

DESIGN CHARENTE

Co-designing affordable housing solutions in rural Newfoundland and Labrador
for Otter Housing Association and Choices for Youth
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INTRODUCTION

This report provides a summary of the design charrette and corresponding design recommendations. Input that came specifically from the design charrette is indicated in *italic* in the main body of the report. Elaboration or corresponding design recommendations are indicated in regular font.

The charrette was held as part of a three hour session held virtually on June 2nd, 2022 called Co-designing Affordable Housing Solutions in Rural Newfoundland and Labrador.

Emily Campbell of Yorabode was hired by Choices for Youth and the Otter Housing Association to design, facilitate and report back on a design charrette.

To design the charrette, Emily met with the stakeholder group multiple times and reviewed background documentation including Community Needs Assessment prepared by the Port Rexton Sustainable Housing Task Force and the draft schedule of the overall event.

The following parameters are taken as assumptions of the project, and were not discussed in detail during the charrette, nor elaborated upon in detail as part of this document.

- 5-10 units of rental housing
- the building will be as sustainable as possible with a goal of net zero energy use
- the dwellings will be in the Port Rexton area, but land has not yet been confirmed

Information was collected by a poll, in small groups, and in a larger facilitated group discussion. Upon registering for the workshop, participants were asked a series of questions. These intake questions are included in the appendix.

SUMMARY & RECOMMENDATIONS

The following are the main themes identified during the design charrette. They are elaborated upon in the following pages:

- *Safety*
- *Balance of privacy and community*
- Reduce indirect housing costs
- *Indoor air quality and natural light*
- *Pet friendly*
- *Storage*
- *Amenities*
- *Accessibility*

SAFETY

It is vital to feel safe in your home. Philosophies such as 'Housing First' acknowledge this basic human need. The design of a space contributes greatly to how safe and private a home feels in the following ways:

- ***In compliance with building codes.*** Codes and standards like the National Building Code of Canada are designed to keep inhabitants safe and comfortable. Smaller municipalities don't always have the resources to complete building inspections and assure construction is in compliance with building codes. Having professionals like architects and engineers involved in a project for the design and regular review of the construction can help assure compliance with building codes to increase safety and building longevity.
- ***Smart neighbourhood planning.*** Certain spaces are more likely to draw criminal or dangerous activity. Assuring a neighbourhood is well lit and free of hiding spaces can help to increase safety. Having windows

that face the street or 'eyes on the street' helps to make for a safe place. Drive through neighbourhoods (not dead ends) can also increase the number of 'eyes on the street' and make for a safer place, but these drive through streets should be narrow so traffic moves slowly. Connections of streets by pathway and shared parking areas also have the potential to increase interaction and safety.

- ***Establishing a safe place.*** For new neighbourhoods, or those that have been identified as problem places, additional measures are required to establish a safe place. This may mean increased security and policing for a period of time or increased social supports and focused efforts such as neighbourhood watch.
- ***Having social programs.*** Supportive programs for residents can increase safety overall and help fight against NIMBY. (Not in my backyard)
- ***Balance security devices.*** While security devices (like locks) are necessary, these elements must be balanced to keep a 'home-like' safe feeling. Hardware like bars or cameras can feel institutional, and if possible should be avoided in homes

BALANCE OF PRIVACY AND COMMUNITY

The participants expressed strong needs for privacy, retreat and equally strong needs for community and togetherness—and the inhabitant's ability to choose between the two. Maybe someone doesn't feel like interacting with others, or maybe interacting with others makes them feel unsafe. Design of housing can provide the opportunity for both in the following ways:

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- **Two separate entrances to each dwelling** allows inhabitants to choose their route, if they'd like to avoid or encourage interaction with neighbours. Two entrances are also safer in case of fire.
- **A careful consideration of the distance of public to private spaces.** Not all rooms within a home need the same amount of privacy. An inhabitant would be more likely to be okay with someone seeing into their living room (a more public space) than say into their bathroom or bedroom (more private spaces). A floor plan should be organized to place the more public spaces closer to the street, and more private spaces further away.
- **Private dwellings where inhabitants can choose how much they interact with the outside world**—design elements that facilitate this could include a gate that closes to create more private outdoor space, or blinds that close to create more private indoor space. Window coverings are a simple way to add privacy (and control heat gain/loss) but can be prohibitively expensive for those living in affordable housing. Including window coverings in the building can decrease heating costs and increase the quality of a home (especially if the inhabitant has input in the style). This has the added benefit of reducing the stigma that using a blanket or sheet as a window covering may carry.
- **Reduced sound transmission between dwellings**—an apparent sound transmission class (ASTC) rating of not less than 47 in the floors, walls and roofs of dwellings that are directly in contact. (NBCC 2020 9.11.1.1.1a) Reduced sound transmission can also be achieved by separating dwellings completely in say two single detached homes.
- **Shared space where folks can choose to engage, like a coworking space, shared garden/shed, communal kitchen.** Architecture can help encourage casual interactions in these spaces by locating share space in high traffic areas. Shared spaces must be managed and maintained in a deliberate and careful way. If shared spaces are not cared for, it's likely they won't be used and could become dangerous places or fall into disrepair.



Above: Dongziguan Affordable Housing designed by line + studio in China. A rare example of exceptional affordable housing architecture in a rural context. This project draws on the vernacular or traditional architecture of the area to create a centralized model of housing. While the look of buildings in Newfoundland would be significantly different, some take-

aways from this project could be a modern interpretation of vernacular architecture, the use of shared space, maintaining the style of collective living the inhabitants were previously used to, sustainable design, community consultation (co-design). (Image from line + studio website)

- **Mature Trees.** Trees can provide privacy seasonally or year round, depending on whether they shed their leaves/needles.

REDUCE INDIRECT HOUSING COSTS

The costs associated with housing affordability are frequently more than just rent. The CMHC's (Canada Mortgage and Housing Corporation) definition of affordability accounts for utilities, like electricity, but the cost of owning and operating a vehicle can be a significant portion of household costs and is sometimes excluded from the cost of housing. It has been expressed that utilities are to be included in rent. The following are some ways to reduce costs like utilities and transportation:

- **Located in an area that is near amenities**—currently Port Rexton does not have public transportation, the building should be located so inhabitants can reduce their reliance on vehicular transportation. By living in an area that has amenities like a grocery store, public spaces and work places, inhabitants of affordable housing can spend less time (and money) getting around and more time focusing on their daily lives.
- **Integrated sustainable systems** play a part in achieving the goal of net zero. Some examples to be explore further are as follows:
 - Heat pumps (like mini-splits)
 - Heat recovery in ventilation or hot water systems
 - Increasing the insulation value of floor, wall and roof assemblies
 - Decreasing the overall surface area of exterior envelope, a home with a square plan or shared walls (ie. row house) will have less exterior area and space for heat to be lost
 - Decreasing circulation space and creating an efficient layout can decrease the building area
 - Consider passive systems like passive solar and natural ventilation.
 - Consider window style, glazing, coatings and window coverings which can control solar heat gain and minimize heat loss.



Above: Grannypad by Best Practice Architecture in Seattle. This project is a renovation of a garage to allow a family to grow onto their property. This project makes a very small space feel open by ample windows and double height spaces. It also incorporates accessibility features. (Photo from Best Practice Architecture website)

Opposite: Agorahaverne Seniors Housing in Denmark by Sandberg (architect) and Tetris (developer). The dwellings in this co-housing project are organized around a central courtyard. While the overall scale of this project is larger than the one proposed in Port Rexton, some takeaways are the organization of shared and private space to encourage social interaction, shared space that is out of the weather (and could even be used as part of the building's heating/cooling system), universal accessibility, the dual-aspect (windows on two sides) of each dwelling unit and use of sustainable materials like wood. (Photo from Dezeen)

INDOOR AIR QUALITY AND NATURAL LIGHT

Access to daylight and fresh air make for improved physical and mental wellbeing and can also contribute to lower operating costs due to decreased reliance on electricity and active ventilation systems.

As a rule of thumb, a house should be bright enough to read a book without any lights on if it's an overcast day. The lighting levels required in residential construction are 10-50 foot candles. The amount of light outside on an overcast day is approximately 200 foot candles.¹ It follows that every inhabited room should have windows.² Inhabited rooms are where activities take place like living rooms and bathrooms, but would not include storage rooms. Reflective or light coloured materials can increase light reflection in situations where it is difficult to achieve sufficient daylight.

The home should have windows on at least two opposing sides of the dwelling to encourage a cross-breeze. The airflow will be increased if the windows are located along the direction of prevailing winds. Wherever possible, win-

dows should open so the inhabitants have control over their environment.

Sufficient natural ventilation is not possible in our climate year round. Well oriented operable windows should be supplemented by active systems that draw in fresh air and exhaust stale air (like a heat recovery ventilator, which is a code requirement for all new construction). Inhabitants need to know how to operate the system. Regular follow up is usually necessary to ensure the system is being used and maintained. Many dwellings develop problems with moisture (like mould) because the people who live there don't understand how to use the systems or the systems are not properly cleaned and maintained.

1. Value of 10-50 foot candles comes from IESNA handbook, table of illumination values, taken in the horizontal plane. The amount of 200 foot candles was taken outside with a light meter.

2. In fact it is a requirement of Canada's National Building Code 2020 that all bedrooms have windows. The code requirement however is not intended for sunlight, but egress in the case of a fire.



PET FRIENDLY

A number of the participants have pets. While making a rental unit pet friendly is an operational decision there are design implications such as:

- locating the pet friendly dwellings on ground level with direct access to the outdoors for a dog, or outdoor cat.
- choosing materials that are easily cleaned and don't attract dirt and pet fur. This may mean a hard material like linoleum is more suitable for a corridor than a soft material like carpet.

STORAGE

Storage inside and outside the dwelling units is recommended. Smart storage reduces clutter in the living space and helps inhabitants make the most of smaller spaces. One person requires at minimum 22 ft² of full height closet space³, 6 linear feet of counter space with storage below and an additional 16 ft² of storage space for bulk items like a bicycle. The storage space for bulk items could be in a sectioned off shared space like is common in condominiums. The amount of storage space for each additional person living in one dwelling unit can be reduced slightly.

AMENITIES

Participants expressed the need for the following amenities:

- *office space*
- *parking space*
- *laundry*

ACCESSIBILITY

The participants expressed a need for universally accessible units, however a direct need for this kind of accessibility from potential inhabitants was not indicated in the survey. It is recommended that, at minimum, the provincial guidelines for universal accessibility at the time of construction be followed. If a central building type is selected, all shared spaces should be universally accessible along with a minimum of 10% accessible dwellings.⁴

The current code and standard for accessibility is CSA B651-18 Accessible design for the built environment.

3. This data comes from the author's experience with design. It is assumed that the closet space is split between 2 to 3 closets located in proximity to the spaces where the items will be used.

4. Funding requirements often dictate more than 10% of dwelling units to be accessible.

BUILDING TYPE

A dwelling mix of 75% one bedroom units and 25% two bedroom units is proposed. It is assumed that half of the survey respondents with two-person households would find a one bedroom dwelling unit suitable (couples). Due to a small sample size and potential lag between the design charrette and concept design or construction, this dwelling mix should

be further verified and validated in the early stages of design.

To achieve the proposed dwelling mix there are two options for building type that could both work. Both options are presented below along with their benefits and drawbacks.

BUILDING TYPE	CENTRAL	DISTRIBUTED
DESCRIPTION	One apartment style building that contains all the dwellings on one site.	Many detached or semi-detached single family home style buildings on one or multiple sites.
BENEFITS	<ul style="list-style-type: none"> • more economical (construction and operating) • increased energy efficiency and reasonable payback period for energy generation (ie. solar panels) • greater potential to create community between inhabitants • greater potential for shared indoor space, like corridor, storage or co-working 	<ul style="list-style-type: none"> • increased level of privacy and ownership • integration into the community
DRAWBACKS	<ul style="list-style-type: none"> • decreased privacy • greater potential for stigmatization¹ 	<ul style="list-style-type: none"> • increased upfront and operating costs • decreased energy efficiency

1. Stigmatization - Some people carry assumptions or stereotypes associated with those living in subsidized or other affordable housing projects. Stigmatization can occur because of the condition of housing, or the location if an area is uniformly poor and marginalized, which can further reinforce that stigma as it becomes evident to passers-by that the inhabitants are of lesser means. Stigmatization creates social

barriers for the inhabitants. If pursuing a central option is of interest, the drawback of potential stigmatization can be addressed by exploring including market rate rental units as well.

SURVEY

BACKGROUND

A survey was administered using slido during the charrette. The intent of the survey was to obtain specific demographic information about the people who hope to inhabit the proposed affordable housing.

Nine people participated in the survey, seven of those indicated they would like to live in the proposed housing. However, eight participants answered the questions directed towards those who would like to live in the proposed housing. The responses from those eight participants are summarized below.

RESULTS

- *Households are made up of four single-person households, four two-person households*
- *Ages of household members are as follows. No indication was made if a one bedroom dwelling would be suitable for the two person households.*
 - *seniors*
 - *29*
 - *15, 38*
 - *47*
 - *22*
 - *22, 21*
 - *21, 23*
 - *24*
- *Number of vehicles per household are as follows:*
 - *2 households with no vehicles*
 - *4 households with one vehicle (standard car)*
 - *1 household with two vehicles (one car, one truck)*
 - *1 household with five vehicles (car, truck, ATV, and two snowmobiles)*
- *Of the below list the following is ranked from most important to least important*

1. *Parking spot*
 2. *Space to store large gear*
 3. *Ground level access*
 4. *Deep freeze*
 5. *Bath tub*
- *Additional important features are as follows*
 - *Laundry*
 - *Bicycle storage*
 - *Space for work and to store work materials*
 - *Space to store winter tires, tools etc.*
 - *One participant answered they have accessibility or disability related needs that should be considered in the building. (Intimate partner violence survivor support) The remaining participants indicated no specific needs or that this question was not applicable to them.*
 - *The people who weren't interested in living in the proposed dwellings wanted to be involved in the following ways:*
 - *Spreading the word*
 - *Building connections*
 - *Helping with the design and/or construction process*
 - *Advocacy*
 - *Training*
 - *Financial support, direct or assistance in finding finances*
 - *Wrap around supports for future inhabitants*

1. It's possible this household is the respondent that is not interested in living in the affordable housing, but supporting the project in another way.



