

BENBOW DEMENTIA CARE SMALL HOUSE DESIGN

CHECKLIST

2019

(BDC)

CHECKLIST DESIGN FEATURES:

(can be used separately or combined)

SMALL HOUSEHOLD AND WAYFINDING;

ACCESSIBILITY;

INTERIOR DESIGN;

LIGHTING AND NOISE;

OUTDOOR.

DEMENTIA HOUSEHOLD

BENBOW SMALL HOUSEHOLD AND WAYFINDING CHECKLIST (BSHWC)

Benbow January 2019

FACILITY:

UNIT:

DATE:

RATER:

CONTACT PHONE:

EMAIL:

	Design Feature	Minimal	Average	Superior	Score	Note
(Max 100 pts)		A	B	C		
Intervention	Score each item as 0,1, 3 or 5	1	3	5		Support documentation for scoring is available from billbenbow@shaw.ca
Small House Building Structure	1 Small Scale self-contained Household model	19 - 24 residents	14 - 18 residents	6 - 13 residents		Self-contained Households: If number of residents is 19 - 24, House should be subdivided into wings
	2 Privacy	≥80% residents Single rooms & ensuites	≥90% residents Single rooms & ensuites	100% single rooms & ensuites		Prefer privacy zone separate from amenities with all single rooms with private 3 piece ensuites
	3. Amenities	Main Lounge and Dining colocated	Plus Outdoor garden, deck or sunroom	Plus Resident Kitchen and/or Activity Area		Consider shared Neighbourhood areas such as Activity to increase accessible walkable spaces within security zone
	4 Accessible: resident rooms and amenities	Res Rms 15.5sm; amenity ≥6sm per res.	Res Rms 17sm; amenity ≥7sm per res.	Res Rms 18sm; amenity ≥8sm per res.		Resident room usable space excludes ensuites, vestibule, built-ins. Amenity = dining +lounge +activity per resident
	5 Direct visual access	50% of resident rooms	75% of resident rooms	100% resident rooms		Ability to see amenities from bedroom and bedroom from core amenities
	6 Floorplan Layout	H shape	L, V, U, Y, or T shape	open plan or one corridor		Limited changes in direction (amenities in intermediate location)
	7 Corridor length	≤35m (115 ft)	≤30 m (100 ft)	≤25 m (82 ft)		Short distance bedroom to amenities: could be open plan with no corridors
	8 Household has front door and exit controls	Front door with exit controls	Separate service access	Camouflaged exits		Households not accessed thru other Households: with exit controls within security zone and separate service access.
	9 Bathing	portable showers and assisted tubs	mix of private showers and assisted tubs	all resident rooms have 3 piece ensuite		prefer all resident rooms have ensuites with showers; any shared assisted tubs are not accessed thru amenity areas
	10 Outdoor access	all residents share ground floor garden	own floor access: garden, deck, sunroom	House access to garden, deck, sunroom		Outdoor/deck/sun area should be secure, accessible, preferably visible with access from Household core amenities
Wayfinding elements	11 Reference points/landmarks	at all major intersections	& at entrances to major rooms/areas	plus at resident rooms		Unique design elements at decision points; personal elements at resident rooms (memory boxes)
	12 Minimal repetitive elements	distinct amenities	& distinct wing entrances	plus distinct res. Doors		Built in distinctiveness: e.g. res. doors, amenities, wing entrances
	13 Rooms with legible meaning	amenity furnishings	décor and fixtures	words and pictograms		Function and meaning self-evident
	14 Residents Name and Photo	name beside res. Room	name & photo by res. Room	name, young photo on door		To identify resident's bedroom door
	15 Signage and Pictograms	3/4 inch lettering	1 and 1/2 inch lettering	& placement below 4 feet		Minimal 3/4 inch height, good contrast with background and wall, low or on floor
	16 Colour contrast (30 - 70%)	minimum 70% on signs	minimum 30% walls/floors doors/frames	minimum 30% furniture & fixtures		Avoid similar hues, pale tones, avoid blue/green and red/green combinations
	17. Lighting - glare and lux	Eliminate glare; ≥320 lux ambient	Eliminate glare; ≥550 lux ambient	Eliminate glare; ≥1000 lux ambient		sufficient lux for ambient with no daylight glare or harsh reflections
	18. Minimal Information clutter	simple signs	minimal posted info	restrict to key junctions		avoid over stimulation
	19. Reduced floor patterns and lines	small patterns low contrast	no lines or patterns	no adjoining floor contrast		prevents access to desired routes
	20. Visibly accessible toilets	res. Ensuite door removed or left open	& amenity wc door left open and light on	& high contrast toilet seat or pictogram		leave door open when not in use, colour contrast fixtures, pictograms
Total Score						

DEMENTIA HOUSEHOLD BENBOW ACCESSIBILITY CHECKLIST (BAC)

Benbow January 2019

FACILITY: _____ **UNIT:** _____ **DATE:** _____
RATER: _____ **CONTACT PHONE:** _____ **EMAIL:** _____

Intervention	Design Feature	Minimal	Average	Superior	Score	Notes
Accessibility (Max. 100 pts.)	Assign rate of 1, 3, 5, or 0 for each item	A 1	B 3	C 5		Support documentation for scoring is available from billbenbow@shaw.ca
Front Entrance	1. Walkway to main entrance	continuous plane, <6mm flush joints	1524 mm wide Permanent, firm, slip-resistant	≤ 1 in 20 gradient curbs if ≥75mm drop		Continuous level surface. 1525 mm wide, ≤ 1 in 20 gradient
	2. Facility Entrance power operated	Power operated by Push plate	auto opening by sensor	sliding with 4 - 6 second delay		Prefer sliding doors with adjustable opening/closing delay.
	3. Facility Entrance door clearance	Door ≥ 914mm (36")	Clear area L = 1100mm + door W = door + latch allowance	Clear area 1524 x 1524 mm plus door swing		Clear rectangular area before door: 1100mm + door swing in length by width of door + latch allowance; 600 mm away, 300 mm towards.
Outside grade access	4. Grade access from House Units	all levels have access to patio, decks or sun rooms	all Houses have direct access to patio, decks or sun rooms	outside access doors are auto sensor or pad		All levels have outdoor access: Sunrooms/decks for House units on floors without grade access.
Floor levels	5. Contiguous floor levels	thresholds ≤ 13mm (1/2")	joints ≤ 6mm (1/4")	joints ≤ 2mm (1/25")		Thresholds ≤ 1/2" and bevelled ≤ 45 degrees; joints ≤ 1/4"
Turning Circle	6. Wheel chair turning Circle: resident room, ensuites, amenities	1524mm (5')	1676mm (5'6")	1830mm (6')		1676mm needed for turning with opposing rotation of wheels.
Corridors	7. Corridor width	1830mm (6')	1830mm with alcoves	2400mm (8')		1830 mm + door insets, laybys or alcoves for parking carts, lifts.
	8. Corridor length	≤ 35m (115')	≤ 30m (100')	≤ 25m (82')		Bedroom to dining room - 15.3m (50') is a good median distance.
Resident Room	9. Resident room useable space: excluding ensuite & vestibule	15.5 sq.m. (167 sq.f)	17 sq.m. (183 sq.f)	18 sq.m. (193 sq.f)		Ensuite 4.5 to 7 sq. m. Vestibule: 2 to 3 sq. m.
	10. Resident Room Minimum Dimensions: <u>Panhandle design</u> Paired Ensuite design:	4000mm (13'1") x 6550mm (21'6") or 3455 (11'4") x 4548 mm (14'11")	4420mm (14'6") x 6858mm (22'6") or 3799mm (12'6") x 4844mm (15'11")	4420mm (14'6") x 7315mm (24') or 4064mm (13'4") x 5335mm (17'6")		Panhandle design: (A) is from CRD (wabenbow.com). (B) is from (CLC, 2011, p.4-13) (C) is from (CLC, 2011, p.4-19). Paired Ensuite: (A) is from NB, 2010, p.27. (B) is from Jensen (Ayre Manor) (C) is from NB, 2010, p.29.
Resident Ensuite	11. Resident room ensuite area	≥ 5.3 sq.m. (57 sq.f)	≥ 6 sq.m. (65 sq.f)	≥ 7 sq.m. (75 sq.f)		With shower : 5.3 - 7 sq.m. If no shower 4.5 - 6.5 sq.m.
Doors	12. Resident room Door openings: Ensuite	≥ 914 mm (36") ≥ 914 mm (36")	clearance 600mm latch side; 300 mm outside	1500mm clear and level space in front of door		Res.ent.-914mm; ensuite-914 mm latch jam side clearance: inside 600mm; outside 300mm
Ensuite	13. Ensuite Toilet:	Height: 400 mm (16") - 460 mm (18")	Access: Front+ one side 600mm x 1500mm	Access: Front + two sides		Height: 400 - 460mm Side clearance for toilet access should be 600 - 800 mm x 1500mm.
	14. Ensuite Fixtures:	Clearance: Under sink 735 mm (29")	ensuite shower	tilting mirror locked drawer nurses cupboard		Under sink clearance: 735mm; Consider ensuite shower; and nurses cupboard.
Bathing Suite	15. Assisted Bathing Suite:	20 sq. m. (215 sq.f)	22 sq. m. (237 sq.f)	24 sq. m. (258 sq.f)		20 - 24 sq.m including wc; Provide tub access on three sides.
Door handles	16. Resident Room Door handles	Push plate or Door pull	Lever	No closure or minimal pressure		Push, pull or lever; Closure between 22 - 38 N forces.
Ceiling Lift	17. Resident Room ceiling lift system	one track over bed	room coverage	into ensuite		Full room coverage preferable.
Amenities	18. In-House Amenity area: dining +lounge +activity	≥ 6sq.m. (65 sq.f)	> 7 sq.m. (75 sq.f.)	≥ 8 sq.m. (86 sq.f)		6 - 8 sq.m; Can share activity in Neighbourhood
Controls	19. Resident Area Controls: height from finished floor	≤ 1200mm (47")	≤ 1100mm (43")	plus Motion sensor		Height ≤ 1200 mm; Consider ensuite Motion sensor.
Windows	20. Resident Area Windows: viewing height	Visibility from sitting ≤ 630 mm from floor	visibility from sitting and bed	≥ 457mm (18") away from corners		≤ 630 mm; natural light and vistas
TOTAL SCORE						

DEMENTIA HOUSEHOLD BENBOW INTERIOR DESIGN CHECKLIST (BIDC)

Benbow January 2019

FACILITY:

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CONTACT PHONE:

EMAIL:

Intervention	Design Feature	Minimal	Average	Superior	Score	Notes
		A	B	C		Support documentation for scoring is available from billbenbow@shaw.ca
	Assign rate of 1, 3, 5 or 0 for each item	1	3	5		
LIGHT FIXTURES	1 Ambient and Task Lighting provided	320 lux ambient; 550 lux task	550 lux ambient; 750 lux task	1000 lux ambient; 1200 lux task		Ambient: lounge, bedroom , WC; Task: reading, activity, dining shielded bulbs, indirect lighting, non-reflective surfaces, window shades
	2 Mitigate Glare	Shielded bulbs, indirect lighting,	non-reflective: flooring and outdoor surfaces 30 - 40 LRV	Window shades, drapes, curtains		
	3 Colour Rendering Index & Kelvin rating of source (fixture)	CRI ≥ 70; >3000 Kelvin	CRI ≥80; >3500 Kelvin	CRI ≥ 90; >4000 Kelvin		in common areas, corridors, resident rooms. Kelvin could be automated to Circadian rhythm.
	4 Controls	switches < 1200 mm (47 inches)	plus double-switching fixtures in bedrooms	plus dimmable fixtures in corridors		accessible controls, dimmers for built in flexibility
	5 Flexibility	variety of fixtures including floor and table lamps	overhead and task lighting bedrooms, common areas	motion sensors especially for ensuite, corridors		variety of light fixtures including overhead, wall sconces, table and floor lamps; motion sensors
WALL AND DOOR COLOURS, CONTRAST and CAMOUFLAGE	6 Colours	use strong warm colours: yellow -red end of spectrum	light against black, dark against white, light yellow against dark blue	peach, coral, apricot tones add warmth		Avoid too many colours, use strong warm colours; light, bright against dark and vice-versa; avoid red/green
	7 Colour Contrast to aid in direction and redirection	To hide doors to exits, housekeeping etc.(Paint doors and walls same colour)	Use contrasting stripe on floor or ribbons on doors to deter access	Frame doors with contrasting colour to door and wall colour		Use of minimum 30% contrast or lack of contrast to direct or redirect residents (use Gray Scale).
	8 Murals for Camouflage and Interest	Murals on doors to camouflage exits, staff areas	Unique Res. Doors; Murals on Walls to add interest	Interactive Murals to stimulate activity		Vinyl adhesive type wall and door murals are available: Creativeartco.com ; Truedoors.com
ENSUITE FIXTURES	9 Focus on Safety, Accessibility, Visibility	ensuite toilet visible from bed	plus grab bars, traditional marked faucets	use contrast for toilet seat; sink/vanity;		Visibility of ensuite toilet from bed; contrast toilet and seat, sink and vanity; accessible fixtures
FITTINGS	10 Focus on simple and plain, contrast	Avoid large or life like patterns on curtains, bedding, cushions	use personalized bedspreads, memory boxes	contrast: placemats, plates, utensils, handles		Avoid life like items and large patterns: do personalize bedrooms; use object contrast for visibility
SIGNAGE	11 Signage: Visibility	Use large text and min 70% contrast (min. 60 pt - 2 cm.)	plus locate below door handle level	use pictures and text for toilet rooms, bedrooms		Signage: large text, minimum 70% contrast, low placement, pictures and text for toilet and bedrooms
FURNITURE	12 Chairs: (seating)	51 - 56 cm high (20 to 22 inches), sturdy, firm seat, arm rests	water resistant, flow through, pop up cushion	variety of choice, contrast with wall, floor		Good height and depth for Sit to Stand, arm rests, firm seat, water resistant fabric, variety, contrast.
	13 Tables	Sturdy: Pedestal or well braced legs	Square, rounded corners, curved edges	wheelchair clearance		Sturdy, safe, accessible
	14 Wardrobes and Dressers	Wardrobes with open or glazed section for daily clothes	Contrasting handles, no sharp corners	Durable: High pressure laminate, not particle board		Dementia friendly, contrasting handles, safe, durable
	15 Appliances (if applicable)	Refrigerator only accessible appliance	microwave: sensors + simple to use controls	range: should have shut off for staff control		Safety is primary concern: staff controls need to be in place for any Range/oven; microwave - sensors.
FLOORING	16 Focus on safety, accessibility, durability	Thresholds maximum 13 mm (1/2 inch)	stable, firm, slip resistant, yet not impede movement	easily maintained: water, mildew and stain resistant		needs low threshold; firm, slip resistant, yet not impede balance or gait; durable easily maintained
	17 Use of contrast on flooring	Avoid large contrasting patterns	flooring should contrast with walls and baseboards	Avoid tonal contrast from one flooring material to another		Large patterns and stripes can appear as chasms; needs to have visible contrast with walls and baseboard to have visible edge
FINISHES	18 Focus on simplicity, durability, Light Reflective Value (LRV)	Avoid life like patterns or specks	LRV: Ceilings >80; walls >60; floors & pathways 30 - 40	wall and corner protection		Life like patterns are confusing; ; LRV is important for ceiling, walls, floor; durability
	19 Use of contrast between objects and field	≥ 30% contrast: objects with background: handrails, grab bars, handles; furniture	& Provide adjacency contrast + edges, especially for pastels	& use strong colour contrast on stair tread edges and other drop offs.		Contrast is critical for object/field discrimination, and to see edges especially flooring to walls, doors to walls; handles etc.
FEATURES	20 Special points of interest	general use as décor, atmosphere, theme	specific use as landmarks for wayfinding	plants, animals (aquarium, aviary)		special features to add atmosphere, memory stimulation, landmarks, Eden like use of living things.
TOTAL SCORE						

DEMENTIA HOUSEHOLD BENBOW LIGHTING AND NOISE CHECKLIST (BLNC)

Benbow January 2019

FACILITY:

UNIT:

DATE:

RATER:

CONTACT PHONE:

EMAIL:

LIGHTING	Design Feature	Minimal	Average	Superior	Score	Notes
Max 100 pts	Score each item as 0, 1, 3, or 5	A	B	C		Support documentation for scoring is available from billbenbow@shaw.ca
		1	3	5		
Lighting Levels	1 Ambient Lighting	320 lux	550 lux	1000 lux		lounge, bedroom bathroom
	2 Task Lighting	550 lux	750 lux	1200 lux		reading, activity, dining
Lighting Issues	3 Natural Light	plenty of windows	clerestories skylights	plus CRI ≥ 90; Kelvin ≥ 4000		Windows, clearstories, skylights; plus fixtures with CRI greater than 90, and Kelvin temperature greater than 4000
	4 Natural Views	several view points	< 630mm sill common areas	< 630mm sill res room		View points: seating: sill heights < 630mm (25")
	5 Transitions	shaded entrances	plus inside entrance light	no differential > three times		Awnings, Portico, interior entrance lights
	6 Day and Night Adjustments	corridors & common areas night dimming	night lights or motion sensors	auto adjustment to follow circadian rhythm		Ability to cue evening and night time
	7 Even distribution of lighting	indirect lighting	ceilings > 80 LRV walls: > 60 LRV	plus sheer curtains		No pooling, shadows or excessive contrast;
	8 Mitigate Glare	shielded bulbs	non-reflective flooring and outdoor surfaces 30 - 40 LRV	Window shades, drapes		Shielded bulbs, indirect lighting, non-reflective surfaces, window shades
	9 Individual Preferences	ambient light dimmers	task light dimmers	controls < 1200mm (47")		task lamps, dimmers, for built in flexibility
	10 Maintenance Schedule	maintenance schedule	adjust lighting throughout day	monitor and clean res. glasses		Clean windows, clean resident glasses, fixtures
Lighting Sub-total						
NOISE	Design Feature	Minimal	Average	Superior	Score	Note
Noise Levels	1 Ambient Noise Level: Bedrooms	<40dB	<35dB	<32dB		Use Noise Meter: Bedroom
	2 Ambient Noise Level: Common	<45dB	<40dB	<35dB		Dining, lounge, activity areas
Noise issues	3 Layout	privacy zone	separate service access	quiet seating area		Quiet/privacy Zone for Resident rooms
	4 Noise Mitigating Design Features	double glazing & acoustic material	resident room STC ≤ 45	HVAC NC 25 - 35		Sound proof walls, acoustical tiles, partitions
	5 Noise Reducing Adaptations	restrict noisy equipment	drapes, wall hangings, carpets	noise reducing practices		Note efforts to dampen noise: e.g. carpets, drapes, close doors, turn off equipment and unwatched TV, soft voices and footwear, signage.
	6 Schedule Intrusive Noise: Avoid	schedule noisy equipment	schedule server noise	schedule quiet periods		Vacuuming, floor cleaning, washing
	7 Night Time Noise	subdued night lighting	quiet nursing routines	adaptive monitoring		Dim lights and reduce noise at night
	8 Alarms and Pagers	restrict public paging	cell phones on vibrate	mitigate alarm noise & practices		Eliminate overhead paging; reduce alarms
	9 Staff Training and Surveys	include in staff training	scheduled feedback	recent interventions to mitigate noise		Schedule regular inservice sessions on noise: Schedule regular feedback: family, staff, residents; and have made recent interventions
	10 Maintenance Schedule	scheduled maintenance	daily monitoring and remedy	monitor hearing aids		Regular schedule to address noise issues
Noise Sub-total						
TOTAL SCORE						

DEMENTIA HOUSEHOLD BENBOW OUTDOOR CHECKLIST (BOC)

Benbow January 2019

FACILITY:

UNIT:

DATE:

RATER:

CONTACT PHONE:

EMAIL:

Intervention		Minimal	Average	Superior	Score	Notes
SUPPORT ELEMENTS	Assign score of 1, 3, 5, or 0 for each item based on a rating of Minimal, Average or Superior	A	B	C		Support documentation for scoring is available from billbenbow@shaw.ca
		1	3	5		
Management Support	1 Organizational Philosophy, Policy, Procedures, Programming, promote outdoor use.	Written Mission, Philosophy & Policy	Plus Written Procedures & Staff Training	Plus Directors' Attitudes and example		Facility literature, brochures, programs and training all support outdoor activities
Staff Involvement	2 Staff attitudes and practices support outdoor use.	Staff facilitate independent use of outdoors	Plus Staff regularly provide outdoor activities	Plus there is staff training re outdoor activities		Staff Training, Manual, staff meetings outdoors, staff led activities outdoors.
Meaningful Activities	3 Motivation is provided for residents by the provision of meaningful outdoor activities	Everyday activities provided outdoors	Plus special occasion and gardening	Staff regularly brainstorm, review outdoor activities		Staff regularly brainstorm for outdoor activity ideas and review resident participation.
Maintenance (Hard & Soft)	4 Maintenance of hard and soft landscape elements.	Pathways are well maintained, litter and crack free	Plus plants and features are well maintained	Volunteer program to help with maintenance		Facility has an active volunteer program to assist with outdoor maintenance
DESIGN ELEMENTS						
Location	5. Easy Physical Access	Access to Outdoor area from each floor: at grade or deck	Direct access from each Care Unit or Household	Adjacent to each Household's Common areas		Prefer direct access from each Household's common area (dining, lounge, activity)
Entryway	6. Single legible Access Point	Single Highly visible landmark legible Entryway	Plus unlocked, easy to open door, or automatic or propped open	With transitional lighting indoors and shade outdoors		Highly visible landmark from inside and outside. Regularly easy to open unlocked door. Transitional lighting inside and shading outside.
Safety	7. Design for physical safety	Walkways: smooth, level, non-slip, non-glare, litter free.	Plus enhanced lighting: walkways, perimeter	Plus non toxic plants, no thorns or hazards.		Protect against falls, poisons, injury.
Visibility	8. Visible Garden for Staff and Residents	Glass Entry door and large adjacent windows	Whole Garden is visible from indoor Common areas	Indoor Common area is visible from Garden		Visibility and easy monitoring provides confidence for staff and residents
Security	9. Enclosure	Securely Enclosed Garden	Fencing/walls minimum of 2200mm (7.2').	Camouflaged fencing and service exits		Unobtrusive but safe enclosure
Accessibility (Door)	10. Accessible Door	36 inch wide; lever handle; latch side clearance of 24 "	Max 8.5 pd opening pressure; 1/2 inch max threshold	Door left open or Automatic opener		Easy to pass through doorway
Accessibility (Walkway)	11. Accessible Walkway	1830 mm (6') wide	Gentle curves: No sharp turns	curbs and hand rails		Wide enough for wheelchairs to pass and negotiate turns.
Accessibility (Furniture and Fixtures)	12. Accessible Furniture	Tables with 685 mm under top clearance, manoeuvring space	Raised Garden beds: Height 450 - 600 mm	Drinking Water at wheelchair height		Tables, Raised Garden Beds, Drinking Water.
Comfort (Shelter)	13. Shelter from inclement weather	Large Sheltered Entryway Patio with seating	Plus Destination shelter with seating: Gazebo	Conservatory, Sunroom for year round use		Protection from wind and rain; Entry patio large enough for tables, seating and wheelchairs.
Comfort (Shade and Screening)	14. Shelter from sun, bugs.	Entryway Patio covered for shade	Plus Shady Nooks with seating, shady walkway (trellis)	Plus Screening option for bug protection		Protection from sun (avoid dark shadows); screening option.
Layout	15. Simple pathway	Looped visible pathway leading back to large entry patio	With landmark destinations	With frequent rest stops		Large Entry Patio with visible looped pathway, destinations, and rest stops
Amenities Convenience	16. Amenities	Easy access to washroom: <15m(50')	Plus Beverage and snack cart; or barbeque	Plus Garden shed and tools		Washroom; hydration and snacks; barbeque; garden shed
Seating	17. Seating features	Variety of seating locations	Plus on a firm level base, back support and armrests	Plus Seat height 405 - 460 mm (16 - 19").		Well constructed, stable seating in a variety of locations
Plants	18. Natural features	Variety of safe non-toxic plants	Appeal to sight, smell, taste, touch, sound.	Familiar plants and flowers		Variety of greenery and flowers.
Features	19. Supportive features	Garden ornaments, weather vane, flag pole, car, bike.	Plus bird houses, bird baths, bird and squirrel feeders	Plus safe water feature; pergolas, arches, arbours		Attract birds, butterflies, squirrels, add architectural interest.
Views	20. Motivating Views	Views of activity and wildlife within garden	Plus views of activity outside garden	Outside garden views mitigated by unobtrusive enclosure		Views provide motivation to go outdoors.
TOTAL SCORE						

SCORING SUPPORT FOR BENBOW DEMENTIA CARE SMALL HOUSE DESIGN CHECKLIST (BDC) 2019

DESIGN FEATURES:

(can be used separately or combined)

**SMALL HOUSEHOLD AND WAYFINDING,
ACCESSIBILITY,
INTERIOR DESIGN,
LIGHTING AND NOISE,
OUTDOOR.**

REFERENCES (available on www.wabenbow.com)

Benbow, William, "Advantages of 'Small House' designs in dementia care", Canadian Nursing Home, Vol.23, March, 2012

Benbow, William, "*Evidence-based checklist for wayfinding design in dementia care facilities*", Canadian Nursing Home, March/April 2013, Vol.24, No.1,

Benbow, William, "*Are Nursing Homes Falling Short In Full Wheelchair Accessibility?*" Canadian Nursing Home, Vol.24, No.4, December 2013 ,

Benbow, William, " Interior Design for dementia care residences", Canadian Nursing Home, Vol. 25, No. 3, October 2014,

Benbow, William, "Lighting and Noise Design in Dementia Care Facilities", Canadian Nursing Home, Vol.24, October, 2013

Benbow, William, Maximizing the use of outdoor gardens in dementia care facilities, Canadian Nursing Home, Vol.25, No.1, March/April, 2014

William Benbow
January 2019
wabenbow.com

BENBOW SMALL HOUSEHOLD AND WAYFINDING CHECKLIST SCORING SUPPORT (Maximum 100 points - Assign score of 0, 1, 3, or 5 for each Design Feature)

SMALL HOUSE BUILDING STRUCTURE:

- 1. Small Scale:** (number of residents per self-contained Household – including lounge and dining)
(Reference: Marquardt 2009, Netten 1989, Calkins, Cutler, Nelson, Verbeek, Jenkins)

Score 0 points if House census is greater than 24 residents.

- Score 1 point if Household census is between 19 and 24 residents and House is divided into wings or sub-groups.
- Score 3 points if House census is between 14 and 18 residents.
- Score 5 points if House census is between 6 and 13 residents.

- 2. Privacy:** (prefer all resident rooms are singles, in a privacy zone, and with ensuite showers)
(Reference: Chaudhury 2003, AIA, 2006, Gooloo 2001)

Score 0 points if Household has fewer than 90 percent of its residents in private rooms.

- Score 1 point if Household has at least 80% of its residents in private rooms with ensuite.
- Score 3 points if Household has 90% of its residents in private rooms with ensuite.
- Score 5 points if Household has 100% of its residents in private rooms with ensuite .

- 3. Amenities:** (Prefer core Lounge and Dining located together within Household; with adjacent Activity, Resident Kitchen or life skills areas which could be shared within a Neighbourhood)
(Reference: Marquardt, Passini)

Score 0 points if the main amenities are not collocated.

- Score 1 point if the main lounge and dining are collocated.
- Score 3 points if the main lounge and dining are collocated and there is access to an outdoor or sun area. (in multistory buildings this could be a deck/balcony or sunroom)
- Score 5 points if in addition to the above, there is an adjacent activity area. (this activity area could be shared with other Households in the Neighbourhood and/or could be life skills stations and/or a resident kitchen which could be part of a servery)

4. Accessible: Resident Rooms and Amenities: (See Accessibility Check list, resident rooms and amenities (dining, lounge, and activity) are sized for wheelchair and mobility aids so that residents can age in place)

(Reference: various design guidelines – wabenbow.com “NURSING HOME LONG TERM CARE DESIGN GUIDELINES COMPARISON”

Score 0 points if resident rooms have less than 15.5 square metres (167 square feet) of usable space: i.e. excluding vestibule, ensuite, and built-ins; to allow for wheelchair manoeuvrability and amenities score less than 6 square metres per resident .

- a. Score 1 point if resident rooms have at least 15.5 sq.m. (167 sq. feet) of usable space and amenities have at least 6 sq. metres per resident (65 sf).
- b. Score 3 points if resident rooms have at least 17 sq.m. (183 sq. feet) of usable space and amenities have at least 7 sq. metres per resident (75 sf).
- c. Score 5 points if resident rooms have at least 18 sq.m. (193 sq.f) of usable space and amenities have at least 8 sq. metres per resident (86 sf).

5. Direct Visual Access: (amenities are visible from resident bedroom, and vice versa)

(Reference: Marquardt 2009 and 2011, Passini 1998 and 2000)

Score 0 points if less than 50% of residents can see the core amenity areas including dining and lounge from their bedroom door and vice versa.

- a. Score 1 point if at least 50% of residents can see the core amenity areas from their bedroom door and vice versa: i.e. their bedroom door from the amenity and have visual and direct access of the outdoor area from the core amenity area.
- b. Score 3 points if at least 75% of residents can see the core amenity areas from their bedroom door and vice versa and have visual and direct access to the secure outside area from the core amenity area.
- c. Score 5 points if 100% of residents can see the core amenity areas from their bedroom door and vice versa and have visual and direct access to the secure outside area from the core amenity area.

6. Floorplan Layout: (floor plan shape of House: circulation has minimal changes in direction with core amenities in intermediate/central location)
(Reference: Elmstahl, Marquardt 2009)

Score 0 points if the House unit floor plan layout is a courtyard or square design or any shape with multiple changes of direction (more than 2).

- a. Score 1 point if the House unit floor plan layout is an H shaped design with amenities in the cross piece.
- b. Score 3 points if the House unit floor plan layout has only one change in direction such as an L, V, U, Y or T shape with core amenities at the junction.
- c. Score 5 points if the House unit floor plan layout is a straight corridor with no change in direction, or an open plan design. Note: in Houses with larger census and a longer corridor the amenities should be an intermediate element.

7. Corridor length: (short or no distance between resident room and amenities)
(Reference: Netten 1989, Pinet 1999, Brawley 1992, Regnier)

Score 0 points if corridor linking resident rooms to amenities is longer than 35 metres (115 feet) from furthest resident room door to entrance to core amenities.

- a. Score 1 point if corridor length is 35 metres or less (115 feet) and has at least two intermediate elements such as a seating/resting area.
- b. Score 3 points if corridor length is 30 metres or less (100 feet) and has at least one intermediate element such as a seating area.
- c. Score 5 points if corridor length is 25 metres or less (82 feet); or if Household is an open plan (i.e. no corridor – resident rooms open directly onto core amenities)

8. Front door and exit controls: (Household is a distinct unit with its own controlled access: i.e. it is not accessed through another Household)
(Reference: Benbow, 2017)

Score 0 points if Household access/exit is not distinct and controlled or part of a Security Zone that is controlled.

- a. Score 1 point if Household has distinct front door with exit controls.
- b. Score 3 points if Household has distinct controlled front door and a separate Service access.
- c. Score 5 points if access doors are camouflaged to reduce exit seeking behaviour by residents.

9. Bathing: (prefer all resident rooms have ensuites with showers: number of assisted/therapeutic tubs may be reduced if all residents have ensuite showers)

Score 0 points if majority of resident rooms do not have ensuite showers.

- a. Score 1 point if portable showers are used to provide private showers in resident ensuites in conjunction with availability of shared assisted/therapeutic tubs in bathing rooms.
- b. Score 3 points if a majority of resident rooms have 3 piece ensuites (built in showers either European style or prefab with maximum sloped 13mm (1/2 inch) threshold) with one shared assisted/therapeutic tub per Household.
- c. Score 5 points if all resident rooms have 3 piece ensuites (built in showers) and there is one assisted/bathing tub per neighbourhood.

10. Outdoor Access: (See Outdoor Checklist, Secure access to outdoor area: garden, deck, sunroom preferably from Household core amenities or shared within a Neighbourhood on same floor.)
(Reference: Benbow, Canadian Nursing Home, March/April, 2014)

Score 0 points if there is no outdoor area available to residents.

- a. Score 1 point if there is a ground floor garden shared by all residents.
- b. Score 3 points if there is own floor access to an outdoor area such as a garden, deck or sunroom from the same floor as the Household.
- c. Score 5 points if there is physical and visible access to an outdoor area such as a garden, deck or sunroom directly from the amenity area of the Household or Neighbourhood.

WAYFINDING ELEMENTS:

11. Reference Points (anchor points/landmarks at circulation decision points)
(Reference: Elmstahl, Marquardt 2011, Zeisel, Netten, Passini, Brawley)

Score 0 points if there are no reference points to aid wayfinding decision making at intersections of corridors and entrances to rooms, wings and amenities.

- a. Score 1 point if there are reference points to aid wayfinding decision making at all major intersections.
- b. Score 3 points if there are reference points to aid wayfinding decision making at entrances to major rooms and areas.
- c. Score 5 points if in addition to “a” and “b” there are reference points to aid wayfinding decision making beside each resident room door. (e.g. memory box, plant, umbrella stand, shelf)

12. Minimal Repetitive Elements: (architectural and/or design elements: rooms and entrances)
(Reference: Passini, Marquardt 2009, Netten, Fleming, Joseph, University of Stirling)

Score 0 points if there are many repetitive elements such as similar doors along corridors, identical wings and amenity spaces.

- a. Score 1 point if amenity areas are distinct in shape and finish.
- b. Score 3 points if amenity areas are distinct in shape and finish and entrances to corridors/wings are distinct.
- c. Score 5 points if resident bedroom doors are distinct in style and colour; corridor entrances and wings are distinctive; and amenity rooms have distinct and defining shapes and finishes.

13. Rooms with legible meaning: (function and meaning of room are self-evident)
(Reference: Marquardt, Netten, Passini)

Score 0 points if rooms are indistinguishable for the most part, with generic furniture and décor: i.e. all resident rooms are identical, amenity areas have shared and overlapping functions.

- a. Score 1 point if lounge, dining and activity amenities are recognizable spaces with some distinctive furnishings.
- b. Score 3 points if amenities are distinct rooms with clear separate functions such as dining, lounge, and activity, distinguishable by flooring, fixtures, furnishings and décor.
- c. Score 5 points if rooms and their entrances are clearly distinguishable by function and meaning, with pictograms and words reinforcing flooring, fixtures, furnishings and décor: eg. Picture of a knife and fork and the word as well for location of dining room.

14. Residents' Name and Photo: (to identify resident rooms for residents)
(Reference: Namazi 1951, Nolan 2001 and 2002, Passini)

Score 0 points if resident room doors are not identified by resident name or picture.

- a. Score 1 point if Resident's name is used to identify resident room.
- b. Score 3 points if Resident's name and photo are used to identify resident room.
- c. Score 5 points if Resident's name and photo as young adult are used to identify resident room and are placed on the resident's room door.

15. Signage and Pictograms: (e.g. Large legible lettering and/or graphic; e.g. knife and fork for dining room, toilet for WC, placed below 4 feet from floor)
(Reference: Namazi, Cantley, Passini, Brawley 1992, Namazi, Calkins)

Score 0 points if large lettering or pictograms are not used.

- a. Score 1 point if lettering on signs is a minimum of $\frac{3}{4}$ inch high.
- b. Score 3 points if lettering on most signs is a minimum of 1 and $\frac{1}{2}$ inches high.
- c. Score 5 points if in addition signage and pictograms are placed below 4 feet from the floor, or on the floor e.g. arrows, foot steps.

16. Colour contrast: (luminance contrast – use a gray scale chart for evaluating colour contrast available at art supply stores: minimum 30% for cues, walls, floors, step edges, level changes, furniture, fixtures, sinks, toilets, switches, plates and minimum 70% contrast for lettering on signs relative to background of lettering.
(Reference: Bright and Egger, Fleming, Brawley, see LRV in University of Stirling "Virtual Suite")

Use Gray Scale available from art supply stores:



Score 0 points if there is poor colour contrast for signs, furniture, fixtures, walls, floors, doors.

- a. Score 1 point if wayfinding signs are at least 70% contrast colour letters to background.
- b. Score 3 points if wayfinding signs are in 70% contrast colour; and floor and wall are minimum 30% contrast colours; and doors for resident use are minimum 30% colour contrast with their frames.
- c. Score 5 points if wayfinding signs are in high contrast colour combinations, and floor and wall are in 30% contrast colours and doors for resident use are in 30% colour contrast with their frames; and furniture and fixtures are in minimum 30% contrasting colour to walls and floor.

17. Lighting – glare and lux: (see Lighting Checklist: light requirement for older people can be five times greater)
(Reference: Netten, Brawley, Fleming)

Score 0 points if no effort is made to mitigate glare and poor lighting levels.

- a. Score 1 point if the interaction between lighting, flooring and other surfaces eliminates glare: use of non-reflective floors, walls, tables, artwork and indirect lighting, shaded lamps and ambient lighting is equal to or greater than 320 lux.
- b. Score 3 points if glare is eliminated, and ambient lighting is equal to or greater than 550 lux.
- c. Score 5 points if glare is eliminated; ambient lighting is equal to or greater than 1000 lux and signs, cues and landmarks are well lit.

18. Minimal information clutter: (keep signage and directions simple and concise)
(Reference: Passini)

Score 0 points if walls are cluttered with signage etc.

- a. Score 1 point if signage is simple (six grade reading level)
- b. Score 3 points if signage is simple, and posted information is minimal.
- c. Score 5 points if signage is simple, posted information is minimal, and kept to meaningful decision points: key intersections and entrances.

19. Reduced floor patterns and lines: (to reduce impediments to desired routes)
(Reference: Brawley, Perritt)

Score 0 points if floor patterns are large, busy and confusing and/or have strong contrasting sections and lines.

- a. Score 1 point if floor patterns are of low contrast, with small pattern detail.
- b. Score 3 points if floor patterns and lines are eliminated for the most part.
- c. Score 5 points if adjoining floor materials match well in appearance with little contrast.

20. Visibly accessible toilet: (toilets out of sight are out of mind – to remediate door is left open when not in use or removed and replaced with privacy curtain; and light left on)
(Reference: Namazi)

- a. Score 1 point if door routinely left open or removed on resident room ensuite and light left on or a night light so that toilet is visible from outside the ensuite.
- b. Score 3 points if door routinely left open on resident room ensuite and amenity toilet rooms and a light left on so that toilet or sink is visible from outside the room. WC could have modesty vestibule, curtain, or “close door” sign on inside.
- c. Score 5 points if all toilet room doors routinely left open with a light on; and high colour contrast used between toilet and floor, or toilet seat and toilet; and/or pictograms are used such as arrows on floor with toilet pictogram on door.

BENBOW ACCESSIBILITY CHECKLIST SCORING SUPPORT

(Maximum 100 points)

(Rating scale: Assign score of 0, 1, 3, or 5 for each Design Feature)

(References: Various Design Guidelines; US Veterans Affairs Small House Model 2017)

DESIGN FEATURES:

1. Front Entrance: Walkway to main entrance:

Score 0 points if walkway to main entrance is uneven.

- a. Score 1 point if the walkway is a continuous plane surface with flush joints a maximum 6mm in height differential.
- b. Score 3 points if in addition to (a), the walkway surface is of a permanent material, that is firm and slip resistant and a minimum of 1524 mm (5') wide.
- c. Score 5 points if in addition to (b) the walkway is level; or if inclined it is at a maximum gradient of 1 in 20 with appropriate safety curbs if there is a greater than 75mm side drop off.

2. Front Entrance: Facility Entrance power operated:

Score 0 points if the Facility Entrance doors are not power operated.

- a. Score 1 point if the Facility Entrance doors are power operated by a push paddle or key pad.
- b. Score 3 points if the Facility Entrance doors are power operated by automatic sensors.
- c. Score 5 points if in addition to (a) or (b) the Facility Entrance doors are sliders with a 4 – 6 second closure delay.

3. Front Entrance: door clearances:



Score 0 points if the Front Entrance Door opening is less than 914 mm (36") wide.

- a. Score 1 point if the Front Entrance door is a minimum 914 mm (36") wide.
- b. Score 3 points if in addition to (a) there is a rectangular clear area in front of each side of the door of a minimum **Length** of 1100 mm (43"), plus on the inward swing side to this clear area length is added the width of the door to account for the swing of the door towards the wheelchair.
AND the minimum **Width** of the clear area is equal to the width of the door plus a latch side clearance of 600 mm (2 feet) on the inward swing side of the door; and to the clearance width of the outside of the door, the width of the door plus an additional latch side width of 300 mm (1 foot).
- c. Score 5 points if the rectangular clear area before the door is a minimum length and width of 1524 mm x 1524 mm (5 feet), plus on the inward side the addition of the door width to the clearance length to account for the inward swing of the door.

4. Outside access from House Units:

Score 0 points if there is no at grade access to an outside area.

- a. Score 1 point if all levels of the Facility have access to an outdoor area at grade or to a patio, deck or sunroom.
- b. Score 3 points if all Houses of the Facility have direct access from within each Household or adjacent shared amenity area to an outdoor area at grade or a patio, deck or a sunroom.
- c. Score 5 points if in addition to (b) all Houses have access to an outside area, deck or sunroom via doors that are automated with a paddle or sensor.

5. Contiguous floor levels:

Score 0 points if floor levels are not contiguous: i.e. flooring is not a level surface plane.

- a. Score 1 point if thresholds between flooring are bevelled at 45 degrees or less; and are a maximum 13mm (1/2 inch) in height.
- b. Score 3 points if flooring joints are a maximum 6 mm in height differential (1/4 inch).
- c. Score 5 points if flooring joints are a maximum 2 mm in height differential (1/25 inch).

6. Wheel chair turning diameter in resident rooms, ensuites, and amenities:

Score 0 points if there is less than 1524 mm (5 feet) turning diameter for wheel chair maneuverability.

- a. Score 1 point if there is a minimum of 1524 mm turning diameter for wheel chairs in all resident areas.
- b. Score 3 points if wheel chair turning diameter is a minimum of 1676 mm (5'6").
- c. Score 5 points if wheel chair turning diameter is a minimum of 1830 mm (6 feet).

7. Corridor width:

Score 0 points if corridor width is less than 1830 mm (6 feet)

- a. Score 1 point if corridor width is a minimum of 1830 mm (6 feet).
- b. Score 3 points if corridor width is a minimum of 1830 mm (6 feet) and the corridor has laybys or alcoves for parking carts and lifts so they do not obstruct traffic.
- c. Score 5 points if corridor width is a minimum of 2400 mm (8 feet).

8. Corridor length:

Score 0 points if the corridor length from the bedroom door to the beginning of the main amenities is more than 35 m (115 feet) for the most distant resident room.

- a. Score 1 point if corridor length from bedroom door to the start of the main amenities is a maximum of 35 m (115 feet) for the most distant resident room.
- b. Score 3 points if corridor length from bedroom door to the start of the main amenities is a maximum of 30 m (100 feet) for the most distant resident room.
- c. Score 5 points if corridor length from bedroom door to the start of the main amenities is a maximum of 25 m (82 feet) for the most distant resident room.

9. Resident Room usable space (excluding ensuite, built-ins and vestibule):

Score 0 points if the Resident Room usable space is less than 15.5 sq. m. (167 sq. feet).

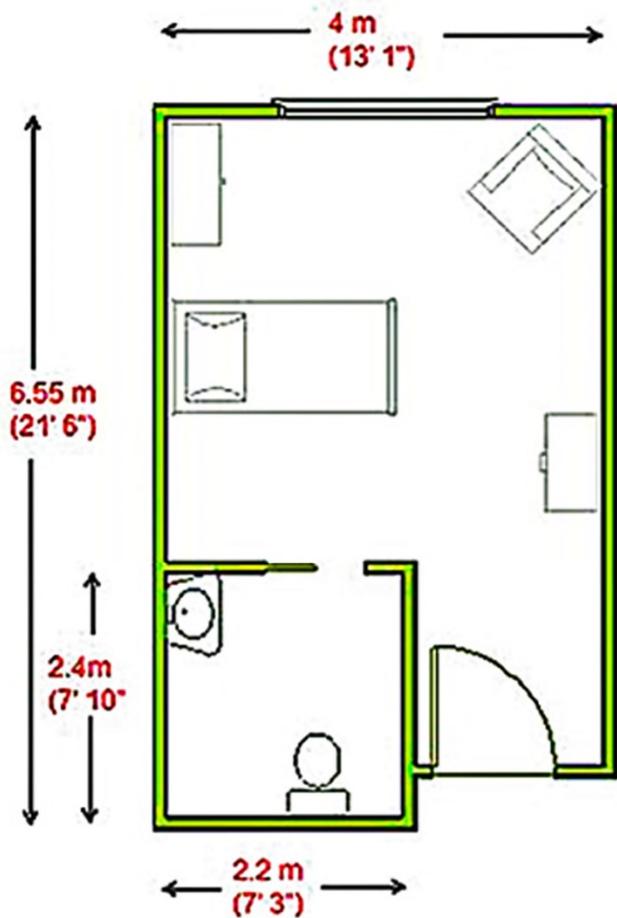
- a. Score 1 point if the Resident Room usable space is a minimum 15.5 sq. m. (167 sq. feet).
- b. Score 3 points if the Resident Room usable space is a minimum of 17 sq. m. (183 sq. feet).
- c. Score 5 points if the Resident Room usable space is a minimum of 18 sq. m. (193 sq. feet).

10. Resident Room minimum dimensions for required clearances – score either Panhandle or Paired Ensuite design or use an average if both designs are in use:

(i) Panhandle design (vestibule):

Score 0 points if the Resident Room width is less than 4000 mm (13'1") wide by 6550 mm (21'6") long.

- a. Score 1 point if the Resident Room is a minimum of 4000 mm (13'1") wide by 6550 mm (21'6") long. (CRD, Victoria design)
- b. Score 3 points if the Resident Room is a minimum of 4420 mm (14'6") wide by 6858 mm (22'6") long. (CLC, 2011, p.4-13 design)
- c. Score 5 points if the Resident Room is a minimum of 4420 mm (14'6") wide by 7315 mm (24') long. (CLC, 2011, p. 4-19 design)

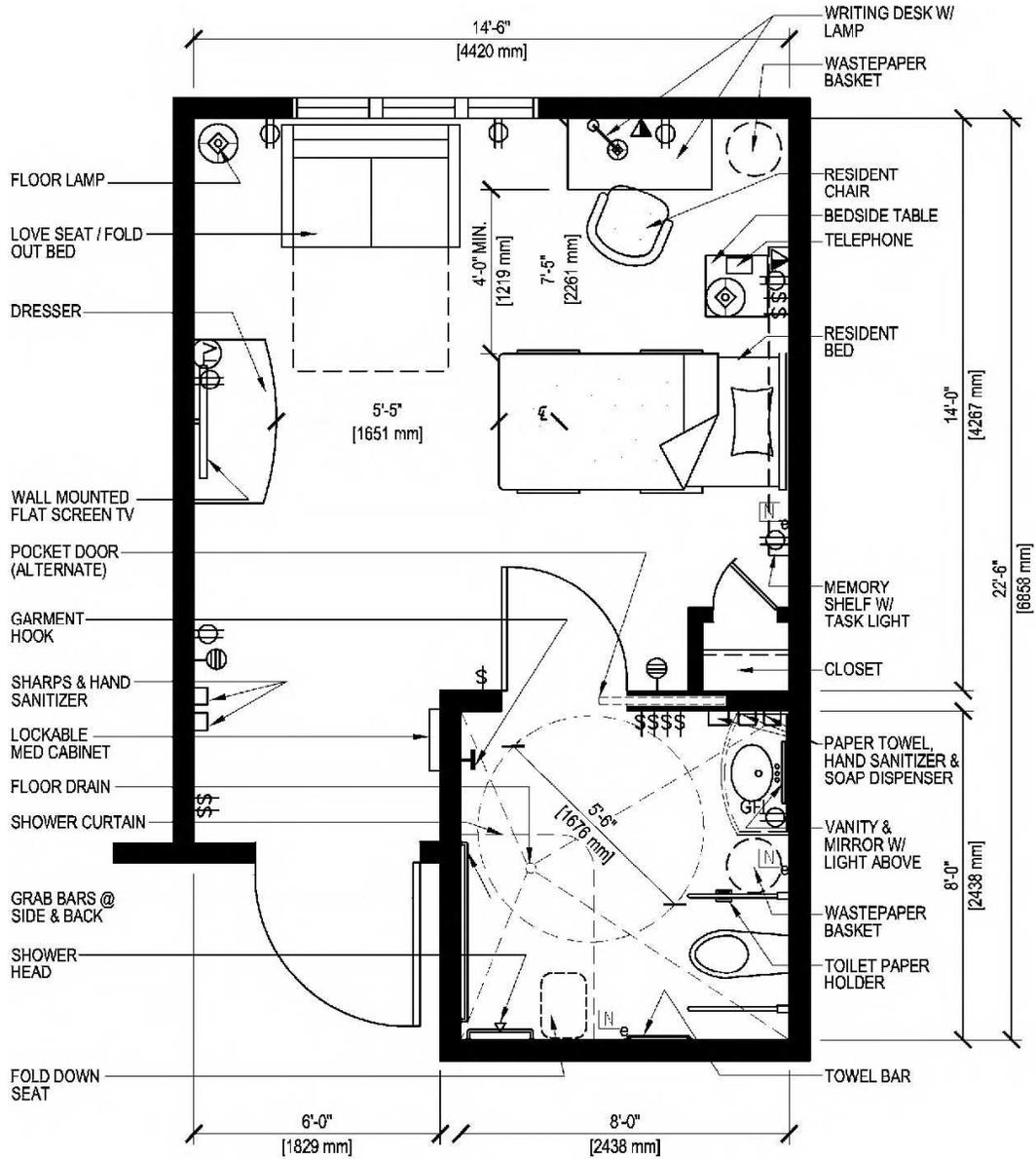


CRD MODEL

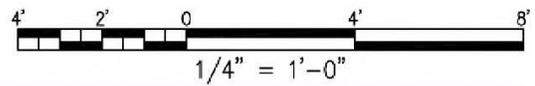
24.6 sq. m (265 sq.f)

16.3 sq. m. usable space (175 sq.f)

H1.0 Resident Bedroom (BRNP1); and Bathroom (TLTS2) Floor Plan



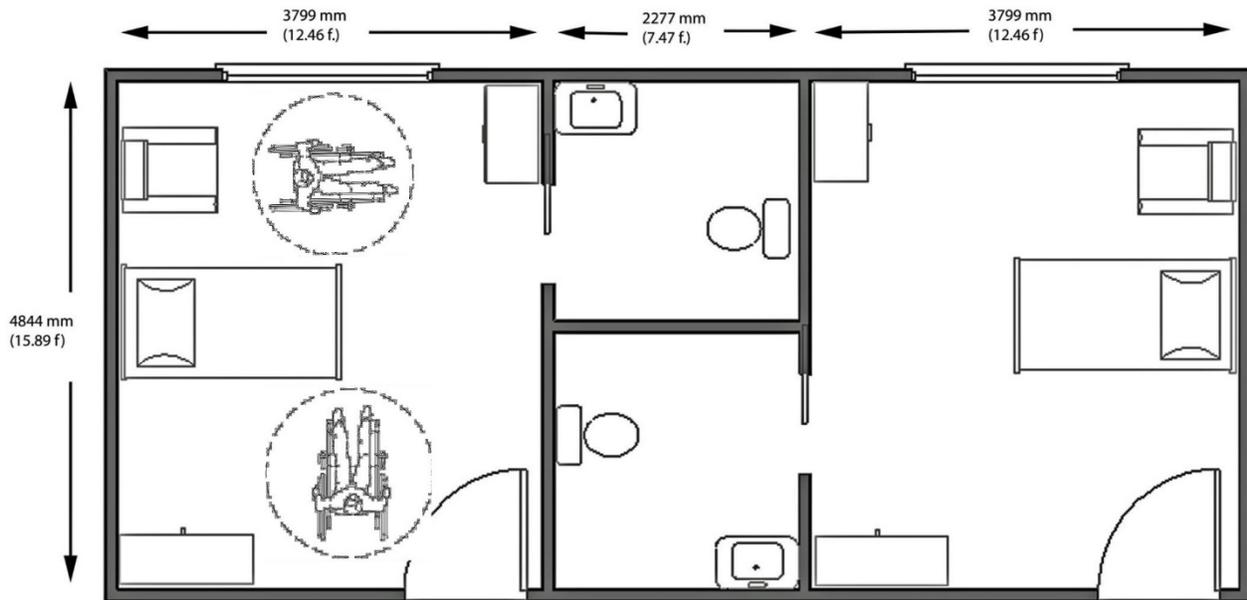
Resident Bedroom (BRNP1): 225 NSF [20.9 m²]
Resident Bathroom (TLTS2): 65 NSF [6.0 m²]



(ii) Paired Ensuite design:

Score 0 points if the Resident Room width is less than 3455 mm (11'4") wide by 4548 mm (14'11") long.

- Score 1 point if the Resident Room width is less than 3455 mm (11'4") wide by 4548 mm (14'11") long. (NB, 2010, p.27 design)
- Score 3 points if the Resident Room is a minimum of 3799 mm (12'6") wide by 4844 mm (15'11") long. (Ayre Manor, Sooke BC - design by Jensen Group Architects)
- Score 5 points if the Resident Room is a minimum of 4064 mm (13'4") wide by 5335 mm (17'6") long. (NB, 2010, p.29 design)



AYRE MANOR COMPLEX CARE SUITE
24.1 sq. m. (259 sq. f.)
18.4 sq. m. (198 sq. f.) excluding ensuite

11. Resident Room Ensuite Area

Score 0 points if the Resident Ensuite includes a shower and is less than 5 sq. m. (54 sq. f) or is a minimum 4.5 sq. m. (50 sq. f) without a shower.

- Score 1 point if the Resident Ensuite includes a shower and is a minimum 5 sq. m. (54 sq. f); or is a minimum 4.5 sq. m. (50 sq. f) without a shower.
- Score 3 points if the Resident Room Ensuite includes a shower and is a minimum 6 sq. m. (65 sq.f); or is a minimum 5.5 sq. m. (60 sq. f) without a shower.
- Score 5 points if the Resident Room Ensuite includes a shower and is a minimum 7 sq. m. (75 sq. f) or is a minimum 6.5 sq. m. (70 sq. f) without a shower.

12. Door Openings: Resident Room and Ensuite:

Score 0 points if either the Resident Room entrance door or Ensuite door is less than 914 mm (36 inches).
Note: prefer ensuite door not be swing type: rather should be sliding, barn, saloon, accordian, or curtain.

- a. Score 1 point if the Resident Room entrance doorway and Ensuite doorway are both a minimum 914 mm (36 inches).
- b. Score 3 points if in addition to (a), there is a latch side clearance of 600mm (24") on the swing side of the door and a minimum latch side clearance of 300mm (12") on the non-swing side of the door.
- c. Score 5 points if in addition to (b) there is a minimum clear and level rectangular space 1500 mm (5') in length in front of both sides of the door.

13. Ensuite Toilet:

Score 0 points if the ensuite toilet seat is not between 400 mm (16") and 460 mm (18") in height from the floor.

- a. Score 1 point if the ensuite toilet seat is between 400 mm (16") and 460 mm (18") in height from the floor.
- b. Score 3 points if the ensuite toilet is accessible from the front and one side: i.e. there is a clear and level rectangular space 600 mm by 1500 mm (2' x 5').
- c. Score 5 points if the toilet is accessible from the front and two sides.

14. Resident Room Ensuite Fixtures:

Score 0 points if clearance under the sink is less than 735 mm (29') and there is no ensuite shower, tilting mirror, locked drawer or nurses cupboard.

- a. Score 1 point if the ensuite sink has an under sink clearance of 735 mm (29").
- b. Score 3 points if there is an ensuite shower in each resident room ensuite.
- c. Score 5 points if there is a tilting mirror, locked drawer for resident use, and nurses' cupboard for special supplies.

15. Assisted Bathing Suite:

Score 0 if there is not at least one Assisted Bathing Suite per Neighbourhood or if it is less than 20 sq. m.

- a. Score 1 point if there is at least one Assisted Bathing Suite per Neighbourhood and it includes a toilet and sink, has tub access on three sides, and is a minimum 20 sq. m.
- b. Score 3 points if there is at least one Assisted Bathing Suite per Neighbourhood and it includes a toilet and sink, has tub access on three sides, and is a minimum 22 sq. m.
- c. Score 5 points if there is at least one Assisted Bathing Suite per Neighbourhood and it includes a toilet and sink, has tub access on three sides, and is a minimum 24 sq. m.

16. Resident areas door handles and closure:

Score 0 points if door handles are of a knob type that requires clutching and turning.

- a. Score 1 point if the door handles are a push plate or a U shaped door pull.
- b. Score 3 points if the door handles are a lever.
- c. Score 5 points if in addition to (a) or (b) the doors have no closures or any closure device is set at a maximum 38 N force.

17. Resident Room ceiling lift system:

Score 0 points if resident rooms do not have a ceiling lift system.

- a. Score 1 point if there is a one track ceiling lift system over the bed or built in potential.
- b. Score 3 points if the ceiling track system covers most of the resident's room such as a gantry system (2 tracks with bridging movable gantry)
- c. Score 5 points if in addition to (a) or (b) the ceiling track system continues into the ensuite.

18. In-House Amenity area (dining plus lounge plus activity areas)

Score 0 points if combined amenities total less than 6 sq. m. (65 sq. feet) per resident.

- a. Score 1 point if combined amenities total a minimum of 6 sq. m. (65 sq. feet) per resident.
- b. Score 3 points if combined amenities total a minimum of 7 sq. m. (75 sq. feet) per resident.
- c. Score 5 points if combined amenities total a minimum of 8 sq. m. (86 sq. feet) per resident.

Note: Activity area can be shared between 2 – 3 adjacent Households within a security zone.

19. Resident areas controls: height from finished floor:

Score 0 points if controls are higher than 1200 mm (47") from the finished floor.

- a. Score 1 point if controls are a maximum 1200 mm (47") from the finished floor.
- b. Score 3 points if controls are a maximum 1100 mm (43") from the finished floor.
- c. Score 5 points if in addition to (b) some controls operate on a motion sensor.

20. Resident areas windows: viewing height:

Score 0 points if window height prevents viewing from a sitting position.

- a. Score 1 point if window height enables visibility from a sitting position.
- b. Score 3 points if window height enables visibility from sitting and bed positions.
- c. Score 5 points if windows are located a minimum 457 mm (18") away from corners.

BENBOW INTERIOR DESIGN CHECKLIST SCORING SUPPORT

(Maximum 100 points)

(Rating scale: Assign score of 0, 1, 3, or 5 for each Design Feature)

LIGHT FIXTURES

Lighting Levels:

Use a light meter equivalent to DVM 1300 from Velleman, capable of measuring 0 – 50,000 lux with an accuracy of 5%. Take several readings from several rooms and times; then average. If measuring in Foot Candles (FC) - Note: 1 foot candle = 10.76 lux.

1. Ambient and Task Lighting (Ambient in Lounge, Bedroom, Bathroom taken at sitting eye level; and Task for Dining, Activity, Lounge and Bedroom Reading areas - measure on surface of task)

(References: Brawley, Noell-Waggoner, Lepeleire, Sinoo, Riemersma-van der Lek, Calkins)

Score 0 points if Ambient Lighting is < 320 lux and task lighting is < 550 lux.

- a. Score 1 points if Ambient Lighting is \geq 320 lux, and task lighting is \geq 550 lux.
- b. Score 3 points if Ambient Lighting is \geq 550 lux, and task lighting is \geq 750 lux .
- a. Score 5 points if Ambient Lighting is \geq 1000 lux in an amenity: i.e. bright light therapy, and task lighting is \geq 1200 lux.

2. Mitigate Glare:

(References: Brawley and Noell-Waggoner)

Score 0 points if glare is present.

- a. Score 1 point if light fixtures use shielded bulbs and indirect lighting (pointed at ceiling).
- b. Score 3 points if in addition to (a), reflective surfaces on walls, tables, artwork, are limited to eliminate harsh reflections and flooring including outdoor surfaces have a low to medium LRV (30 to 40).
- c. Score 5 points if in addition to (a) and (b), window shades, curtains, drapes, or blinds are available and used to block uncomfortable sun light.

Light Reflectance Value (LRV) is the percentage of light a paint colour reflects and is normally indicated on paint and stain chips and tins (see item 18).

3. Colour Rendering Index & Kelvin rating of Fixture/source: (Colour Rendering Index (CRI) is measure of closeness to daylight of source of light. Kelvin is a unit of measurement used to describe the hue of a specific light source: the higher the Kelvin value of the light source, the closer the light's colour output will be to actual sunlight. Bulbs with an output of 3500K or lower will have an amber hue, bulbs in the mid-range of 3500K-4100K will have a white hue, bulbs in the higher 4100K+ range will tend toward a blue hue and closer to sunlight. You can check with fixture or light bulb manufacturer for CRI

and Kelvin ratings. Automated fixtures and LED bulbs are available to adjust the Kelvin temperature/brightness of light to mimic Circadian rhythm and promote alertness during the day and sleep at night.)(References: Noell-Waggoner)

Score 0 points if CRI < 70 and Kelvin colour temperature <3000 during daytime in common areas, resident rooms, corridors.

- a. Score 1 points if CRI \geq 70 in common areas and bedrooms and Colour Temperature is >3000 Kelvin during daytime.
- b. Score 3 points if CRI \geq 80 in common areas and bedrooms and Colour Temperature is >3500 Kelvin during daytime.
- c. Score 5 points if CRI \geq 90 in common areas and bedrooms and Colour Temperature is > 4000 Kelvin (white daylight) in during daytime or automated fixture and/or bulbs are used to mimic Circadian rhythm.

Examples of Color Temperature and CRI

Light Source	Color Temperature	Color Rendering Index
Candle	1700k	100 CRI
High Pressure Sodium	2100k	25 CRI
Incandescent	2700k	100 CRI
Tungsten Halogen	3200k	95 CRI
Cool White	4200k	62 CRI
Clear Metal Halide	5500k	60 CRI
Natural Sunlight	5000-6000k	100 CRI
Daylight Bulb	6400k	80 CRI

Kelvin Color Temperature	2700K	3000K	3500K	4100K	5000K	6500K
Associated Effects and Moods	Ambiant Intimate Personal	Calm Warm	Friendly Inviting	Precise Clean Efficient	Daylight Vibrant	Daylight Alert
Appropriate Applications	Living/Family Rooms Commercial/ Hospitality	Living/Family Rooms Commercial/ Hospitality	Kitchen/Bath Light Commercial	Garage Commercial	Commercial Industrial Institutional	Commercial Industrial Institutional

4. Controls:

Score 0 points if switches are located higher than 1200 mm (47 inches)

- a. Score 1 point if switches are located lower than 1200 mm (47 inches).
- b. Score 3 points if in addition to (a), double-switching is used in bedrooms.
- c. Score 5 points if in addition to (a) and (b) dimmable switches are used in corridors.

5. Flexibility:

Score 0 points if there is limited flexibility in type of lighting fixtures.

- a. Score 1 point if there is a variety of fixtures including floor and table lamps.
- b. Score 3 points if in addition to (a) there are overhead and task lighting fixtures in resident rooms and common areas.
- c. Score 5 points if in addition to (a) and (b) some fixtures are activated by motion sensors or are automated, especially for ensuite and/or corridors and/or circadian rhythm.

COLOUR PALETTE , COLOUR CONTRAST, CAMOUFLAGE

Contrast can be determined using a Grayscale available from Art supply store,

A standard Grayscale has 10 segments ranging from white to black, in 10% increments. Good contrast should have at least two segments between: i.e. 30% value difference – if one item has 20% value the other should have at least 50%. Signs should have minimum 70% contrast between lettering and background.

See Youtube demonstration: <http://www.youtube.com/watch?v=CgMf16Mbke8>

Programs like Adobe Photoshop can convert colour photos to Grayscale image.

<http://www.workwithcolor.com/color-luminance-2233.htm>



6. Colour particularly major surfaces such as walls, doors, ceilings and flooring:

(References: Cooper, Bakker)

Score 0 points if colours are predominantly pastel, washed out, weak or red and green together.

- Score 1 point if strong warm colours at the yellow-red end of the spectrum are used.
- Score 3 points if in addition to “a” colour contrast is well utilized: e.g. light against black, dark against white, light yellow against dark blue.
- Score 5 points if in addition to (a) and (b) peach, coral, apricot tones are used to add warmth, with a minimum of pastel blues and lavenders.

7. Contrast for Direction and Redirection:

(References: Bright and Egger)

Score 0 points if there is minimal use of contrast or lack of contrast for direction/redirection.

- Score 1 point if a lack of contrast is used to hide doors to exits, housekeeping rooms: e.g. paint doors same colour and contrast value as walls.
- Score 3 points if contrast such as a contrasting stripe on floor or contrasting ribbons on doors is used to deter access.
- Score 5 points if door frames are in contrasting colour to door and walls to enhance visibility.

8. Murals for Camouflage and Interest:

(References: creativeartco.com, truedoors.com)

Score 0 points if no use of murals or camouflage.

- Score 1 point if doors are camouflaged to conceal exits and access to unsafe areas: e.g. elevator and exit doors disguised as bookcases.
- Score 3 points if doors are unique: e.g. resident doors made to appear like resident’s own distinct front door rather than all resident doors the same. And Murals on walls to add interest.
- Score 5 points if Interactive murals are used to stimulate activity: e.g. movable flowers to attach to garden mural or tree with elements like snow and leaves to change with season.

ENSUITE FIXTURES

9. Ensuite Fixtures - Safety, Accessibility, Visibility:

(References: Namazi and Johnson, 1991,1992)

Score 0 points if little effort has been made to make ensuite fixtures easily visible and accessible.

- a. Score 1 point if the ensuite toilet is visible from the bed and an accessible height (between 400 mm (16") and 460 mm (18") in height from the floor). (could provide small stool to raise feet for improved squatting posture for residents with difficult bowel movements)
- b. Score 3 points if in addition to (a) there are appropriate grab bars for the toilet and shower and well marked faucets (traditional).
- c. Score 5 points if in addition to (a) and (b) contrast is used to make the toilet seat, sink, and grab bars stand out against their backgrounds.

FITTINGS

10. Fittings - Simple and plain, contrast:

(References: Brush)

Score 0 points if there is little effort to avoid large contrasting patterns on fittings.

- a. Score 1 point if there is no life like or large pattern on curtains, bedding and cushions.
- b. Score 3 points if in addition to (a) there are personalized fittings such as bedspreads, pillows, and other personal items on display.
- c. Score 5 points if in addition to (a) and (b) there is a good use of contrast between table/placemats and plates, and utensils, and between handles and background.

SIGNAGE

11. Signage, Visibility:

(References: Bright and Egger, Namazi and Johnson, Brawley)

Score 0 points if little effort is made to make signage visible with large fonts and contrast.

- a. Score 1 point if signage uses large text (minimum 60 pt.- 2 cm.) and minimum 70% contrast between text and background.
- b. Score 3 points if in addition to (a) signage is located at or below door handle level.
- c. Score 5 points if in addition to (a) and (b) pictures and text are used in some signage such as for common toilet rooms and resident bedroom doors.

FURNITURE

12. Seating:

(References: Capezuti, Hughes)

Score 0 points if chairs and sofas are poorly suited to seniors in terms of height, stability, durability and contrast to background.

- a. Score 1 point if seating is 51 to 56 cm - 20 to 22 inches high, sturdy, with arm rests to aid in sit to stand action.
- b. Score 3 points if in addition to "a", seating is designed with water resistant fabric, firm pop up cushions for cleaning and a flow through design.
- c. Score 5 points if in addition to "a" and "b", there is a variety of choice in terms of seating height, and the furniture colour contrasts with its background (walls, floor).

13. Tables:

Score 0 points if the tables are not sturdy, durable, safe, and accessible.

- a. Score 1 point if the dining room tables are sturdy: i.e. substantial pedestal or well braced legs.
- b. Score 3 points if in addition to "a" the tables are square, with rounded corners, and curved edges.
- c. Score 5 points if in addition to "a" and "b" tables have adequate wheel chair clearance. (underside 735 mm - 29 inches from floor)

14. Wardrobes and Dressers:

Score 0 points if wardrobes and dressers are inappropriate for dementia residents.

- a. Score 1 point if wardrobes have two side by side compartments, one section open or glazed for one day use; and the other larger for ongoing storage.
- b. Score 3 points if in addition to (a) wardrobes and dressers have handles contrasting with their backgrounds, and no sharp corners or edges.
- c. Score 5 points if wardrobes, dressers, night tables etc. have hard wearing high pressure laminate on major surfaces and are fabricated with a durable substrate such as wood, plywood, or medium density fiberboard (not particle board).

15. Appliances (safety):

Score 0 if there is no effort to ensure safety of appliances.

- a. Score 1 point if the only appliances accessible to residents are refrigerators.
- b. Score 3 points if there are no microwave ovens available to residents or any that are available have safety sensors and simple to use controls.
- c. Score 5 points if in addition to (b) there are no ranges accessible to residents or any that are available have staff controlled shut offs.

FLOORING

16. Flooring - Safety, Accessibility, Durability:

Score 0 points if inappropriate flooring is used.

- a. Score 1 point if thresholds are a maximum 13 mm (1/2 inch) and bevelled.
- b. Score 3 points if flooring is stable, firm, slip resistant, and cushioned, yet does not impede movement.
- c. Score 5 points if in addition to (a) or (b) flooring is easily maintained, water, mildew and stain resistant.

17. Flooring - Contrast:

(References: Dickinson, Perritt)

Score 0 points if contrast issues are not taken into consideration in the choice of flooring.

- a. Score 1 point if large contrasting patterns have been avoided.
- b. Score 3 points if in addition to (a) flooring contrasts with walls and baseboards to easily distinguish edges between flooring and walls.
- c. Score 5 points if in addition to (a) or (b) tonal contrast from one flooring material to another is less than 30% unless contrast is being used to redirect residents away from an area.

FINISHES

18. Finishes - Simplicity, Durability: (Light Reflectance Value, Contrast, and durability)

Light Reflectance Value (LRV) is a numerical rating assigned by paint manufacturers to each color they make. Usually this number is shown on sample paint chips and actual paint containers. This number is a scientifically determined assessment of the amount of light and heat that color will reflect on a scale of 0 to 100. Pure black has an LRV of 0, absorbs all light and heat, and can get very hot. On the other hand, pure white has a reflectance value of nearly 100, and can keep a space light and cool. All colors fit in between these two extremes. A color with an LRV of 50 will reflect 50% of the light that falls on it, and one with an LRV of 23 will reflect 23% of the light, and so on. Think of LRV's as a numerical version of a gray value scale for colors, roughly like this:

White: (LRV 100) High Light (LRV 95) Light (LRV 80)	Low Light (LRV 65) Medium: (LRV 50) High Dark (LRV 35)	Dark (LRV 20) Low Dark (LRV 5) Black (LRV 0)
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Score 0 points if finishes have inappropriate Light Reflective Values or confusing patterns.

- a. Score 1 point if finishes avoid large contrasting or life like patterns or specks.
- b. Score 3 points if in addition to (a) the Light Reflective Value of ceilings is greater than 80; and the LRV of walls is greater than 60, and the LRV of floors is between 30 and 40.
- c. Score 5 points if in addition to (a) and (b) there is use of wall and corner protection such as chair rails and acrovyn like coverings on susceptible surfaces.

19. Finishes - Contrast:

(References: Dupuy)

Score 0 points if contrast is not well utilized to aid in visibility of objects against their background.

- a. Score 1 point there is generally 30% contrast between objects and their background: e.g. handrails, grab bars, handles, furniture.
- b. Score 3 points if in addition to (a) adjacencies utilize contrast so that junctions and edges are more visible, particularly for pastel finishes which tend to be seen as gray: ie. Walls to floor, baseboards, table edges.
- c. Score 5 points if in addition to (a) and (b) strong colour contrast is utilized on stair tread edges and drop offs for safety.

FEATURES

20. Special Points of Interest: to enhance memory, provide atmosphere, interest.

Score 0 points if there is a dearth of special points of interest.

- a. Score 1 point if special features are used to enhance décor, atmosphere and theme.
- b. Score 3 points if special features are used as landmarks to aid in wayfinding.
- c. Score 5 points if in addition to (b) special living features such as plants and animals are used: e.g. aquarium, aviary, the Eden model.

BENBOW LIGHTING AND NOISE CHECKLIST SCORING

(Rating Scale: 1 - 3 – 5)

LIGHTING:

1. Ambient Lighting (Lounge, Bedroom, Bathroom: (taken at sitting eye level)

(References: Brawley, Noell-Waggoner, Lepeleire, Sinoo, Riemersma-van der Lek Calkins)

Score 0 points if Ambient Lighting is < 320 lux.

a. Score 1 point if Ambient Lighting is ≥ 320 lux.

b. Score 3 points if Ambient Lighting is ≥ 550 lux.

c. Score 5 points if Ambient Lighting is ≥ 1000 lux in an amenity: i.e. bright light therapy.

2. Task Lighting: (Dining, Activity, Lounge, Bedroom Reading areas) Measure surface of task)

Score 0 points if task lighting is < 550 lux.

a. Score 1 point if task lighting is ≥ 550 lux.

b. Score 3 points if task lighting is ≥ 750 lux.

c. Score 5 points if task lighting is ≥ 1100 lux.

Lighting Levels: Use a light meter capable of measuring 0 – 50,000 lux with an accuracy of 5%. Take several readings from several rooms and times; then average. If in Foot Candles (FC) 1 foot candle = 10.76 lux.

3. Natural Light

(References: Noell-Waggoner, Torrington, Brawley)

Score 0 points if there is poor access to natural light.

a. Score 1 point if there is good use of windows to bring daylight into the facility.

b. Score 3 points if there are added features such as clerestories or skylights.

c. Score 5 points if in addition to (b) fixtures have at least 90 CRI and 4000 Kelvin.

Colour Rendering Index (CRI) and Kelvin temperature are measures of closeness to daylight of a source of light)

Examples of Color Temperature and CRI

Light Source	Color Temperature	Color Rendering Index
Candle	1700k	100 CRI
High Pressure Sodium	2100k	25 CRI
Incandescent	2700k	100 CRI
Tungsten Halogen	3200k	95 CRI
Cool White	4200k	62 CRI
Clear Metal Halide	5500k	60 CRI
Natural Sunlight	5000-6000k	100 CRI
Daylight Bulb	6400k	80 CRI

4. Natural Views:

(References: Torrington)

Score 0 points if there are limited natural views.

- a. Score 1 point if there are pleasant natural views accessible from several windows in the facility.
- b. Score 3 points if there are excellent natural views with adjacent seating near windows with appropriate sill heights 630 mm (25 inches) in the common areas.
- c. Score 5 points if in addition to (b), there are excellent natural views for many of the resident bedrooms with appropriate sill heights (630mm) to permit easy viewing from sitting or in bed.

5. Transitions:

(References: Noell-Waggoner)

Score 0 points if there is no effort to mitigate entrance light differences from outside to inside.

- a. Score 1 point if facility entrances have some shade covering such as a portico or awning.
- b. Score 3 points if entrances have shade covering plus increased inside electric light to aid in the transition from outside to inside during daytime.
- c. Score 5 points if in addition to (b), there is no area in the facility where the brightest light is any greater than three times brighter than the lowest light.

6. Day and Night Adjustments:

(References: Noell-Waggoner)

Score 0 points if corridor lighting is not dimmed at night.

- a. Score 1 point if corridors and common areas are dimmed at night.
- b. Score 3 points if in addition to (a), night lights and/or motion sensors are used to assist at night.
- c. Score 5 points if auto adjustment of fixtures or bulbs is used to follow circadian rhythm.

7. Even Distribution of Lighting:

(References: Noell-Waggoner)

Score 0 points if pooling of light is evident.

- a. Score 1 point if indirect lighting is used to evenly disperse lighting to walls and floors.
- b. Score 3 points if ceilings have an LRV ≥ 80 ; and walls > 60 .
- c. Score 5 points if in addition to (a) and (b), sheer curtains are used to diffuse bright daylight.

8. Glare:

(References: Brawley and Noell-Waggoner)

Score 0 points if glare is present.

- a. Score 1 point if light fixtures use shielded bulbs and indirect lighting.
- b. Score 3 points if in addition to (a), reflective surfaces such as tables, artwork, are limited to eliminate harsh reflections and flooring including outdoor surfaces have a low to medium LRV (30 to 40).
- c. Score 5 points if in addition to (a) and (b), window shades, curtains, drapes, or blinds are available and used to block uncomfortable sun light.

Light Reflectance Value (LRV) is the percentage of light a paint colour reflects and is normally indicated on paint and stain chips and tins.

9. Individual Preferences:

Score 0 points if no provision is made for flexible individual preferences in lighting.

- a. Score 1 point if ambient light is adjustable with dimmers.
- b. Score 3 points if ambient and task light are adjustable with dimmers.
- c. Score 5 points if lighting controls on walls are within accessible reach - 1200mm (47").

10. Maintenance Standards and Schedule:

Score 0 points if there is no regular routine maintenance of fixtures and bulbs

- a. Score 1 point if there is a schedule to regularly audit lighting and clean fixtures.
- b. Score 3 points if by policy staff monitor and adjust lighting throughout the day to suit daylight changes.
- c. Score 5 points if by policy residents' glasses are actively monitored and cleaned.

NOISE:

Noise Levels: Use a Type 2 Sound Meter equivalent to a Sound Level Pen (840018) from Sper Scientific (measuring 32 – 130 dB with an accuracy of 1.5 dB) Data to be collected while rooms unoccupied. Take several readings from several rooms and times: do not average, but rather, take the median: i.e. list the values from lowest to highest and take the middle one.

1. Ambient Noise Level Assessments – Bedrooms:

(References: Bharathan, Berglund))

Score 0 points if Daytime Resident bedroom noise level > 40 dB

- a. Score 1 point if Day time and Night time Resident bedroom noise level \leq 40 dB.
- b. Score 3 points if Day time and Night time Resident bedroom is <35 dB.
- c. Score 5 points if Day time and Night time Resident bedroom is \leq 32 dB

2. Ambient Noise Level Assessments – Common Areas:

Score 0 points if Daytime Common areas are > 45 dB

- a. Score 1 point if Daytime Common areas are \leq 45 dB
- b. Score 3 points if Daytime Common areas are \leq 40 dB
- c. Score 5 points if Daytime Common areas are \leq 35 dB

Noise Issues:

3. Layout:

Score 0 points if resident bedrooms flank noisy areas or access to House Units is through resident bedroom areas.

- a. Score 1 point if there is a privacy zone for resident bedrooms separate from noisier areas such as utility, laundry, activity, dining, server, nurses' stations, entrances and public areas.
- b. Score 3 points if in addition to (a), service traffic is minimized through the resident room areas: e.g. with a service corridor or service entrance for utilities, supplies, meals etc.
- c. Score 5 points if in addition to (a) and (b), there is a quiet seating area in addition to noisier lounge areas such as TV rooms.

4. Noise Mitigating Design Features: (Architect, Engineer, and/or Builder can confirm design specifications)

(References: Osborne)

Score 0 points if no noise mitigating features are evident.

- a. Score 1 point if windows are double glazed and ceilings or walls are clad with sound absorbing material.
- b. Score 3 points if in addition to (a), resident bedroom walls are soundproofed with a Sound Transmission Class rating of 45 with walls extending to the structural deck.
- c. Score 5 points if in addition to (a) and (b), HVAC equipment and ducting is designed and installed with a Noise Criterion (NC) of 25 in bedrooms and 35 in amenity areas.

5. Noise Reducing Adaptations:

(References: Bakker, Connell)

Score 0 points if no noise reducing adaptations are evident.

- a. Score 1 point if an effort is made to use noisy equipment away from resident areas: e.g. pill crushers, dish washers, coffee grinders.
- b. Score 3 points if lined drapes, wall hangings and/or carpeting are used to soften sound.
- c. Score 5 points if in addition to (a) and (b), noise reducing measures are practiced such as rubber tips on chairs, bedside TV speakers, padded equipment, place mats, and closed doors.

6. Schedule Intrusive Noise:

(References: Boehm, Bakker)

Score 0 points if no effort is made to schedule intrusive noise.

- a. Score 1 points if floor and carpet cleaning is scheduled for times when areas are unoccupied by residents.
- b. Score 3 points if in addition to (a), servery and dining noise is minimized by prepping before residents arrive in area and cleaning up, dishwashing etc. after residents depart area; and keeping door to Servery closed.
- c. Score 5 points if in addition to (a) and (b), Quiet Times are regularly scheduled.

7. Night Time Noise:

(References: Alessi)

Score 0 point if no measures are taken to reduce night-time nursing noise.

- a. Score 1 point if corridor lights are dimmed at night, and resident rooms have night lights to aid them in locating bathrooms and exits.
- b. Score 3 points if night time nursing care routines are conducted with minimal lighting and noise.
- c. Score 5 points if in addition to (a) and (b), supervision is facilitated with measures such as windows and blinds in resident bedroom doors, and/or motion sensor monitoring.

8. Alarms and Pagers:

(References: Bakker)

Score 0 point if no effort is made to reduce overhead pagers and alarm noise.

- a. Score 1 point if overhead paging is limited to emergencies.
- b. Score 3 points if portable pagers and cellphones are muted by using vibrate.
- c. Score 5 points if an alarm use protocol has been arranged with local authorities to guide sound levels, drills and testing routines.

9. Staff Training and Surveys

(References: Overman-Dube)

Score 0 points if noise reduction is not regularly included in staff training or interventions.

- a. Score 1 point if noise reduction is part of ongoing staff training.
- b. Score 3 points if in addition to (a), surveys are used to regularly gather feedback from residents, families and staff re noise problems and suggestions for remediation.
- c. Score 5 points if in addition to (a) and (b), staff regularly intervene to mitigate noise and have implemented noise reducing interventions during past year.

10. Maintenance Schedule:

(References: Dewing)

Score 0 points if there is no regular routine maintenance of noise making equipment.

- a. Score 1 point if regular maintenance of noise generating equipment is scheduled.
- b. Score 3 points if staff monitor noisy equipment throughout the day and immediately address maintenance issues such as squeaky wheels, leaky faucets.
- c. Score 5 points if residents hearing aids are actively and regularly monitored for use and batteries are replaced promptly.

BENBOW OUTDOOR CHECKLIST SCORING SUPPORT

Maximum 100 points: Assign a score of 0, 1, 3, or 5 for each Element or Feature

SUPPORT ELEMENTS:

1. Management Support (written and actual):

(References: Grant, Chapman)

Score 0 points if there is no documented evidence of management support.

- a. Score 1 point if the Mission, Vision, Values, Philosophy, or Policy support and encourage outdoor area use by residents: e.g. by promoting residents' independence and maintaining their optimal abilities.
- b. Score 3 points if in addition to (a), the facility has written Procedures, Programming and Staff Training that support and encourage outdoor area use by residents.
- c. Score 5 points if in addition to (a) and (b) the management team's attitude and example support and encourage outdoor area use by residents.

2. Staff Involvement (attitudes and practices):

(References: Connell, Wood, Fleming)

Score 0 points if there is little or no evidence of active staff involvement in supporting and encouraging outdoor area use by residents.

- a. Score 1 point if staff facilitate independent use of outdoor area: e.g. by ensuring that the door to the outdoor area is easy to use, regularly open or unlocked for resident use.
- b. Score 3 points if in addition to (a) staff regularly provide outdoor activities.
- c. Score 5 points if in addition to (a) and (b) staff participate in training to develop their knowledge and skills in optimizing residents' use of outdoors.

3. Meaningful Activities (to enhance motivation):

(References: Brawley, Chapman, Troxel, Lovering, Guaita)

Score 0 points if there is little evidence of activity being used to motivate outdoor use.

- a. Score 1 point if residents are encouraged to pursue simple activities outdoors such as helping with cleaning, feeding birds, watering and weeding.
- b. Score 3 points if in addition to (a) there are regularly scheduled and special occasion activities held outdoors.
- c. Score 5 points if in addition to (a) and (b) there are regular staff reviews of outdoor use and activities with a view to keeping the outdoor area an interesting active place.

4. Maintenance (Hard and Soft):

(Reference: Rodiek, Brawley)

Score 0 points if the outdoor area is poorly maintained.

- a. Score 1 point if hard surfaced pathways are well maintained, litter and crack free.
- b. Score 3 points if in addition to (a) soft landscaping and special features are well cared for.
- c. Score 5 points if in addition to (a) and (b) there is an active volunteer program to assist staff in maintaining and caring for the outdoor areas.

DESIGN ELEMENTS:

5. Location (Direct Physical Access):

(Reference: Cohen-Mansfield, Cutler)

Score 0 points if there is not direct access from every residential floor to an outdoor area or solarium/conservatory or balcony.

- a. Score 1 point if there is direct access from every residential floor to an outdoor area or solarium/conservatory or balcony.
- b. Score 3 points if there is direct access from every Care Unit or Household to an outdoor area or solarium/conservatory or balcony.
- c. Score 5 points if every Care Unit or Household has direct access to an Outdoor Area or solarium/conservatory or balcony from their common areas such as dining, lounge or activity areas .

6. Entryway (Easy to use main legible access point):

(Reference: Grant, Namazi 1992)

Score 0 points if there is not a main well marked legible access point.

- a. Score 1 point if there is a main highly visible landmark legible Entryway.
- b. Score 3 points if in addition to (a) the Entryway door is unlocked during the day in reasonable weather with an easy to open door or with an automatic opener or is propped open.
- c. Score 5 points if in addition to (a) and (b) visual transition has been mitigated at the Entryway with additional lighting indoors and shading outdoors.

7. Safety (to minimize falls and other hazards):

(Reference: Lovering, Detweiler, Zeisel, Namazi)

Score 0 points if there are unmet safety concerns re outdoor area.

- a. Score 1 point if walkways are smooth, level, non-slip, non-glare, and litter free with no dangerous overhangs or objects projecting onto the path.
- b. Score 3 points if in addition to (a) there is enhanced lighting of the walkways, perimeter and features.
- c. Score 5 points if in addition to (a) and (b) all plants are non-toxic with no thorns, or other hazards.

8. Visibility (for staff and residents):

(Reference: Bengtsson)

Score 0 points if visibility of the outdoor area from indoors is compromised.

- a. Score 1 point if there is good visibility of the outdoor area from indoors through a glass Entry door and large adjacent windows.
- b. Score 3 points if the whole Garden is easily visible from the indoor Common areas and the Entryway.
- c. Score 5 points if once outdoors the resident can see the way back to the Entryway and the Indoor Common area is visible from the Garden.

9. Security (unobtrusive enclosure):

(Reference: Zeisel, Grant, Beckwith, Brawley)

Score 0 points if the outdoor area is not enclosed securely.

- a. Score 1 point if the outdoor area is securely enclosed.
- b. Score 3 points if the enclosure is a minimum of 2200 mm (7.2 feet) and difficult to climb.
- c. Score 5 points if in the enclosure fencing and service exits are camouflaged.

10. Accessibility (easy to open door):

(Reference: Detweiler, Murphy, Rodiek)

Score 0 points if the Entryway door is difficult to open. (note: if a looped two door system is used, then both doors should meet these criteria)

- a. Score 1 point if the Entryway door is on a level landing; is a minimum 914 mm (36") wide with a lever handle; and the latch side clearance is a minimum 610 mm (24 ").
- b. Score 3 points if in addition to (a) the Entryway door requires a maximum 8.5 pound opening pressure; and has a 13 mm (1/2") maximum bevelled threshold.
- c. Score 5 points if in addition to (a) and (b) the Entryway door has an automatic opener or is propped open during clement weather.

11. Accessibility (easy to use Walkway):

(Reference: Cohen-Mansfield, Cooper-Marcus, Murphy, Lovering)

Score 0 points if the walkway is not barrier free.

- a. Score 1 point if the walkway is a minimum 1830 mm (6') wide.
- b. Score 3 points if in addition to (a) the walkway has gentle curves with no sharp turns or angles.
- c. Score 5 points if in addition to (a) and (b) the walkway has clearly marked edges or curbs; and handrails.

12. Accessibility (easy to use Furniture and Fixtures):

(Reference: Grove, Lovering)

Score 0 points if furniture and fixtures are not wheelchair accessible.

- a. Score 1 point if outdoor tables have a minimum under top clearance of 685 mm (27") for wheelchair user knees to slide under; and adequate manoeuvring space.
- b. Score 3 points if in addition to (a) there are raised garden beds with heights of 450 – 600 mm (18 – 24").
- c. Score 5 points if in addition to (a) and (b) an accessible drinking fountain is supplied (minimum 27" knee space and easy to operate).

13. Comfort (shelter from inclement weather):

(Reference: Grant)

Score 0 points if no shelter is provided from inclement weather – wind and rain.

- a. Score 1 point if there is a large sheltered Entryway Patio with seating.
- b. Score 3 points if in addition to (a), there is a destination shelter with seating.
- c. Score 5 points if there is a conservatory, sunroom or enclosed perimeter walkway for year round use.

14. Comfort (shade and screening):

(Reference: Heath, Rodiek, Cutler)

Score 0 points if there is no shade provided.

- a. Score 1 point if the Entryway Patio is covered for protection from the sun.
- b. Score 3 points if additional shade is provided in shady nooks with seating and/or trellis over the walkway.
- c. Score 5 points if in addition to shade, screening is provided for protection from insects.

15. Layout (a simple pathway):

(Reference: Marcus, Rodiek, Lovering)

Score 0 points if the layout is complex: not a simple pathway.

- a. Score 1 point if the layout is based on a simple visible looped pathway that leads back to the entry patio, or if not looped, there is a reasonable turnaround to direct the resident back towards the entry patio.
- b. Score 3 points if there are well landmarked destinations going and coming back.
- c. Score 5 points if there are adequate rest stops with seating along the way.

16. Amenities (convenience):

(Reference: Lovering)

Score 0 if there are no convenience amenities.

- a. Score 1 point if there is easy access to a washroom: i.e. less than 15 metres (50 feet) from Entryway (either indoors or outdoors though preferably with direct outdoor access to the washroom).
- b. Score 3 points if in addition to (a) there is a snack and beverage cart or barbeque supplied outdoors.
- c. Score 5 points if in addition to (a) and (b) there is a garden shed with easy to use tools.

17. Seating (location and design):

(Reference: Lovering, Rodiek, Brawley)

Score 0 points if seating is non-existent or quite limited.

- a. Score 1 point if there is a variety of seating locations outdoors that provide options of sun or shade, private or social opportunities.
- b. Score 3 points if in addition to (a) seating is on a firm level base with adequate back support and armrests to allow for easy transfers.
- c. Score 5 points if in addition to (a) and (b) seat height is in the range of 405 – 460 mm (16 – 19”) which facilitates rising and transfers.

18. Natural Features:

(Reference: Rodiek, Bengtsson)

Score 0 points if there is a paucity of natural features.

- a. Score 1 point if there is a good variety of safe, non-toxic plants.
- b. Score 3 points if the natural elements appeal to a variety of senses: sight, smell, touch, taste, sound: eg. are colourful and interesting.
- c. Score 5 points if in addition to (a) or (b) the plants and wildlife are familiar to residents and help them recall their own gardens.

19. Supportive Features:

(Reference: Brawley, Grove)

Score 0 points if there are little if any special garden ornamental features.

- a. Score 1 point if there are a variety of garden ornaments such as weather vane, wind chimes, flag pole, old car, bike etc.
- b. Score 3 points if in addition to (a) there are wild life features such as bird bath, bird feeder, bird houses, squirrel feeders, etc.
- c. Score 5 points if in addition to (a) and (b) there is a safe water feature such as a bubbling fountain or trickling stream; and/or arbour, archway, pergola to add architectural interest.

20. Views (to add motivation):

(Reference: Cohen-Mansfield, Rodiek, Cutler, Zeisel)

Score 0 points if the main view from the outdoor area is a fence or wall.

- a. Score 1 point if there are interesting views within the garden such as activity and wildlife.
- b. Score 3 points if from the outdoor area there are interesting views of activity outside the garden.
- c. Score 5 points if the views to areas outside the garden are mitigated so as not to stimulate exit behaviour: i.e. fences, gates and service doors are camouflaged so that the enclosure appears natural and unobtrusive so as not to entice exiting.

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