

RESEARCH - Questions

Designing proper spaces for long-term care is becoming more necessary with our aging population (Kasian, 2015). Along with long term care is memory care and spaces for people with dementia, which can include many more key design elements on top of ones already necessary for general long-term care. Designing for memory care has its challenges but it is possible to overcome the challenges and design a space that fully embraces the needs of people with dementia. The following research question was established to help guide the review of existing literature and the design process for the McCormick Home renovation:

How can a long-term care residence be designed to help enrich the lives of people living with dementia?

Some of the key design variables that need to be addressed include safety, inclusivity, community, and stimulation. These key pillars are important to focus on during the research phase of a design and must continue to play a role for the remainder of the space being occupied.

SAFETY

What could be done to improve the buildings design that will result in the safety of the residents, staff, and visitors while also enriching the lives of residents?

INCLUSIVITY

How can we reduce the institutional restrictions and promote inclusivity while enriching the lives of people with dementia?

COMMUNITY

How do we involve community in memory care facilities in order to help enrich the lives of people with dementia?

STIMULATION

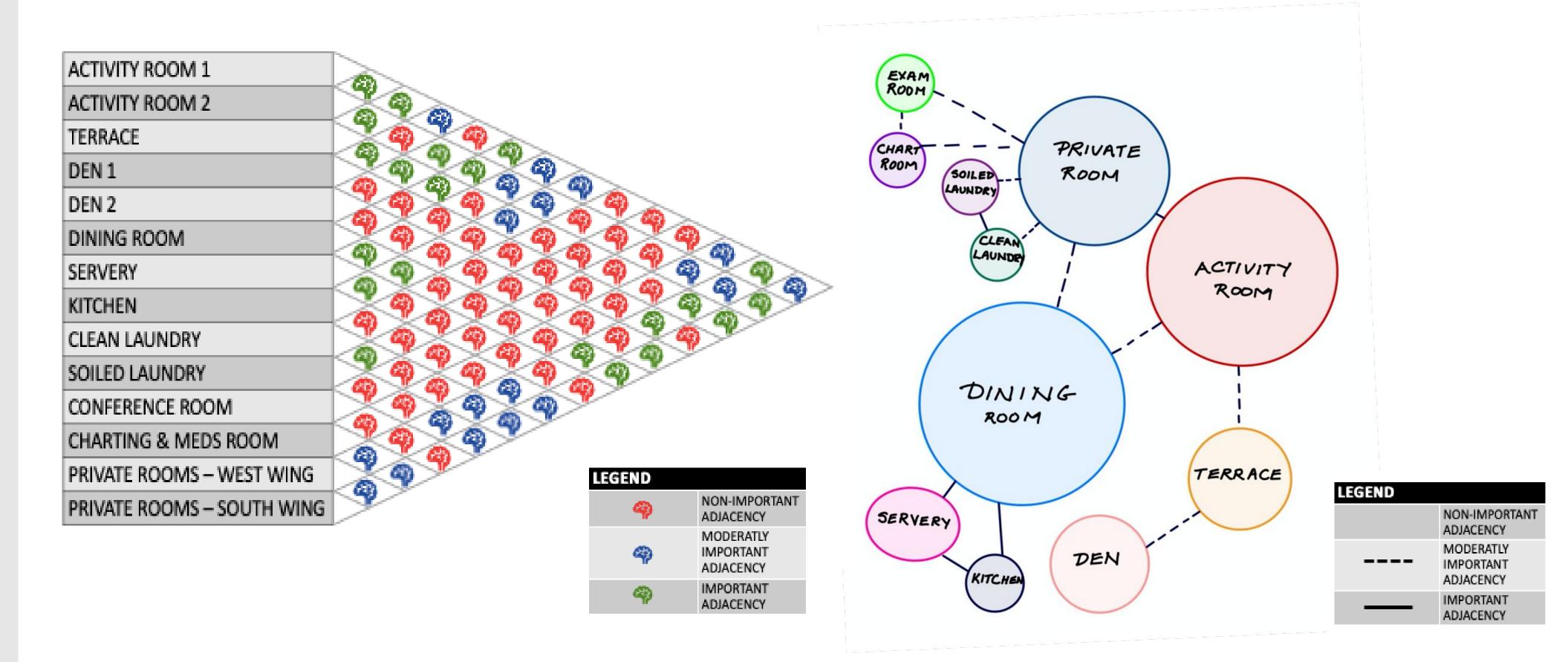
How can sensory stimulation be carefully addressed to help enrich the lives of people with dementia without the risk of overstimulation?



Design Concept

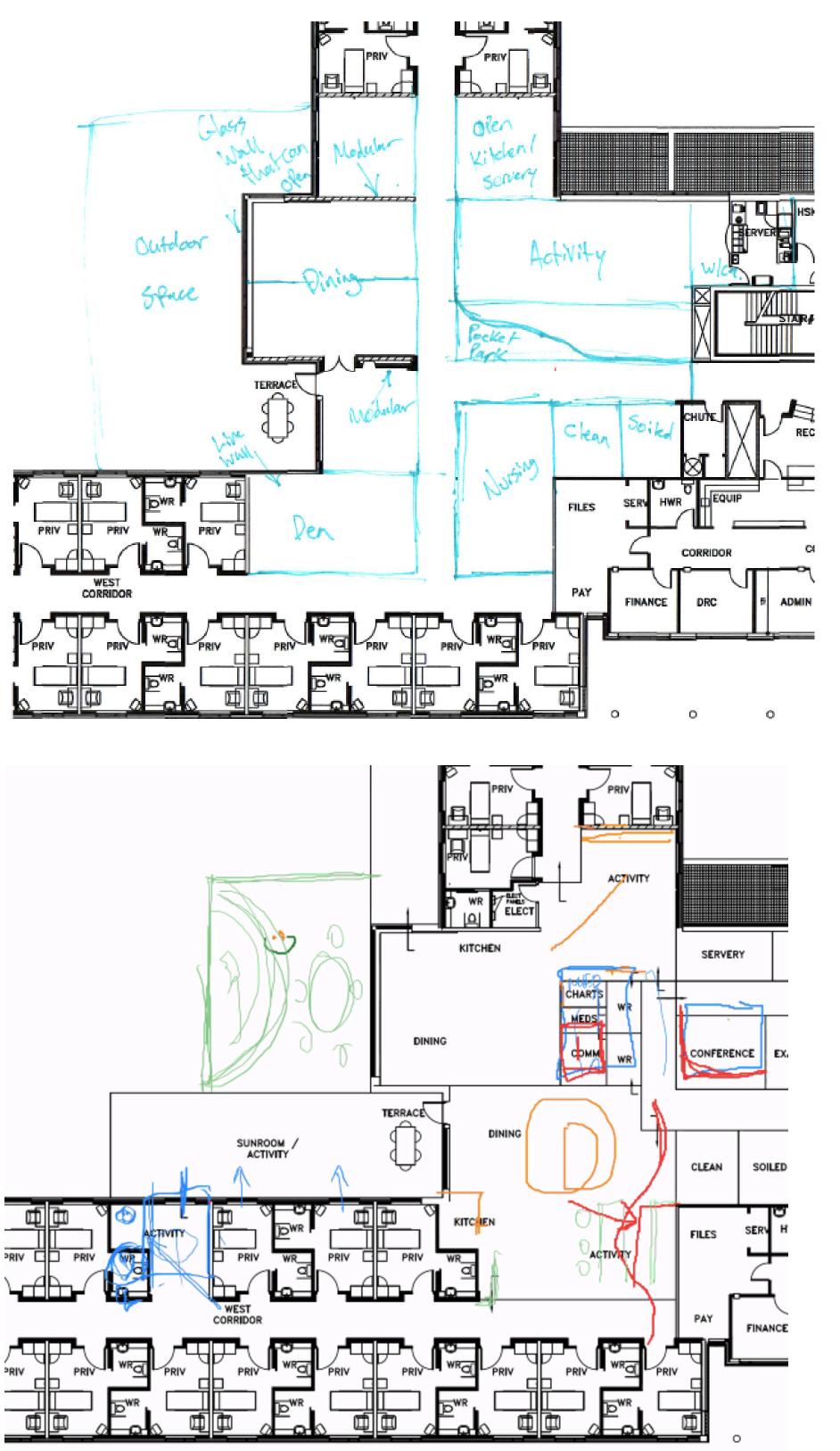
As designers, it is important to understand how and why the we can create most desirable and necessary spaces for the people that within them interact the most. Designing a memory care center for residents with dementia should prioritize safety, cognitive-stimulating activities that seamlessly ties together a residence, that ensures residents home-like design comforted, supported and acknowledged during their stay. The key is to design a space that takes all factors and users into consideration. The goal is to design a safe, human centric, space that encompasses a lifestyle change that is subtle for residents. This can be done by implementing design principals that focus on wayfinding, memory rehabilitation or memory therapy, minimal stimulation or overwhelming spaces, interactive features, community spaces to engage with others, and spaces to create a sense of purpose for them. Based on research and precedent studies, it isn't only achievable to design a space that incorporates all these aspects but is fully necessary to do so to achieve a successful memory care facility design.

Design Process - Ideation

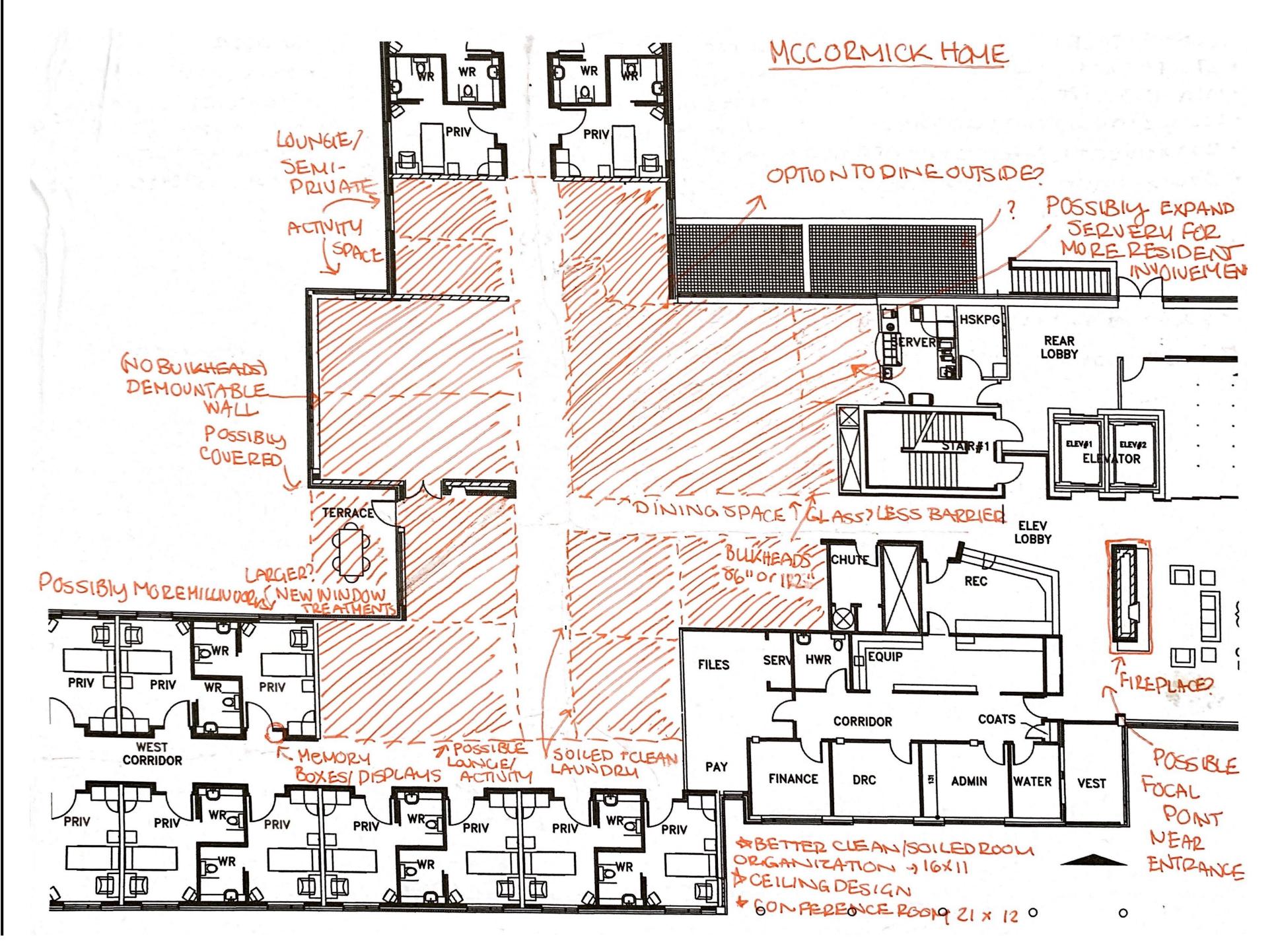


The first steps within the design process for McCormick Home's Memory Lane Redesign, was establishing a matrix and bubble diagram to visually organize how the space should be designed in the most effective way possible. The matrix diagram concluded that the activity rooms should be in close proximity to dining, with the terrace and dining also being an important adjacency for residents to have the option to dine outside in small numbers. Other considerations such as soiled and clean laundry were also noted as important adjacencies where they can be seen pictured side by side in the bubble diagram, that visually displays the proportional size differences in each denoted space.

Design Process - Ideation

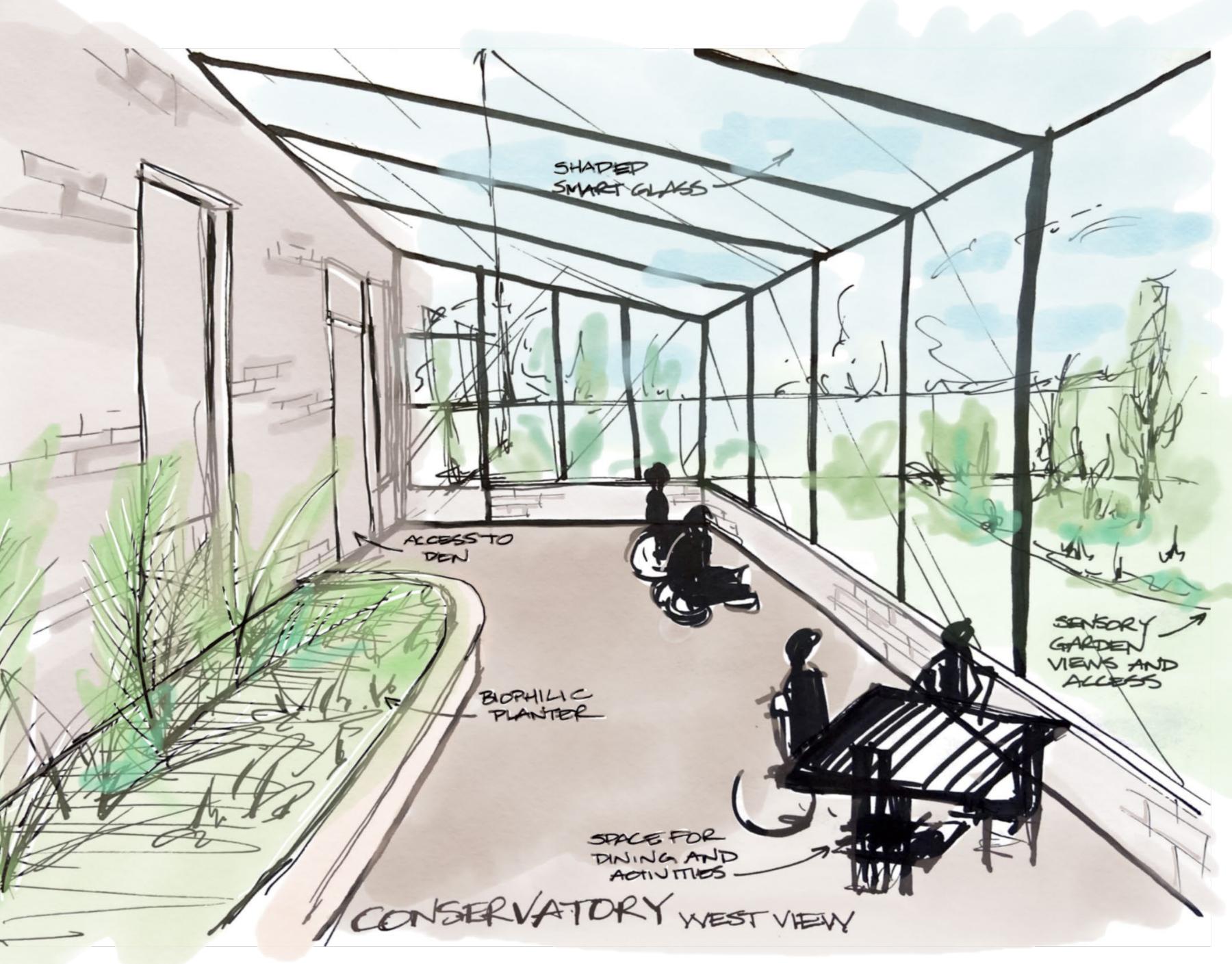


After completion of the matrix and bubble diagram, we as a team completed individual analyses where we took the research, precedent studies, and our previous knowledge of the building to redesign both the macro and micro areas.



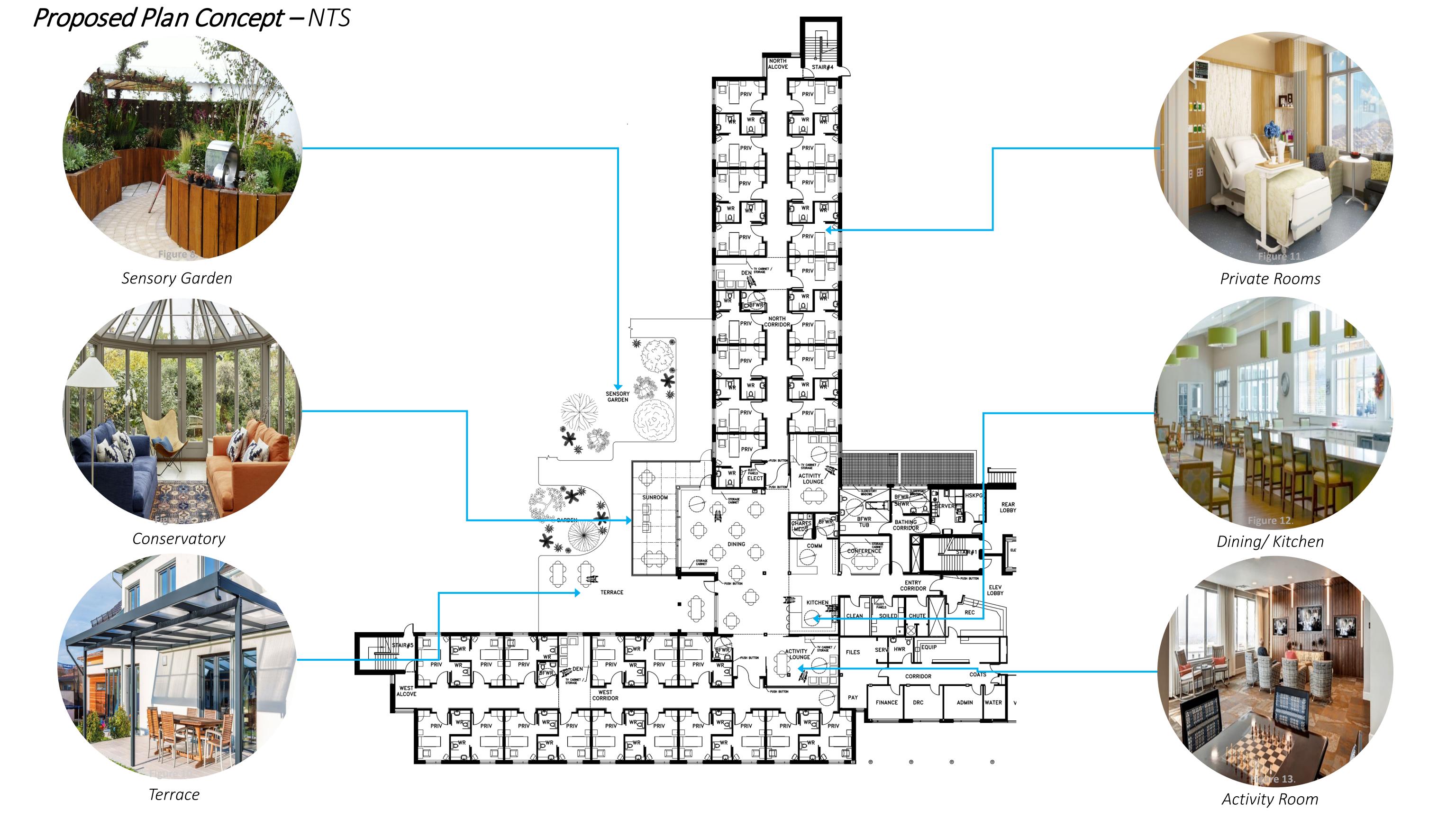


Conservatory Inspirations and 3D Ideation

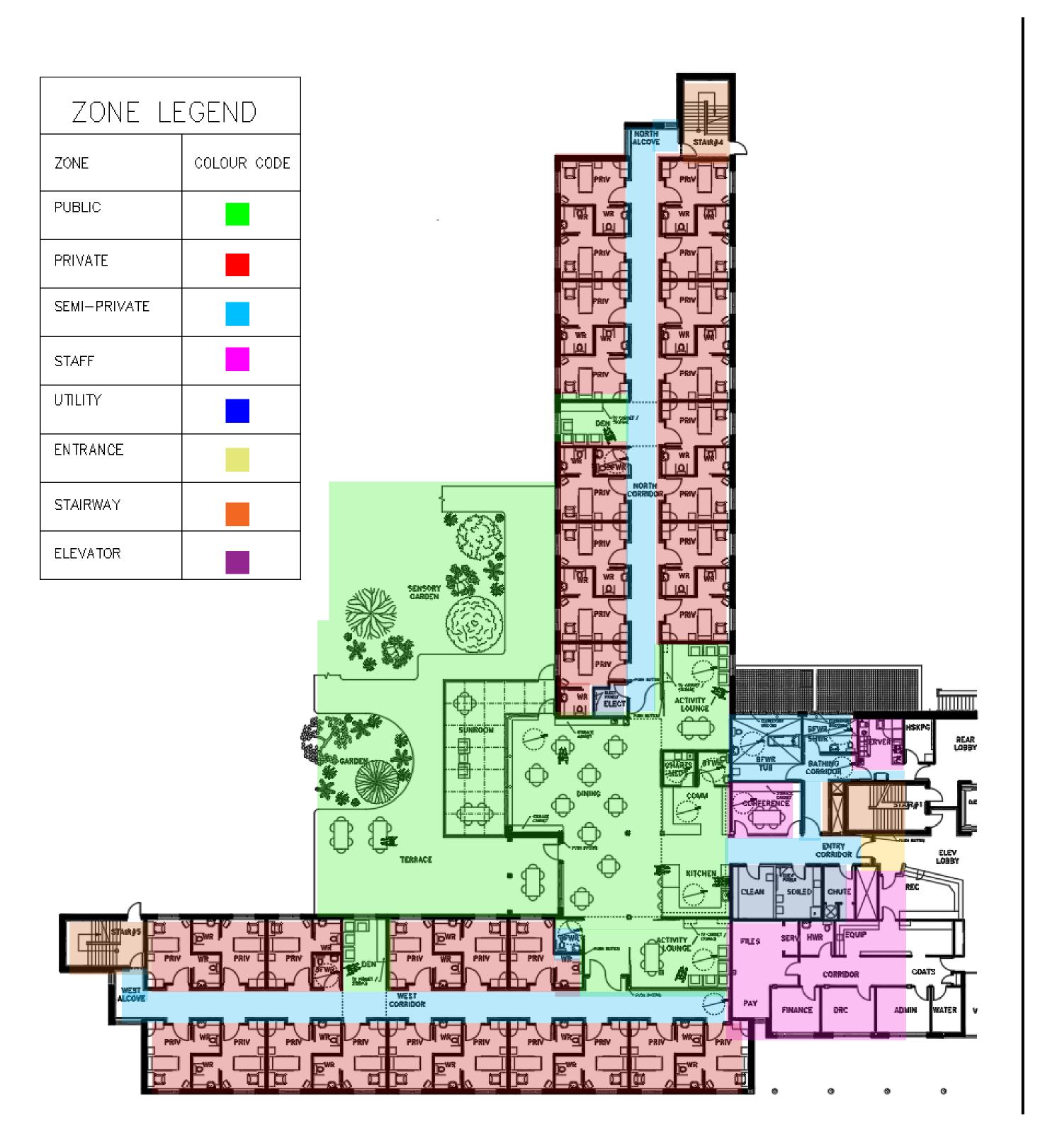




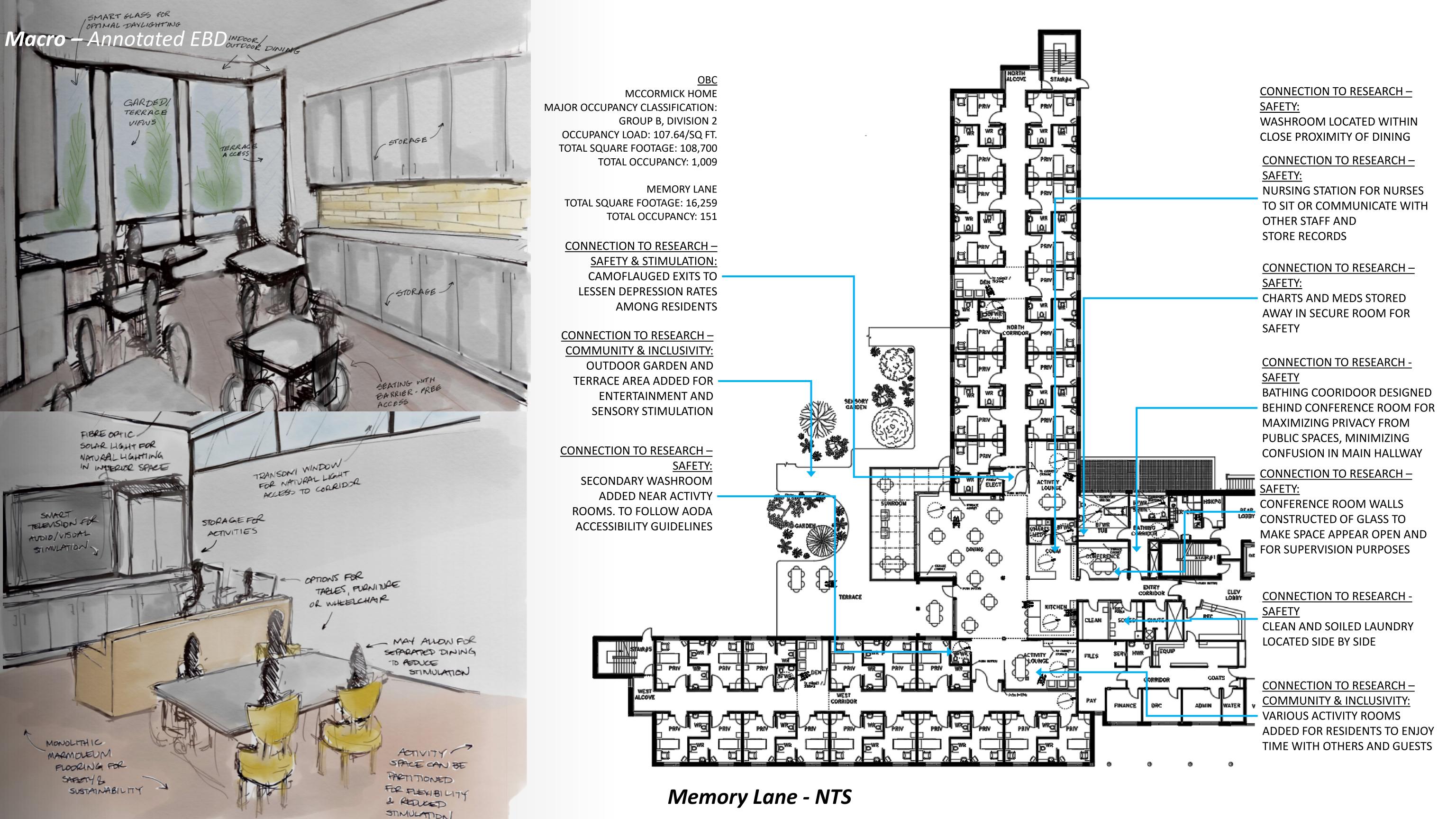




Diagrams – Zoning and Spaghetti – NTS







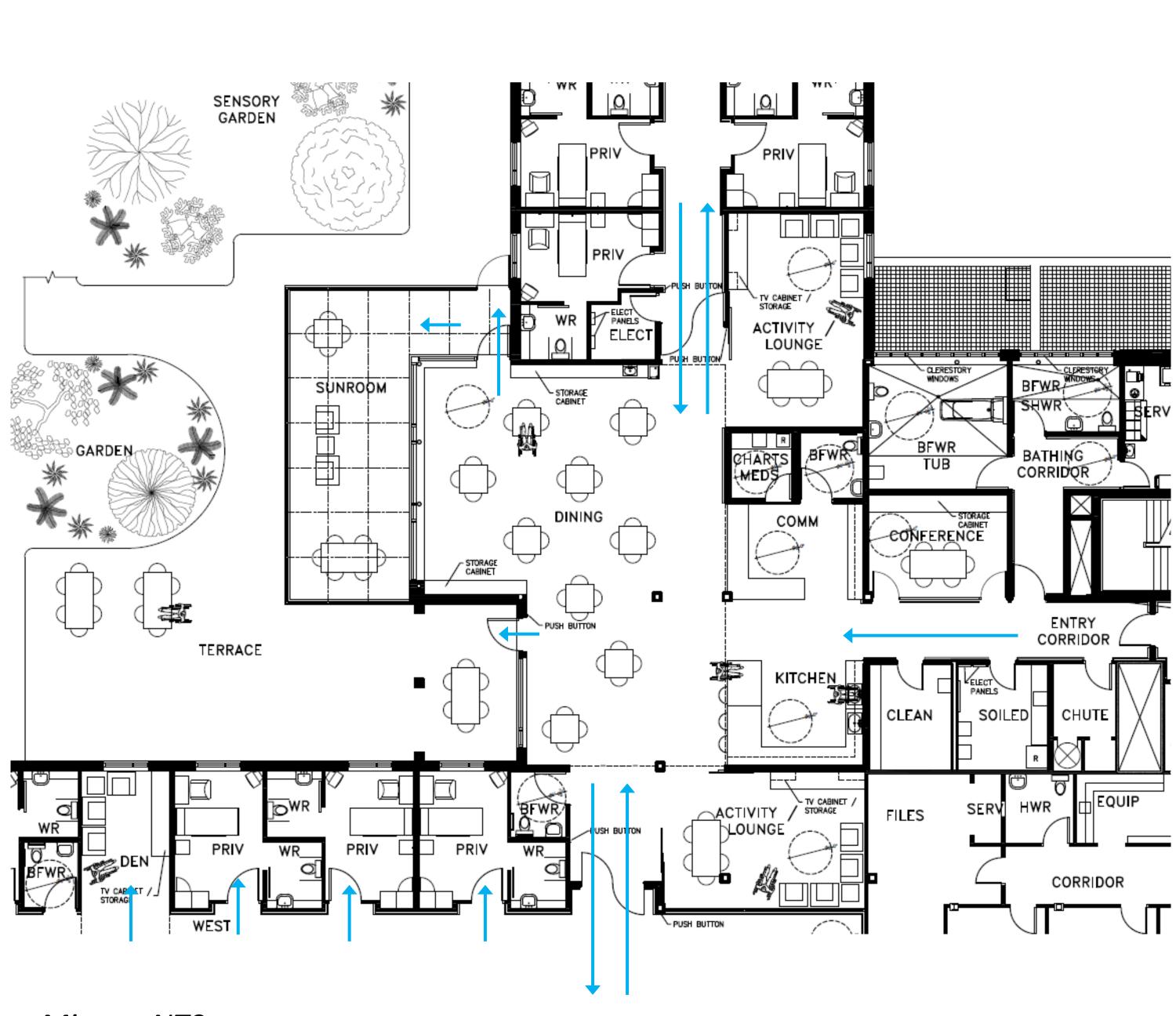
Plans – McCormick Home Memory Lane Renovation Proposal SENSORY GARDEN KITCHEN ACTIVITY / FILE WEST CORRIDOR

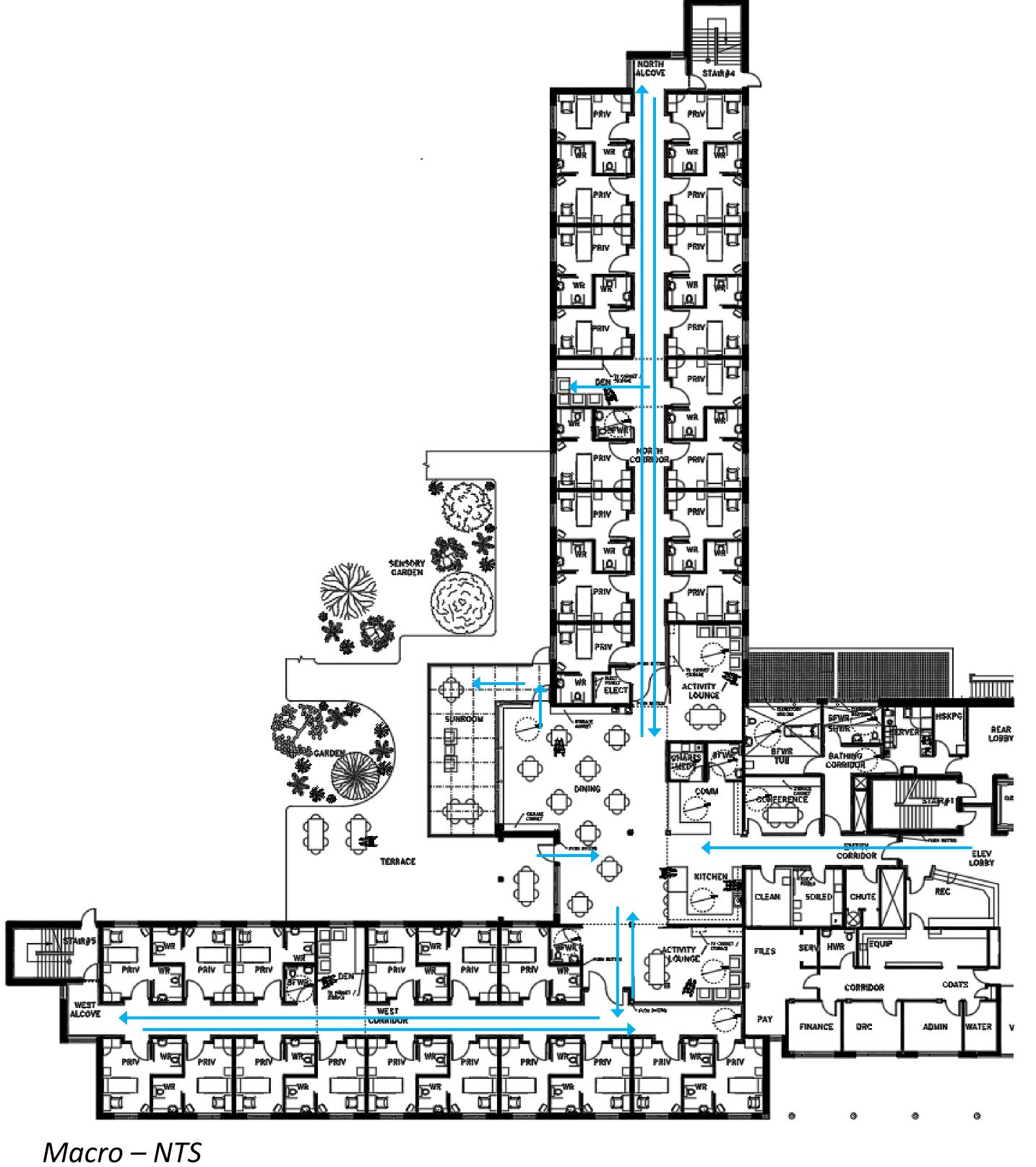
Micro Plan – Public Spaces – NTS

Macro Plan – Memory Lane with 2 Sets of 16 Private Rooms – NTS

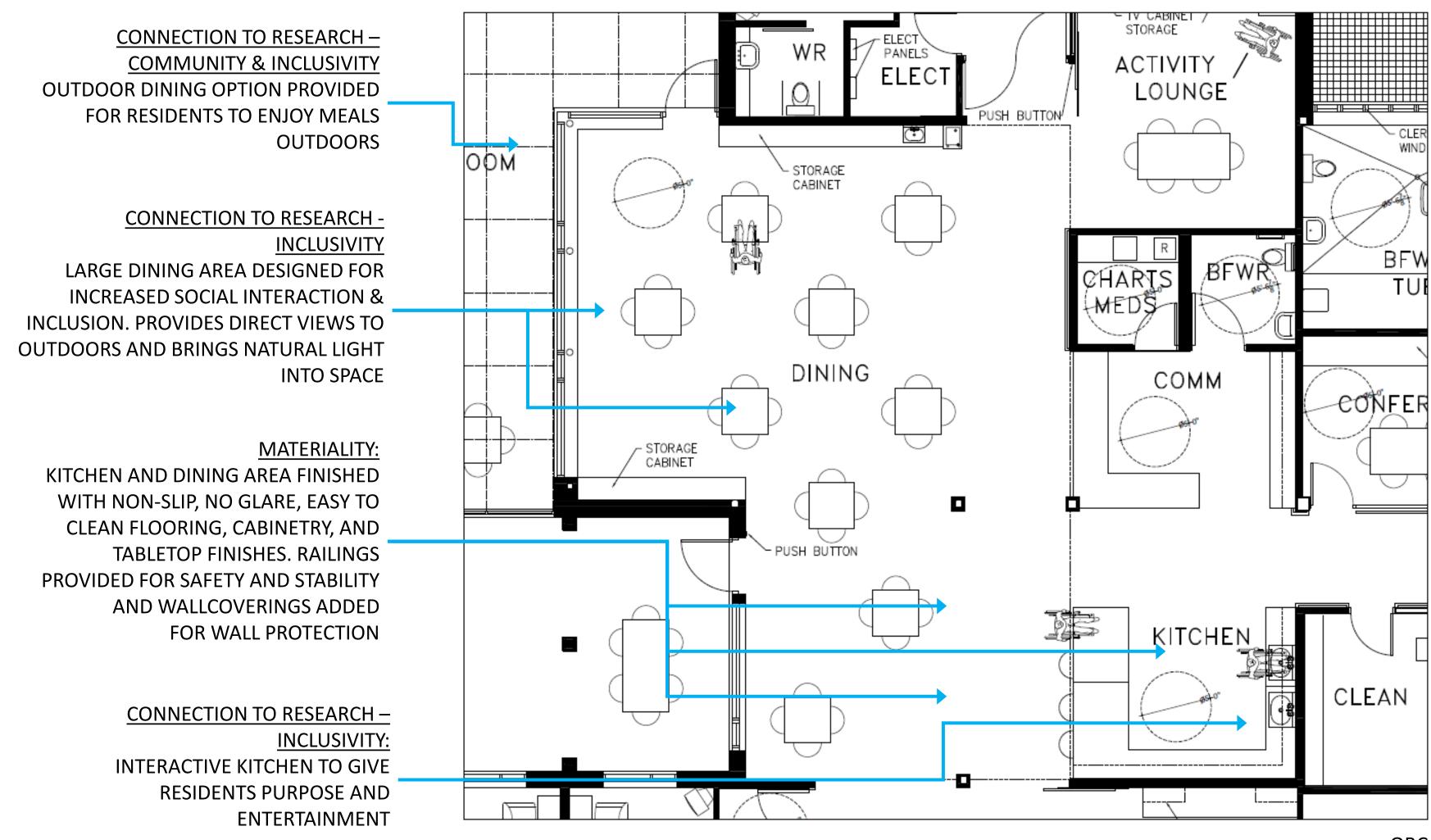
Diagrams – Wayfinding / Traffic flow

These diagrams give a visual representation of the paths and wayfinding for residents living in the ca residents in the direction of which the arrow shows. This is to help split up the residential wings and c the space.





Micro – NTS



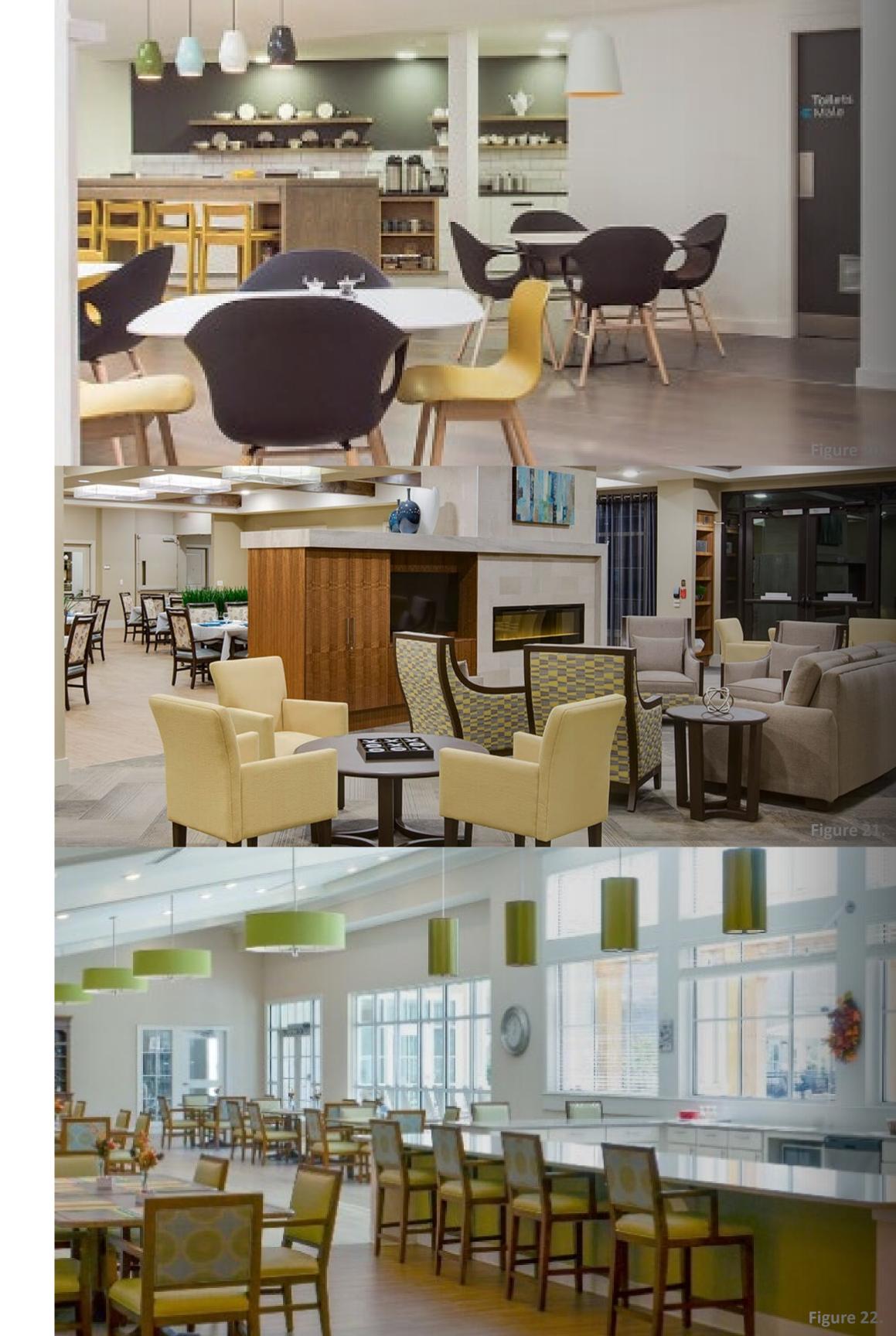
Dining Area with Kitchen - NTS

OBC 3.8.2.3.B

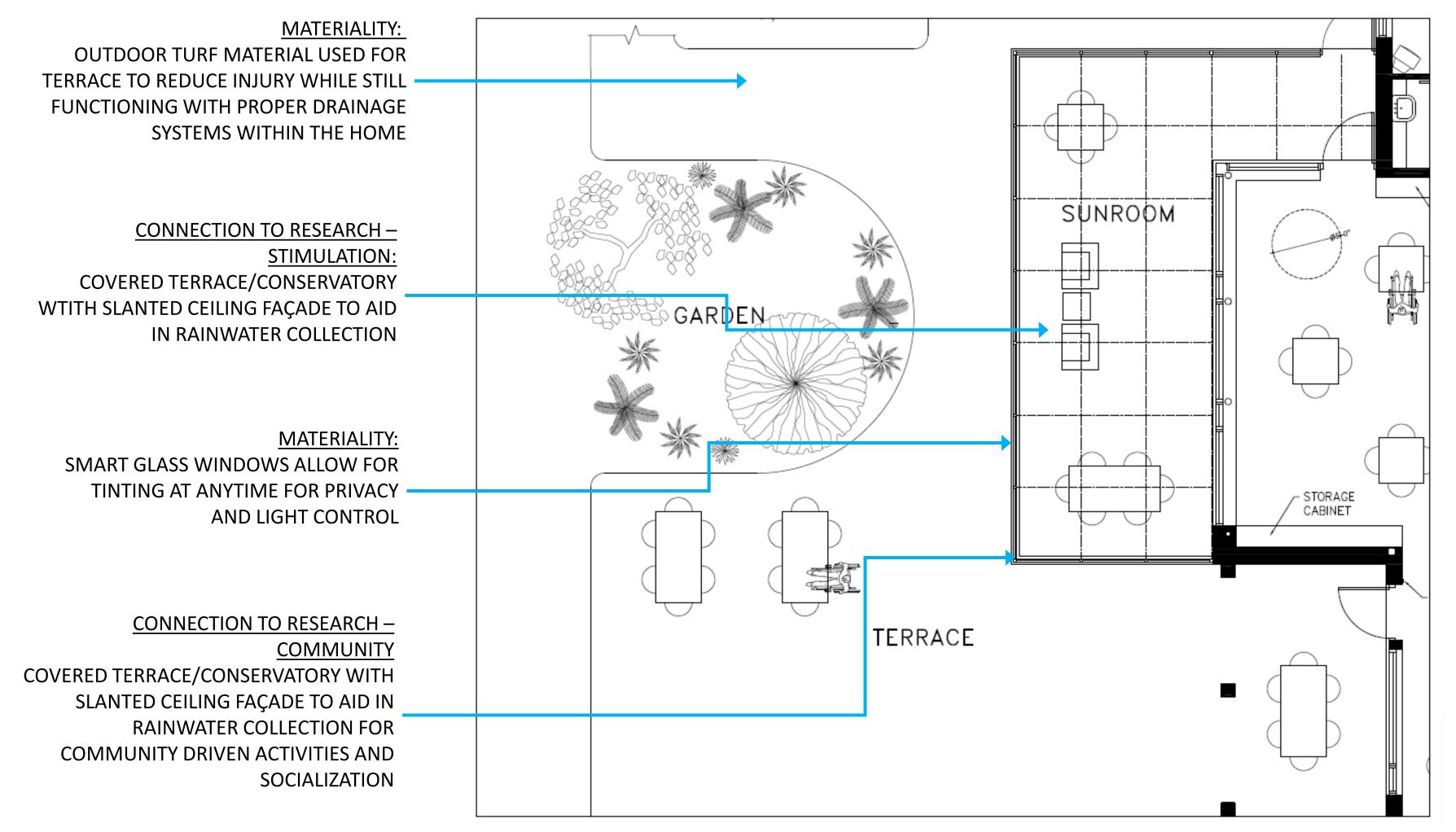
REDUCED DISTANCE BETWEEN BARRIER-FREE WASHROOMS FOR MAXIMUM ACCESSIBILITY

AODA/MOHLTC

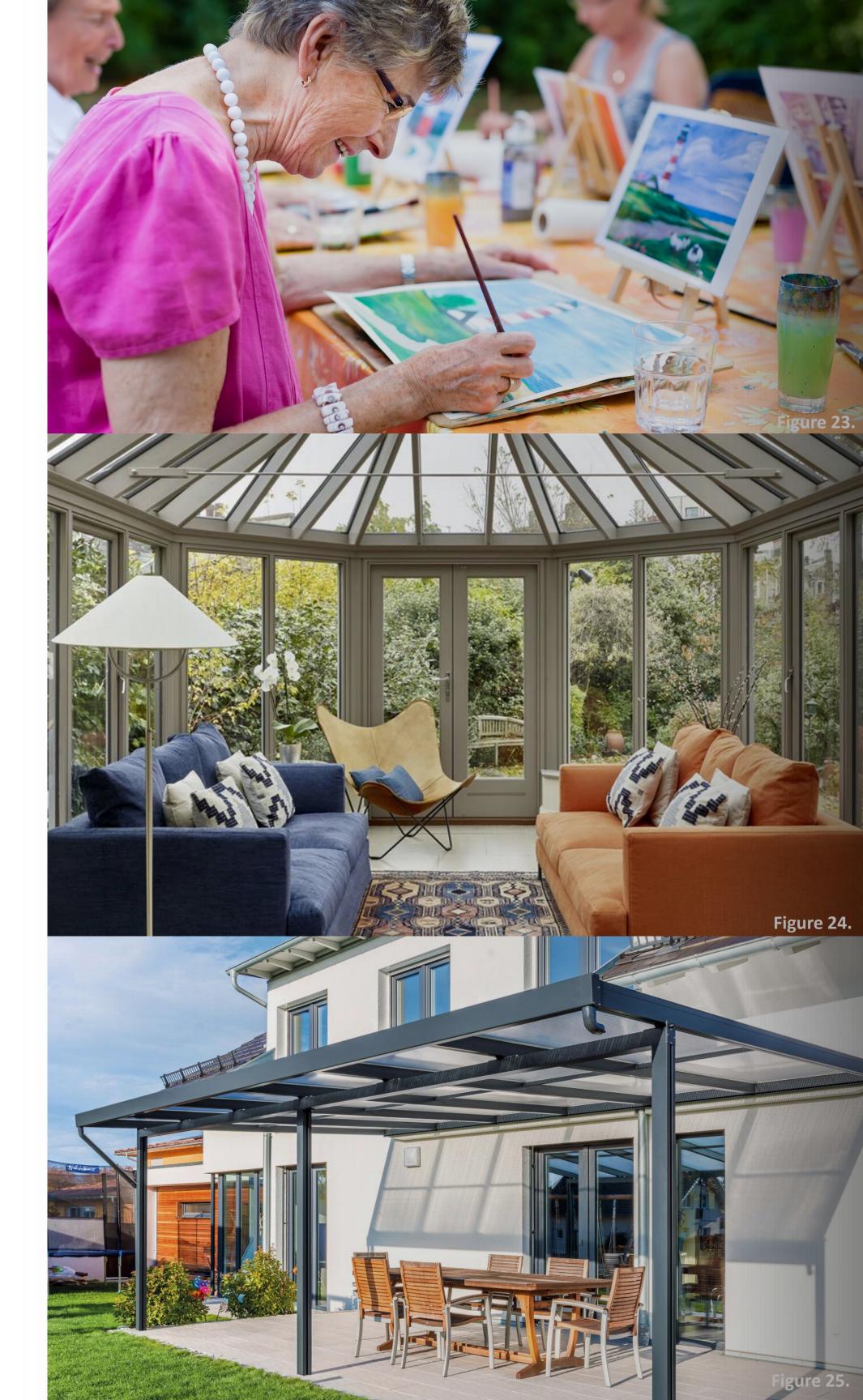
BARRIER-FREE FEATURES INSTALLED IN
KITCHEN, COMM AND MILLWORK FOR ACTIVITY
SPACES AS OUTLINES IN THE AODA/IASR
BUILDING CODE ACT



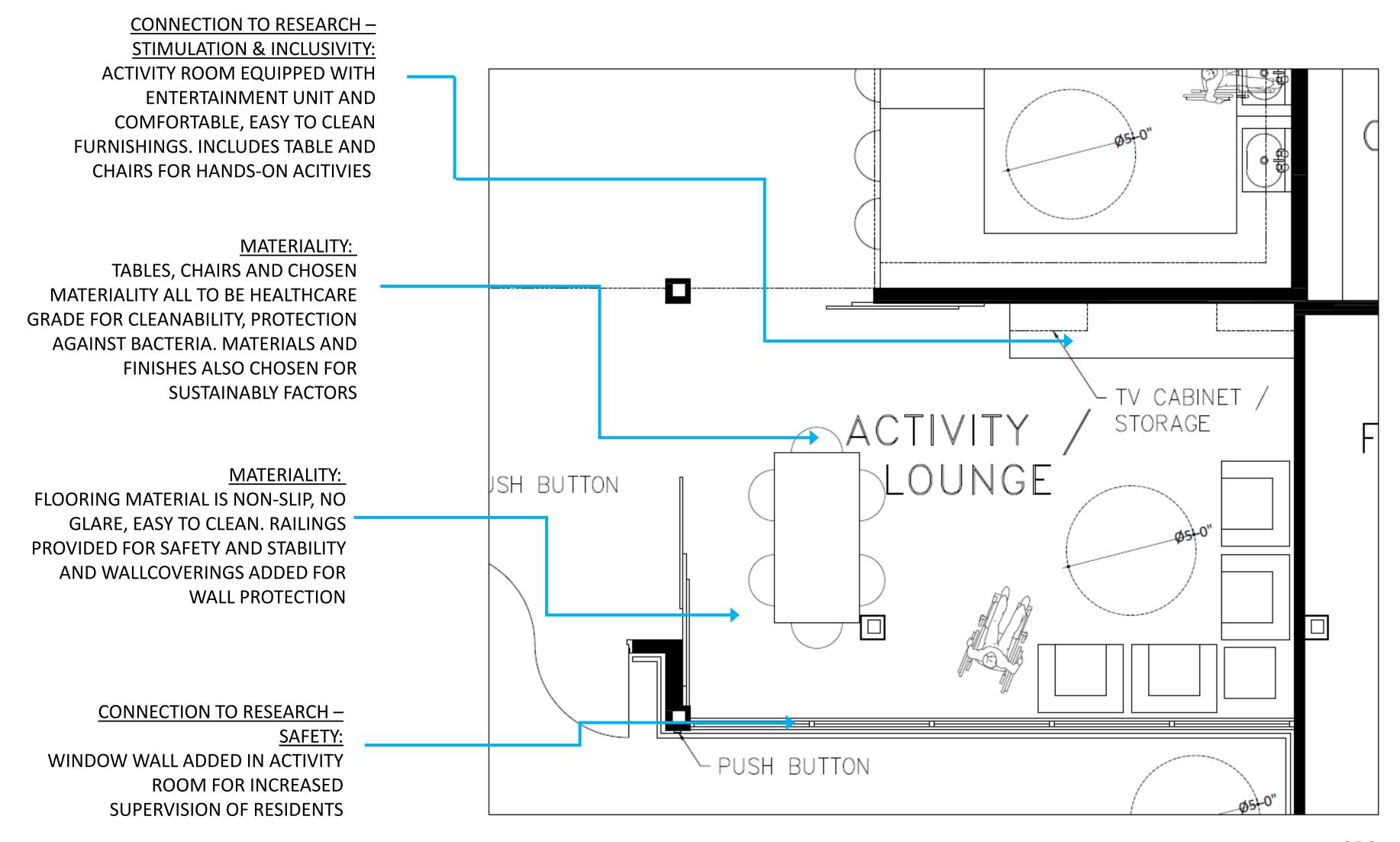
Micro - Annotated EBD



Conservatory, Terrace, and Sensory Garden - NTS



Micro - Annotated EBD

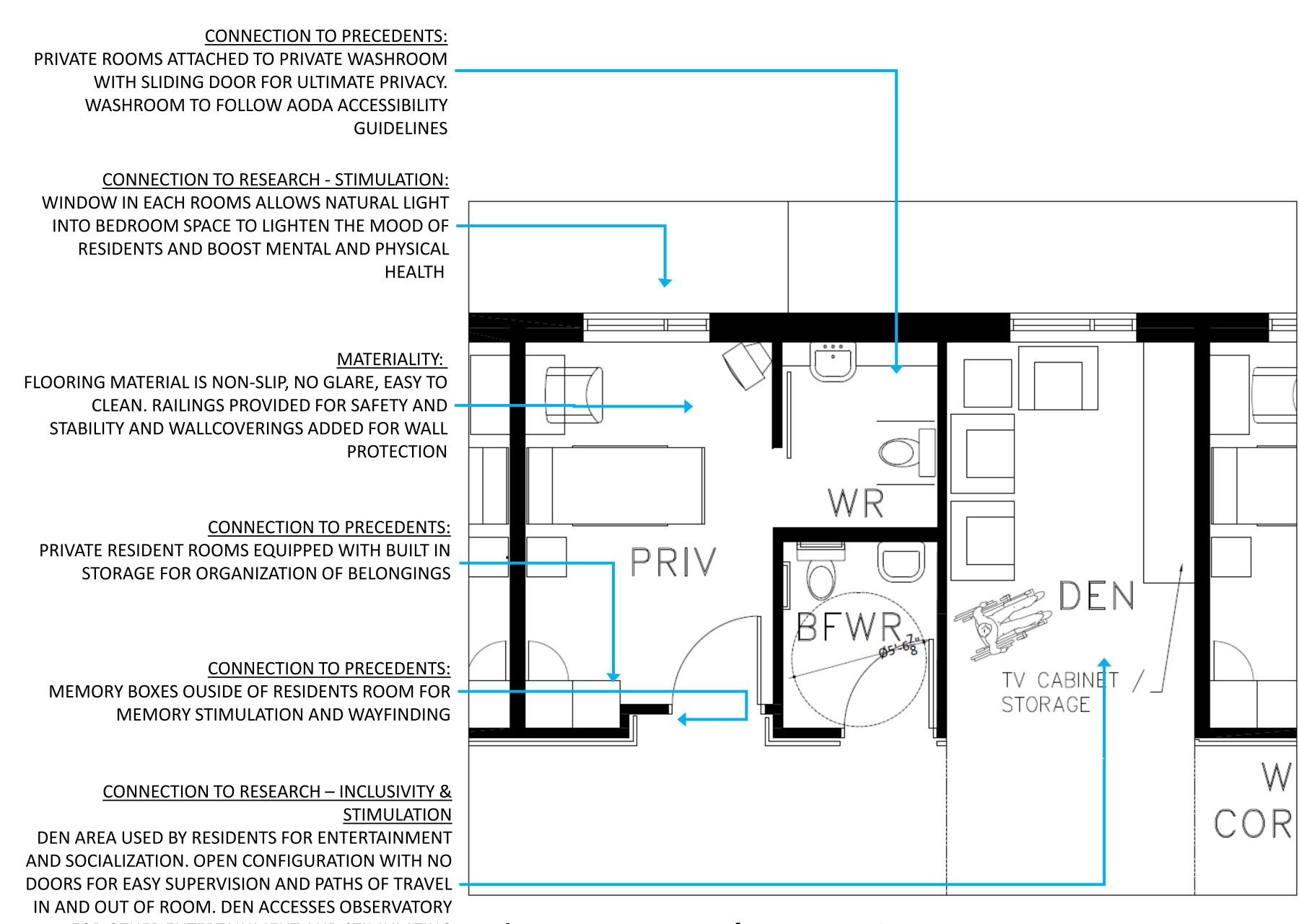


Activity/ Lounge - NTS

OBC 3.4.6.5.(14) HANDRAILS INSTALLED IN ALL CORRIDORS

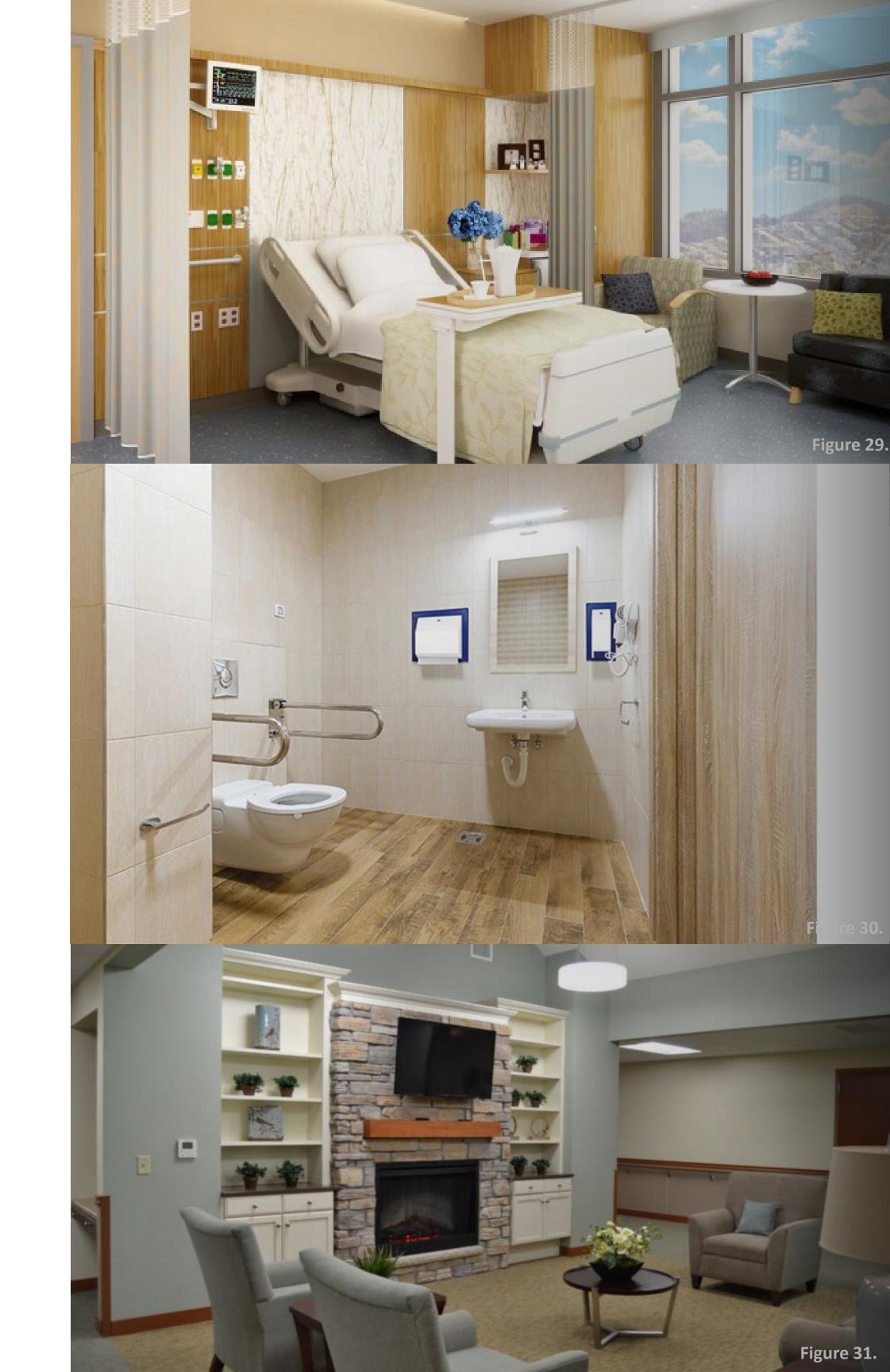


Micro - Annotated EBD



FOR OTHER ENTERTAINMENT AND STIMULATING Private Rooms and Den - NTS

ACTIVITIES THROUGHOUT THE DAY



Light Map

These diagrams give a visual representation of lighting within the macro and micro interiors of the building.



LEGEND Natural Lighting General Lighting Accent Lighting Task Lighting

Micro – NTS

Macro – NTS

Furniture - Seating



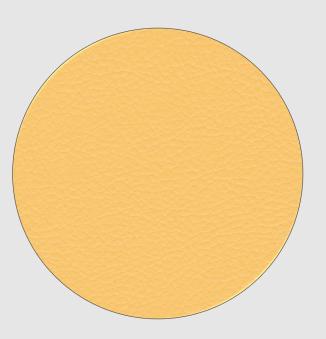
The Cove Patient Recliner chair supports the neck, back, arms and legs of its users, with built-in moisture barriers to increase longevity of the chair. This product does not emit pollutants into the air, such as VOC's and PVC's (Wieland, 2020).





Selection

The Architex Evolution material in the colour Niche and Selection 100,000 double rubs the Evolution collection is a stain resistant, antimicrobial, denim-dye transfer resistant, that contains no PVC's and is bleach cleanable (Architex, 2020).



Niche

The Architex Himalayan Upholstery in the colour Annapurna, is made up of an authentic silicone material that is fungal and stain resistant, which has 200,000 double rubs, and adds a subtle pop of colour within the activity room spaces (Architex, 2020).



Himalayan

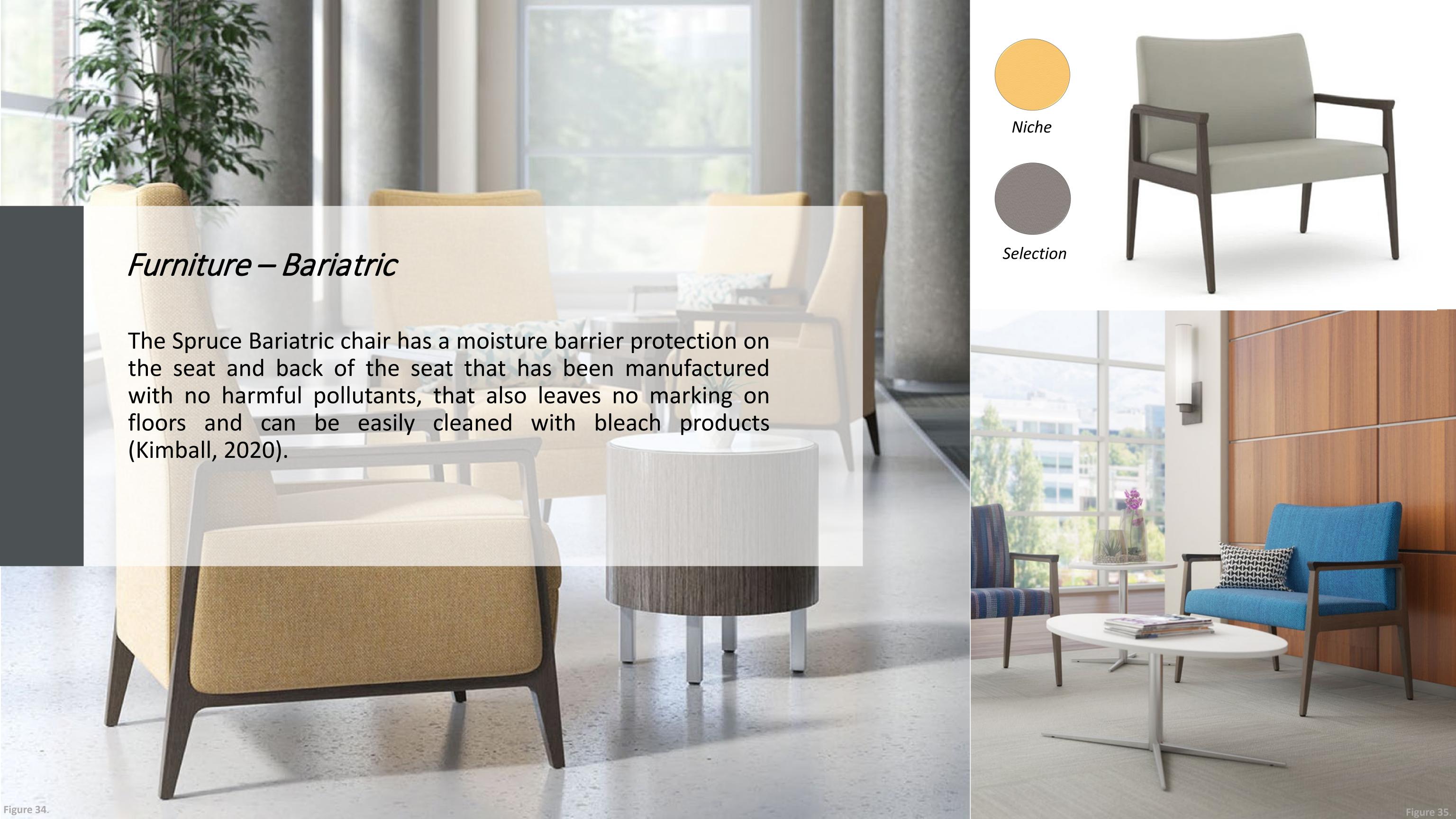


The Spruce patient chair has a moisture barrier protection on the seat and back of the seat, that has been manufactured with no harmful pollutants, that also leaves no marking on floors and can be easily cleaned with bleach products (Kimball, 2020).











MATERIALS AND FINISHES

MANUFACTURER	PRODUCT NAME	LOCATION IN PLAN	COLOUR/FINISH	DESCRIPTION	IMAGE
Armstrong	Ultima Health Zone Acoustical Ceiling Tile	24"x24" Panels in resident and activity rooms. 24"x48" Panels in dining area	White	Smooth-textured acoustical panels are water repellent, provide excellent sound absorption, bleach cleanable, bacteria-resistant, mold and mildew resistant, and scrubable. The tiles are made of 68% recycled content (Armstrong, 2020).	
Forbo	Marmoleum Striato Original Flooring	All flooring	Withered Prairie	Contains no phthalates, no plasticizers and no mineral oil. Finished with Topshield2 which is a high-performance UV-finish. Topshield2 prevents staining, scuffing and scratching for lasting appearance retention and provides for easy cleaning and maintenance at lower intervals. Made up of 97% natural raw materials, 72% rapidly renewable materials, and 43% recycled content (Forbo, 2020).	
Knoll	Franklin Backed Wallcovering	Corridors between resident rooms, bathing corridor	Inlet	Made of natural glass cloth with horizontal weaving appearance, that is 100% phthalate-free vinyl coated polyester, that is bleach cleanable, highly durable, and scrubable (Knoll, 2020).	
Architex	Himalayan Upholstery	Activity room seating finish	Annapurna	This authentic silicone, fungal and stain resistant material has 200,000 double rubs, and adds a subtle pop of colour within the activity room spaces (Architex, 2020).	
Architex	Evolution	Dining room chairs	Niche	With 100,000 double rubs the Evolution collection is a stain resistant, antimicrobial, denim-dye transfer resistant, that contains no PVC's and is bleach cleanable (Architex, 2020).	
Architex	Evolution	Dining room chairs	Selection	With 100,000 double rubs the Evolution collection is a stain resistant, antimicrobial, denim-dye transfer resistant, that contains no PVC's and is bleach cleanable (Architex, 2020).	
Benjamin Moore	Benjamin Moore Natura Interior Paint- Flat	Activity room walls, dining room walls, resident room walls	Shoreline – Flat Finish	The Benjamin Moore Natura Interior Paint has zero VOC's, other emissions, is certified allergy and asthma friendly, and provides a durable, washable film (Benjamin Moore, 2020).	
Corian	DuPont Corian	Kitchen countertop	Everest	The Everest quartz is an extremely durable option for countertop spaces that is nonporous, easy to clean, seamless, and manufactured with very little VOC's (Corian, 2020).	
Herman Miller	Woodgrain Laminate	Kitchen cabinetry	Clear on Ash	This laminate tile is an extremely durable option for tabletop and cabinet surfaces with a woodgrain finish to give the material depth and texture. This material is also bleach cleanable, scrubable, and smooth to the touch.	
Lumicor	Impressions Natura Collection	Kitchen backsplash	Grove	This resin wall application adds a touch of biophilic design into the interior space, while still being cleanable and appropriate as a backsplash material for the kitchen zone.	

Lighting

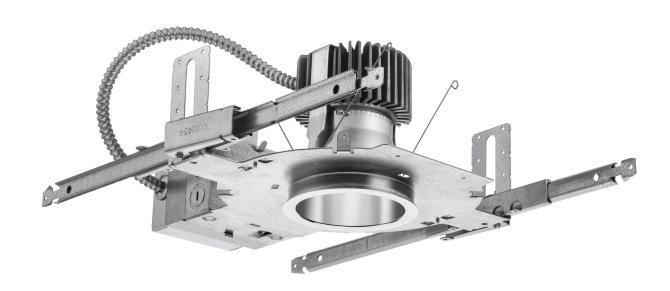
Fresco Touchscreen Controller

Smart controls for tunable and RBG lighting



EVO TUWH 4" Downlight by Gotham Lighting

- LED tunable white smart lamp
- 4300K to 1800K



MP Lighting L195 Pendant Luminaire

- LED tunable white smart lamp
 - 4300K to 1800K



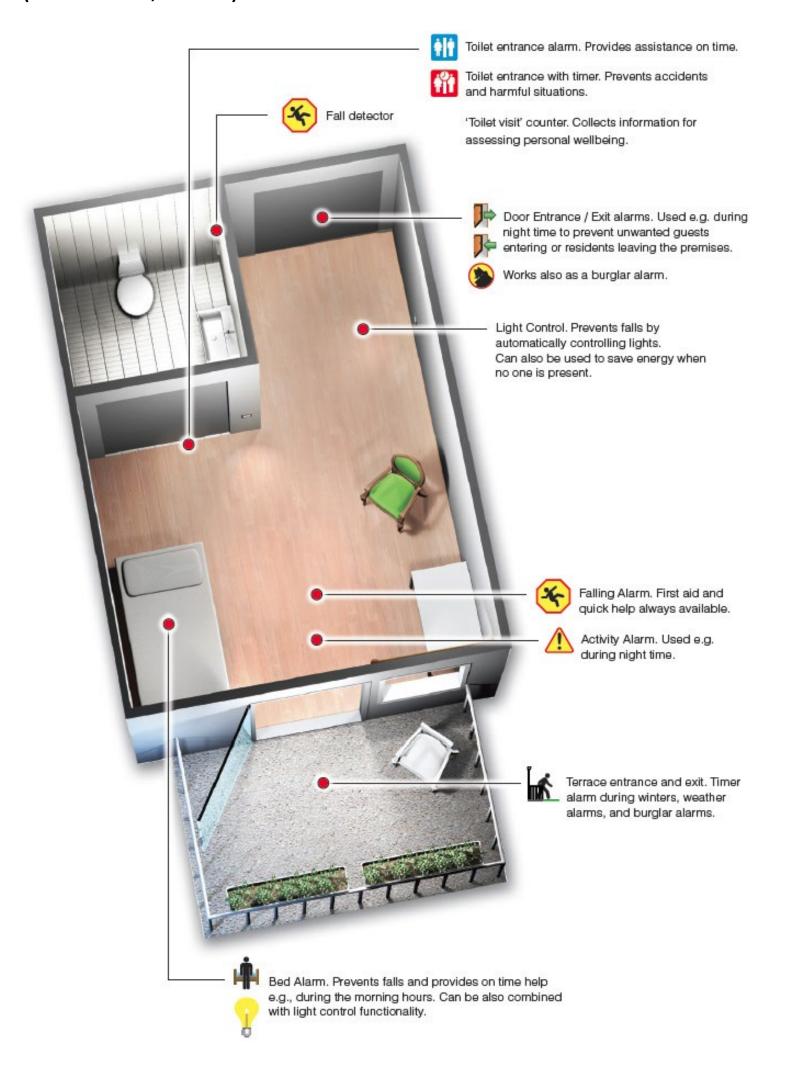
Technology

Elsi Smart Floor by MariCare

Elsi Smart Floor is a smart flooring systems designed for care home applications that can digitally detect possible resident falls, monitor activity in and out of beds and washrooms, as well as monitor entrances and exits into the building or ward.

Elsi Smart Floor can be integrated into smart lighting and thermostat features in order to turn on or off the lights and adjust thermal comfort based on occupancy of spaces.

Elsi Smart Floor can be monitored from a central location and replaces the need for invasive video monitoring (MariCare, 2020).



Fibre Optic Solar Lighting System by Parans



The Parans fibre optic solar lighting system collects natural daylight from the sun via sunlight collector units installed on the roof of the building.

By harvesting the sunlight through the collector, the system can then feed the light through fibre optic cables and delivered to solar luminaires. This system allows natural light to penetrate inner building areas that may not receive natural lighting from fenestration.



Alledio Smart Commercial Thermostat



- Careful digital management of thermal comfort through ventilation, temperature and humidity
- Adjusts thermal comfort based on occupant behaviours
- Optimizes energy consumption for sustainability and cost management
- Centralized controls easy for staff use
- Uses thermodynamics to determine optimal comfort zone

(Alledio, 2020)

FloWise Flushometer Water Closet by American Standard

- ADA Compliant
- Ideal height for accessibility
- Efficient water consumption
- Automatic flush

(American Standard, 2020)



Airblade Wash+Dry by Dyson



- 14-second dry time
- HEPA filter to eliminate 99,9% of viruses and bacteria particles
- 76% less energy consumption than standard hand dryers

(Dyson Canada, 2020)



Safety

GARDEDI

How to improve the buildings design that will result in the safety of the residents, staff, and visitors while also enriching the lives of residents:

- Open outdoor areas up to provide more access and semblance of more freedom while keeping residents safe
- Provide technology to monitor access to exterior spaces, monitor falls and spills
- Use smart thermostat features to maintain thermal comfort
- Specify monolithic flooring to reduce risk of fall
- Provide clear wayfinding to reduce chance of wandering
- Keep furniture and décor cues to help identify zones
- Reduce the visible length of corridors
- Preventing obstructive barriers within floorplan to ensure interior and exterior of building are safe (Fleming, Bennett, Zeisel, 2020).

Community

How to involve community in memory care facilities in order to help enrich the lives of people with dementia:

- Provide multiple public spaces to allow for flexibility and community involvement
- Allow activity spaces to be partitioned off to allow for larger or smaller spaces
- Provide large terrace for outdoor classrooms and seasonal activities and additional outdoor areas for flexible use
- Specify flexible seating and tables to allow for a variety of activity uses

SPACE FOR

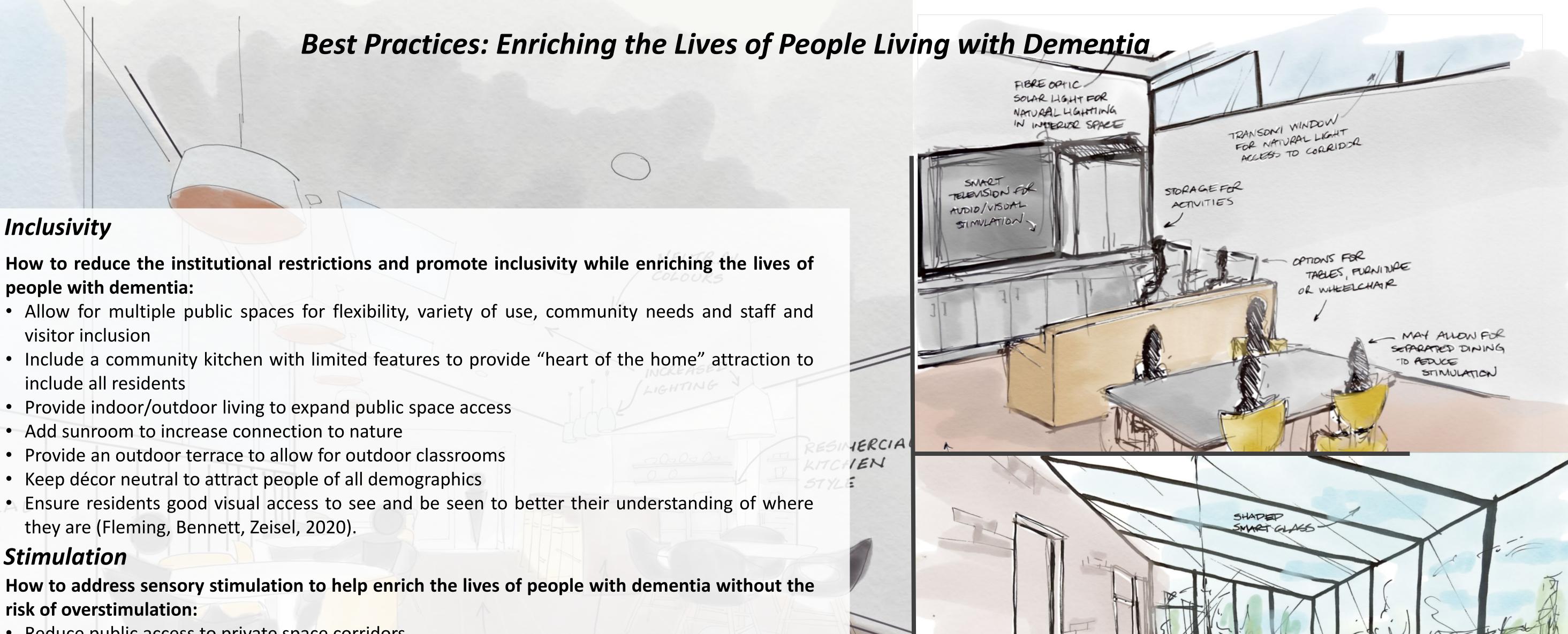
ISERVATORY WEST VIEW

- Provide activities and tasks to stimulate brain function
- Designing a space that encourages social interaction such as activity spaces, open dining areas, and lounge/den zones will help build a residents' identity through interaction with friends, family, caregivers and other residents (Fleming, Bennett, Zeisel, 2020).





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ISERVATORY WEST VIEW

• Ensure residents good visual access to see and be seen to better their understanding of where they are (Fleming, Bennett, Zeisel, 2020).

Stimulation

Inclusivity

people with dementia:

include all residents

visitor inclusion

How to address sensory stimulation to help enrich the lives of people with dementia without the risk of overstimulation:

- Reduce public access to private space corridors
- Keep colours warm and bold but only mildly contrasted
- Limit the number of visible sightlines; break up corridors
- Include biophilic elements indoors and sensory garden outdoors to provide sensory stimulation
- Include private spaces with familiar furnishings and décor
- Provide access to outdoor spaces and maximize access to natural light
- Reduce unhelpful stimulation and optimize helpful stimulation to reduce auditory and visual overload (Fleming, Bennett, Zeisel, 2020).



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PITH

Guidelines to Designing Dignified Environments

Allow Access to
Outdoor Spaces
and Include
Indoor/Outdoor
Living

Accommodate
Community
Access and
Inclusion

Address
Stimulation
With Careful
Management of
Sightlines

Arrange a
Variety of Public
Spaces for
Flexible Use

Specify
Furniture &
Materials That
Foster Health
and Wellness

Incorporate to Optimize
Technology
Safety and
Freedom



Fleming Bennett Design Principles:

- Allow people to see and be seen
- Optimize helpful stimulation
- Support movement and engagement
- Create a familiar place
- Link to the community
- Design in response to vision for way of life



Fleming Bennett Design Principles:

- Provide a human scale
- Allow people to see and be seen
- Optimize helpful stimulation
- Support movement and engagement
- Link to the community
- Design in response to vision for way of life



Fleming Bennett Design Principles:

- Unobtrusively reduce risks
- Provide a human scale
- Allow people to see and be seen
- Optimize helpful stimulation
- Create a familiar place
- Provide opportunities to be alone with others
- Design in response to vision for way of life



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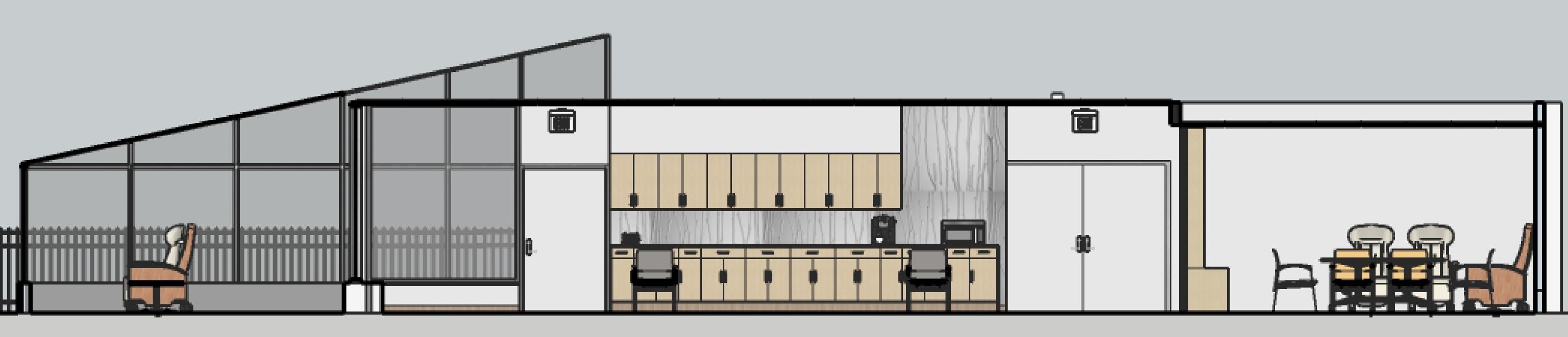
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Elevations



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Figure 31. Den (https://communitylivingsolutions.com/interior-design-for-dementia-care-homes/)

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Figure 33. The Spruce Patient Chair

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Dyson Canada. (2020). Airblade Wash+Dry. Retrieved from https://www.dysoncanada.ca/en/commercial/hand-dryers/airblade-wash-dry-short?gclid=Cj0KCQiA8dH BRD_ARIsAC24umYK0HLjq7emiSW7b2V7mKAYp1TKKc1WGX1_if11NzDIUGWnnMI1ebYaAtvuEALw_wcB&gclsrc=aw.ds#features

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DESIGN, DIGNITY, DEMENTIA: Dementia-related Design and the Built Environment

FANSHAWE Team: Mirey Akhmad, Kristy Braun, Corey Mason-Grant, Adam Mifsud McCormick

DESIGN CONCEPT

As designers, it is important to understand how and why we can create the most desirable and necessary spaces for the people that interact within them the most. Designing a memory care center for residents with dementia should prioritize safety, cognitive-stimulating activities that seamlessly ties together a residence, home-like design that ensures residents feel comforted, supported and acknowledged during their stay. The key is to design a space that takes all factors and users into consideration. The goal is to design a safe, human centric, space that encompasses a lifestyle change that is subtle for residents. This can be done by implementing design principals that focus on wayfinding, memory rehabilitation or memory therapy, minimal stimulation or overwhelming spaces, interactive features, community spaces to engage with others, and spaces to create a sense of purpose for them. Based on research and precedent studies, it isn't only achievable to design a space that incorporates all these aspects but is fully necessary to do so to achieve a successful memory care facility

QUESTIONS

How can a long-term care residence be designed to help enrich the lives of people living with dementia?

SAFETY

What could be done to improve the buildings design that will result in the safety of the residents, staff, and visitors while also enriching the lives of residents?

INCLUSIVITY

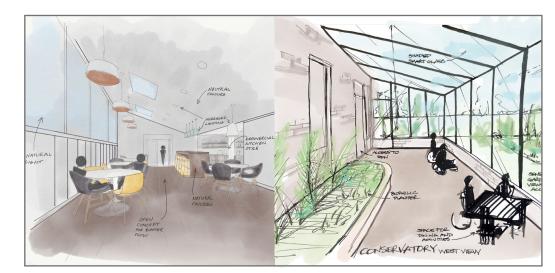
How can we reduce the institutional restrictions and promote inclusivity while enriching the lives of people with dementia?



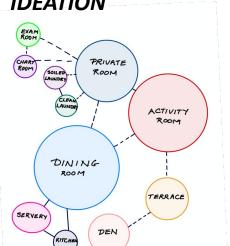


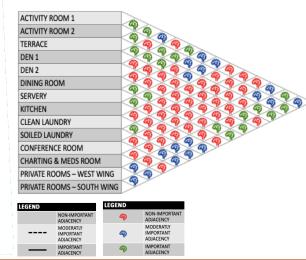
STIMULATION

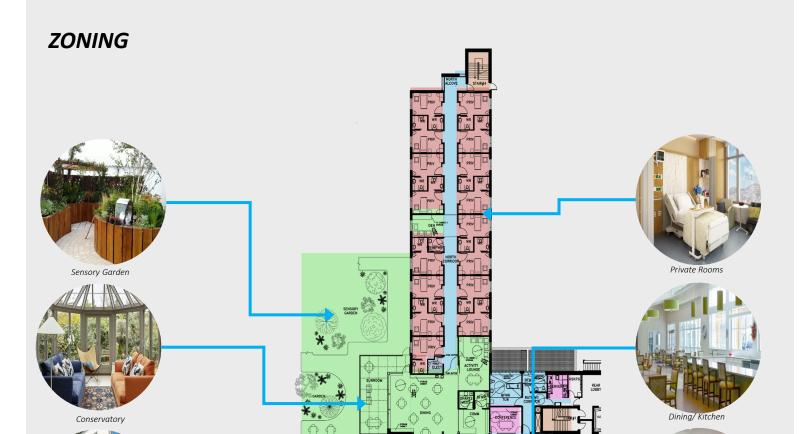
How can sensory stimulation be carefully addressed to help enrich the lives of people with dementia without the risk of overstimulation?

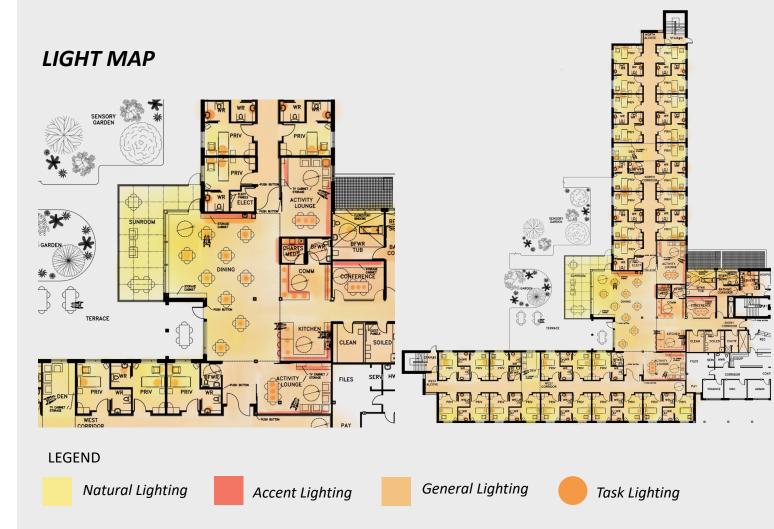


IDEATION





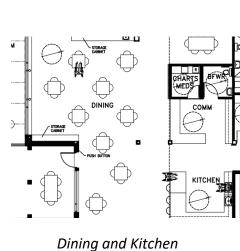




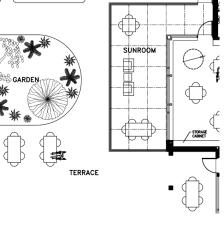
FURNITURE & FINISHES



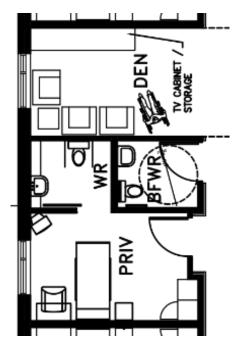
MICRO PLANS



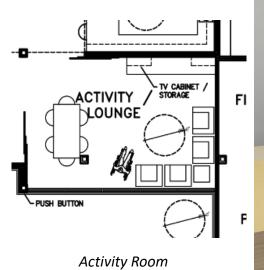








Private Room and Den







Smart Lighting



Smart Thermostat





Optimize





Smart Sink

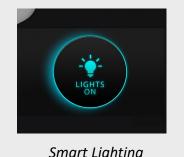


Smart Hand Dryer



GUIDELINES TO DESIGNING DIGNIFIED ENVIRONMENTS

归出



Accommodate **Community Access** and **Inclusion**

Allow Access to **Outdoor Spaces** and

Include Indoor/

Outdoor Living



Arrange a Variety of **Public Spaces for** Flexible Use

Specify Furniture & Materials That Foster **Health and** Wellness



NAVIGATION



