places by the features within them. The use of a rich variety of materials and colour in the infrastructure and features further help orientation. The incised seats mapping out time and the audio features also help orientation in a person's lived and experienced memories, giving meaning to their life in the present. This potential unlocking of memory, we believe, can provide good discussion points and reinforce a sense of identity and worth.

P6. Support way-finding and navigation. The Memory Walk is a good example of the use of prominent visual information to promote way-finding and navigation. It is based on lessons learnt elsewhere in wards where images are used extensively to help patients locate their beds. The panels depicting different eras are used as an orientation method to discuss previous decades and then reorient to the current decade. They additionally tell a story which acts as pathway to the Devon Garden, helping with physical orientation to the environment and its location. It works in an informal, but none the less effective way of making an otherwise featureless space into a memorable place. This assertion is reinforced with discussion with the hospital porters.

"This garden allows patients and their carers to embrace a piece of outdoors; the shelter within an enclosed courtyard allows the feeling of outdoors whilst also providing protection from the elements."

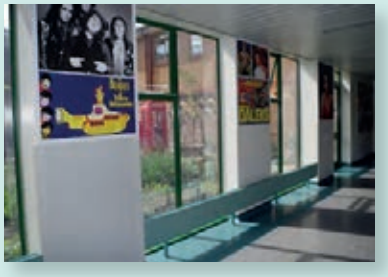
Occupational Therapist

P7. Provide access to nature and the outdoors. A visit to the garden, by definition, gives our patients access to natural light, nature and the outdoors. As our head Occupational Therapist observed: *"Through the creation of the Devon Garden this is a place, which allows exposure to the outside world, when at times the wall of a bay within a ward could feel potentially claustrophobic."* Discussion with a relative who visited with his Grandmother each day over a number of weeks revealed that increased access to natural sunlight also helped to order sleep patterns. It was also observed that she responded to stimuli more in the garden than on the ward. Her appetite was also boosted.

"How nice it is to be able to utilise a non-ward based space to allow quality time during visiting hours."

Family member

P8. Promote engagement with friends, relatives and staff. During the detailed planning of the project, the Trust's Governors and Members were consulted and plans fine-tuned. During construction patients, visitors and staff were encouraged to watch progress from the second floor windows. A plan of the garden was installed in the observation corridor and viewers were delighted to see the illustration become real. As the Memory-Walk was being installed engagement with the hospital community increased. Many positive conversations were had. Again our Head Occupational Therapist observed: *"From walking along the corridor I recall engaging in conversations with people looking on in amazement at the building process, and now in admiration of the final product, it appears that people are very engaged indeed".*



P9. Provide good visibility and visual access. Visual access is key to the project. The garden design works as a visual interest and amenity from the ward environment around it and from public corridors. It is however the Memory-Walk with its bold images and bright colours that may give most facility to those with visual impairment.

P11. Promote physical and meaningful activities. On a one-to-one level our Occupational Therapists routinely use the Memory-Walk to engage patients in conversation when wheeled off the ward for exercises such as stair assessments. The design of the garden invites exploration and encourages movement, which can also be a valuable tool in assessment of the patient's ability to cope with living at home or at another care facility. Meaningful activity is fundamental to the project. The garden and its creative features invite intrigue and interest. The provision of time specific music works in a similar way, as does the stories telephone box. The incised seat tops again rely on visual memory triggers, with many musical references. During a visit a patient who found speaking difficult sang 'She Loves you' by the Beatles, inspired by the inscribed icon. The music and stories delivery, although at first passive, is there as a prompt for interaction and discussion with staff and families.

Section 9:
Social care settings case studies

9. SOCIAL CARE SETTINGS CASE STUDIES

Introduction

. The pilot projects funded by the recent DH Dementia Capital Programme highlighted the diversity in Social Care settings and spaces that need to be considered when creating dementia-friendly environments.

. The four case studies reported in this section present a sample of the 74 Social Case projects involved in the Capital Investment Programme. They present exempla of how it is possible to achieve dementia-friendly:

- long-term facilities;
- day centres;
- extra-care houses; and
- gardens.

. The case studies are structured to present:

- the challenges that have moved the project;
- the project aim and objectives;
- the key areas and interventions and their innovative nature;
- the contribution to the 12 design principles; and
- the benefits of the interventions.

. The four case studies provide an invaluable source of information for Social Care organisations who are undertaking projects to make the care environment more dementia-friendly. The case studies not only provide example of innovative design features that can be implemented in different settings, but also demonstrate how the 12 design principles have been applied.

Case studies selection

. The criteria that were used to select the case studies were:

- quality of the project;
- quality of the information reported at the of the DH Dementia Capital Programme;
- quality of the impact and benefits.

. The four case studies were selected in order to cover different Social Care settings to reflect the variety of settings addressed during the DH Dementia Capital Programme. These are illustrated in Figure 9.1.

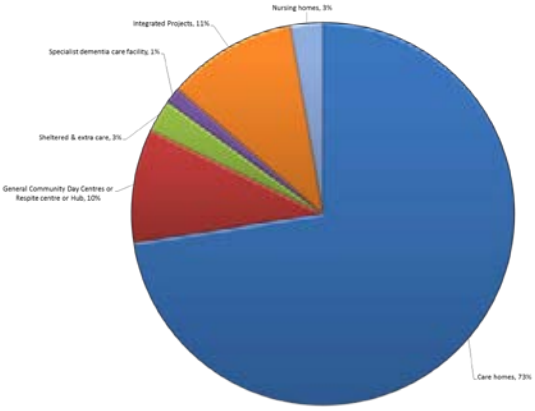


Figure 9.1: LA Social Care pilot project settings

ENRICHING LIVES PROJECT – HC-ONE LTD

Organisation

Tower Bridge Care Home
1 Tower Bridge Road
Southwark
London SE1 4TR

The Challenge

Tower Bridge Care Home is situated in a densely populated residential inner London area, where the majority of residents have lived in Southwark prior to admission. Southwark's older population tends to have very strong local links with an aspiration to remain within the borough and their local community. Southwark Joint Strategic Needs Analysis estimates that there are currently more than 1800 People aged 65 and over with some form of dementia, rising to almost 2300 by 2020. Currently, there are only three nursing homes available to Southwark residents within the borough.

Tower Bridge provision reflects the needs of the community in residential, nursing and dementia nursing care. Residents with a diagnosis of dementia have increased significantly several years. This is reflected in the number of residents with a diagnosis of early onset dementia, early stage dementia and residents transferred to the home who require nursing dementia care.

Aim and objectives

The project aim was to improve the environment for people living with dementia and have the effect of improving their wellbeing.

The main aim was delivered by following objectives:

- support older people living with dementia to remain in the community;
- promote service users dignity, through improving the designed environment;
- minimise trips and falls through the removal of shiny floor surfaces and replacement with safe carpeting or other suitable toned and textured flooring, and the use of appropriate lighting and the removal of shadows that may cause confusion for someone living with dementia;
- promote better nutritional intake for residents, due to meal times being more relaxed;
- encourage independence, by supporting residents to remain active and mobile through the provision of memory props and prompts within each floor;
- improve access for residents to garden and external areas redesigned to stimulate their senses and maximise the therapeutic value of the space;
- draw from best practice and research from the King's Fund http://www.kingsfund.org.uk/projects/enhancing-healing-environment/ehe-design-dementia and Stirling University http://dementia.stir.ac.uk/; and
- focus on the needs of the service users and families with a collaborative approach to co-design.

Lounge pre-intervention

Lounge post-intervention

Key spaces

The created breakout areas in corridors are themed to provide resident areas for existing activities, including music, retro and rummage areas. These areas offer improved ventilation, air handling and cooling. They also allow natural light onto the main communal corridors and provide a view to the Home's surroundings. The break out spaces also provide greater choice of seating areas, supported with hydration stations and areas for de-escalation of disinhibited behaviour.

Bathrooms and bedrooms have been refurbished to provide a comfortable and relaxing environment including safe floor finishes, tranquil colours, contrasting switches and sockets, and visual contrast finishing's in the bathrooms to aid independence.

Bus stop signage improves resident's orientation in their living space. The choice of flooring colours has been considered to reduce contrast and reduce trips. Feature walls and choice of colours provide a calming environment and aid orientation.

The development of a meeting/caféarea to the reception space has allowed for greater involvement with the wider community and provides choice at resident mealtimes. It has also created a friendly and homely non-institutional atmosphere on entering the care home with open reception spaces where residents and their families can meet socially for tea and cake.

Development of a hair dressing salon and residents' life skills kitchen has enhanced residents' experience and promoted dignity and independence.

Redevelopment garden areas with dementia-friendly furniture, sun screens, parasols, water features, hand rails, lighting has provided residents and visitors access to the outside and all its therapeutic benefits. This has improved residents' involvement in activities.

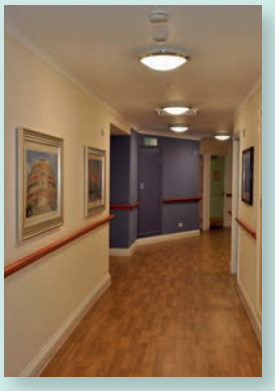
The whole of the Home was developed as part of this scheme, having considerable impact on resident wellbeing. This has included inside and outside spaces.

Key interventions and their innovative nature

The project has provided throughout the building: handrails, indicator points, contrasting decoration, floor finishes with colours and textures, lighting and feature walls to assist location and mobility, corridor seating areas for safer circulation and enhanced day space provision (e.g. cafe, bar, meeting spaces, etc.). Bathrooms, shower rooms and WCs have been refurbished with contrasting grab rails and fittings, safe floor finishes, dignity screens, and tranquil colours. Bedrooms have been equipped with dementia-friendly furnishing improved lighting, grab rails and decorations. Memory boxes and name plates with space for pictures have been provided outside bedrooms to help residents find their rooms. Gardens have been planted and access to the front entrance improved.

Proposed ground floor layout

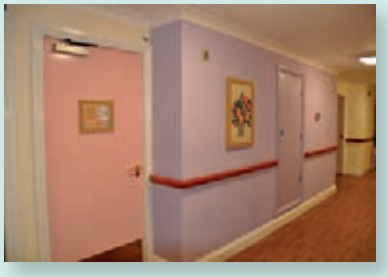
Contribution to 12 design principles



P1. Provide a safe environment. The initial principle of the scheme was to improve the environment of the home and our residents' safety; therefore, the following environmental issues were addressed:

- improve the transfer of natural light from external elevations;
- upgrade artificial lighting throughout the building to provide an average of 600 lux whilst preventing the creation of shadows;
- lighting installation was split to allow minimal lighting levels for night staff with give minimal disruptions to residents;
- all new floor finishes had a minimal light reflective, differences value of 30 between colours, thus erasing the elution of a step, which in turn reduced the number of trips and falls; and
- contrasting handrails and grab rails.

P4. Provide a non-institutional scale and environment. The new environment was based on a domestic scale with the creation of smaller dining rooms and lounges, some of which are culturally themed. Some are suitable for couples and some for a smaller group gathering. To make these areas more homely and less institutional we have also introduced: fire places; two-seater settees with coffee tables; television corners; carpets; local accessories; and suitable artwork which relates to the area, e.g. London.



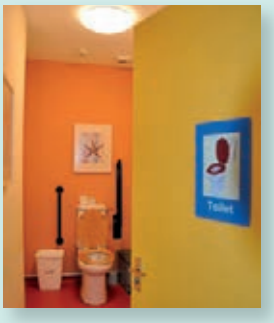
P5. Support orientation. Orientation has been further enhanced with direction signage/door signage throughout the Home. These signs are either fixed flat to the walls or as a bus stop type sign, which could be seen visually in both directions.

P6. Support way-finding and navigation. Memory boxes and bedroom signage have improved navigation for the residents when locating their bedrooms. Within the bedroom signage a personal picture have been used and in some situation the number of their house prior to entering the home. (The memory boxes are very successful when supported by the family providing family memorabilia).

P7. Provide access to nature and the outdoors. Due to the limited external space available, a secure garden was created which is linked to the ground floor dining room. This area provides access to natural light, nature and the outdoors incorporating both shade, raised flowerbeds and level patio areas for access.

P8. Promote engagement with friends, relatives and staff. A coffee bar, bistro area and themed areas were created within the front reception area of the home. This has promoted social engagement of our residents, families and staff outside the main body of the Home, and with the outside community. The pub enables them to play dominos, cribbage, etc., in an out of home environment, and in many cases have stopped residents being disruptive. Creating a day out to the pub within the home for lunch/dinner has also improved eating habits.

P9. Provide good visibility and visual access. The lighting was improved throughout the building to create a minimum of 600 lux. This was further supported in the following ways: bedroom doors painted in different colours; memory boxes outside doors; name plates located on doors where residents could either place a photograph or the house number from which they came; toilet doors highlighted (painted signpost); corridors; feature walls to highlight communal spaces and to assist in the orientation of residents; and doors at end of corridors being painted out to match the wall.



P10. Promote privacy dignity and independence. Enhancements to bathroom provision and choice of living space have increased dignity by way of promoting of independence and choice. Continence has been reduced due to better toilet design. Resident individual memory boxes and individualised door frames have promoted privacy. A choice of seating, breakout areas, gardens with even surfaces, safe flooring appropriate lighting, café, resident kitchen all enhance resident independence.

P11. Promote physical and meaningful activities. The Home is located in central London with minimal external spaces; therefore, the following internal spaces were created to encourage movement and meaningful activities:

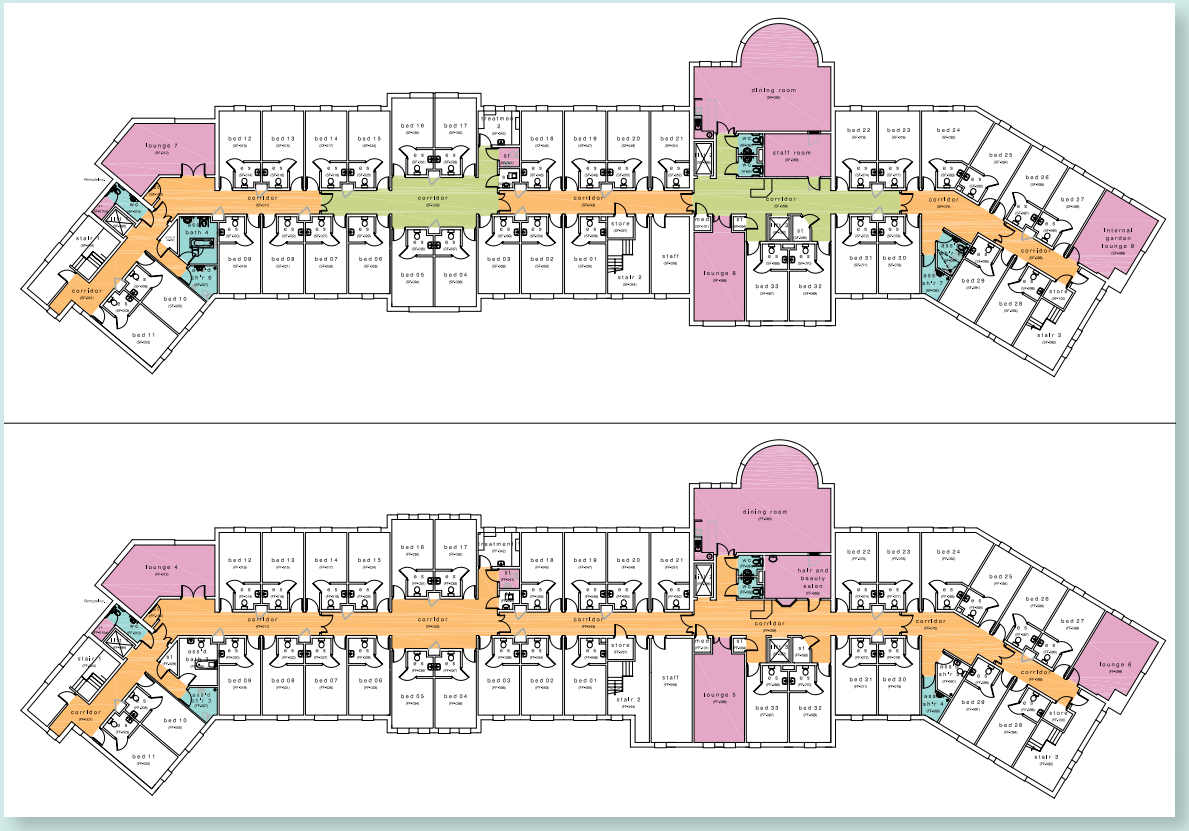
- a life skills kitchen with all general appliances e.g. washing machine, cooker, fridge, microwave where residents are able to carry out certain domestic activities, under the required supervision;
- a Pub/bar allowing residents to play dominos, crib, skittles and creating a pub-like atmosphere to watch all major sporting events; and
- internal garden areas (due to limited external spaces) where residents can undertake activities such as potting and flower arranging.

P12. Support diet, nutrition and hydration. Snack and hydration stations were introduced around the home, e.g. lounge dining room and corridor break out areas, providing water, squash and snacks.

Benefits of the intervention

The new environment has had a very positive result with residents, which in turn has made this unit a happy place to live and work.

- On admission, staffs were informed that Ms A had not slept in her bed since 2006/2007. She always stayed in her room and did not engage with others or take part in conversations. On arrival at Tower Bridge she was noted to say little but began sitting in the communal areas with the other residents. After a day or so she began to talk, short sentences only at first, and within a week we were able to hold full blown conversations with her. She had opinions, voiced them and began to develop relationships with the staff and the residents around her. After a month she started to sleep in her bed by choice. She now sits with other residents at all times and eats with them. She has also joined in with activities, and appears to enjoy herself.
- Mr B had not spoken for several years and he was handed over as someone who possibly understands but has no language skills. Initially, when staff spoke to him, he just looked at them. A month after being here he began to smile when spoken to and the following week he began speaking in his native language Hindi. This is still infrequent but increasing daily. He is able to verbalise his needs now.
- Mr C was admitted from hospital with a history of refusing personal care, not socialising and being very aggressive. From the second day after his admission we were able to undertake all aspects of personal care including shaving this gentleman. He has displayed no signs of aggression and sits in the communal area regularly with the other residents.
- Mr D has a past history of being physically aggressive, withdrawn, no communication and preferred female carers rather than male carers. After a few weeks being on the new unit he started interacting, greeting with a smile whenever anyone enter his room, and accepting personal care from male carers. He had shown significant changes and mental state appears settling.
- Ms E on arrival was confused, low in self-esteem, agitated, verbally abusive towards other residents, less interactive and refuses to wear nice clothes. After a week or two she engaged with the staff especially when she sees a male staff member that gives her the urge to talk about her past partner and the good times they had together. This makes her feel special and encourage her to dress up in nice clothes with matching accessories and make up. She has since started going on outdoor activities with other residents.
- Residents have been noted not to pull at exit doors or wish to get out. This includes residents who had previously displayed such behaviour before.



I and II floor layout

HALCYON CENTRE DAY SERVICES – DEMENTIA-FRIENDLY DESIGN

Organisation

Stockton Borough Council

Acknowledgements

Stockton Borough Council employees:

Rebecca Williams (Manager)

Susan Gray (Deputy Manager)

Peter Smith (Service Manager)

Clients of the Halcyon Centre

Design team:

Gary Laybourne (Design Services Manager)

Mike Smith (Principal Architectural Assistant)

Robert Hirst (Accountant)

Jane Matthews (Asset Manager)

Tees, Esk & Wear Valleys NHS Foundation Trust employees:

Corinne Walsh (Dementia specialist)

Emma Thompson (Team Manager – older people's mental health team)

"The new centre is beautiful and well-furnished now. The rooms and staff are lovely. The ceiling in the hall has been lowered and is much better, the food is marvellous."

Patient

The Challenge

The project supported the provision of a specialised dementia-friendly day care service for adults at the Halcyon Centre, incorporating the new "LiveWell" Hub resource centre and new memory clinic service in partnership with Tees, Esk & Wear Valleys NHS Foundation Trust (TEWV). The LiveWell Hub now acts as a one stop single point of contact offering assessment, information, signposting, training and consultation opportunities for people with dementia, their families, carers and the wider public.

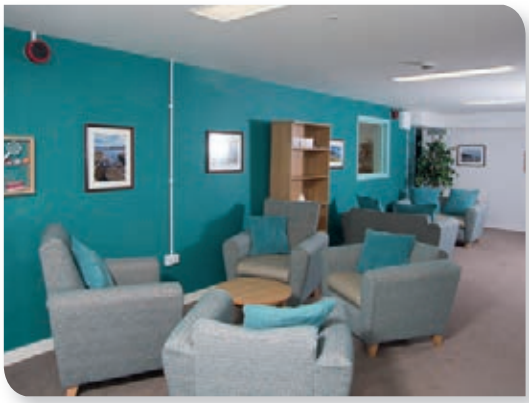
The Halcyon Centre currently has 196 clients on its register, 50 of whom have a formal diagnosis of dementia (a significantly higher number of clients experience dementia like symptoms but have no formal diagnosis). Of those 50 with a formal diagnosis of dementia, 39 are supported within the mainstream Halcyon Centre and 11 experience severe dementia symptoms and are supported by the specialist Kitwood team.

Aim and objectives

The overall aim was to set high environmental design standards utilising best practice dementia-friendly design principles linking with the Council's corporate plans for developing dementia focused services.

From autumn 2014, the LiveWell Hub has been the driver to develop dementia-friendly services working with a range of partners from voluntary and carer organisations to ensure stronger links with the local community by increased involvement and more joint activities. Both the Halcyon Centre and the LiveWell Hub will support people to remain in their own homes for as long as possible in partnership with professional mental health and social care workers providing knowledge, guidance and support, assisting people to live well with dementia in an environment of their choosing.

Communal area before



Communal area after

Projects objectives:

- Implement best practice 'dementia-friendly' design principles throughout the Halcyon Centre for clients and to act as a 'showcase' resource for professionals, families and carers.
- Create the LiveWell Hub within the Halcyon Centre to support integrated care for people living with dementia.
- Build on our relationships with the independent sector offering training opportunities, otherwise unavailable to staff, in facilitating activities in a dementia-friendly way.

Key spaces

The Halcyon Centre boasts a main entrance area, leading to a large central dining room with access to each of the three client wings leading off this central dining room. Two of the three wings house a spacious communal area with access to three different 'activity' rooms and male, female and disabled toilet facilities. The third wing comprises a slightly smaller communal area, leading to one 'activity' room and male, female and disable toilet facilities. Each of the 'activity' rooms in the three wings have been given a unique identity to give clear cues to their intended usage and include a Pub, Beauty Room, Kitchen, Lounge, Art Room, Craft Room and Library / Quiet Room. All areas have been refurbished to promote orientation, improve access, support independence, reduce risk of falls and create a welcoming environment to help reduce anxiety.

Key interventions and their innovative nature

The project has made significant improvements within the Halcyon Centre to implement best practice 'dementia-friendly' design principles for clients and to act as a 'showcase' resource for professionals, families and carers.

Improved signage and way-finding cues have been applied throughout the Centre to achieve a better use contrast. Toilet doors have been repainted to ensure they are a consistent colour throughout the building. Different colour signatures have been used in each of the three wings to assist orientation, as well as to highlight client areas and 'disguise' staff only areas. Lighting levels have been improved and significantly increased, reducing glare, pooling and shadowing. Flooring finishes have been replaced throughout using a combination of carpet and vinyl specifically designed to help prevent trips and falls.

Bespoke photographic artwork has been carefully selected ensuring no abstract or other images that may confuse people living with dementia, with frames that contrast appropriately with wall colour and have been mounted at appropriate heights in line with dementia-friendly recommendations.

New furniture is sturdy and substantial without being heavy. Attention has been paid to ensure furniture can be easily identified (chairs look like chairs), that it contrasts appropriately with its surroundings and that a good variety of seating types are available to suit different needs.

Special attention has been paid to ensure that rooms with specific functions were decorated and furnished in such a way as to give clear cues to their use. 'Memory boxes' have been placed outside filled with age appropriate and easily recognisable items which give clear cues as to the function of the room, serving two purposes: supporting clients who may be unable to recognise or read signage and acting as points of interest throughout the centre.

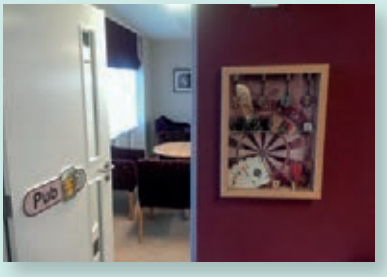
Floor plan layout

Contribution to 12 design principles

P1. Provide a safe environment. Significant attention was paid to reducing 'clutter', improving lighting and signage, and the good use of contrast to reduce risks for individuals moving around the centre. Joints in flooring finishes are flush and closely contrasted, doors contrast strongly with the walls in which they sit, whilst 'staff only' doors are disguised using closely contrasting tones and minimal door furniture. Solid sturdy furniture has been selected to contrast well with its surroundings, featuring smooth edges and rounded corners. Wherever practicable, carpet has been laid to reduce the impact of any falls that may occur. Toilet areas use strong contrasts to ensure hand rails, toilets and hand washing facilities are clearly visible to reduce risk of falls, promote personal hygiene and reduce the risk of infection. Improved signage helps support independent orientation and reduce episodes of violence or aggression that can result when individuals become disorientated, frustrated or anxious.

P2. Provide optimum levels of stimulation. The centre focuses strongly on providing a wide range of meaningful therapeutic activities. Rooms have been designed to clearly communicate their function and therefore what 'behaviour' can be expected to aid understanding, and avoid confusion and anxiety. The activities programme offers 5 different choices of activity each morning and afternoon in a variety of rooms, including a dedicated Kitchen, Beauty Room, Art Room, Craft Room, Pub and two Lounges with living flame electric fireplaces. In addition, there are three communal areas offering a choice of seating options for those clients who may wish to socialise without taking part in a specific activity. All areas have bespoke photographic artwork on the walls and a wide variety of items of interest giving both a domestic feel and conversation points.

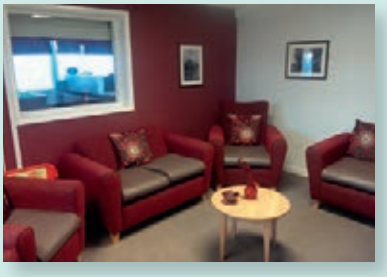
P4. Provide a non-institutional scale and environment. This was a significant challenge and nowhere more so than in our dining room. Firstly, we created a Pub and Kitchen in other areas of the centre giving people the choice to eat in smaller more intimate settings with seating for 8-12 people. We then applied the creative use of flooring in the dining room to create smaller 'eating areas' grouped around a wide central 'pathway' utilising the available space more efficiently, eliminating the previous regimented and crowded arrangement of tables and allowing us to offer a variety of table sizes and seating arrangements. The dining furniture is domestic in style, impervious carpet was laid, the high ceiling was lowered and windows dressed with curtains all of which have vastly improved the previously very poor acoustics and enhanced the domestic feel. Attention has been paid to ensure furniture can be easily identified (chairs look like chairs) that it contrasts appropriately with its surroundings and that a good variety of seating types are available to suit different needs.



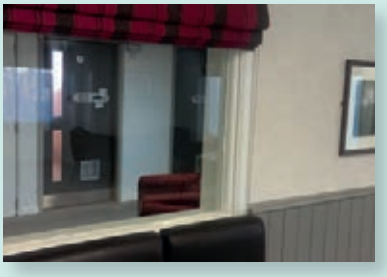
P5. Support orientation. Dementia-friendly signage has been applied throughout. Signs have been placed on the door to which it relates, contrasts appropriately with the door on which it sits, and have been mounted 1.30m from the floor. Signs feature words and pictorial representations to aid understanding. Special attention has been paid to ensure that rooms with specific functions decorated and furnished in such a way as to give clear cues to their use. 'Memory boxes' have been filled with objects that give cues to the function of each room further aid orientation and also act as a point of interest. As detailed above, the use of different colour signature in each wing assists people to distinguish between them, and flooring in the central dining room has been used to create a 'pathway' guiding people to each of the three wings where they are greeted by a door which mirrors the colour signature of the wing it leads to. This innovative approach addresses the challenge of supporting orientation in an area where signage alone could not achieve this.

P6. Support way-finding and navigation. Dementia-friendly signage, different colour signatures for each wing, visibility panels, consistently coloured contrasting toilet doors, memory boxes and use of supportive flooring have been used throughout the centre to support way-finding and navigation. In addition, bespoke photographic artwork has also been used with individual themes for each individual room or area, such as scenes of nature through the seasons, wild flowers, local landmarks and waterscapes. These not only support way-finding but also act as considerable points of interest, stimulate discussion and have a calming effect.

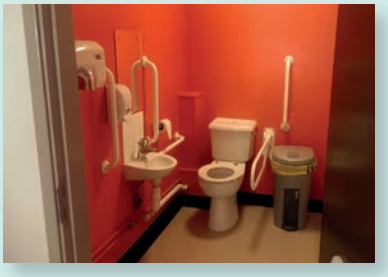
P7. Provide access to nature and the outdoors. The Centre benefits from extensive windows, lots of natural light and substantial gardens, accessible from virtually every room of the Centre, including a sensory garden, a gazebo, an allotment area with raised beds and a greenhouse, a 'memory walk', and further planted and green space areas. When considering windows, care was taken not to obscure views of these areas, therefore blinds and curtains can be pulled back fully; however, on completion it was found that voile curtains used to reduce glare and shadowing cannot be opened and obscure views too much when sunlight level are not problematic. This is to be addressed. There are doors that lead to outside areas from virtually every room, these are currently heavy unalarmed fire doors. Replacement of these was outside the scope of the original project, but is to be addressed over the coming months to improve access.



P8. Promote engagement with friends, relatives and staff. As a day centre the vast majority of the people who attend live with partners or family, so the time are with us provides additional support for people living with dementia, but also respite for those who care for them at home. Consequently, visits from family or friends are rare; although, we do operate a 'no appointment' system for any friends or family known to us and we actively support visits wherever these are requested. Complimentary tea and coffee is available in the main reception area and friends and family are welcome to make use of the communal areas.



P9. Provide good visibility and visual access. Whilst we already benefited from exceptionally good levels of natural light, improved lighting levels and good use of tone and contrast throughout have contributed significantly to improve visibility and other actions, such as installing visibility panels into a number of internal walls allowing people to see toilets from within rooms. In addition, each of the three wings, which are all identical to each other with regard to structural layout, have been decorated in individual colour signature (e.g. burgundy, blue or gold, with the exception of toilet doors which are the same consistent colour throughout the centre, contrasting with each of the three signature colour schemes). The three doors that lead to these wings from the central dining room have been painted to match the colour signature of the wing it leads to.



P10. Promote privacy dignity and independence. Dementia-friendly signage has been applied throughout to assist people to move independently around the centre. Visibility panels in a number of internal walls offer views of toilet doors from within rooms. This reduces the need for people to ask for assistance to find the toilet, or being unable to find the toilet when they need it, thus better maintaining their independence, privacy and dignity. Good use of contrast in toilet areas ensures handrails, toilets, and hand washing facilities are clearly visible to promote independence.

P11. Promote physical and meaningful activities. The centre focuses strongly on providing therapeutic activities and achieving positive outcomes for all those who attend no matter what their level of ability or need. Dementia-friendly activity boards detail what is going on each morning and afternoon. Individuals choose, or are supported to choose, what they would like to do. Activities take place in rooms which clearly communicate their function, and what 'behaviour' can be expected. In simple terms, where cookery activities previously took place in a 'generic' activity room that looked no different to the rooms used for art and craft, pampering or the gentleman's club, has now been transformed into a kitchen complete with kitchen cupboards, range cooker, large kitchen table etc. This helps people understand what to expect when they are in that room with the aim of reducing confusion and anxiety, and supporting meaningful engagement.

P12. Support diet, nutrition and hydration. The centre has a very large central dining room which presented a number of challenges. In response to these, a Pub and Kitchen were created in other areas of the centre giving people the choice to eat in smaller more intimate settings with seating for 8-12 people. Supportive use of flooring was implemented in the dining room to create smaller 'eating areas' grouped around a wide central 'pathway', eliminating the previous regimented and crowded arrangement of tables and allowing a variety of table sizes and seating arrangements with views of the outside areas. There are bespoke, food related photographic artwork on the walls with the aim of stimulating appetite as well as discussion. The dining furniture is domestic in style and crockery contrasts strongly with table tops, impervious carpet was laid, the high ceiling was lowered and windows dressed with curtains, all of which have vastly improved the previously very poor acoustics and enhanced the domestic feel. A water cooler has been installed, which is freely available at all times.

Benefits of the intervention

Due to the cyclical nature of the capital work we were able to consult with service users, staff and carers not only prior to work stating, but also after each stage of work was completed and before starting the next. This allowed us to respond to feedback and apply learning as the project progressed.

Data Collection Tools used: King's Fund EHE Assessment Tool; Service User / Carer Feedback Surveys; and Service User Focus Groups.

The EHE Environment Assessment Tool originally completed in March 2013 identified the following three priority areas based on pre intervention compliance levels: promoting orientation; promoting calm and security; and promoting wellbeing.

Results from the King's Fund EHE Assessment Tool show improvements have been achieved across all seven areas but with significant improvement achieved in these three priority areas. Responses from Service User/Carer Feedback Surveys and focus groups indicate that improved signage, lighting levels and function specific decor have had the most impact.

Recent Case Study

Mr J has a diagnosis of dementia and lives at home with his wife who is also his main carer. Following referral from his GP to the Mental Health Team, 24hr dementia residential care was recommended; however, Mr J was not accepting of this. A referral for 5 day attendance at the Kitwood Unit was made to attempt to address Mr J's concerns regarding residential care whilst also providing much needed carer respite for his wife. There was some concern that Mr J would struggle to settle due to previously experiencing significant anxiety and distress when separated from his wife, however, to date Mr J has settled well and engages in a number of therapeutic activities during his time with us. Mr J has been supported to remain in his own home and be cared for in a setting of his choice. Mrs J is receiving vital carer respite which is supporting her to continue in her caring role.

DAME ALICE COURT

Organisation

Bedford Borough Council

Dame Alice Court, Anchor Housing Association.

www.anchor.org.uk/our-properties/dame-alice-court-bedford

Acknowledgments

There are many partners involved in making it happen for Dame Alice Court, which was part of a wider Bedford Dementia Friendly Environment Project:

Bedford Borough Council (Adult Social Care Commissioning Team, Property Services Team, Home Care Team and their manager, Finance Team and Public Health Team)

Anchor Housing Association (Dame Alice staff and the site manager, in house surveying team)

Bedford Hospital (clinical staff from Harpur and Elizabeth Wards, Estates Officer)

Bedfordshire Pilgrim Housing Association (service and sites managers and staff, in house surveying team)

Ingleton Wood LLP architect, design and surveying support

Rempods and the Higgins Gallery in Bedford

Dame Alice Court site lead: Vivienne Cornelius. Project directors/managers: Sheila Hartnett (Bedford Hospital Trust) and Marek Zamborsky (Bedford Borough Council).

Dining room pre-intervention

Dining room post-intervention

The Challenge

Bedford Borough Council recognises importance of integrated community care for the local population with dementia. A lack of integrated care can inhibit people living with dementia's access to care and support, limiting their choices in care and resulting in crisis admissions to hospitals and care homes. Bedford Borough Council, Bedford Hospital Trust, Anchor Housing Association and Bedfordshire Pilgrim Housing Association worked together to create an integrated dementia-friendly design approach to improve the care pathway in the community.

Dame Alice Court (Anchor Housing Association), discussed in this case study, is one of the four selected sites.

- Built in 1993, comprises 39 flats.
- Sizes: studio, 1 bedroom, includes wheelchair standard properties.
- 24hours on-site care staff, non-resident management staff and community alarm service.
- Lift, lounge, dining room, laundry, guest facilities, garden, community centre, hobby room, activities room, shop, hairdressing salon, and assisted bathing facility.
- Situated centrally in Bedford town centre close to all amenities.
- New residents accepted from 55 years of age. Both cats and dogs are generally accepted (subject to conditions).
- Care provider: Bedford Borough Council.

Aim and objectives

The overall aim of the project was to improve quality of life for people living with dementia by creating synchronised and integrated dementia-friendly features across four selected sites in the community.

The main aim of case study was delivered by following objectives:

- improve quality of care for people with dementia by enhancing selected extra care schemes' environment (Dame Alice Court, Tavistock Court) and the local day centre (Goldington Day Centre);
- improve care for people living with dementia in Bedford Hospital in an environment that enhances their care;
- synchronise selected dementia friendly features across all sites to aid easy transitions;
- reduce unnecessary length of stay in a hospital;
- enable smoother "settling down" at home after episode of acute hospitalisation or in a hospital if hospitalisation is required;
- reduce readmissions to hospital;
- evaluate value of environmental similarities between acute and community settings; and
- contribute to the national debate about extra care housing and dementia.

The main types of stakeholder engagement, which shaped the project, were: on-going Bedford Borough's system wide partnership engagement delivering the Joint Dementia Commissioning Strategy (2011-2014); Sites' related bespoke engagement with residents, patients and service users via focused groups, surveys, residents' meetings, bespoke consultation with mature citizens' forum groups, and established communication channels such as service newsletters.

Key spaces

The main areas of refurbishment included communal areas, corridors and their décor, restyling of hairdressing room, studwork in various places, automatic skylight opening, a self-cleaning glass canopy in the garden, new sanitary ware in communal bathrooms, new higher kick plates to all front doors, all new door furniture and new zip boiler for communal lounge. The communal areas and lounges had new pictures installed which included local scenes. New furniture was purchased throughout the scheme. The other areas of main refurbishment were renovation of the flooring in the dining room plus carpets to the ground floor and first floor lounges and main entrance. The project also included some external work to the garden with on the pathway which was extended so that tenants could walk all the way round the building. There was a new shed and greenhouse purchased as all the flowers are grown on site by a 'resident gardener'.

Key interventions and their innovative nature

The introduction of reminiscent areas which did not previously exist was key innovation. In consultation with residents, the project utilised empty spaces across the scheme to introduce music area, film area, replica of a local shop, and memorabilia area. Suitability: mild and moderate dementia stages.

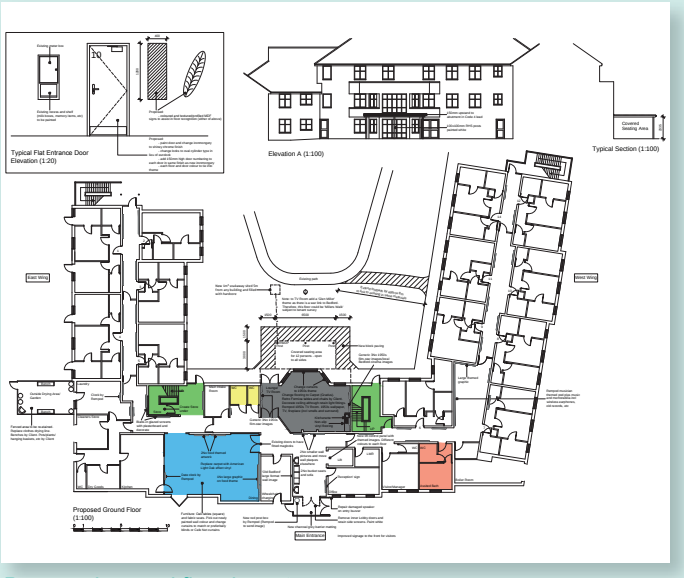
Way-finding and Signage – continuity of points of navigation. The scheme consists of three floors. The second and the third floor have a "theme" – music, film. Dementia-friendly signage was introduced combining text and picture, increased size of door signage, colour coordination and "colour blending". Suitability: mild and moderate dementia stages, general population.

Enhancing the physical environment to allow better nutrition. Complete dining area refurbishment, selected seating support (tables, chairs). Colour schemes to aide appetite (based on current research), selected crockery with dementia residents in mind (shape, contrast and colour). Suitability: mild and moderate dementia stages, elderly population without dementia requiting lower level of additional support with the food intake

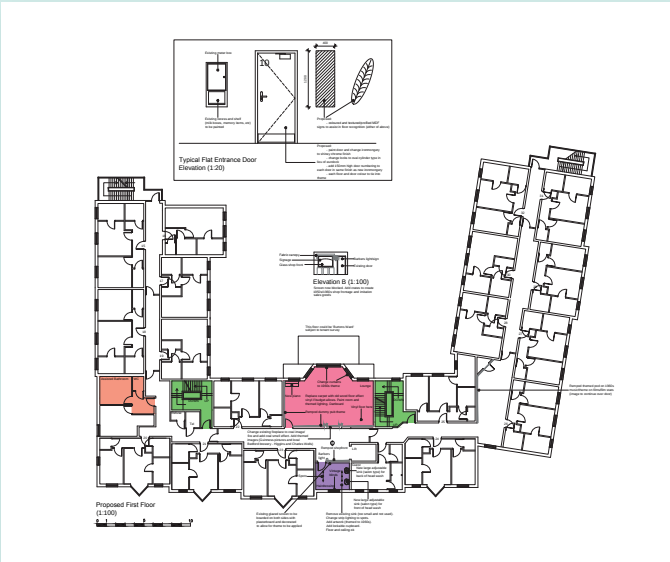
Reminiscence Pods. Worked with Rempods to install permanent rather than temporary reminiscence areas. Suitability: all dementia stages.

Encouraging independence. Dementia-friendly design floors as per EHE Kings Fund guidance, clocks with easy read time and calendar, more independent navigation and dining experience. Suitability: all dementia stages.

Artwork. Local images sourced in cooperation with The Higgins Gallery in Bedford. Suitability: mild and moderate dementia stages without mobility problems

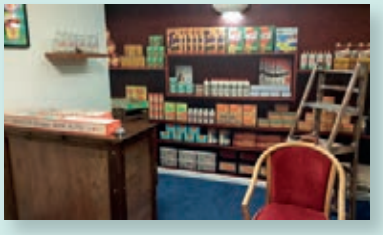


Proposed ground floor layout



Proposed first floor layout

Contribution to the 12 principles



P2. Provide optimum levels of stimulation. Since the refurbishment of Dame Alice Court, there is now a regular themed activity afternoon to encourage those living with dementia to attend and talk about fond memories. Memorabilia and the various themed lounges have enhanced these events. There are various areas around the building to encourage stimulation: points of interest with artwork along the corridors; and a music area with musical instruments, books, games and various items of memorabilia. A sensory garden has been developed with raised flower beds for the benefit of customers who walk about and enjoy the vivid colours and smells. A new greenhouse has been built to enable flowers to be grown from seedlings. The hairdressing room is decorated in a retro style with Hollywood style mirrors and décor, and features reminiscent of the 1960's. The wall has feature wallpaper depicting a 'real life' street view of a salon – there is therefore no doubt what lies inside!

P4. Provide a non-institutional scale and environment. As soon as you enter Dame Alice Court you are welcomed by a bright welcome sign, the sound of soft music from a retro music system with a sofa and chairs in the sitting area near the manager's office. There is an old fashioned pillar box where tenants can post their letters and various pictures of the local area. All seating areas in communal lounges are positioned in small clusters to encourage socialisation in an informal setting with a mixture of sofas and chairs in a combination of colours.

P6. Support way-finding and navigation. The creation of themed corridors supports way-finding and navigation. The themes chosen were music, theatre and the local area. Each floor had a name from these choices and the pictures were chosen to match the theme. All property front doors have large clear numbering contrasting to the front door to support orientation to the home. The new signage includes words and graphics to indicate the way to go and identify particular room usage.

P7. Provide access to nature and the outdoors. The communal lounges all have good lighting and overlook the garden to support connections with the outside and nature. The installation of a large glass canopy enables tenants to sit outside whilst enjoying the outside. There is also additional seating and umbrellas. The garden has a sensory area with raised flower beds with a circular pathway to encourage way-finding around the garden. There is also a greenhouse and shed area where all the flowers are grown from seedlings. There is an outside laundry area to hang washing and a seating area for those who want to be involved in pegging out their clothes.

P8. Promote engagement with friends, relatives and staff. Having themed areas has improved the communal facilities which promote more use by family and friends. The first floor lounge is called the “pub lounge” with a themed bar area, darts board and sitting area. This has promoted gatherings, and parties to celebrate birthdays and anniversaries in this area. The dining room is bright and friendly and is also frequently used for family gatherings. The TV “cinema” area is used on a one-to-one basis for when family members visit to spend time and watch a film together. The garden area has many flowers and plants which encourage wild life and a good opportunity for family to spend time together in. On the first floor, the hairdressing room has been renovated with a retro feel but with a modern twist which makes it welcoming for all those that visit it. On the second floor, there is a small room which has been named “Goldings” after a well know local shop - inside it has a selection of specialist dementia books to encourage stimulation and conversation. It also has memorabilia to bring back memories of items bought in times gone by. There is a guest room which can be used for relatives to stay.

P10. Promote privacy, dignity and independence. Considerations have been given to resting and break-out areas for customers to enjoy quiet time by themselves or with their friends and families. Clustered sitting, homely furnishings, themed lounge area all add to the dignity aspect of Dame Alice Court.

P12. Support diet, nutrition and hydration. A complete renewal and improvement of the dining area has been carried out. All dining room tables were renewed with rectangular tables to enable the person to feel comfortable in their own space whilst allowing 4-5 people to sit together and socialise at the same time. All chairs were renewed to an appropriate height. The flooring was renewed with a matt, non-slip and non-reflective wood style finish floor covering to be more appropriate to the dining rooms usage. Plain crockery with a high contrasted colour rim was purchased. A deep red colour was chosen following on from various consultations methods used to determine what would encourage eating and hydration. Pictures with the theme of food were used to encourage eating and also make it a homely environment. New blinds were put up with café style nets to give privacy but make it look inviting and homely. There is also a small kitchenette area in each lounge to encourage independent use for small events.

Benefits of the intervention

The project used a “before and after approach” to evaluate benefits as the project was not set up as an experimental design. Data collection and data design were managed by the project management group. Data analysis was performed by Bedford Borough Council’s Public Health Team, utilising the data available.

Data collection tools used:

- King’s Fund EHE Assessment Tool.
- Quantitative data were provided by the units involved in the project and relate to a period of 11 months before the intervention and 3 months after the intervention.
- Patient /Service Users’/Family feedback surveys; Staff focused groups.
- The Alzheimer Disease Related Quality of Life (ADQRL).
- Getting Value for Money from Construction Projects through Design (self-assessment tool).

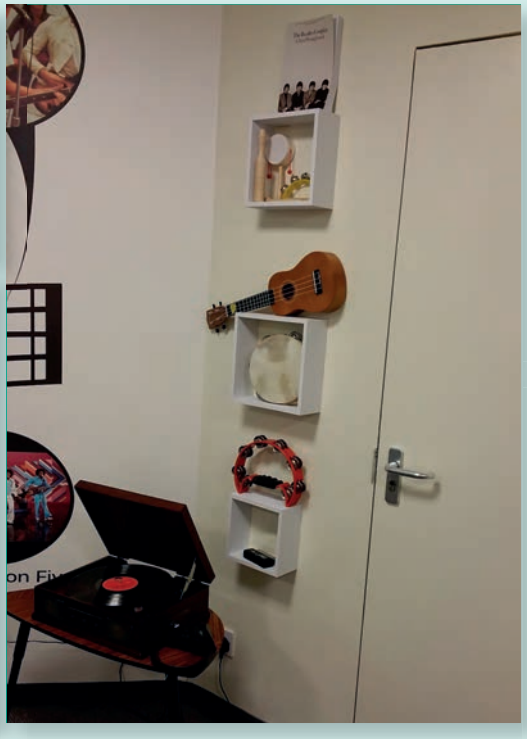
As mentioned above, the project was not set up as an experimental design; therefore the data have variable level of validity and reliability, and variable effect of various sites.

In summary, following trends were observed from the data.

The results from the EHE King’s Fund assessment show that the refurbishments have made a difference to the environment as intended.

The response from client and family member questionnaires showed the changes had impacted on their experience. They found the general décor, signage and flooring had the most impact.

The staff reported that clients have more activities and seem to be more comfortable in their surroundings. The staff initiated additional activities with a specific focus to support and include those with dementia “Down the Memory Lane – Dame Alice Dementia-friendly Place). Staff observed that: residents with dementia, “come out of their rooms” and participate more in social life in the community which understands and accepts them. In addition, residents with dementia appear more settled, “not wanting to go home”, feel more safe – indication from ADRQL.



DEMENTIA GARDEN WALKWAY TO A LONG LIFE

Organisation

Southend-on-Sea Borough Council

St Martin's Residential Care Home

Acknowledgements

Project Sponsor and Champion – Jacqui Lansley (Head of Housing, Procurement and Commissioning)

Project Director – Jo Dickinson (Strategy and Commissioning Manager Mental Health and Dementia)

Project team:

- *Sean Butler (CUBE)*
- *Charles McCormak (CEO Darby and Joan)*
- *Michelle Rogers (Operations Manager Darby and Joan)*
- *Karen Peters (Contracts Manager SBC)*
- *Nevada Shaw (Improvement Practitioner Adavanced, Public Health SBC)*

Thanks also to Angela Rippon OBE for officially opening the garden in May 2014.

The Challenge

Southend on Sea is a seaside town and a destination of choice for people entering retirement. Southend is witnessing a growth in its ageing population and beginning to see an increase in associated illnesses such as dementia as a result of this. As a consequence, rates of dementia in Southend are higher than the regional and national average.

St Martin's Residential Care Home (provided by a local charity) is a Victorian house which has been refurbished and provides specialist care for 24 people living with dementia. Residents within the home have moderate to severe dementia and range in ages from 76 to 100. The home provides care for residents who have a range of dementia symptoms including disorientation, distressed behaviours, and cognitive impairments. It also provides respite and end of life care.

The rear garden in the care home was large, measuring 165 feet x 85 feet, with undulating grass-areas and no specific path. Use of the garden by residents on their own was limited (always required direct supervision) and provided little stimulation. Planting was in narrow boarders alongside the fence which enclosed the garden on 3 sides and access into the garden was through a door in the conservatory situated at the back of the house. One of the aims of the exemplar dementia-friendly garden was to reduce the incidents of aggression and the number of falls (others listed in the aims and objectives below).

Aim and objectives

The project aimed to create a exemplar dementia-friendly garden that incorporated researched dementia design features and best practice guidance. The overall aim was for garden to improve the well-being of its residents and reduced incidents of aggression or falls. It was anticipated that the garden would be beneficial to relatives or friends visiting the home and that they will stay longer or visit more frequently.

The overall project aim was to improve the wellbeing of people living with dementia principally in the Home. The success was based on the following 9 identified outcomes:

- reduced levels of agitation in residents;
- increased relative/carer/friends visits to residents;
- reduced numbers of falls by residents;
- increased interaction of residents with other residents, visitors and staff;
- increased use of the garden by residents, staff and visitors;
- improved sleep pattern in residents;
- reduced levels of aggression/violence in residents;
- improved mood of residents; and
- levels of use of medication in residents (especially sedatives and antipsychotic drugs).

Weekly stakeholder meetings were held to discuss the project and the design features. Key features of the garden have been driven by staff and relatives. Residents, where they were able to, were also encouraged to participate in the garden design. Each of the residents chose a plant for the garden, one which would trigger memories for them. Most residents chose a Hydrangea or a Rose.

A simple assessment sheet was developed for use by home staff to record these areas for a two month baseline period prior to the project starting (commenced April 2013) and a six month period following the completion of the garden.

Garden pre-intervention

Garden post-intervention

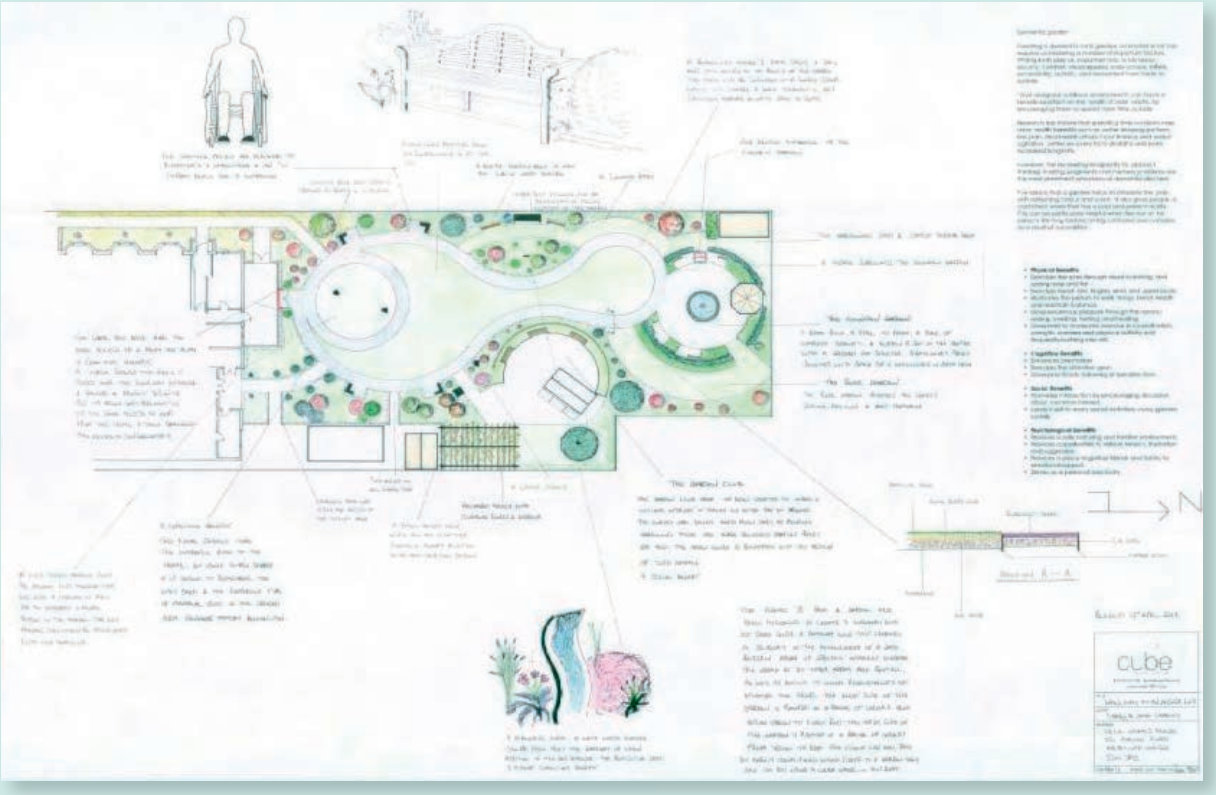
Key spaces

The very large garden was divided into four areas: the fountain garden; the rose garden; the 'Garden Club'; and the grass areas. Each section linked by a figure of eight path starting from and leading back to the main house. The doors into the house are now colour coded on the outside to aid orientation back to the main building.

- The fountain garden is the focal point; surrounded by arches, seating including space for wheelchairs, and shading from a gazebo (which is heated for all year use).
- The rose garden helps to trigger senses: seeing, smelling and stimulating fond memories.
- The Garden Club has raised beds for easy no bending vegetable growing supported by a potting shed.
- The lawn has a meadow flowers area with wild flowers, poppies, daisies and buttercups for summer events, garden games and football with younger visitors attending with their families.

Key interventions and their innovative nature

The garden has a figure of eight shape returning path to decrease agitation and panic and with non-slip, non-reflective 'sure-bond rubber' (as used in children's play areas to reduce injury from falls), flat level reducing trip hazards throughout the garden. The path is surrounded with familiar features including a bus stop and shelter, and a post-box. Letters can be posted in the post-box and are removed regularly and posted. Edging the path are raised flower beds with vibrant colours, smells and different textures. These have been raised to wheelchair height and wooden seating that has been designed to accommodate wheelchair users. Entrances and exits are highlighted within and outside the home to aid in identification. Orientation and way-finding features are incorporated, for example, a colour wheel of planting, to help people find their way around the garden both visually and by scent. The heating and lighting for the gazebo are activated by two separate switches from inside the structure. The gazebo will only emit heat once these switches have been activated thus avoiding energy waste.



Garden layout and features

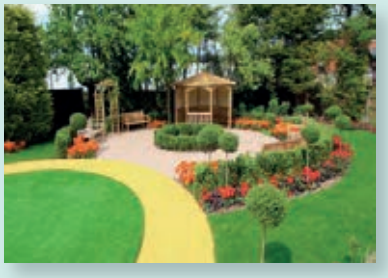
Contribution to the 12 principles

P1. Provide a safe environment. The garden access was redesigned to provide completely level access from inside to outside. The garden was also completely level, with an even flow and free of contrasts. There are no steep slopes or other barriers within the outdoor area and flush, non-slip surfaces were chosen without being highly reflective (including sure-bond rubber flooring and artificial turf). The path in the garden is wheelchair accessible and returns the user to the beginning. The main entrance to the building for visitors is without steps, with dementia-friendly signage (clear, in bold face and with good contrast between text and background). The signage is also at eye level. The garden is fully enclosed and secure. The small pond area incorporates pond safe flooring made from high density polyethylene to minimise any falls, or other related risks. All plants are non-toxic.

P2. Provide optimum levels of stimulation. Plants were chosen based on various attributes including all plants being non-toxic. The plants are attractive to wildlife, with a range of year round planting, offering a range of stimulation to the senses:

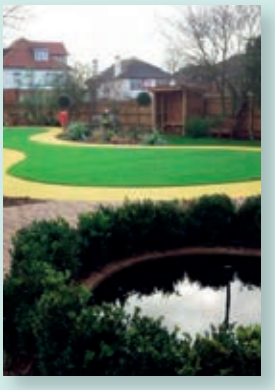
- sensory trees and shrubs for scent – Jasmine and colourful and fragrant rose garden to stimulate the senses;
- fragrant climbing plants – climbing rose, star jasmine;
- fragrant ground cover plants – Chamomile, Sweet Woodruff;
- sensory plants for touch – lambs ears, squirrel tail grass;
- sensory plants for sound – bamboo, verbena, animated oats; and
- sensory plants for scent – roses, herbs such as rosemary, lemon balm, mint, curry plant and lavender.

The fountain garden area and wind-chimes add to sensory stimulation. The fountain garden also provides an area to stimulate and replicate senses from being ‘at the seaside’.

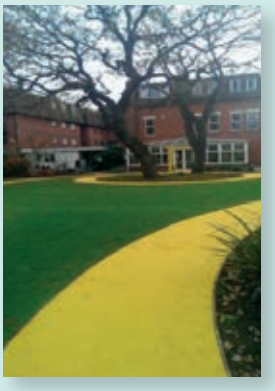


P3. Provide optimum lighting and contrast. The use of evenly distributed external lighting that has helped to avoid pools of bright light and deep shadow contrasts. Expert opinion was sought on colour contrast and was taken into account when choosing the various colour schemes. The conservatory entrance is well lit and allows sunlight to be present throughout the day. This is possible because of low level planting located near all window areas.

P4. Provide a non-institutional scale and environment. The rear garden to the home was large measuring 50 meters x 26 meters (165 feet x 85 feet) and previously had undulating lawns with no specific paving. The garden has incorporated a figure of eight returning pathway that is both non-slip and flat level. The garden is divided into four areas; an activity and garden area, a rose garden, a water area fountain, water wall and a ‘village green’ area.



P5. Support orientation. Colour contrast and good lighting were also used to help orientation, with blocks of colour planting used to avoid any distractions. This scheme was based on planting on a colour wheel. Key landmarks were used to help people living with dementia find their way, including: a yellow path; yellow arch over the doorway back into the home; some of the original trees in the garden; a water feature; a bus shelter; and a gazebo.



P6. Support way-finding and navigation. A yellow figure of eight path was chosen based on research showing the use of “landmarks” for people living with dementia to navigate their way around, both inside and out. Colour contrast and good lighting were also used to help navigation. Blocks of colour planting and the strategic use of planting (bamboo and original trees) helpes guide residents away from exit areas which they should not use. The garden exit naturally leads back to the toilet.

P7. Provide access to nature and the outdoors. Residents in wheelchairs are now able to use the garden with minimum supervision and there is generally more seating, including a heated seating area to enable more residents and their visitors to use the garden. Bright, more compact planting has increased natural lighting to the garden, while the yellow path increases the sense of light within the garden. Through the plants and water-features, staff and residents have spotted wildlife not previously seen, this is now being recorded on a magnetic board inside and outside with updates given in the ‘garden newsletter’.

P8. Promote engagement with friends, relatives and staff. The garden has provided space for residents and their relatives to have quiet open space to enjoy each other’s company and spend quality time together as a family. Friends, relatives and staff were consulted at every stage of the application and design process. Relatives and friends helped to choose plants favoured by loved ones and staff have a feature in the ‘garden newsletter’ which goes out to friends, relatives and local dementia charities. Open evenings and events have been held in the garden including a tea dance and cheese and wine evening.

P9. Provide good visibility and visual access. All the different areas created in the garden are connected by the figure of eight path. The accessible outdoor areas are easily visible to staff from inside the building, including the side entrance for visitors. Plants near to the windows were chosen based on their eventual size (small to medium), so not to block out the visibility, while other plants in the garden were also chosen to ensure that no planting area would impair visual access. External lighting was evenly distributed throughout the garden, tested at different times in the day to check the avoidance of pools of bright light and deep shadow contract, before the final placement was agreed.

P10. Promote privacy dignity and independence. Strategic use of planting and landmarks has helped to promote privacy and independence in the garden without impairing visual access for staff and relatives. Rest areas in the garden, such as the gazebo offer protection from direct sunlight and wind with weatherproof blinds and heated areas. All seated areas have been designed to also be accessible by wheelchair users, and the level free flowing garden allows for greater independent use by residents. A raised bed planting area was created for residence with lightweight tools to enable residents to work independently, while an area in the garden was devoted to flowers chosen by residents and their relatives, to feel part of the process. As this garden is within is a residential care home, a separate entrance and toilet area was created for visitors enabling residents to keep their home private.

"For summer events the village green area can be used for garden games, especially for younger people attending with their families. The bus stop and Post Box will create opportunities for reminiscence activities."

P11. Promote physical and meaningful activities. The village green area is a social area that can be used for garden games. The ergonomic raised bed area is wheel chair-friendly and the heavy clay soil was cultivated with addition of 75% organic material to allow residents ease of use. There is a wild flower meadow and also a village green style area with bus stop and post box to trigger memories. Residents had previously designed and painted bird boxes and these have been used throughout the garden. Residents also painted the raised herb planters. Using these different areas within the garden will also allow for particular monitoring by staff to see if certain areas, for example, the social/activities area attract and engage more residents. The 'never-ending' pathway will encourage residents to walk which will help them to exercise/maintain and improve muscle tone.

"In a few residents who started to use the garden, increased hydration levels have been noted by staff."

P12. Support diet, nutrition and hydration. Staff have utilised fruit (apples, plums, gages and herbs) from the garden in everyday meal provision and residents have been encouraged to the garden after meal and refreshment opportunities.

Benefits of the intervention

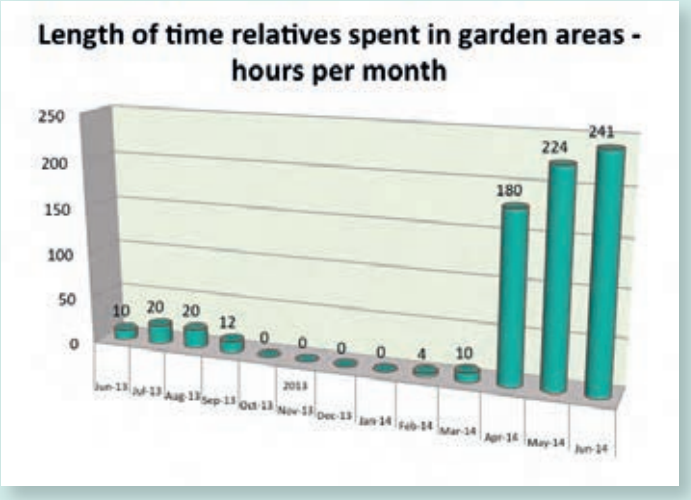
To demonstrate the impact of the project, a set of qualitative and quantitative data was collected. Qualitative data were collected via staff focus groups, and a set of standardised questions, which were sought from visitors and staff. Quantitative data were collected for 3 months prior to the build (from June to September 2013) and for 3 months following the completion of the garden (from April to June). The collected data were: agitation; visitors numbers; falls; slips/trips/falls; interaction levels; amount on time in the garden (both residents and visitors); sleep pattern; physical and verbal aggression; mood; and medication. The rationale for this data collection was that if the dementia-friendly garden is accessed regularly, the residents will have a significant positive impact on any potentially negative behaviour.

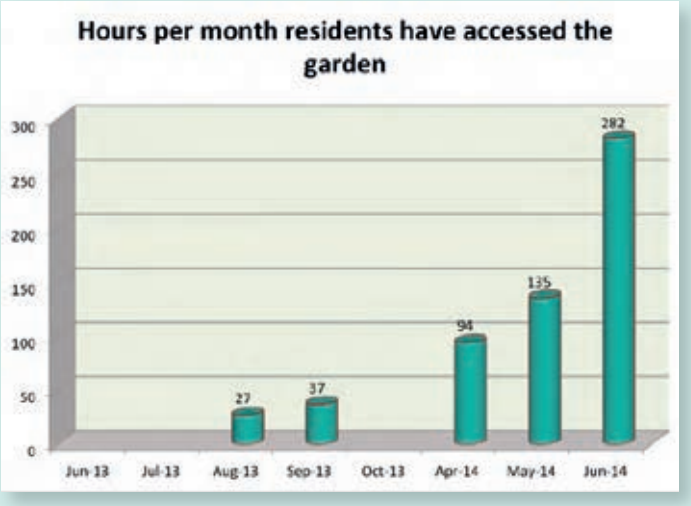
There have been direct improvements to quality of life, for example, following the success of the launch, monthly tea parties are now held for residents. Early indicators show a considerable increase in the time residents and relatives spend in the garden. There are more visitors coming to see the residents and the community is also benefiting from the garden.

A resident, who had been living there 13 months and never engaged with staff, started going into the garden and telling staff about what he had seen. Relatives have commented on reduced aggression and agitation, staff have noticed residents go into the garden when agitated and returning much calmer.

Another Resident will happily show people around their garden and another enjoys waiting at the bus stop for the 'no 7 bus'. Staff have reported an increased enjoyment coming to work and staff sickness has reduced.

Reductions in staff sickness levels have been an unintended positive outcome.





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