Architecture for the Elderly

TAIWAN HOME SERVICE STRATEGIC ALLIANCE (THSSA)
TAIPEI
26TH June 2019

Presentation Outline

What is space for the elderly?

What are the elderly conditions?
Identify elderly illness and their conditions.

How can space improve physical and mental health?

What are the elements in space that can improve physical and mental health? Identify spatial elements and themes.

US and UK Standards - Architecture of a Nursing Home Introduce the standards and their themes.

Natural Light/Optimum Lighting

Natural Ventilation

External View/Access to the Outdoors

Wayfinding/Art

Familiar Finishes, Non-Institutional Environment/Personalization

Social Opportunity

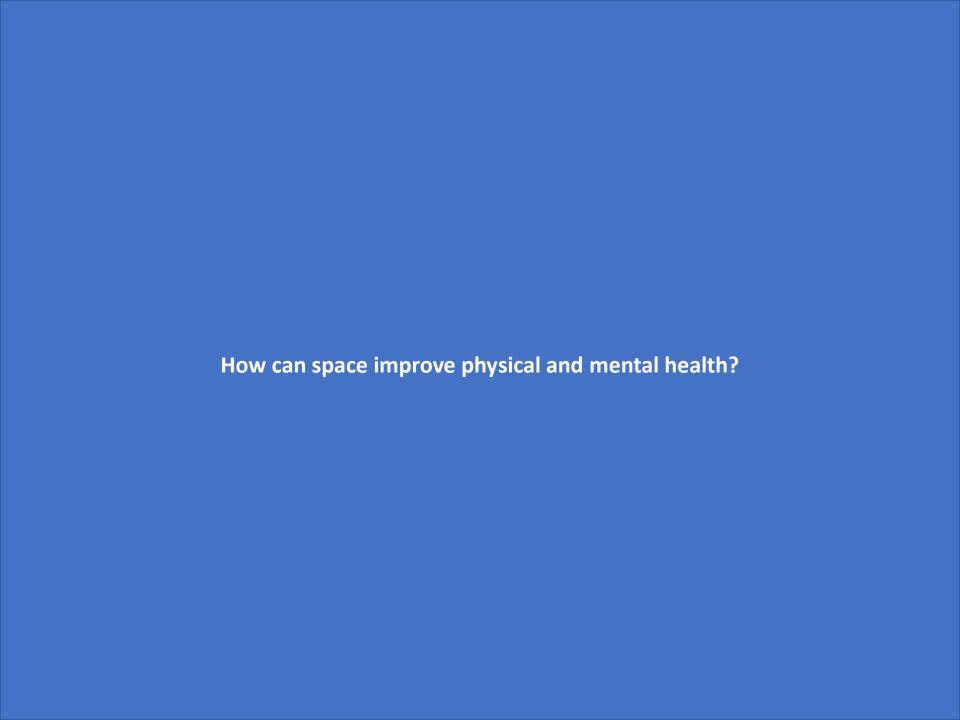
Community - Upholding Independence and Continuation of Daily Chores

Conclusion

What we think are important in the space for the elderly.



medication, crane, crutches, wh	What are elderly conditions? neelchair, bedridden, caregivers, lone physical and mental conditions	eliness, mental illness, dementia

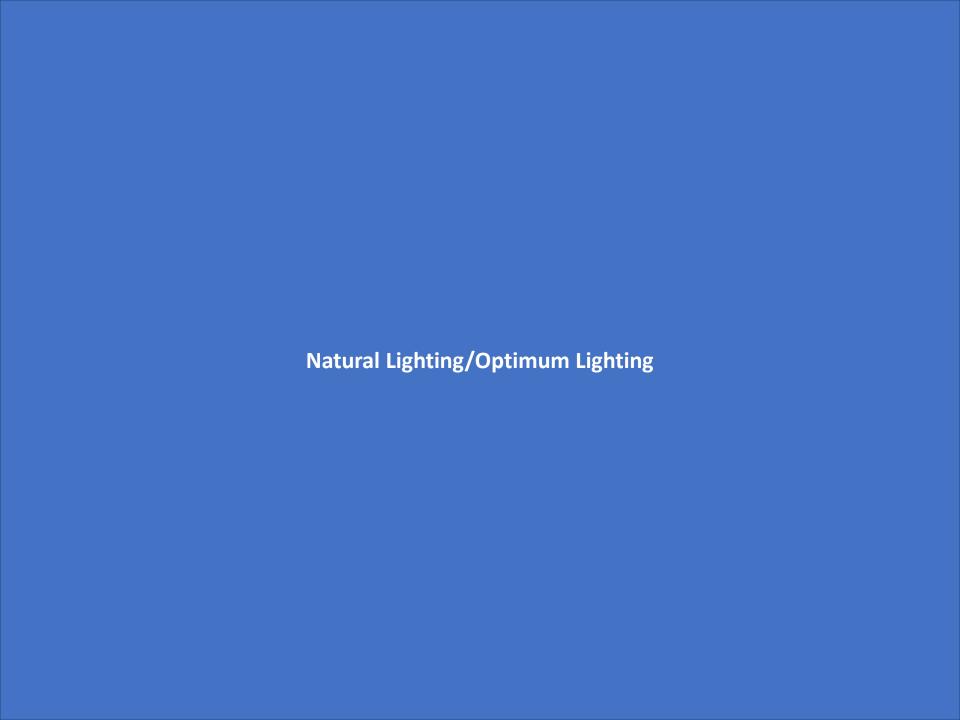


Key Elements in US and UK Standards for Elderly Housing

US WBDG Whole Building Design Guide
UK HBN Health Building Notes
UK HAPPI Housing our Ageing Population Panel for Innovation

WBDG	HBN 00-01	HBN 08-02	НАРРІ ИК
Natural light	visual and color contrast	Provide a safe environment	Space and flexibility
Views of the outdoors	natural lighting	Provide optimum levels of stimulation	Daylight in the home and in shared spaces
familiar finishes, colors, textures	external view	Provide Optimum lighting and contrast	Balconies and outdoor space
access to the outdoors	natural ventilation	Provide a non-institutional scale and environment	Adaptability and 'care ready' design
personalization	wayfinding	Support Orientation	Positive use of circulation space
wayfinding/signage	art	Suppor way-finding and navigation	Shared facilities and 'hubs'
higher lighting		Provide access to nature and the outdoors	Plants, trees, and the natural environment
use of artwork		Promote engagement with friends, relatives and staff	Energy efficiency and sustainable design
safety		Provide good visibility and visual access	Storage for belongings and bicycles
		Promote privacy, dignity and independence	External shared surfaces and 'home zones'
		Support diet, nutrition and hydration	

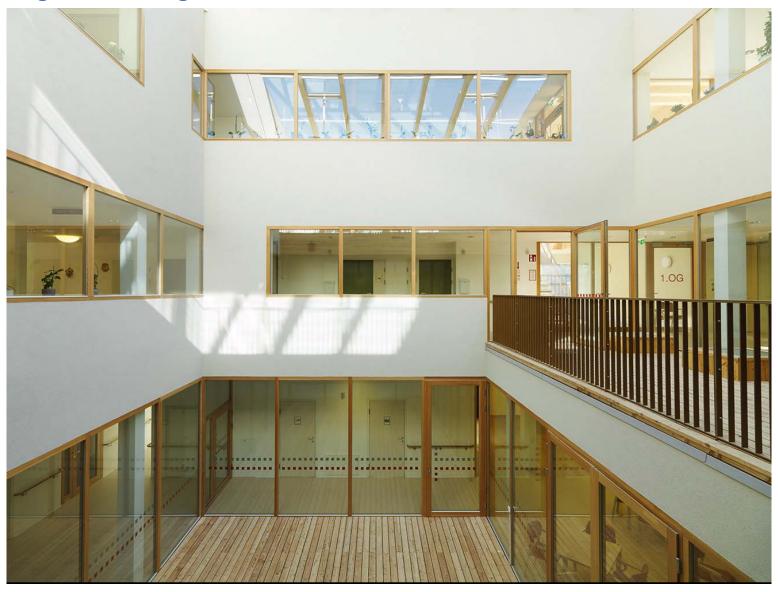
Natural Light/Optimum Lighting Natural Ventilation External View/Access to the Outdoors Wayfinding/Orientation/Art Familiar Finishes, Non-Institutional Environment/Personalization Social Opportunity Community



Inviting natural sunlight and visual connection with natural plants.

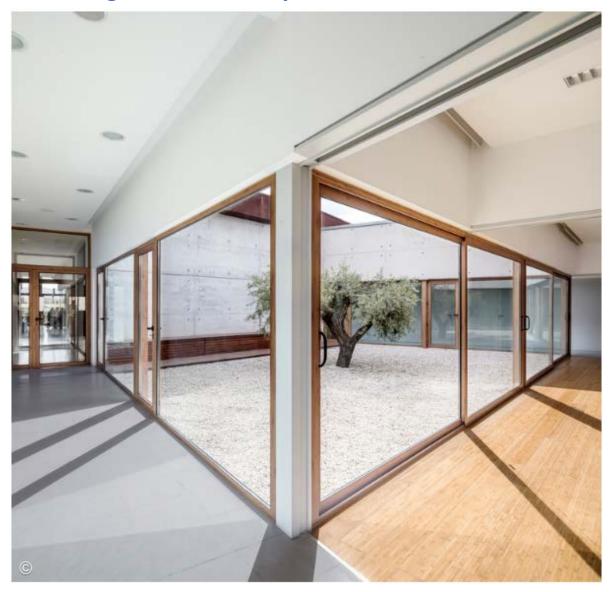


Inviting natural sunlight to central atrium



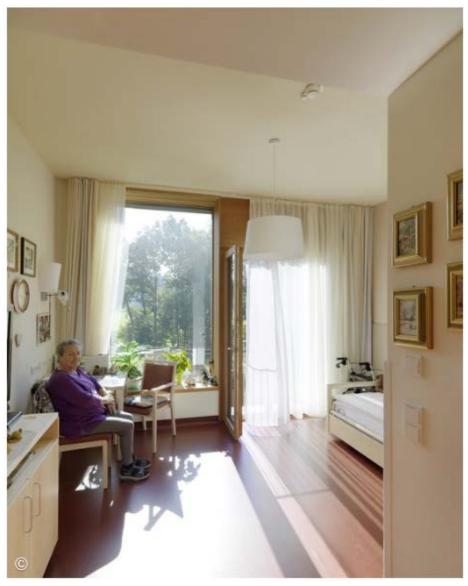
Nursing and Retirement Home | Dietger Wissounig Architekten | Leoben, Austria

Inviting natural sunlight to inner courtyard

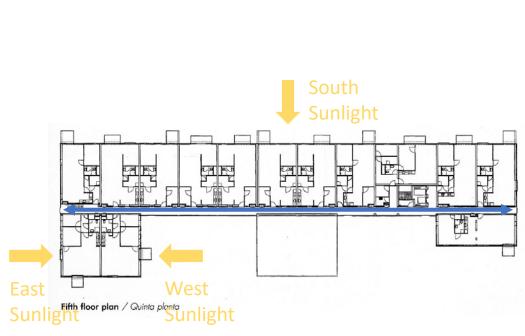


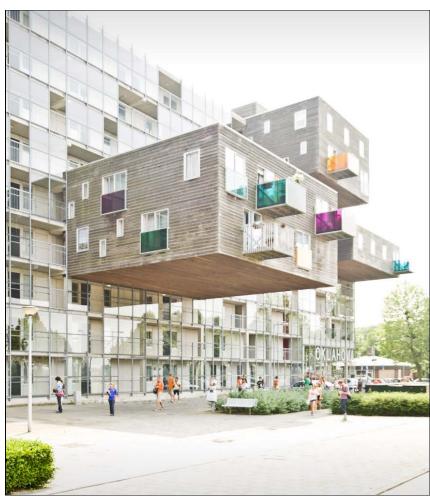
Day Center and Home for the Elderly of Blancafort | Guillem Carrera | Tarragona, Spain

Natural sunlight in the bedroom



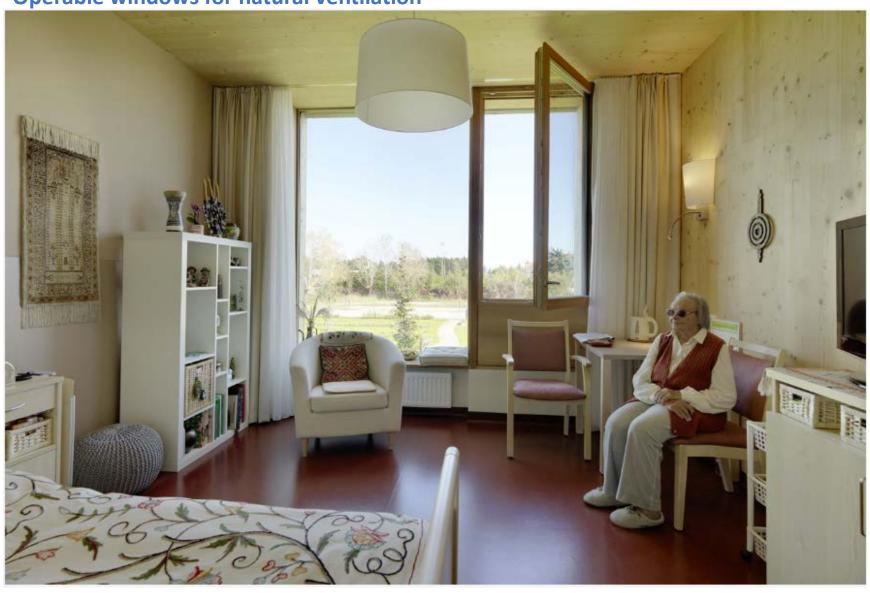
North facing apartments receive sunlight from east and west sides







Operable windows for natural ventilation



Peter Rosegger Nursing Home | Dietger Wissounig Architekten | Graz, Austria

Cross-ventilation



The Future Sølund | C.F. Møller Architects and Tredje Natur | Copenhagen, Denmark

External Views/Access to the Outdoors

Green indoor and outdoor



Plants in atrium



Access to inner courtyard



The Architect | LEVS architecten | Utrecht, Netherlands

External access through balcony

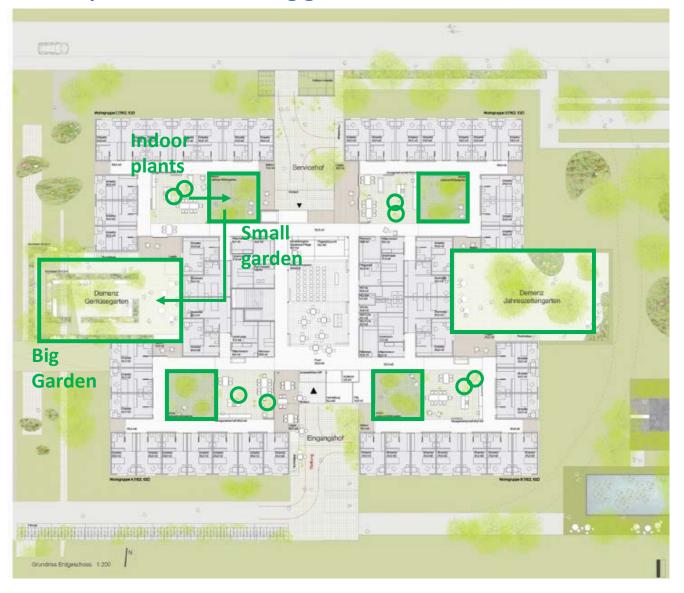


Retirement and Nursing Home Wilder Kaiser | SRAP Sedlak Rissland + Dürschinger Architekten | Austria

Balcony extending to the nature

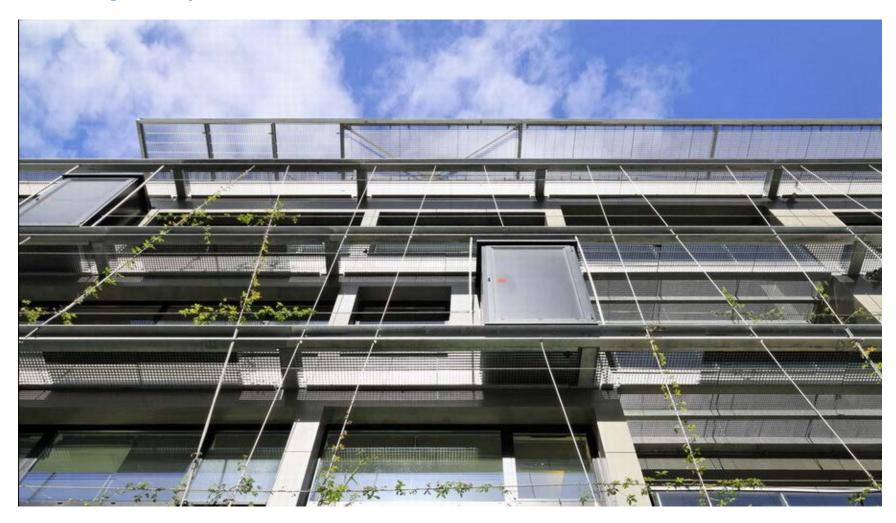


From indoor plants to outdoor big gardens



Peter Rosegger Nursing Home | Dietger Wissounig Architekten | Graz, Austria

Vertical greenery



Seniors' Residence + Nursery | a/LTA | Nantes, France



Floor pattern and art installation as a wayfinding guidance



The Summit, Rockwood's South Campus | Perkins Eastman | Spokane, Washington, USA

Art to identify and recognize the space



Willibrord Nursing Home | Atelier PRO Architekten | Middelburg, NL

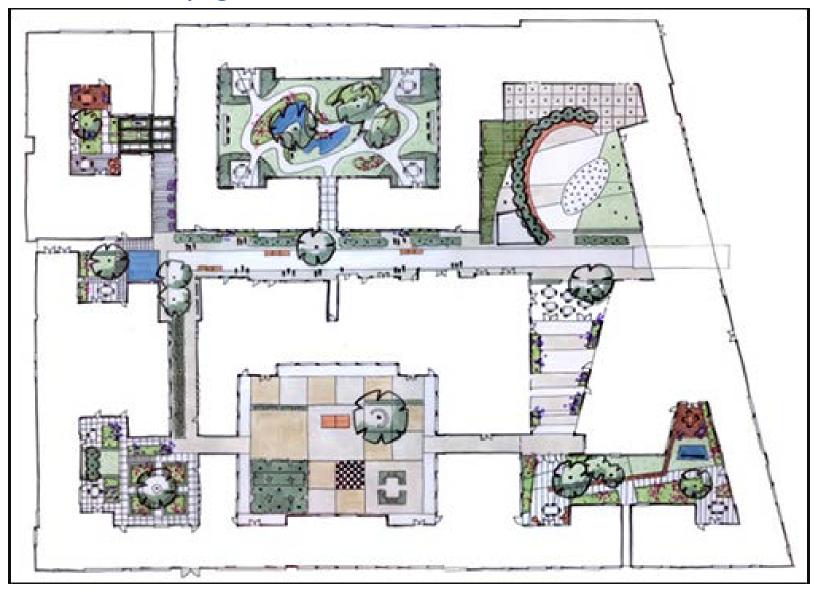
Using color as cues



Using color as guidance and camouflage



Different landscape gardens as orientation reminder



Hogewey Dementia Village | Molenaar&Bol&VanDillen | Weesp, Netherlands

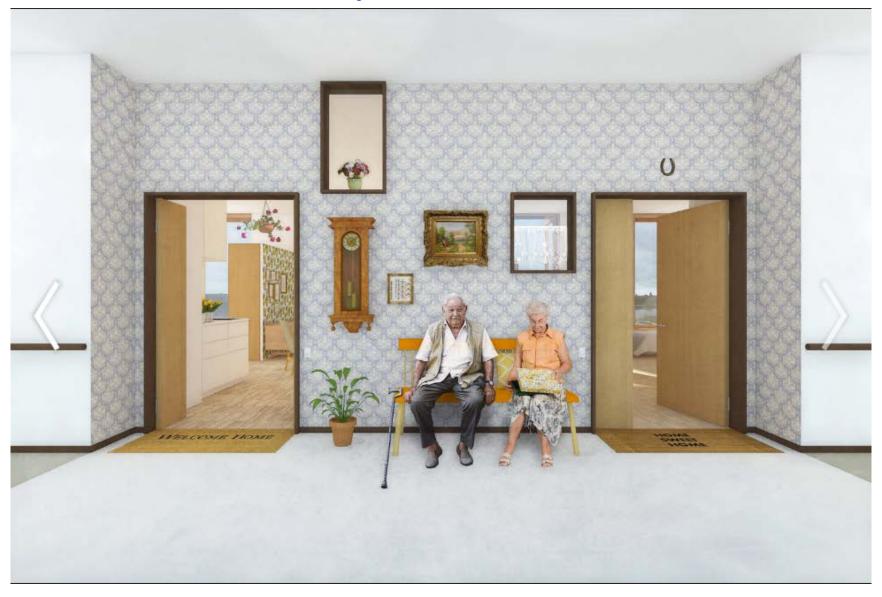


Personal touch



Willibrord Nursing Home | Atelier PRO Architekten | Middelburg, NL

Personalization; use of familiar objects.



Future Sølund | C.F. Møller Architects and Tredje Natur | Copenhagen, Denmark

To continue lives with the lifestyles they are familiar with

The Artisan lifestyle



The residents in this lifestyle are all proud of their trade. They are plumbers, carpenters, etc. The love for their profession is well-loved topic for conversation. The atmosphere is homey and cosy. The layout of the house is solid and traditional. An old-fashioned apple pie or cake is baked every week. There is every opportunity for residents to help with the cooking. The meals are traditionally Dutch, serving many old-time favourites.

The *Christian* lifestyle



Religion is central to this lifestyle. Praying, saying grace and listening to religious music form a central part. Many of the residents visit church services regularly. The Christian lifestyle is restrained. The cooked meals served are simple Dutch dishes. There is room however for a biscuit or a little chocolate when drinking tea or coffee.

The Cultural lifestyle



Art, culture and literature are important in this lifestyle. The residents enjoy reading books or newspapers and go out to the theatre, movies, museums and concerts. Equality and respect for each other are very important in this lifestyle. A generous breakfast is served every day while lunch is a more sober affair. Evening meals are important as well, with long and extensive dining. Wine is served with diner and the menu features fish, fruit, rice and vegetarian dishes.

The Gooise lifestyle



The Gool area of the Netherlands is associated with posh people and has an upper class connotation. The residents in this lifestyle appreciate correct etiquette. Classical concerts are visited regularly and a communal brunch or high-tea is often enjoyed. A lot of attention is devoted to appearance and the interior of the houses is classical and tasteful. The table is laid with care. Meals are considered a social occasion and the presentation of dishes is very important. The residents favour French cuisine and they enjoy going out for diner as well.

The Homey lifestyle



Caring for family and day to day housekeeping has always been important to these residents. Whoever feels like it can join in on the folding of the laundry or peeling the potatoes. The homey and warm atmosphere creates a cosy feel. Old-fashioned games are played regularly. Traditional Dutch cuisine is favoured among residents, consisting of potatoes, meat and fresh vegetables. Birthdays are celebrated extensively with coffee and cake

The *Indonesian* lifestyle



Keywords fort his lifestyle are: tradition, nostalgia and respect for yourself and others. Memories of Indonesia are shared between the residents with the aid of videos, DVDs, photographs, music and incense. Trips for the residents go to the Pasar Malam (Asian market) and the Indische Club (Indonesian society). Food and dining together are very important in this lifestyle. The residents prefer two hot meals a day. The meals feature mostly Indonesian dishes some classic Dutch dishes once in a while.

The *Urban* lifestyle



Characteristics fort his lifestyle are: social, extravert and involved. The residents share happiness and sorrow. Social interaction is open and direct and the atmosphere is vibrant. Trips to the zoo, amusent parks, theatre and swimming pool are organised regularly. Staying at home to read or play games is alright as well. After the afternoon drinks, with cheese and sausage, dinner is enjoyed together with the other residents. Diner is mostly potatoes, meat and vegetables.

Familiar reference to traditional motif and local handcrafted traditions



Retirement and Nursing Home Wilder Kaiser | SRAP Sedlak Rissland + Dürschinger Architekten | Austria



Creating social opportunities in the corridor



Social opportunities in the central courtyard



Dr George Davis Senior Building | David Baker Architects | San Francisco, USA

Social activities



Social engagements between residents' lounge, multi-use craft room, laundry, bathing and therapy room, hairdressing salon, and meeting spaces.



Central London Almshouse | Witherford Watson Mann Architects | London, UK

This redevelopment of the site provides residents with the opportunity to sit in the sun, get a breath of fresh air, and enjoy the greenery. The environment promotes the use of these spaces by the residents.



The natural healing environment: communal gardening, outdoor events and meetings, play games, sit under one of the trees and enjoy



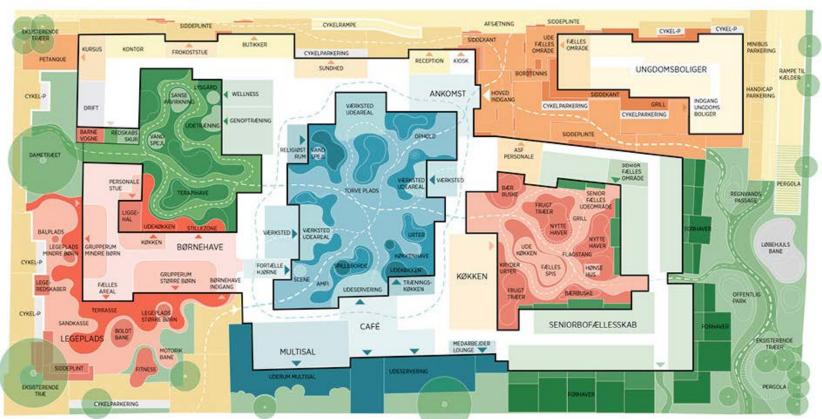
Community – Upholding Independence and Continuation of Daily Chores

The Future Sølund C.F. Møller Architects and Tredje Natur Copenhagen, Denmark

Elderly housing, retirement home, daycare center, and youth apartments

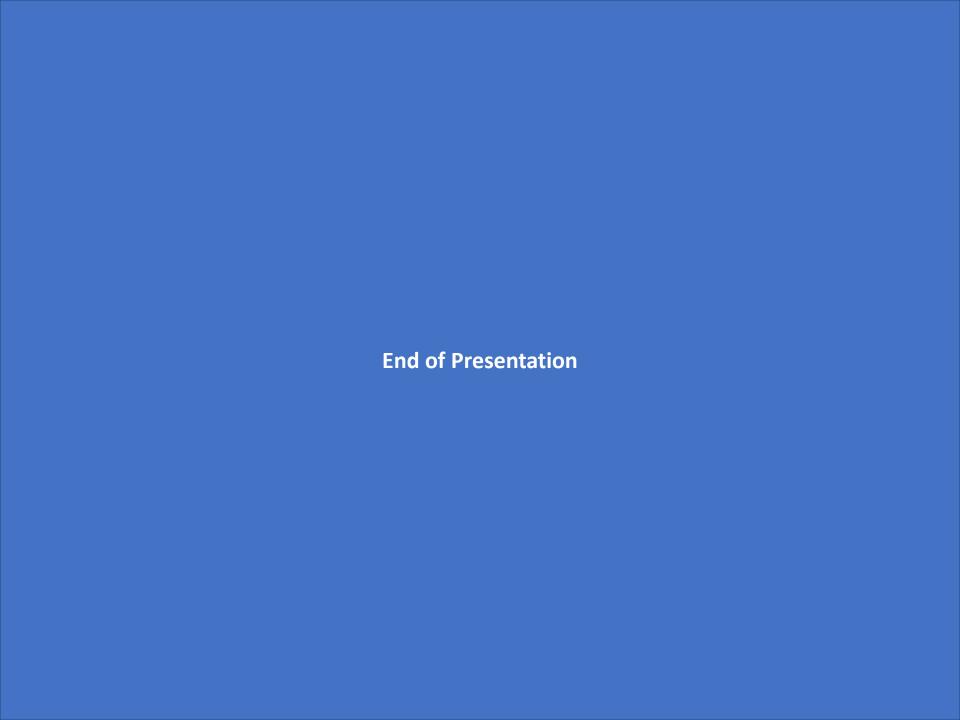
Social support as a community











Example UK Standards

UK

Regulations and Codes of Practice 1.16 The two major pieces of legislation affecting buildings are:

- Building Regulations 2010 regulations that govern the construction and services within buildings. Practical help on how to comply with the building regulations can be found in a series of approved documents (http://www.planningportal.gov.uk/buildingregulations/approveddocuments).
- Health and Safety at Work etc Act 1974 regulations that govern the working

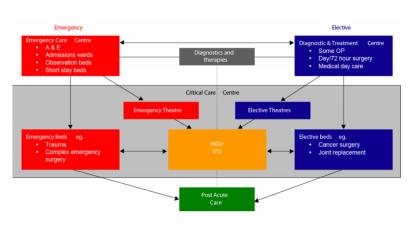
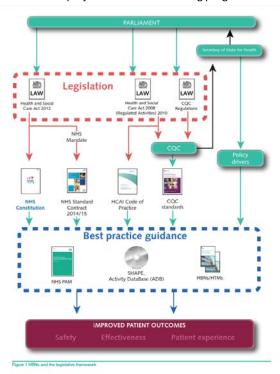


Figure 6 Example acute model of care

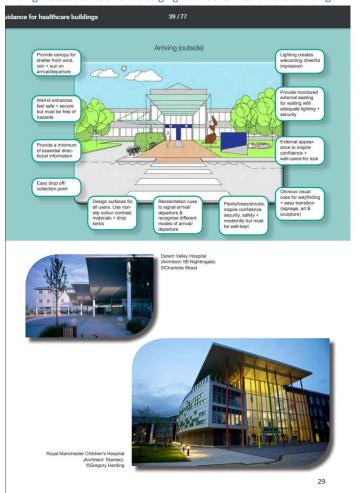
Department of Health and Social Care

Health Building Note 00-01 General design guidance for healthcare buildings https://assets.publishing.service.gov.uk/government/uploads/system/uploads

About Health Building Notes Health Building Notes give best practice guidance on the design and planning of new healthcare buildings and on the adaptation/extension of existing facilities. They provide information to support the briefing and design processes for individual projects in the NHS building programme.



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Laguna Honda Hospital, San Francisco (Architect: Stantec). ©David Wakely Photography





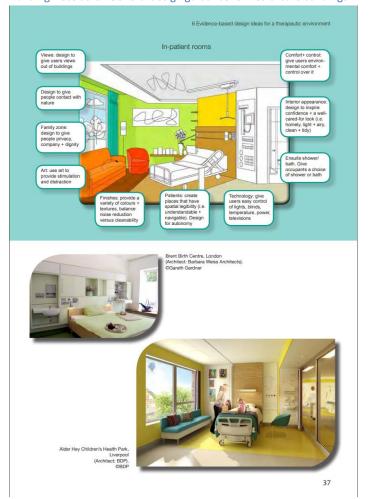


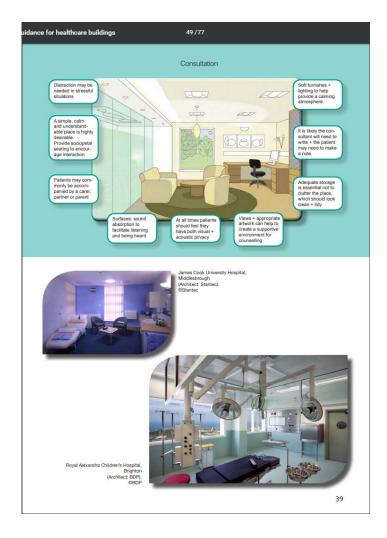
A mix of sociopetal seating arrangements ©Bryan Lawson



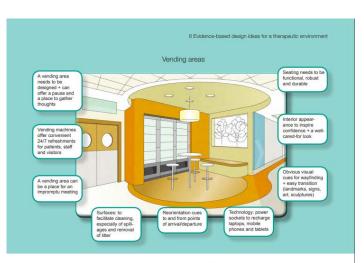
The Redwoods Centre, Shrewsbury (Architect: IBI Nightingale). ©Richard Chivers

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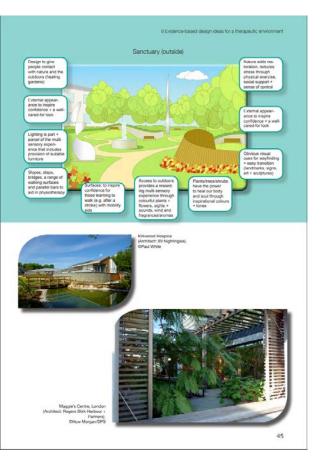


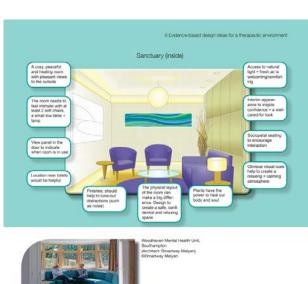


Kidderminster Treatment Centre (Architect: Medical Architecture). ©Lisa Payne Photography

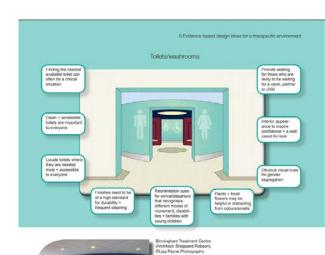


©Reverse Vending Corporation 2014







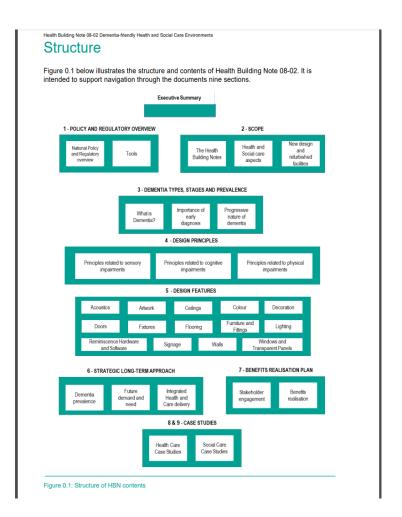




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Health Building Note 08-02 Dementia-friendly Health and Social Care Environments https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/416780/HBN_08-02.pdf

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.



Health Building Note 08-02 Dementia-friendly Health and Social Care Environments

Section 2 Scope

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	7%
rooms	
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).

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%

. 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 2.8: 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%	

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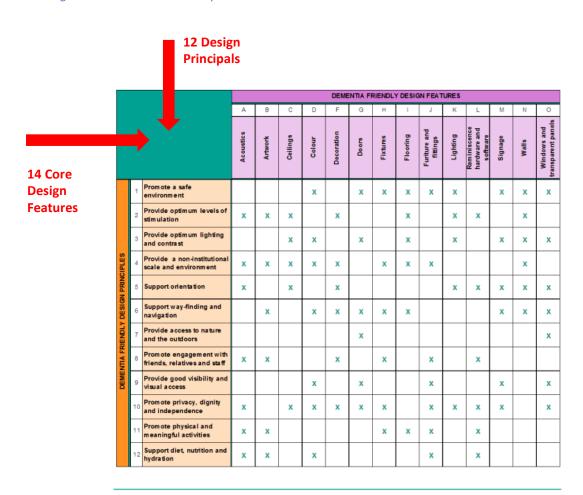


Figure 5.1: Core dementia-friendly design features

Health Building Note 08-02 Dementia-friendly Health and Social Care Environments

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 risated 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 fidures 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 wayfinding 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 driculation areas, including tollets. Where gym and activity rooms are provide, these should include specialist fitness equipment for the elderty. Celling mounted hoists can be used to improve safeling mounted hoists can be used to improve safeling mounted hoists can be used to improve safely.











Health Building Note 08-02 Dementia-friendly Health and Social Care Environments 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 elutier on the Ward and create a calimer atmosphere and a safer space for patients to walk in. Colour contrast toilet seats were used to reduce eluties 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 stalf wellbeing. The project implemented a welcoming reception area, where visitors can be greating 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



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 recoption 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 comidors 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 / tollets, and blue toilet seats were introduced to support independence with self-care and tolleting. 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 pivolat 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 noom 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.