



Winnipeg Regional
Health Authority

Caring for Health

Office régional de la
santé de Winnipeg

À l'écoute de notre santé

Environmental Modifications for Behavior Management in Dementia

Presentation by:

Ken Kollinger

WRHA Capital Planning

Relationships with commercial interests:

Not Applicable

Mitigating Potential Bias:

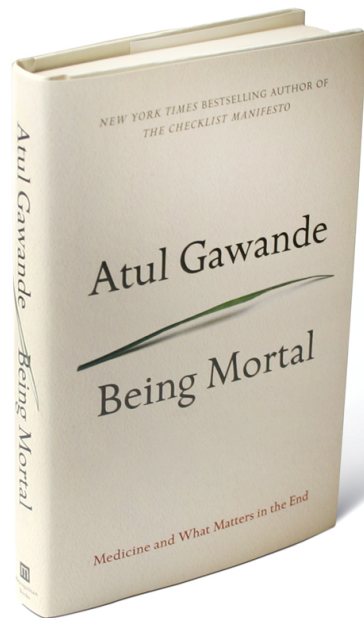
Not Applicable

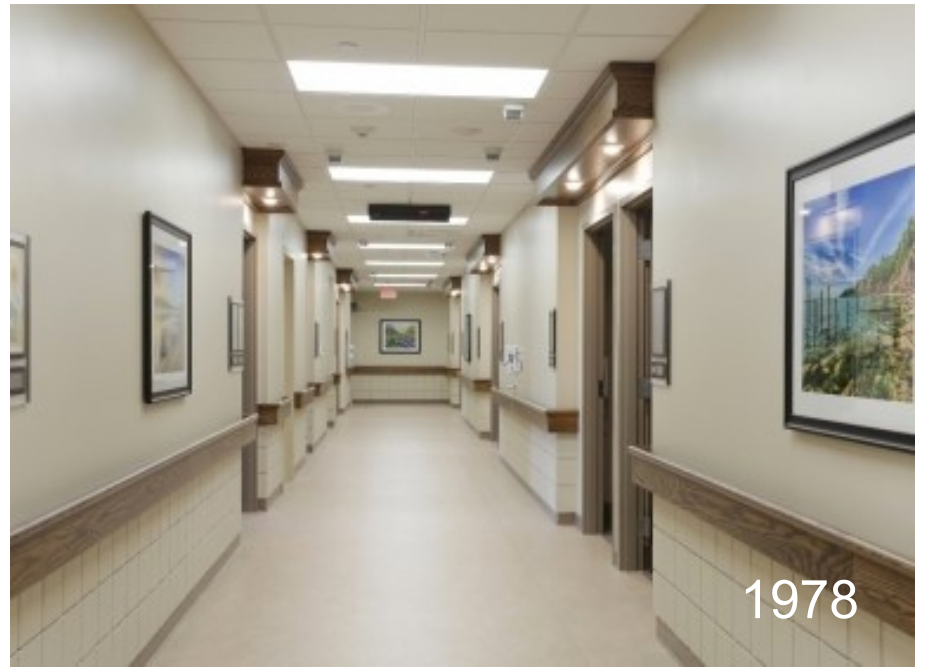
The quality of life in a long term care home typically is one of routine, lack of freedom, and absence of dignity.

If admitted into such a facility one can expect to be well nourished, sheltered and protected, however all emphasis on the continuum of daily life with purpose and fulfillment are seriously lacking.

“Making lives meaningful in old age is new. It therefore requires more imagination and invention than making them merely safe does.”

- Atul Gawande: Being Mortal





EDAC - Evidenced Based Design Accreditation & Certification

The process of basing decisions about the built environment on credible research to achieve the best possible outcomes.



Overall, the field of environmental design for people with dementia is well researched in many aspects and only few gaps in knowledge were identified”

Impact of the design of the built environment on people with dementia
An evidence-based review. HERD 8 (1): 127-57

“Residents living in small-scale, homelike facilities had a significantly higher functional status and cognitive performance compared with residents in regular traditional wards”

Small-scale, homelike facilities versus regular psychogeriatric nursing home wards: A cross-sectional study into residents' characteristics. BMC Health Services Research 10 (1): 30

“These results indicate that small-scale dementia care has a positive effect on activity”

The relationship between small-scale care and activity involvement of residents with dementia. Int Psychogeriatr 24

Bureaucratic traditions must give way to cultural transformation

Resident Focused Care

vs

Institutional Care



Small House Model

Code Guy



Established Standards








Unwilling Administrators



Health Officials

PCH DESIGN GUIDELINES



-  Behaviour (72)
-  Cognition (15)
-  Function (26)
-  Well Being (23)
-  Social Abilities (31)
-  Wayfinding (19)
-  Care Outcomes (33)

SPATIAL HIERARCHY •



DESIGN ISSUE •

Residents often do not have the opportunity for individual quiet time or conversation one-on-one with other residents due to the lack of opportunity of rooms suited for varying functions. Often the resident only has two choices of space, either personal bedroom space or full group activity space. There is often no semi-private small lounge or sitting opportunities providing choices for socialization. The challenge is to create environments that provide privacy, opportunities for movement, and safety for all residents using the least restrictive methods possible.

DESIGN INTERVENTIONS ^{11 12} •

13. Design intermediate spaces that allow for transitions between private and public areas. Bedrooms are the most private spaces that belong to residents. When designing to the context of a small house model the absence of corridors can make separation between bedroom and living spaces difficult. The designer should incorporate the separation of the 4 major types of space found within the household. These include:
 - *Private spaces: Resident Bedrooms / Resident Bathrooms.*
 - *Semi Private Spaces: Transitional spaces between bedroom egress and living spaces. This may be simple as creating a "front porch" zone in front of resident room areas which provides demarcation between room and semi-public activity areas.*
 - *Semi Public Spaces: Living and activity areas shared primarily by residents who belong to the same household or neighbourhood.*
 - *Public Spaces: Areas intended for group functions which bring mixed resident household populations and visitors together.*

RATIONALE ^{14 15} •

The provision of rooms for different functions provides the greatest opportunity for freedom of choice for residents to move freely within their environment. Residents in facilities with more individual rooms and more opportunities for personalization tend to experience less anxiety and aggression. The provision of common areas that vary in ambience is associated with reduced depression, social withdrawal, misidentification and hallucinations. A well gradation of space is associated with resident quality of life, highlighting the necessity for design guidance to emphasize a variety of spaces. The availability of private rooms has been shown to reduce irritability and improve sleeping patterns in people with advanced Alzheimer's disease and other related disorders.

DESIGN OUTCOMES ¹⁶ •

- *Residents will have better opportunities for socialization and become less agitated.*
- *Residents will have more variety in the type of semi private spaces available to them.*
- *Residents who experience greater freedom through open concept design, and hence have less conflict about trying to leave the household, feel a greater sense of control and empowerment, leading in turn to less depression.*
- *Residents will experience a higher quality of life.*
- *Environments that establish the familiar spatial hierarchy of a residential home, (living room, dining room, kitchen, private bedroom zone), where sensory input is more understandable and where such input*

Evidence Based Design research topic

Thematic Groups

Provides the associated outcome groups for the research topic.

Design Issue

Explanation of the design issue that the research topic speaks to

EBD Design Interventions

Architects and designers are provided with credible evidence on which they can confidently base their design decisions. Credible research for each design intervention is cited and the source listed in the end notes. All design interventions are number sequentially and the corresponding EBD strategy number is listed beside each thematic group icon in the space programming section of this guide.

Rationale

A systematic literature search was conducted reviewing studies that meet certain inclusion criteria. Each study was rated for rigour. Of credible studies selected the rationale of the design intervention is explained. The research that supports the rationale statement is cited and included in the end notes.

Design Outcomes

If the design interventions are incorporated into the environment of care (EOC) then the expected outcomes can be anticipated. The outcomes reflect the evidence found in the research studies and the sources cited and included in the end notes.

Page Excerpt from room data sets...

SPACE PROGRAM: THE HOME
THE RESIDENT SUITE

SPACE PROGRAM: THE HOME
THE RESIDENT SUITE

SPACE PROGRAM LEGEND

OVERVIEW

- THE HOME**
- THE RESIDENT SUITE
- THE KITCHEN
- COMMON LIVING SPACES
- UTILITY ROOMS + SUPPORT SPACES
 - Assisted Bathing Room
 - Laundry Room/ Soiled Utility
 - Clean Storage
 - Accessible Washrooms
 - Resident Care Office
 - Medication Room
 - Storage and Housekeeping
 - Mechanical/Electrical Space

The resident suite is a private living space that functions as a personal care zone and private family zone as well. In essence, a private bedroom with the additional amenities that help care givers provide the support residents need with incontinence, basic hygienic needs and physical limits. The resident room requires the supporting spatial layout to allow for the smooth transition between sleeping zone, lounge space and private bathroom space.

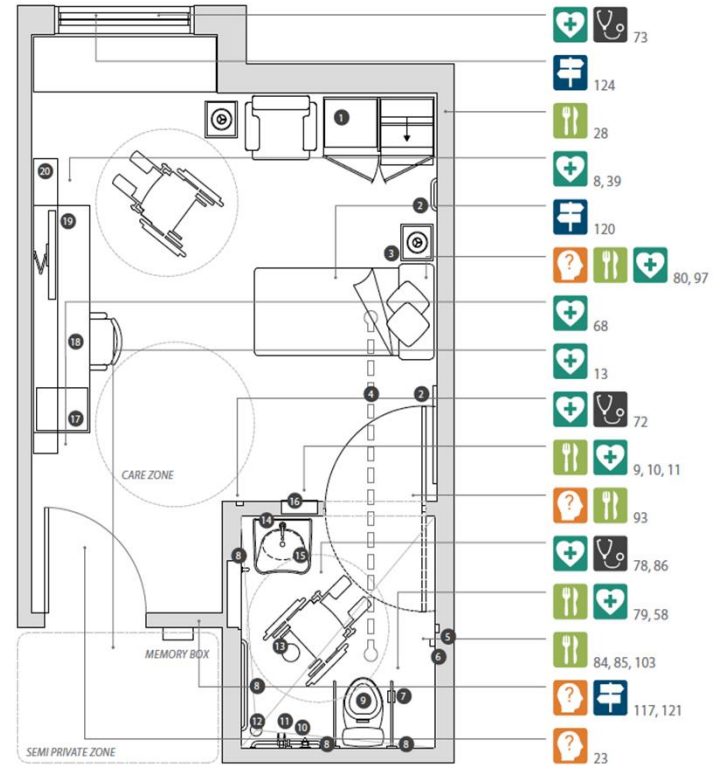
Although layout options are fairly limited in plan, opportunities in spatial quality are limitless. It is important to consider that when a resident is moving into a care home, they are coming from the comforts of their own home into a small bedroom/washroom of less than 260 square feet. Within this footprint, they are required to downsize the contents of their personal life. This is undoubtedly a challenge. As designers, we must have empathy for this significant change in a resident's life and be cognizant that storage space, personalization and unique features will need to be thoroughly considered with each individual room.

THE NEIGHBOURHOOD
 NEIGHBOURHOOD PLANNING
 Site Specific: Operational Typologies

The residential suite should offer options for personalization, which includes shelves and wall space for personal pictures and souvenirs. Furnishings such as beds and nightstands should be residential in nature and not clinical. If feasible, bringing in a furniture item from the comforts of their own home is a great way to allow residents to adjust to their new space.

- THE COMMUNITY**
- THE COMMUNITY CORE
 - Main Entrance/ Meeting Place
 - The Multi Purpose Space
 - Central Courtyard
- THE STREETSCAPE
 - Cafe
 - The Shop
 - The Hair Salon
 - The Meeting Room
 - The Lounge
 - Family Dining Room
 - Family Room
 - Resident Care Treatment Room
 - Resident Service Offices
 - Administration Offices
 - Staff Meeting Room
 - Staff Room
 - Staff Change Rooms
- SUPPORTING SERVICES
 - Nutrition Services
 - Housekeeping and Laundry Services
 - Maintenance Services
 - Material Management
 - Building Management Services

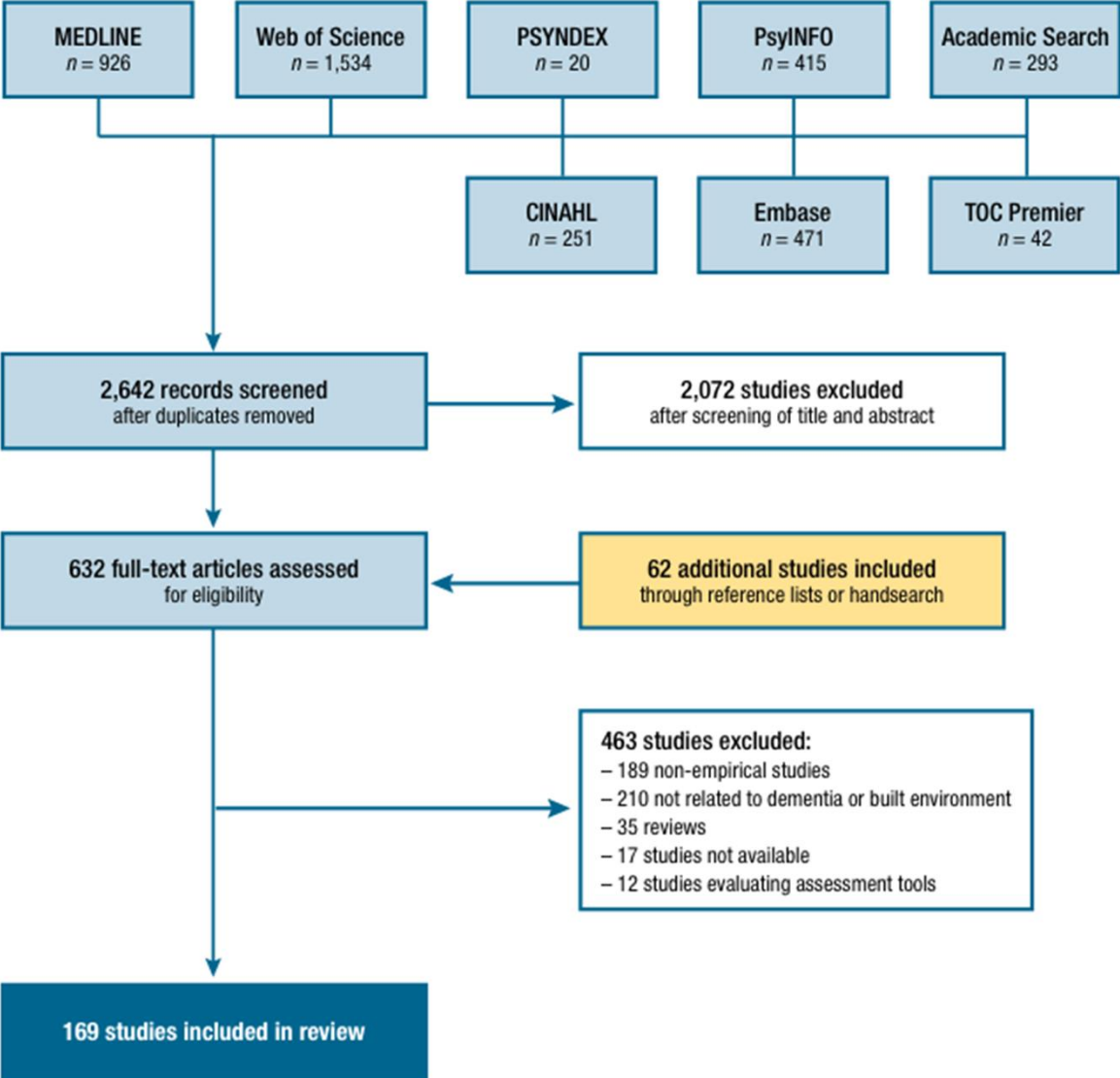
The resident washroom is another personal space that requires thoughtful design. Adaptable to the needs of the resident, the washroom should be visible to the resident from the bed at all times. Contrast and ease of access are key components to reducing incontinence for residents. Depending on square footage availability, care homes should ideally consider having a separate barrier free shower space in the washroom.



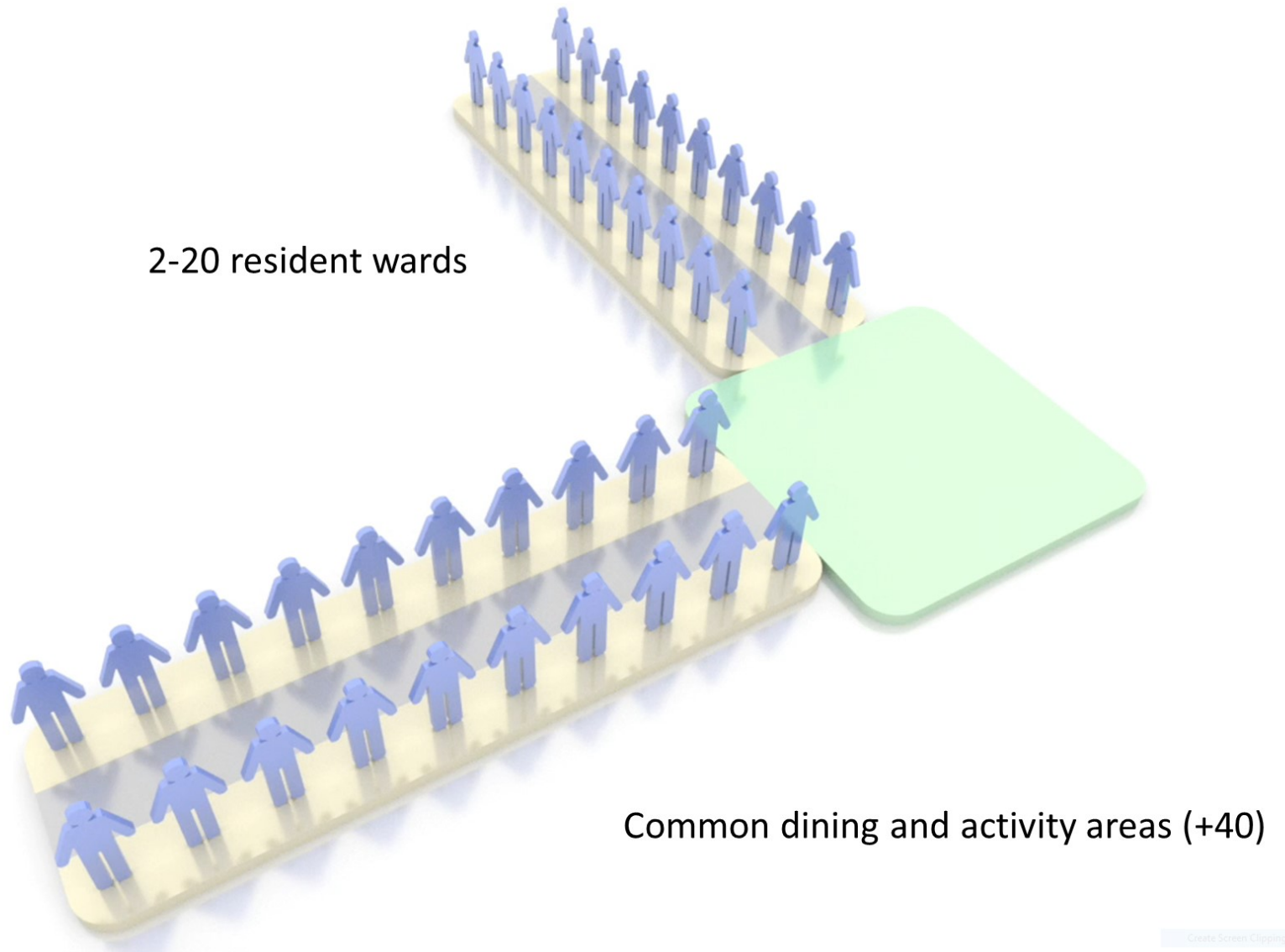
LEGEND

1 Wardrobe	5 Night Light	9 Toilet	13 Heat Lamp	17 Pedestal
2 Hand Rail	6 Garment Hook	10 Shower Valve	14 Mirror	18 Desk
3 Bedside Table	7 Toilet Paper	11 Shower Wand	15 Basin	19 Television
4 Overhead Lift	8 Grab Bar	12 Floor Drain	16 Incontinence Supplies	20 Shelf

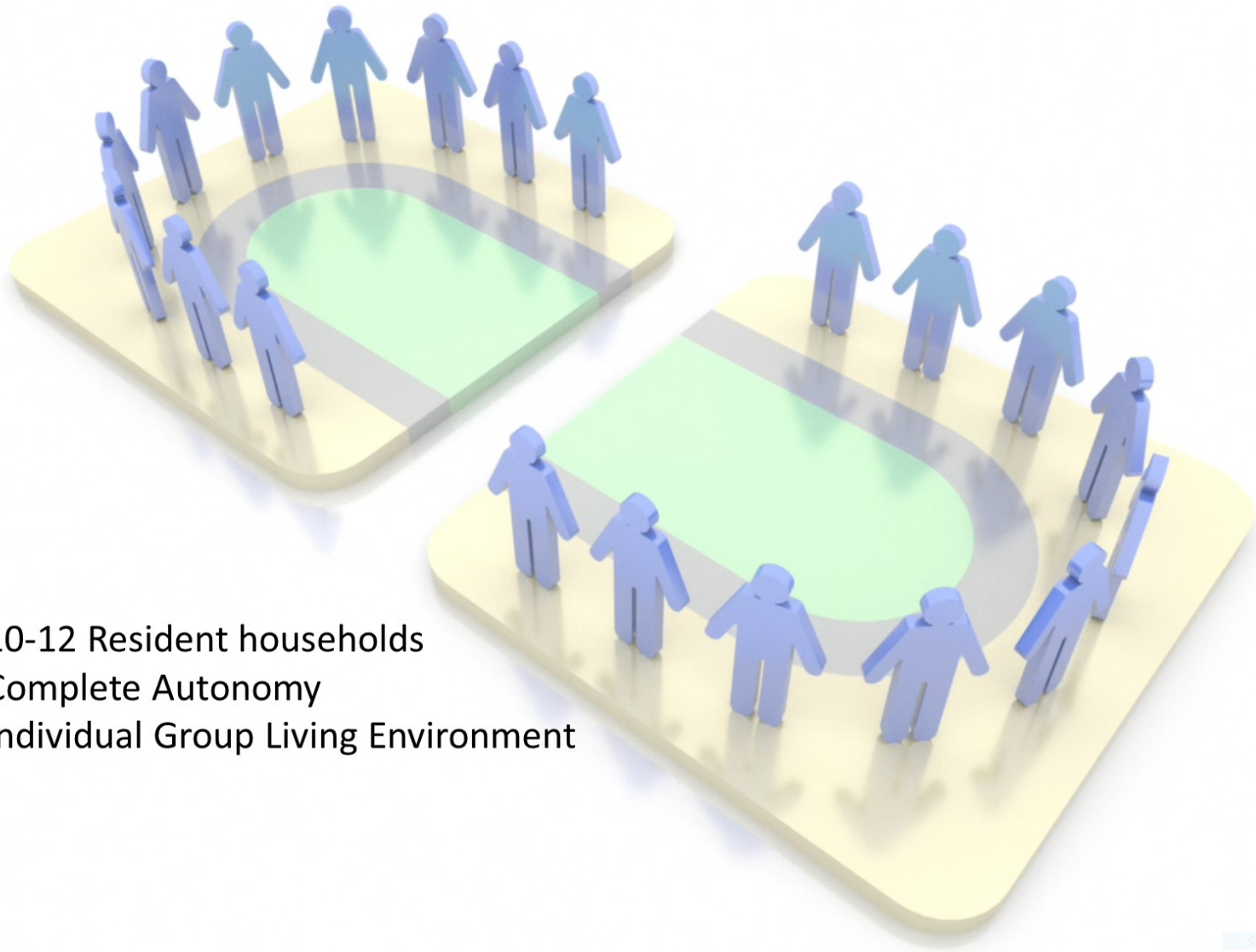
Number of Research Papers Represented in Guidelines



TRADITIONAL MODEL



SMALL HOUSE MODEL



10-12 Resident households
Complete Autonomy
Individual Group Living Environment

FLEXIBILITY IN DESIGN

ALS household

Higher Level Functioning Residents

SCU household



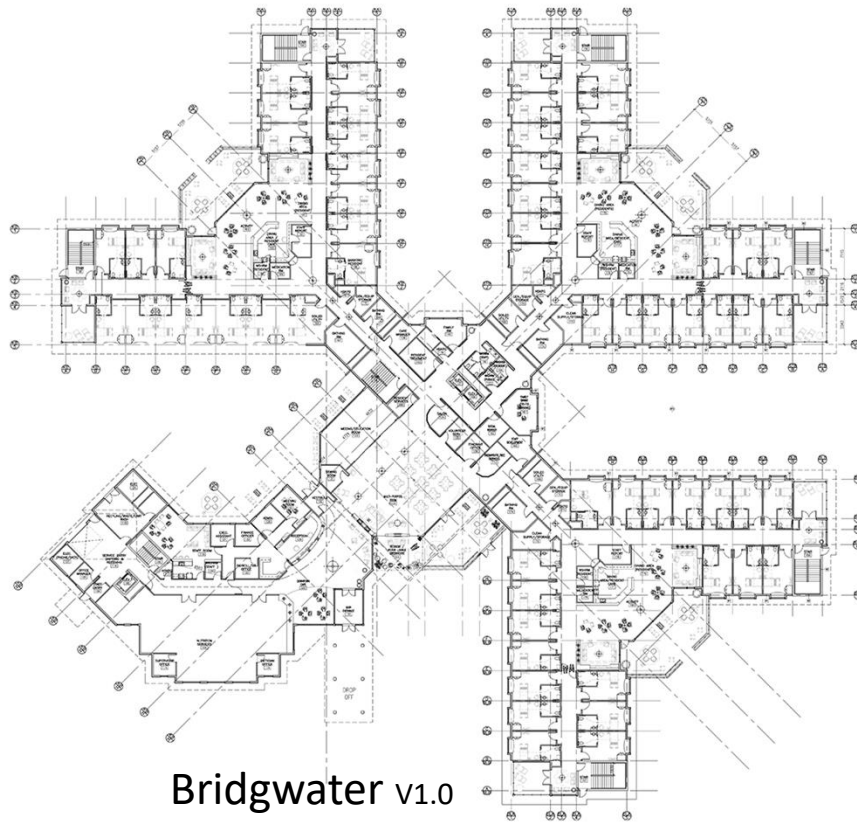
Behavior issues households

Small House Model Pilot Project

Bridgwater Personal Care Home



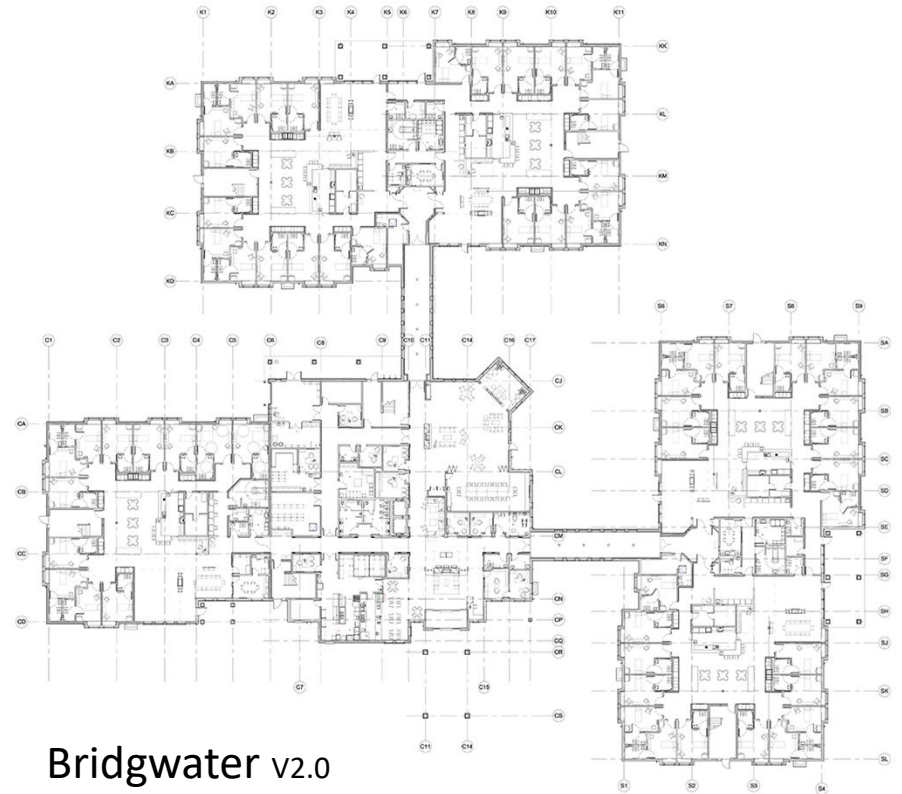
Traditional model vs Small House Model



Bridgwater v1.0

120 Residents

110,437 sf

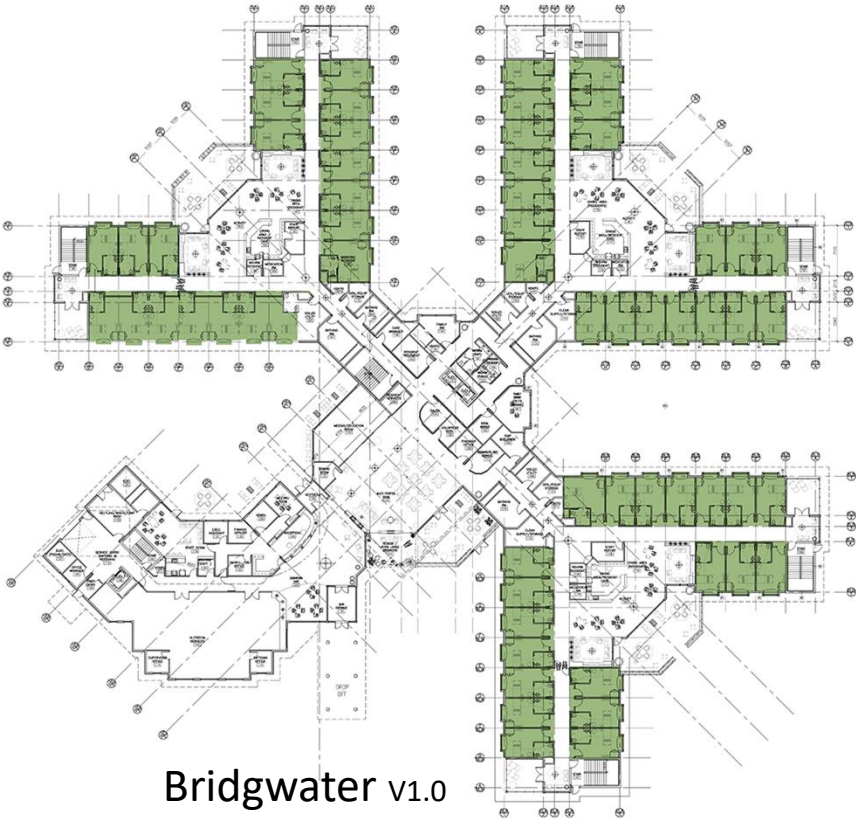


Bridgwater v2.0

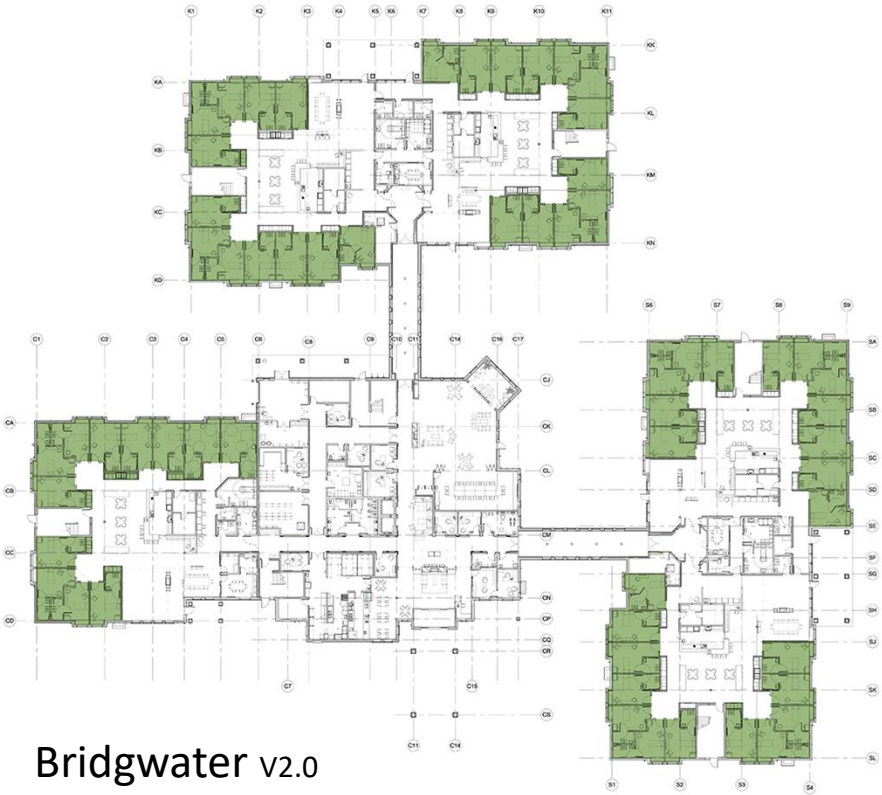
120 Residents

112,978 sf

Traditional model vs Small House Model

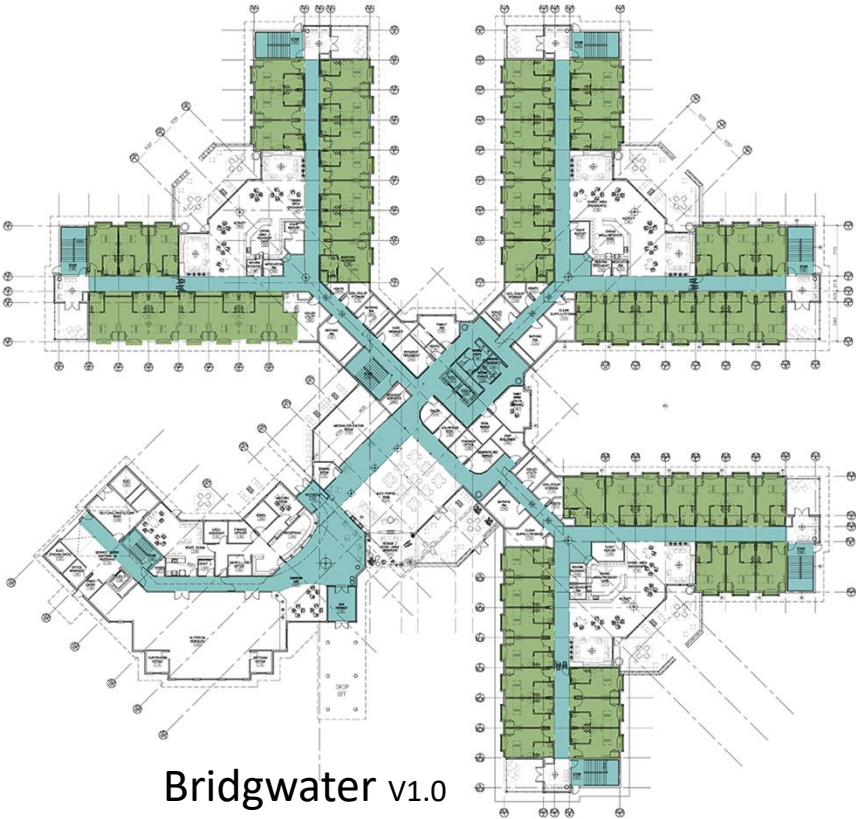


32%

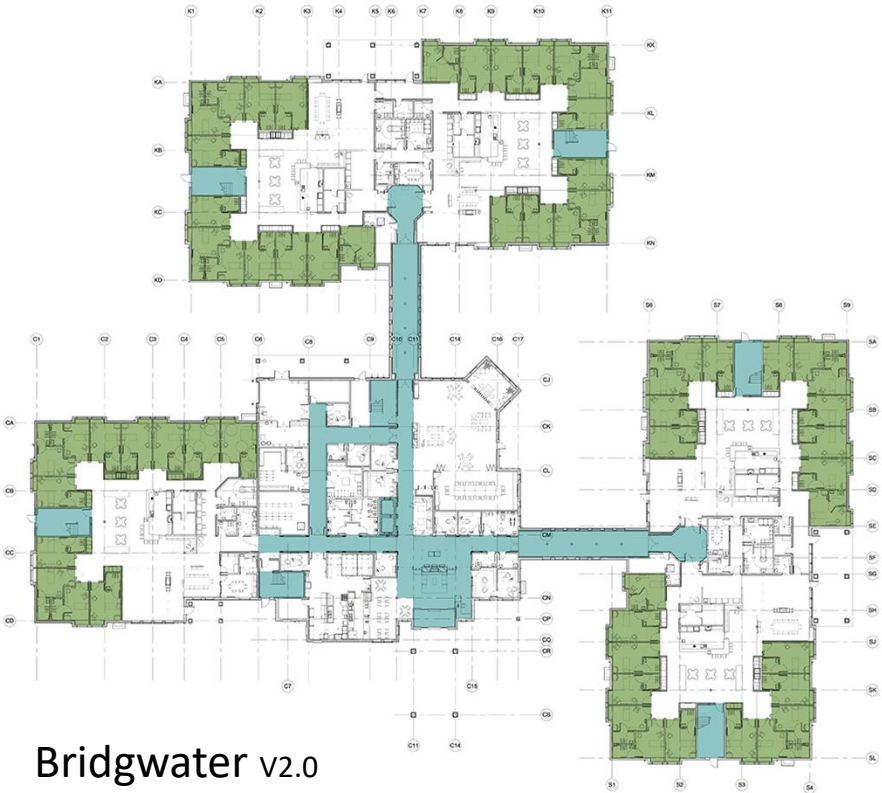


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Traditional model vs Small House Model

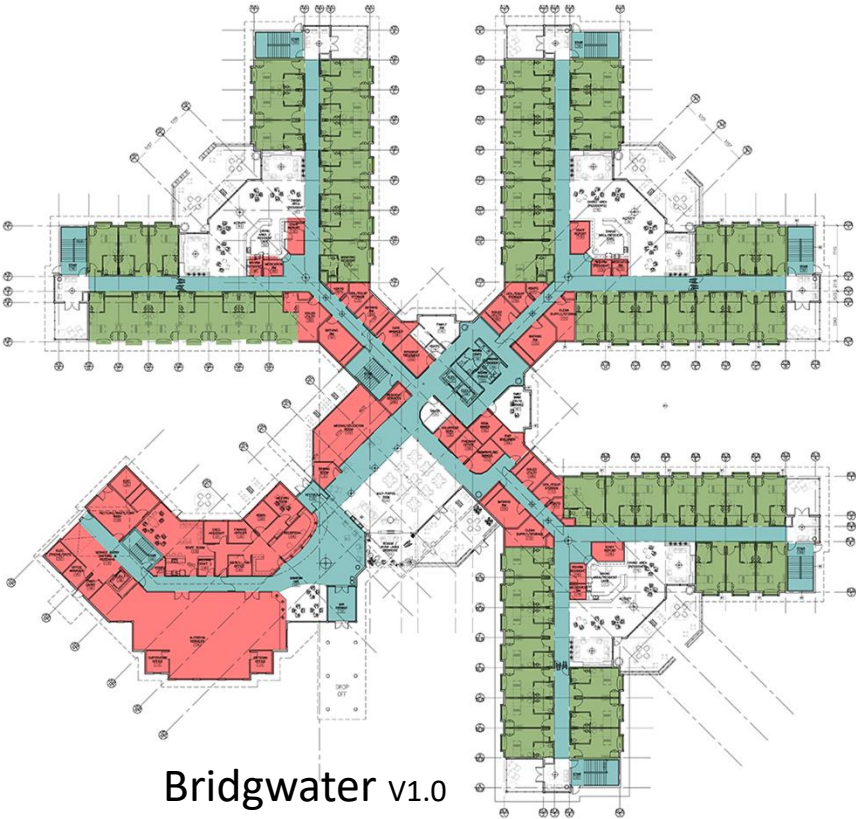


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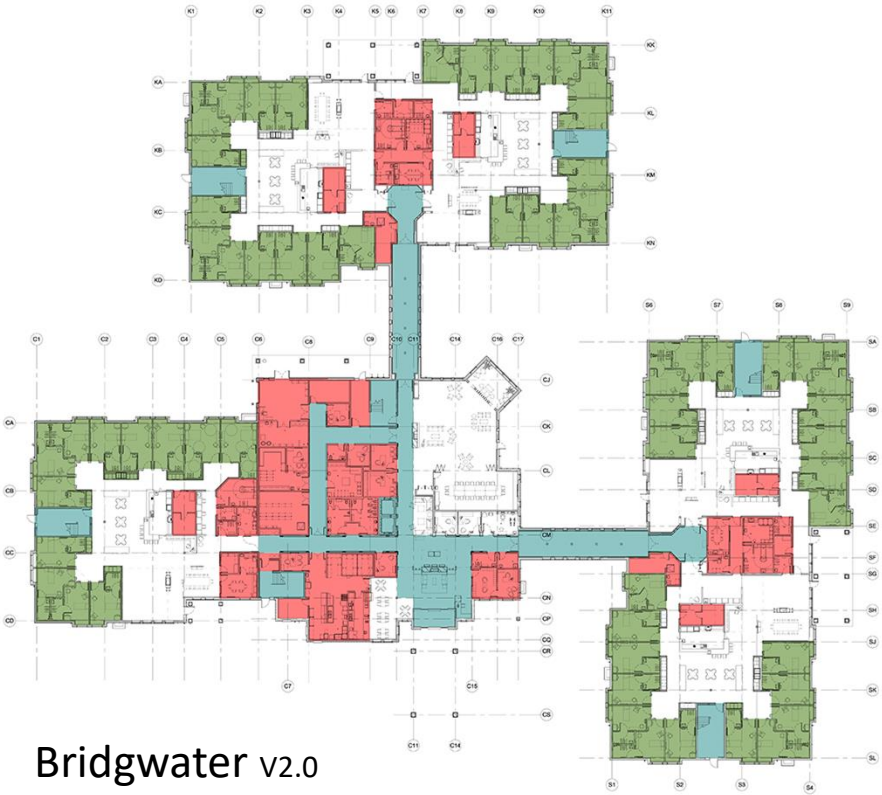


13%

Traditional model vs Small House Model

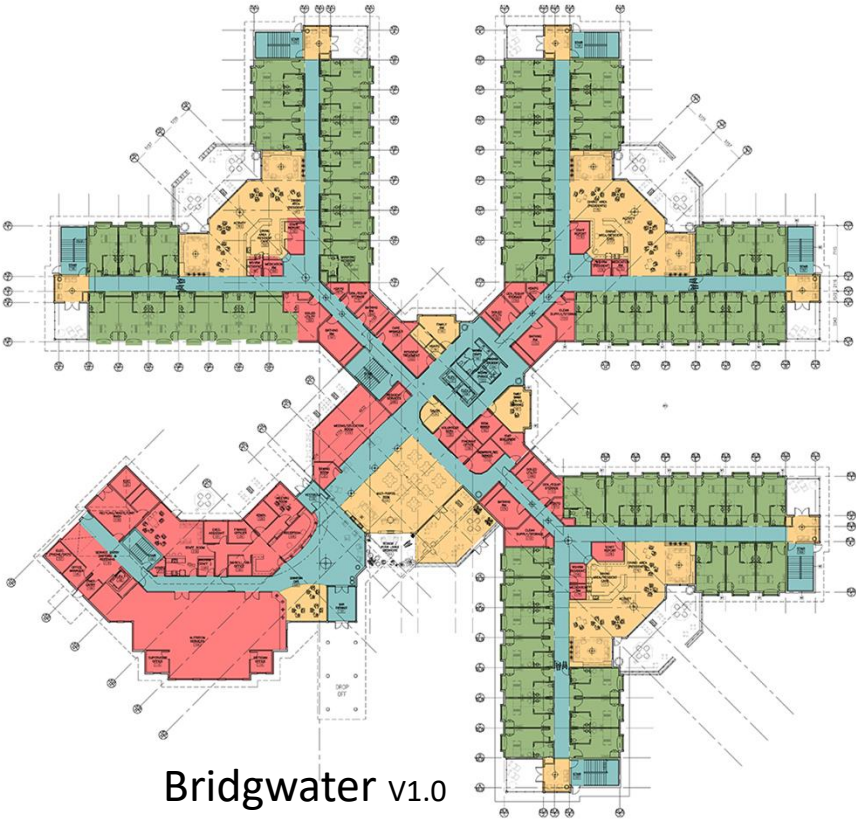


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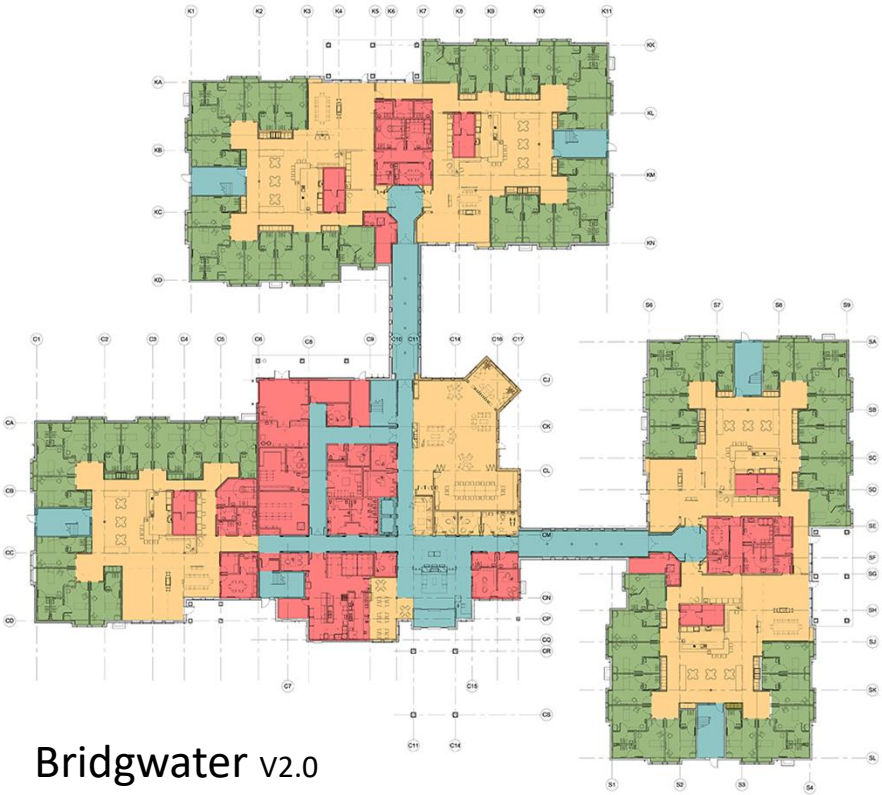
17%

Traditional model vs Small House Model



Bridgwater v1.0
Quality of Life: 21,500 sf

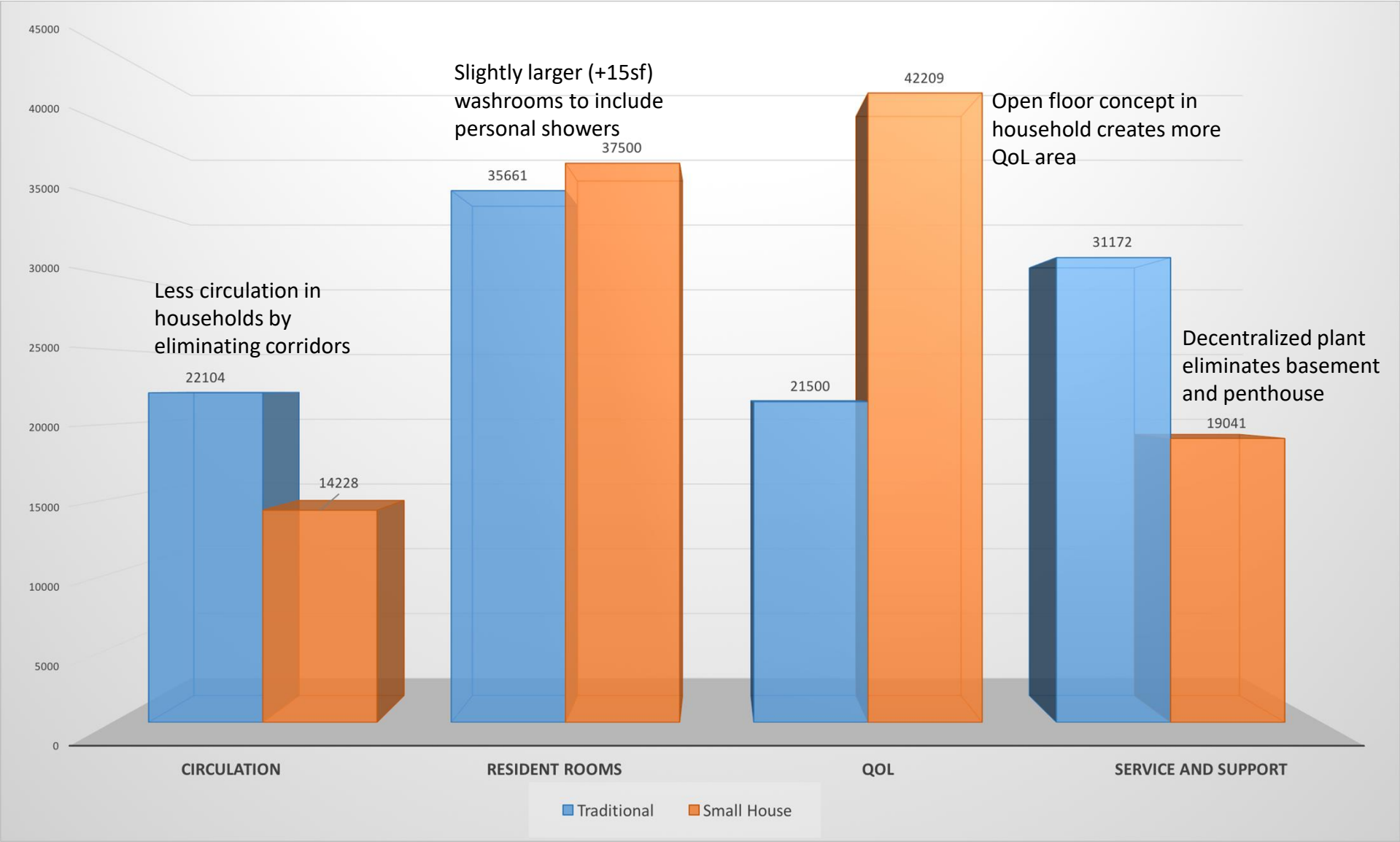
19%



Bridgwater v2.0
Quality of Life: 42,109 sf

37%

Traditional model vs Small House Model

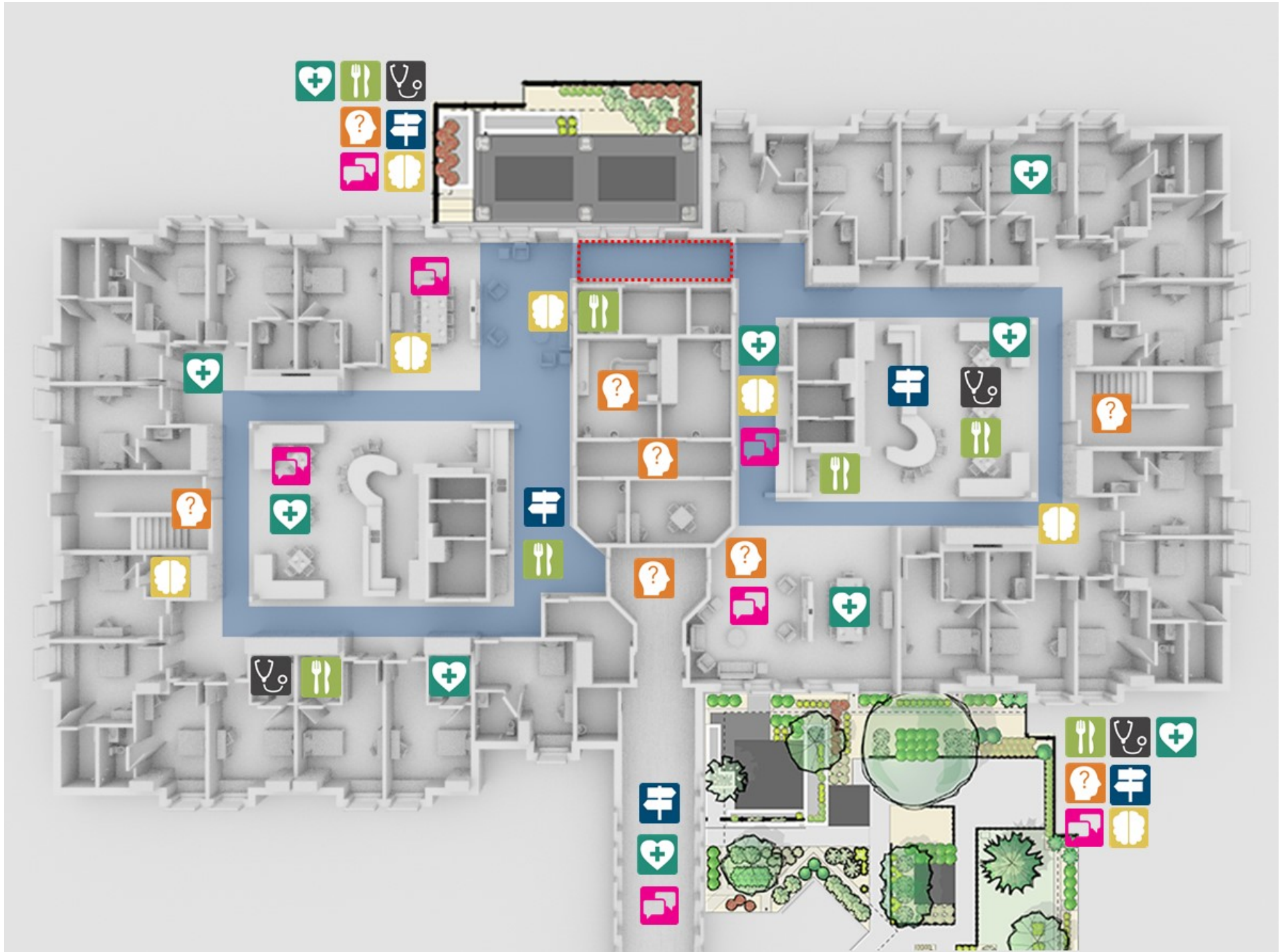


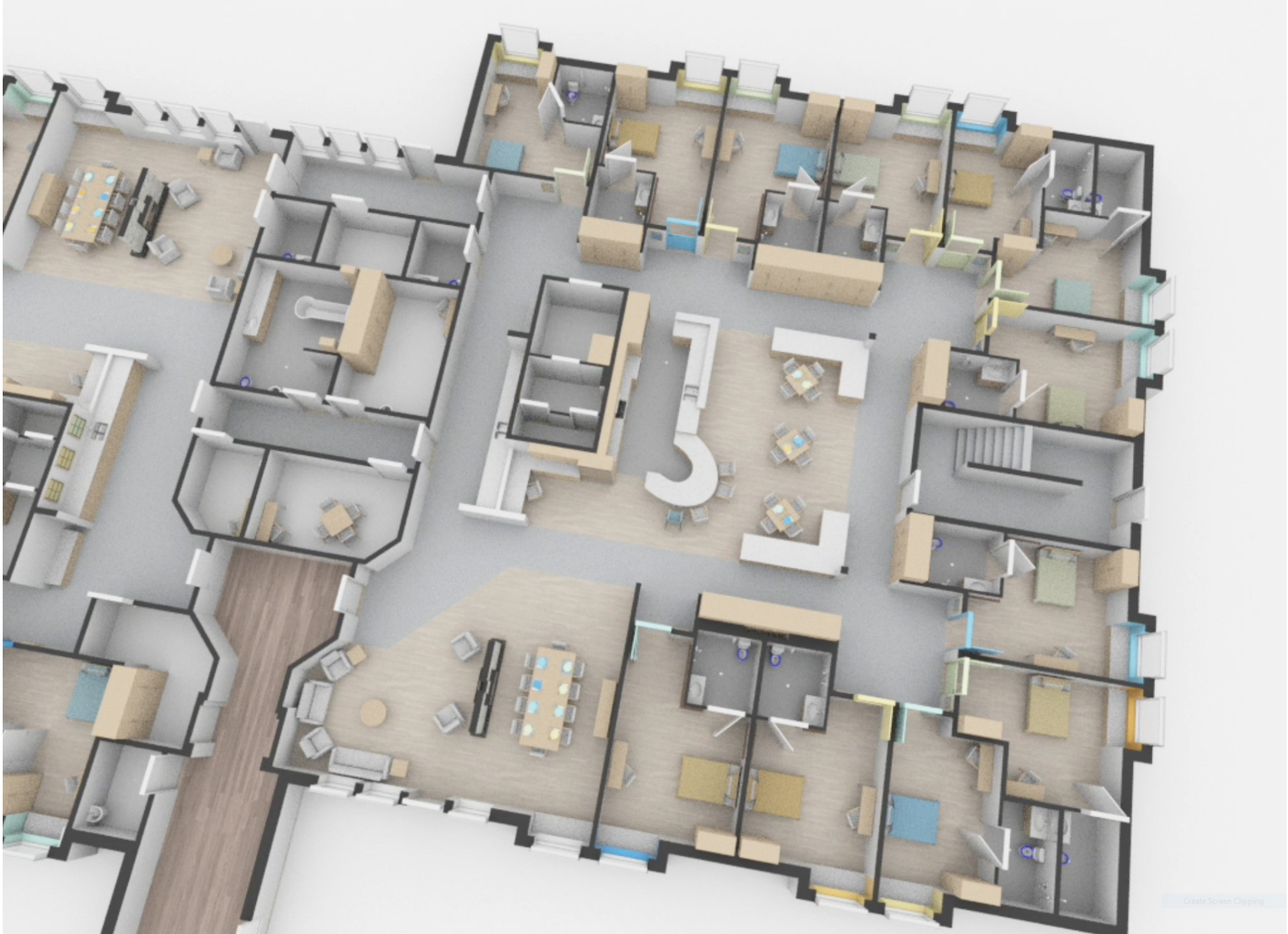
Households

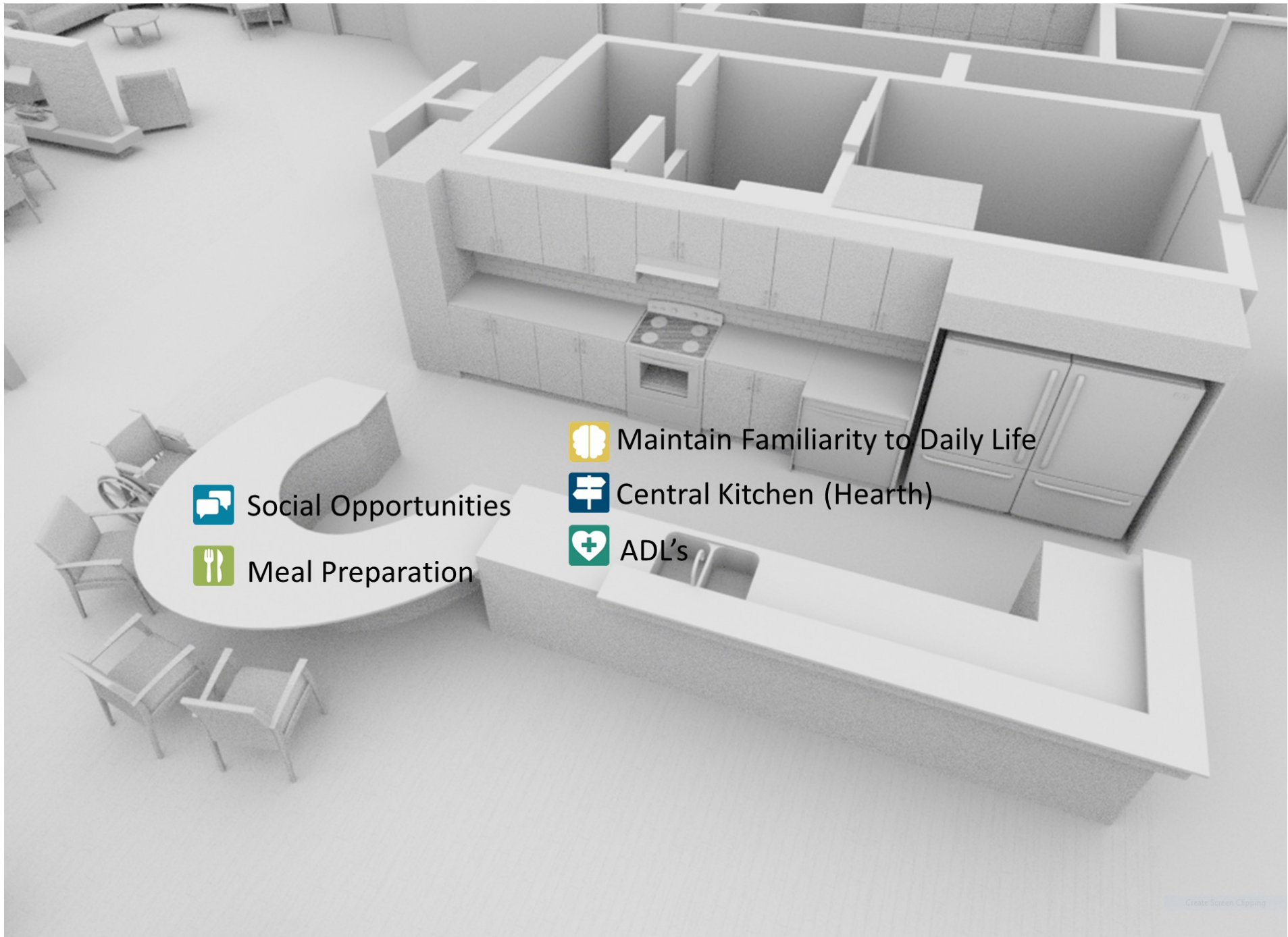


Neighborhoods









Social Opportunities



Meal Preparation



Maintain Familiarity to Daily Life



Central Kitchen (Hearth)



ADL's

Circadian light Therapy (1000lux)



Elopement Strategies



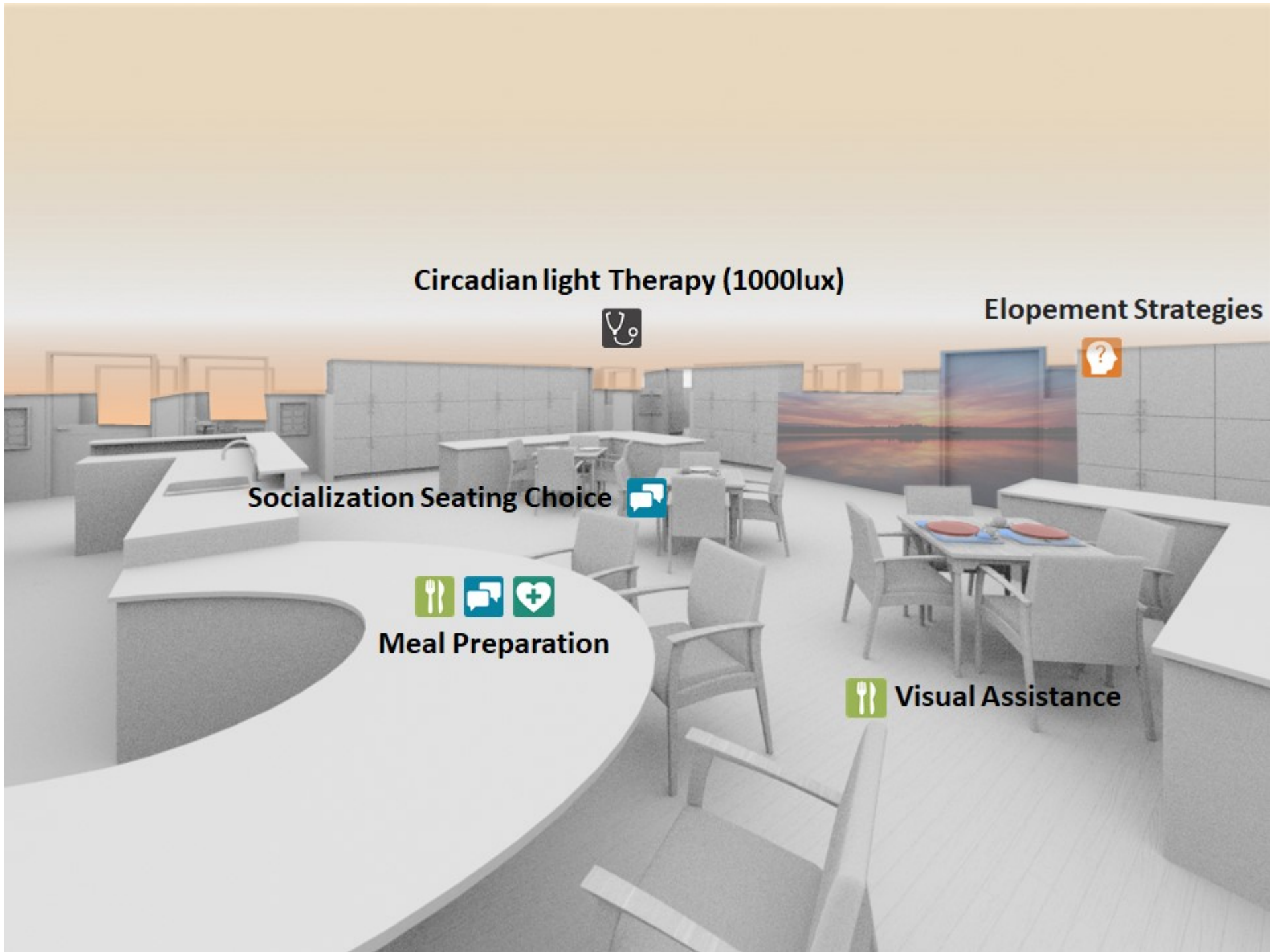
Socialization Seating Choice



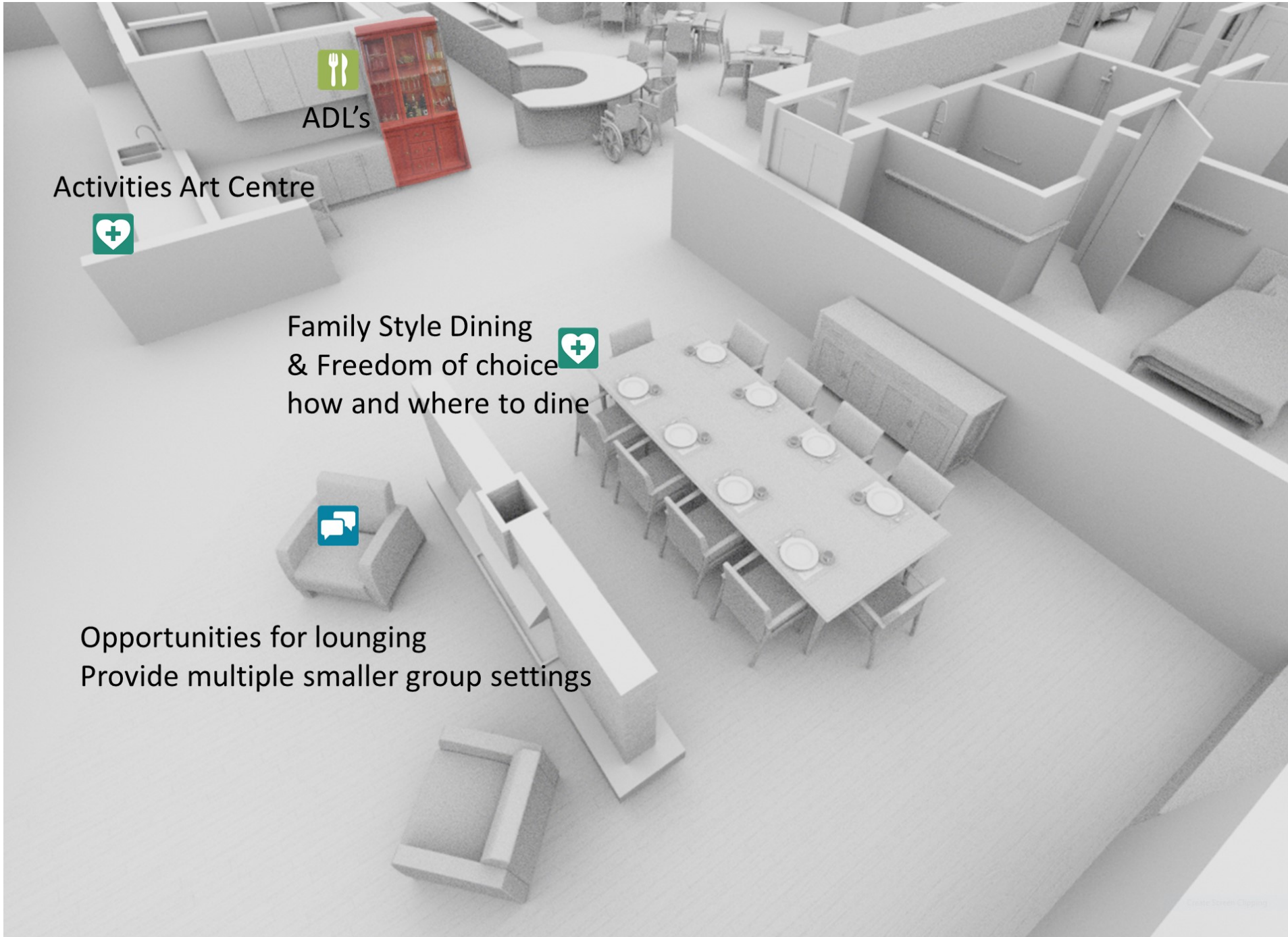
Meal Preparation



Visual Assistance







ADL's

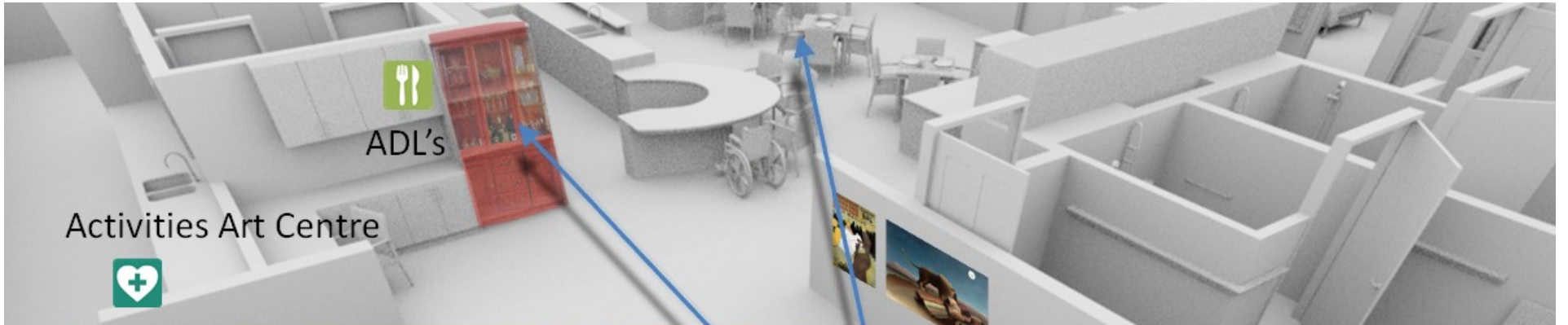
Activities Art Centre



Family Style Dining
& Freedom of choice
how and where to dine



Opportunities for lounging
Provide multiple smaller group settings



Activities Art Centre

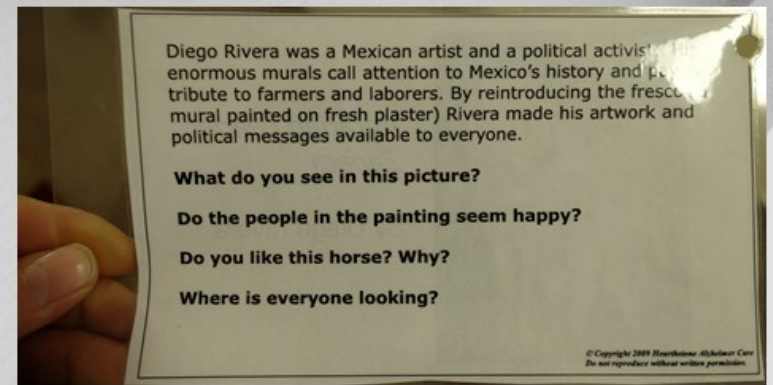
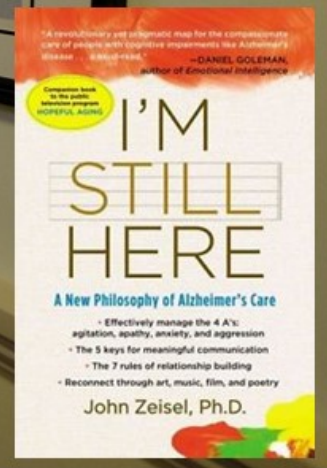


ADL's

Oral Intake



Art for Alzheimer's (Zeisel)



Changing plate and placemat color can reduce or increase contrast at the table setting.



Baseline p=0.00



Yellow Plates +75.3%



Red Plates +76.4%

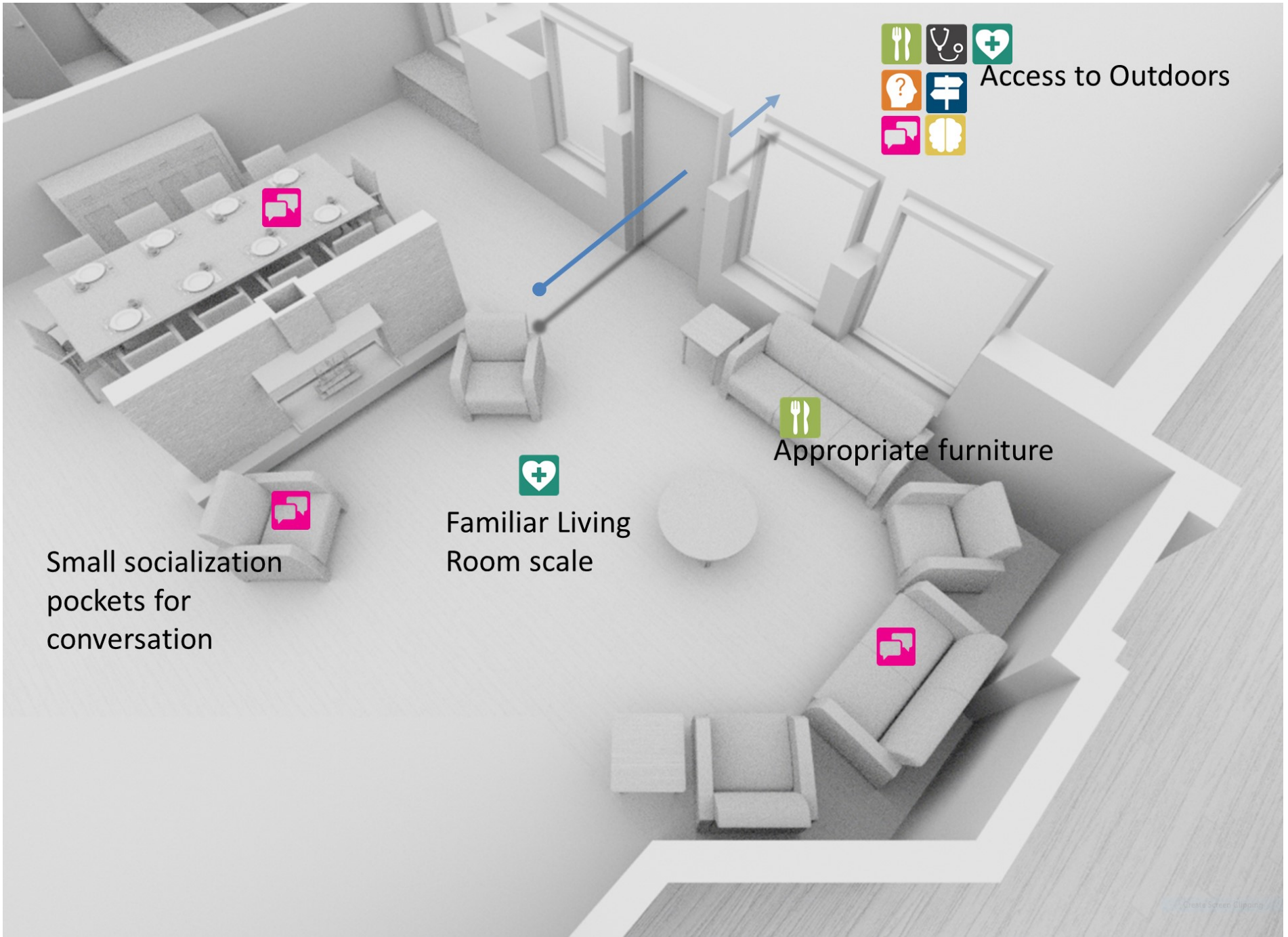
Increasing Oral Intake

Using the Environment to Support Communication and Foster Independence in People with

Dementia: Authors Jennifer A. Brush, MA, CCC/SLP, Hannah A. Fleder, [Margaret P. Calkins, PhD](#)



Innovative Designs *in* Environments
for an Aging Society



Access to Outdoors



Familiar Living Room scale



Appropriate furniture



Small socialization pockets for conversation



Spatial Hierarchy

Creates screen Clipping

“Elderly with Alzheimer's often see themselves as their younger self”

Nolan, Beth AD, R Mark Mathews, and Melanie Harrison. 2001. 96. *Am J Alzheimers Dis Other Demen* 16 (4): 251-254



Memory Boxes

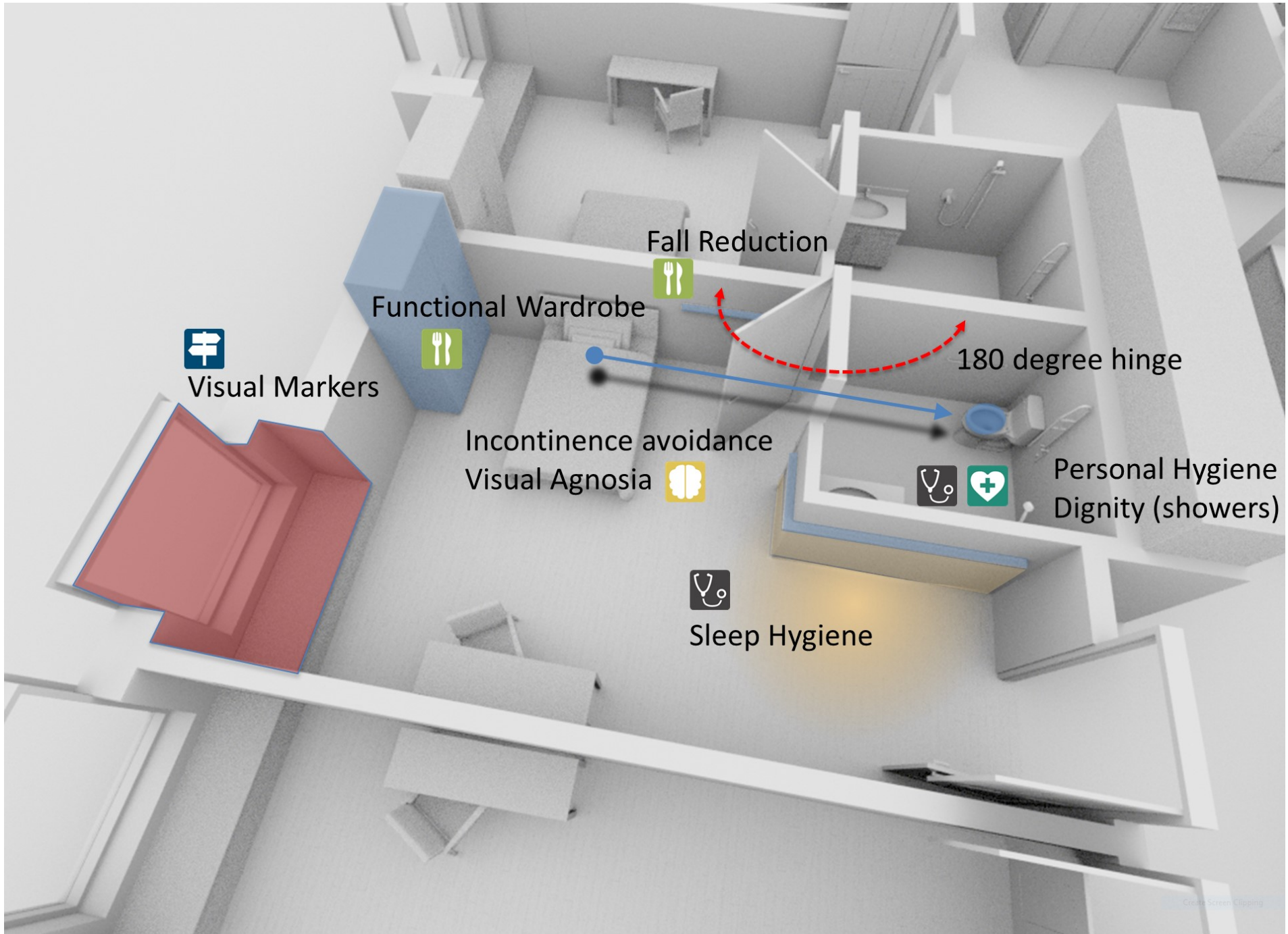


Controlling wandering behavior

RESIDENTIAL ENVIRONMENT



Spatial Hierarchy



Visual Markers



Functional Wardrobe



Fall Reduction



Incontinence avoidance
Visual Agnosia



Sleep Hygiene



Personal Hygiene
Dignity (showers)

180 degree hinge

The Physical Environments is not the only piece of the puzzle.



PEOPLE

Staff have to buy into
Culture Change
Willingness to change
Delivery Model



PLACE

Environment designed
to support Culture
Change (B3)



PROCESS

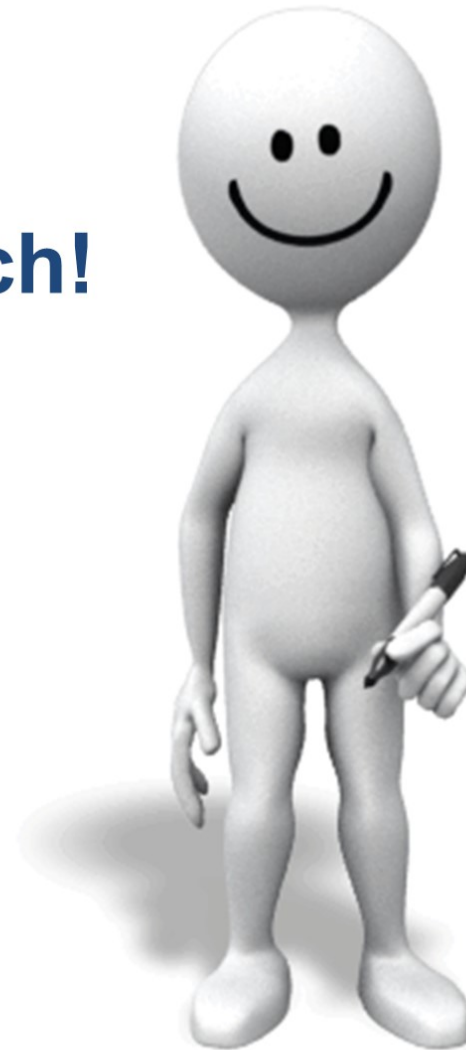
Barriers to Change
Building Codes
Staffing Regulation
Old thinking (B2)

Successful results come only when all stakeholders share the same vision.



Thank You Very Much!

**Happy to answer
any questions.**



PCH DESIGN GUIDELINES

Organizations referencing the guidelines



Presented at
Environment for Aging Conference 2017



Prepared with the assistance with
CHD research department



WithSeniorsinMind.org



Clemson University
Faculty of Architecture



University of Maryland Baltimore County
Faculty of Architecture



FACILITY GUIDELINES INSTITUTE

The Keystone to health care planning, design, and construction.



Alberta Health



Washington State Department of Health

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