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Planning for Change Adaptability and Circularity of Communities and Homes

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Abstract: This paper addresses the need to decarbonize built environments by altering community planning and home design. By employing principles of Circular Economy at the community and dwelling levels, the paper argues that having flexible design strategies can contribute to the reduction of the carbon footprint of urban areas by minimizing the need for demolition and, as a result, material waste. Currently, depending on location and cultural and economic conditions, large-scale developments might take many years to approve and construct. Moreover, when changes are to be introduced to an initially approved masterplan, the process of obtaining municipal planning approval can be lengthy. By using a case study-based methodology for community and home design, this research argues that, given the rapidly emerging new social challenges, neighbourhoods can be designed to adapt and accommodate changes they may encounter throughout their development and in subsequent years. The proposed approval procedure that this research introduces provides a step-by-step approach to planning that can be readily adjusted based on market demand and newly developing economic and social conditions. To demonstrate his research in partnership with a private developer and the municipality, the author utilized these techniques in the design of a community in La Prairie, a town near Montreal, in Quebec, Canada. The paper also introduces the concepts of adaptability and circularity at the dwelling unit level to minimize demolition and waste. The energy efficient design incorporates demountable partitions and specialized conduits for the installation and improvement of utility lines. By investigating the macro and micro levels, the author concludes that changes to the current system, while considering the needs of key stakeholders, stand to reduce demolition and waste.

Keywords: adaptability; circularity; change

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1. Introduction and Methodology: New Residential Design Challenges

Urban developments are facing fluctuating economic challenges, rapid changes in technology, climate emergencies and demographic shifts that call for a new philosophy and form of housing. Innovative design concepts often encounter constraints by authorities when introduced, leading to a loss of opportunities due to inefficient and slow approval processes. Although housing plays a crucial economic role, flexibility of zoning standards is not given equal importance. Moreover, decisions made by developers and designers about building or community design tend to overlook long-term user requirements and future market conditions, focusing instead on a narrow perspective based on nearsighted present conditions.

The changes taking place in the lives of users and in the conditions that stimulate market activity justify adopting new planning approaches that are dynamic and flexible. The scale of change in North American society can be seen in its demographic shifts.

Following World War II and during the advent of the "baby boom" years, builders viewed clients in the housing market as a homogeneous buying block of nuclear families consisting of a breadwinner father, a stay-at-home mother and their children [1]. The single-family home dominated the marketplace, demand exceeded supply and there was no good reason to change the traditional way of designing houses. In recent decades, a range of new buyers has evolved. The 2021 Housing Statistics in Canada indicate that the number of individuals living alone increased from 1.7 million in 1981 to 4.4 million in 2021. In 2021, this accounted for 29 percent of the total population of adults aged 15 and over living in private houses, marking the highest proportion ever recorded [2]. In contrast, the traditional family now accounts for only 17 percent of all family types [3]. These changes call for housing that better address the space needs and budgets of wider range of homebuyers.

Furthermore, significant transformations are taking place in the workplace. Following the COVID-19 pandemic, the practice of working from home has become one of the most rapidly expanding alternative work patterns globally. Millions of individuals globally and in North America are now working remotely from their residences [4]. The transition to remote work has created a demand for integrating economic and household spaces, necessitating a design approach that is versatile and responsive to these growing trends.

In recent decades, building development corporations have become incapable of assuming risks. The increased land costs, together with economic slump and an increasing focus on affordability and sustainability, have led to a reduction in the size of houses in many metropolitan areas [5]. This has resulted in the development of planned communities with increased population density. Given the volatile state of the economy, builders are now reluctant to take on the gamble of acquiring extensive plots of land that may potentially need several years to construct. Instead, they are choosing to acquire expansive properties in collaboration with other developers, while retaining the responsibility of developing only a portion of these properties. The ongoing division of responsibilities and the economic pressures affecting the homebuilding sector provide compelling reasons to establish and adopt planning methods that can regard several alternatives from the initial stage of the planning process.

With heightened interest in and transition to sustainability, cities are closely examining models of Circular Economy (CE) and their potential application to urban planning and architectural design. Circular Economy is a reconceptualization of the current economic system, with the goal of minimizing disposal of construction material and building components as much as possible, thereby decarbonizing the building sector. The Ellen MacArthur Foundation (2015) cites the Sustainable Europe Research Institute's (SERI) study, which reported that 21 billion tons of production materials are wasted in the production process due to inefficient practices [6]. Furthermore, they cite that 2.7 billion tons (2.45 billion tonnes) of material inputs were discarded as waste, with only 40 percent recycled or reused. In a circular economy, the end-of-life perspective that a linear economy is contingent upon is replaced with revitalization through the use of renewable resources, quality design of products and the eventual reuse of material at the end of a product's useful life [7,8].

The current economic model that underpins contemporary architectural design and construction is linear, meaning that it relies on a "take-make-waste" model. Extracted raw material is used for a period of time and then disposed. In Circular Economy, however, the end-of-life idea that defines linear economy is replaced by revitalization, achieved through the use of renewable resources and optimized design of products to maintain quality for as long as possible, and the eventual reuse of materials at the end of a product's useful life [9].

A review of the literature on Circular Economy demonstrates that, at present, there are no sources that relate the planning and residential design domain to decarbonization and alternative design strategies. This research addresses that knowledge gap by introducing

two novel strategic approaches that introduce flexibility to the highly rigid processes at both the community and dwelling levels.

The building industry is gradually warming up to embrace the principles of CE. Several notable buildings have been introduced to demonstrate these ideas. One example is The Circular Building by Arup in London, UK. Through considering the housing prototype as a series of layers—including façade, structure, systems, and "things"—Arup aimed to maximize the lifespan of these elements to come together in an example of comfortable and beautiful circular housing The potential of the circular economy model, Product Life-Extension, is explored through a design that facilitates a minimally damaging deconstruction process at the end of a building's useful life [10]. Another notable project is the Circular House Demonstrator in Lisbjerg, Denmark by GXN Innovation. GXN implements recovery and recycling through the selection of materials with the possibility of material reuse and connections designed for disassembly and reassembly. The documentation of all material and product choices achieves these goals by encouraging architects and construction contractors to consider circular products and construction techniques [11].

The methodology employed in this research is a combination of a case study and simulation. The author collaborated with stakeholders to include a municipality and a homebuilder to develop, implement and draw conclusions from an alternative planning process that will offer greater flexibility in changing an originally accepted plan. In addition, the author developed a prototype of a home that permits interventions, making the dwelling adaptable to constant changes, whether spatial or technical [12]. Both developments are part of the broader context of Circular Economy, which aims to minimize waste and, as a result, decarbonize the built environment [13].

2. Planning for Change: The Conventional and Alternative Development Processes

2.1. The Conventional Development Process

Currently, planners are required to forecast the specific types of residences that will be in demand several years after a project is conceived and approved. Most governments in North America mandate the inclusion of a master plan when submitting an application for residential developments that involve new, previously unoccupied land or the renovation of existing projects (Figure 1). The comprehensive plan, subject to approval through a municipal political procedure, encompasses all main and subsidiary roadways, along with their associated services and infrastructure [14]. It also encompasses all land uses and divisions and provides specific details on the location of lot sizes within the development. The master plan dictates all aspects of urban design, including the placement of light posts, the precise measurements of walkways, building setbacks, and parking configurations, to name a few. Put simply, the entire development needs to be meticulously planned with every aspect considered for the foreseeable future.

Once the master plan is approved, it serves as a permanent and authoritative guide throughout the entire duration of the building process [14]. If a development is not fully constructed at the time of the master plan's approval, one of its stages may be erected years later, but it will continue to be constrained by the original design, even after that design has become out of line with market demands. Difficulties and concerns that were deemed significant during the initial design phase may become irrelevant or even conflict with the difficulties and concerns at the time of construction in later years.

This development method grants municipalities the authority to exert full control over the ultimate shape and nature of any new development by retaining the power to adopt or reject the master plan. Nevertheless, it presupposes that the society for which this project is constructed will remain unaltered over time. Builders and developers may

face a challenging position when they are unable to update an outdated master plan that does not meet the current expectations of the market. Any area that is encompassed by an authorized and largely constructed master plan may become a financial liability. If the plan remains unchanged, the implementation of the authorized design could result in financial losses and significantly reduce its marketability [15].

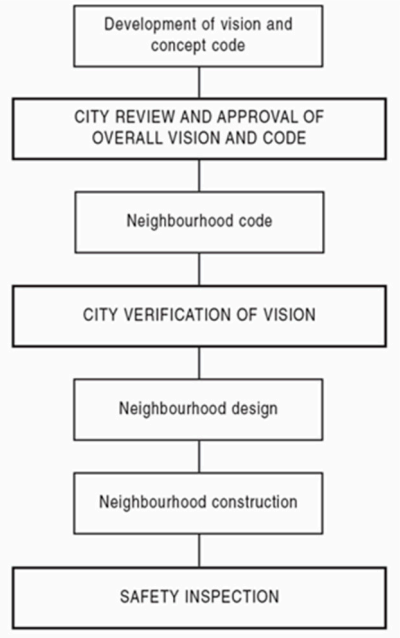


Figure 1. Current general community planning and municipal approval process.

2.2. The Alternative Design Process

To accommodate flexibility, this paper argues that the design of a project needs to be broken down into stages that align with the forecasted construction schedule. This approach ensures that each stage of development is designed immediately before construction, thereby minimizing the risk of significant market changes between the design and construction phases. This would eliminate the necessity for planners to forecast the future of the housing market to develop a design that remains relevant over time. Instead of pre-planning a full community and constructing it in stages, as is commonly done today, only the areas that have obtained financing and are ready for construction would be meticulously developed. The design of succeeding parts would occur just prior to their respective building dates.

This procedure would grant developers and their planners greater autonomy in addressing market needs and diminish the influence of governments in regulating or overseeing the overall nature of residential projects. The proposed technique aims to provide a specific level of consistency and coherence among the various parts of a development. Requiring governments to evaluate the design of each phase of a development before construction is unproductive. However, if the level of local authority is separated hierarchically, it can lead to flexibility without sacrificing harmony and burdening municipal authorities excessively.

In this alternative procedure, the developers, aided by planners, would begin their design by formulating a vision of the type of community they intend to create. This vision would encompass the overall features of the development, excluding the specific features outlined in the code. However, it would not restrict the autonomy of the various components of the project in adapting to market dynamics. The textual description should

be sufficiently broad to accommodate several options while detailed enough to establish the character of the community.

Once the developers have formulated their idea as a response to market demand, they would enlist the assistance of a planner to produce a comprehensive concept for the entire development. This notion would further elucidate the vision and begin to shape the design concept in tangible ways. As a demonstration of this idea, the planner would design the main roads that pass through the site. At this point, planners must also specify the dimensions and capacities of the roads and services, as well as establish the desired overall density of the development. This is to prevent the infrastructure from being overloaded or overbuilt. The developer and the planner will execute the overall architectural idea by establishing the forms, sizes, and quantities of sub-sections that will be used to divide the development. This will ultimately determine the extent of the proposed community.

3. Simulation: The Town of La Prairie, Quebec, Canada

La Prairie, a municipality with a population of 24,000 inhabitants, is situated on the south bank of the St. Lawrence River, about 10 km from Montreal. The town is surrounded by the St. Lawrence River to the north, the towns of Brossard and Candiac to the east and west, respectively, and the hamlet of St. Philippe to the south. The village, originally established in 1647 as the farming Seigniory of La Prairie de la Magdeleine, has expanded over time. It has developed a dense urban centre with a variety of uses along the river's bank and has also created many residential areas further inland [2].

La Prairie has a master plan for its future urban development. The plan is supported by two distinct planning legislations: the plan d'amenagement d'ensemble (PAE), which focuses on the development of broader areas of residential property; and the plan particulier d'urbanisme (PPU), which outlines the approach to future expansion in the downtown area. The planning guidelines, which are enforced and implemented by the planning department and municipal council, along with recommendations from the Comite consultatif d'urbanisme (CCU)—a planning body consisting of five local citizens—collectively establish a distinct set of criteria to direct the approval process for housing and development.

Any development in La Prairie, whether it is a single building permit or the development of a large tract of land, must be subject to the municipality's approval procedure. The procedure operates in the following manner: developers submit their application to the planning department, outlining land usage, density and road networks for a significant portion of property. The proposal is either rejected, accepted or requested to be amended based on the criteria established by the municipality. The guidelines used are often governed by, but not limited to, the diverse planning guidelines. After receiving a permit, the developer is not allowed to make any changes to the application without going through another similar approval process (Figure 2).

The implementation of a planning mechanism known as the Site Planning and Architectural Integration Programmes (SPAIP) has a substantial influence on the approval process and the development of the study site [16]. The SPAIP functions as a planning tool during the approval process and creates a framework for supervising the architectural excellence of a project [9]. In a jurisdiction that follows the SPAIP approach for project evaluation and permission, developers must submit comprehensive planning and architectural drawings to the planning department for each project. Afterwards, the proposal goes through an approval procedure using predetermined evaluation criteria. Once the local council approves, the developer assumes responsibility for carrying out the building of the structures in accordance with the specifications.

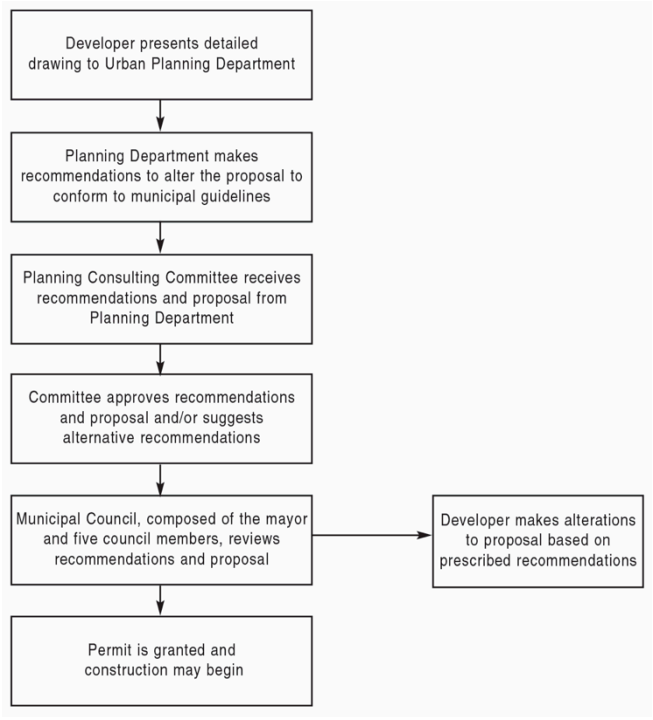


Figure 2. The current approval process in La Prairie.

3.1. Proposals Based on Current Zoning Regulations

The aim of the design was to implement cost-effectiveness concepts in the development of medium-density dwellings in a suburban setting. This involved the creation of modest, efficient residences of between 100 and 150 square meters [17]. It also included the reduction of lot sizes using semi-detached and rowhouse designs, as well as the development of well-planned street layouts that would minimize infrastructure expenses and maximize the utilization of open areas. At a broader level, the affordable housing project was made possible by the low cost of the 11.6-hectare site, which was due to its peripheral location, unusual form, and proximity to an industrial zone. The site is well connected to the old centre via a main boulevard that makes it easily accessible and therefore a desirable place to live (Figure 3). However, this location also presented a problem in terms of designing and marketing the homes. The objective was to create a "community" rather than a "development" by focusing on elements that enhance the well being of the residents. The legacy of the old centre of La Prairie served as a place to emulate. The proposal called for construction of around 300 affordable housing units.

The primary planning concept was to establish a sequence of varied house styles arranged around a communal green area. The project's hierarchical architecture was established by constructing a primary collector artery that forms a circle within the property, from which smaller minor roads branch out. Both the principal and secondary road loops are adorned with a diverse array of two-storey townhouses, semi-detached houses, and detached residences. The central public green area in the centre of the development was designed to align with the natural curves of the stream that traverses a section of the land. To connect the nearby and surrounding housing areas with the public green area, a network of pedestrian routes was implemented. These paths extend the existing local roads and loop across the open space. As illustrated in Figure 4, three aspects were considered in developing the scheme: the built environment comprised of housing, the streets and mobility networks and the public open spaces. Ultimately, trees and bushes were employed to clearly define and provide a protective barrier between the property and the nearby industrial area and hydro-electric power lines [17].

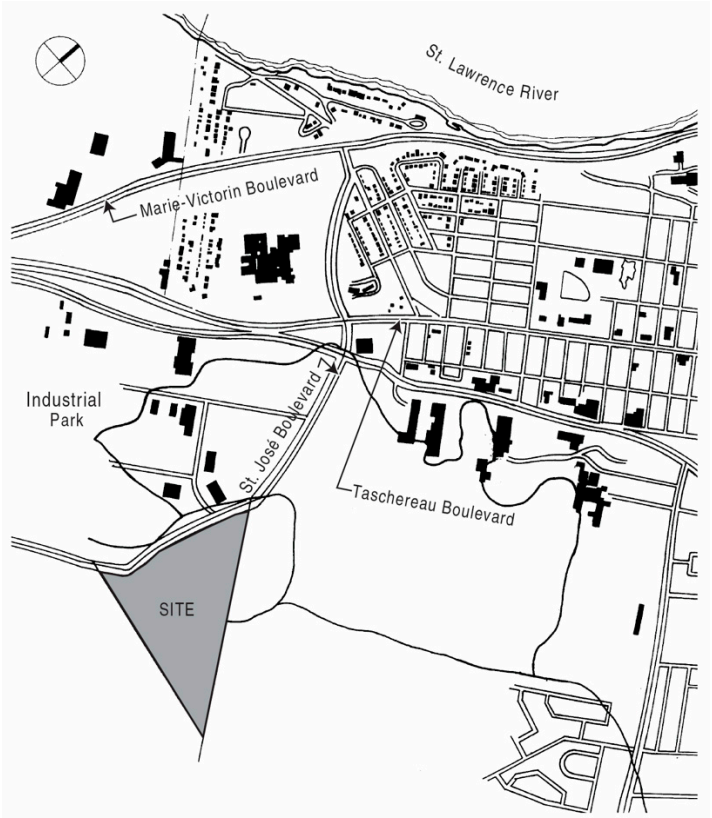


Figure 3. Location of the site in La Prairie.

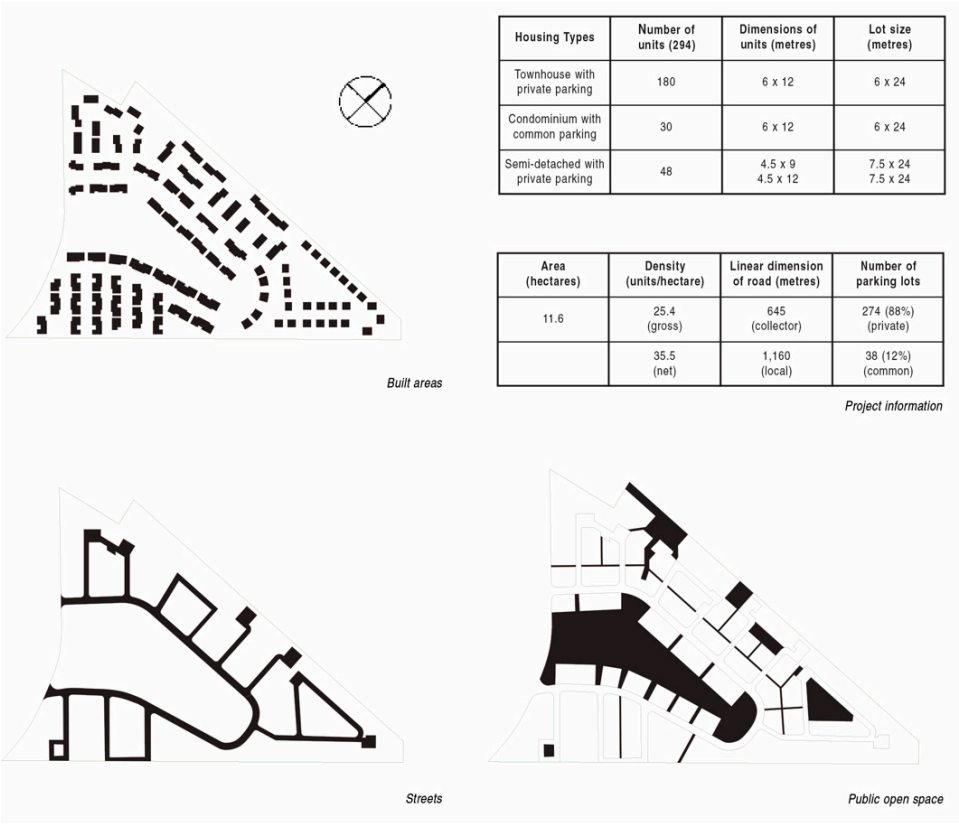


Figure 4. The design concept and related information.

3.2. The Simulated Process of Design for Flexibility

A developer acquired an 11.6-hectare plot of empty land in La Prairie and engaged a planner to create a written or visual representation of the vision and overall development

concept for the site. The planner considered the predetermined development goals outlined in the master plan, which governed the permissible land uses within its jurisdiction. The vision was utilized to create a design and programming that guaranteed the realization of the objective and the cohesion necessary to impart distinctiveness to the community.

The objective of the development was to establish a varied and inclusive physical setting (Figure 5). The community consisted of a sequence of separate areas that become visible as the user progresses through them. The spaces were comprised of areas resembling neighbourhoods and well-developed open spaces that will have a diverse range of plants and street furniture. A diverse selection of housing options would be available, ranging from medium- to low-rise buildings with a maximum of six storeys. These options differed in terms of architectural style and pricing. The neighbourhood promoted a combination of commercial establishments, such as a leisure centre, café, childcare, and business supply shop, which enhance and support a variety of lifestyles in the development. The different segments of the community were brought together by a shared physical area, such as a public meeting hall or open green space, which will promote and strengthen a sense of togetherness and community. Urban planning will prioritize the creation of streets that promote pedestrian mobility and offer aesthetically pleasing scenery. Implementing shorter blocks, well-designed walkways, and roadways adorned with trees will contribute to creating a more human-scale environment. Ultimately, residential units will possess immediate entry to semi-public or private outdoor living areas.

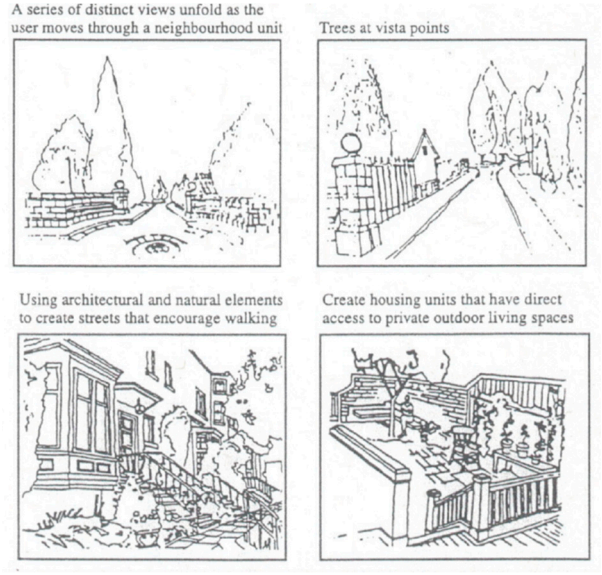


Figure 5. Illustrations of the development's vision.

3.3. Development Concept and Code

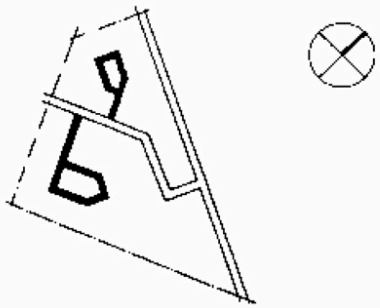
A planner was provided with several design options and guidelines that aligned with the developer's vision for the site. The developer chose a design option and submitted it to the municipal planning department for their approval. After conducting an assessment, the municipality made their decision based on whether the plan and code met specific criteria. These criteria included ensuring that the site was easily accessible to emergency vehicles, such as fire trucks, ambulances and police cars, to maintain public safety. Additionally, the municipality considered the quality of life by ensuring that there were no conflicts between different land uses and adequate public access to light and air. Finally, the municipality evaluated the infrastructure layout to ensure that it met minimum sanitation standards.

Neighbourhood Unit Phase 1

The municipal planning department granted approval for the initial vision and codes pertaining to the location. Next, the developer chose a specific area to construct a residential area and hired an urban planner to create its layout. At this stage, the planner produced an intricate design idea and guidelines for the chosen plot of land (Figure 6). During this phase of development, it was necessary for the new design choices and guidelines to adhere to a predefined set of development codes. Once the developer approved the design and set of codes for the neighbourhood unit, the proposal was assessed to guarantee compliance with the overall initial guidelines. Following this, the proposal was sent to the municipal planning department for certification. Upon thorough examination of the design regulations and safety protocols for the neighbourhood, the municipality could either issue a construction permit or request that the developer make necessary modifications. The neighbourhood's dwellings codes are enforced through deed restrictions (Figure 7).

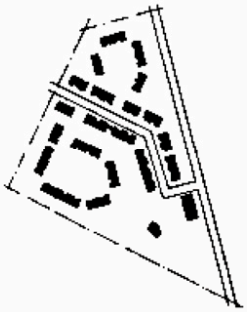
Roads

The generating idea for the neighbourhood unit development is to create a semi-public green space that is bordered by and unites the various housing units in the subdivision. The secondary road system employed wraps around and defines the green space or "square" in an attempt to create an intimate and distinct community setting. The short cul-de-sac configuration of the road contributes to the developer's global vision of creating roads that make vistas and encourage walking. The juxtaposition of secondary roads to each other as well as to the collector road results in shorter, more human-scale blocks. The limited area for which each road is responsible reduces the cost of laying out such infrastructure components as sewage, water, and electrical systems.



Built Form

The housing structures and patterns chosen respond to the developer's intention to build between 80 and 100 affordable low-rise housing units that cater to first-time home buyers. The construction of attached townhouses and condominium units will make the dwelling affordable while maintaining a sense of individual ownership through such features as private parking, entrances, and outdoor living areas. The layout of buildings along both the main collector and secondary roads as well as around the open space creates a strong street edge that encourages walking. The orientation of such building openings as windows and doors towards the street and open space increases safety by ensuring unobstructed visual and physical access to these spaces.



Open Space

The open space provides a distinct area that defines the neighbourhood by uniting the various housing units around it and focusing public activity within it. While the semi-public space may be used by adjacent neighbourhood unit developments, the intent is to provide a public forum for the users in the immediate vicinity. The use of both soft and hard surfaces to compose the semi-public open space encourages a variety of activities such as children's playgrounds, reading niches, and picnic areas. Trees are planted on portions of the site to offer shade and around the perimeter of the neighbourhood to define and screen the area from adjacent neighbourhoods and land uses.

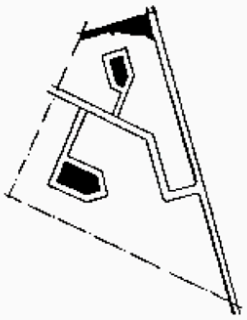


Figure 6. Design concepts for neighbourhood unit phase 1.

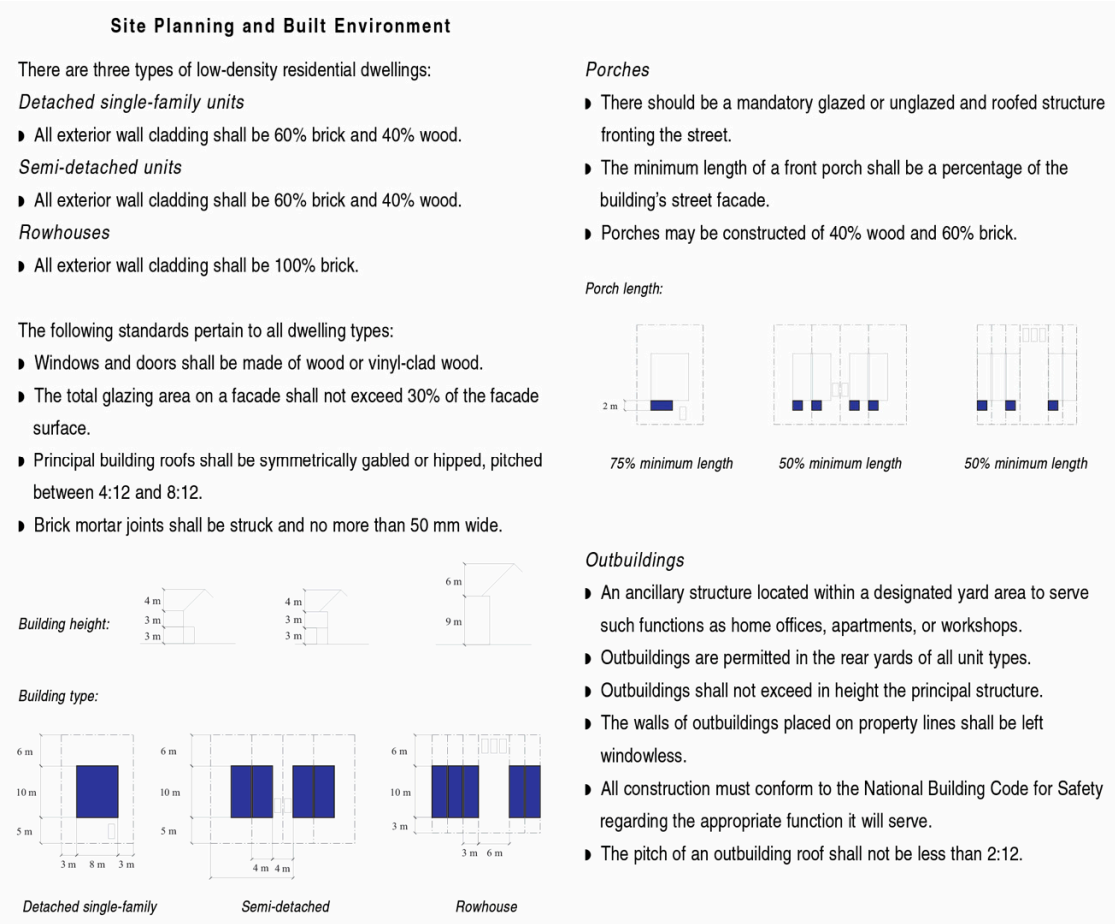


Figure 7. Portion of neighbourhood unit phase 1 site planning and built environment.

To reduce waste, this paper argues that dwelling units also need to be designed for adaptability to accommodate the needs of the initial and subsequent users and avoid major demolition. The design of such a unit will be illustrated below.

4. Planning for Change in the Dwelling Unit Level

The Domus Ex Machina highlights choice, flexibility, circularity and environmental sustainability via the use of sustainable and circular building techniques. The footprint of the structure is 4.8 m by 12 m and it is three floors tall. The three floors are configured for a single-family home, a two-family home (duplex) or a three-family home (triplex). Furthermore, Domus Ex Machina offers the option to be sold using a menu of interior options, letting households customize the unit according to their financial constraints and spatial requirements [12]. The stairwell is positioned on the side of the structure to accommodate flexibility in the main space. Urbanistically, the structure can be part of a row, semi-detached or a detached building. This enables it to be constructed in various municipalities that have varied zoning ordinances. Potential purchasers have the ability to make decisions by utilizing a software program that lets them peruse distinct arrangements and characteristics to envision a range of interior options during the pre-occupancy design phase. Immediate customization options can also be introduced for subsequent occupants. Lightweight demountable partitions may be installed to rapidly change the interior layout (Figure 8).



Figure 8. Renderings of Domus Ex Machina.

Designing for Prefabrication and Dismantling

Domus Ex Machina utilizes prefabricated and modular components, particularly in the building of its floors, outer walls, internal partitions, and roofing. A number of partition designs are utilized in both the exterior and interior of the property (Figure 9). These partitions may be transferred across all layouts of Domus Ex Machina to enable the reuse of partitions between homes [13]. Due to the limited range of partitions available, it is more convenient to retrieve a panel from one residence and repurpose it in another. Moreover, the utilization of standardized partitions simplifies the process of implementing redesign and remanufacturing. Prefabricated pieces often decrease construction waste in comparison to traditional building methods.



Figure 9. Moveable partitions.

The Domus Ex Machina is constructed using the dry connection building method. This approach involves prefabricated components specifically engineered to be easily connected, eliminating the need for drywall, plastering and painting. This expedites the construction process, while promoting a design that facilitates disassembly, as components may be readily dismantled. The recovery step is made more efficient by the use of modular pieces, since they will maintain their structural integrity and may be easily reused. In general, the Domus Ex Machina utilizes well-planned modular components that may be effortlessly installed, dismantled, substituted and repurposed across multiple versions. All of these traits enable the execution of various elements of circularity.

Moreover, Domus Ex Machina features an open web floor joist system on every level of the house (Figure 10). All services are centralized in a single, easily accessible location beneath this system, making them consistently available on every level and across every style of dwelling. This configuration allows the services to be conveniently situated and easily reached through floor openings, and they may be replaced or secured without causing damage to the flooring above. This endeavour encompasses several services, such as plumbing, internet connectivity, ventilation, and electricity supply. All major plumbing systems are located along a shared wall, in addition to the plumbing pipes that run beneath the visible floor chase. This facilitates convenient access to the systems in the event of any plumbing issues that may occur (Figure 11).

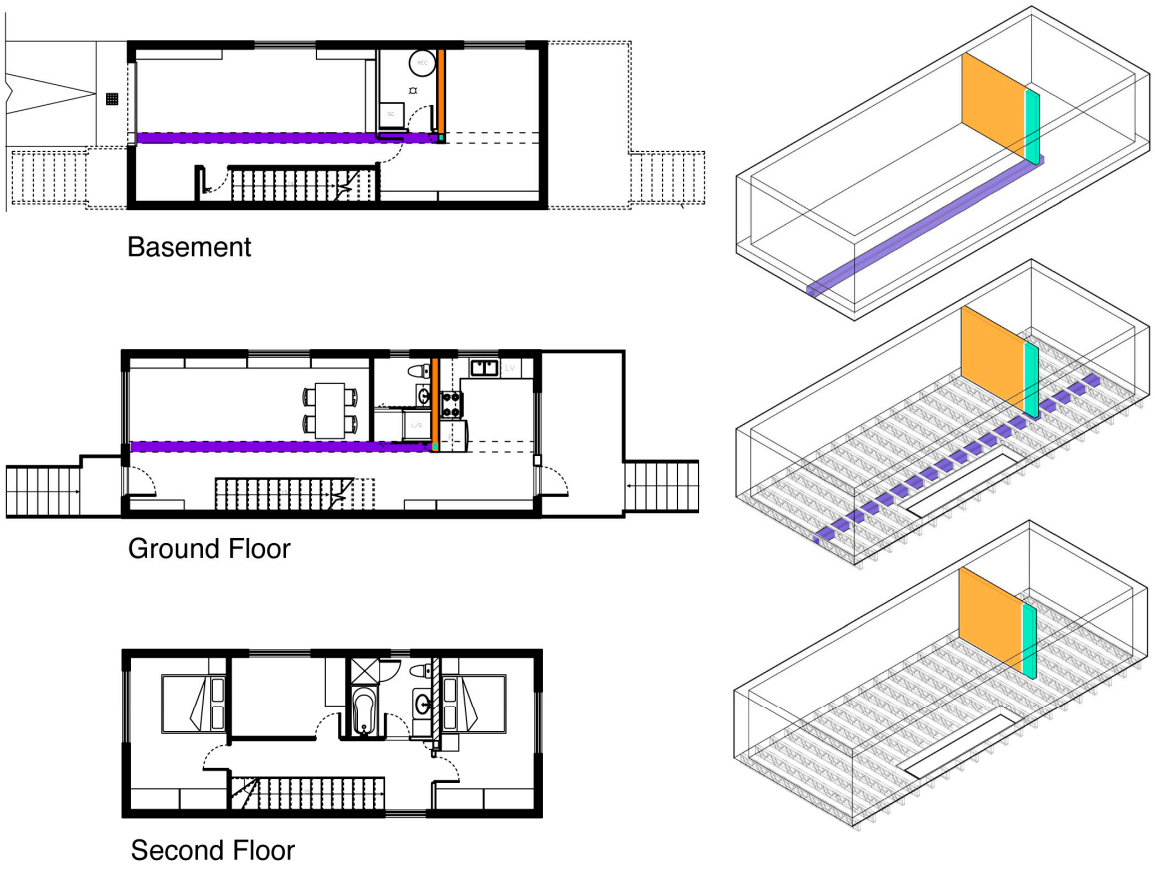


Figure 10. The utility services pass underneath the flooring in the path which is indicated in these drawings.

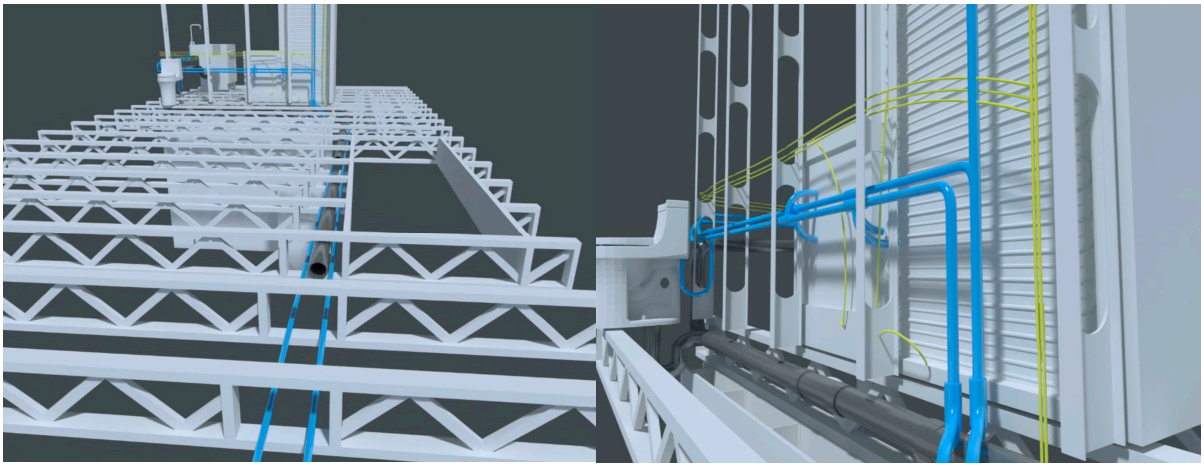


Figure 11. The chaser is a continuous path in the floor in which the utility lines are installed (**left**). A common utilities wall is built between the bathroom and the kitchen (**right**).

5. Discussions and Conclusions

The current linear economy model is unsustainable. Circular Economy is an alternative that promotes extending the lifecycles of buildings and products, thereby minimizing waste and reducing the demand for raw resources. If communities and the homebuilding sector are to lower the amount of waste produced, new processes and practices need to be introduced. The practices that this research introduces are in the domains of town planning and construction. The La Prairie case study presents an alternative planning process that bypasses the delays which currently slow the adoption of new methods and eventually render housing outdated, prompting costly renovations and additional waste.

The current planning process for the new community in La Prairie closely mirrors those used in other North American, and even global, communities. Therefore, the proposed change and the reformulated process should be adaptable to other locations as well. However, the author wishes to point out that residential developments often depend on local social and economic conditions. As a result, implementation of such ideas will depend on conditions at the time of planning. For example, in small-scale projects, the entire community will be built at once, without any no phasing.

Domus Ex Machina is showcased to demonstrate its versatility in terms of dimensions, layout, and associated amenities. Sustainability is carefully taken into account at every stage of the design process. The design's focus on prefabrication and disassembly significantly enhances its social, environmental, and economic benefits.

The application of the proposed practices in planning and design presents several challenges, as the process often involves compromise between environmental aspects and cost. Some tasks designed to improve the built environment may be either more expensive or require careful consideration of factors related to practicality and cost. The consumer's ability to afford and willingness to buy a product, and builders' capacity to make required changes without jeopardizing their operations are critical issues. Needs, requirements and interest, the most common concerns of sustainable housing, centre on practicality, quality and cost.

An important requirement in sustainable developments is ensuring that the method does not significantly disrupt existing operational efficiency. The organizational structures which characterize the construction industry are complex. In the housing sector, the building process has evolved into a streamlined, unique system of operation over the years, resulting in highly efficient operational standards. A traditional construction process consists of a sequence of narrowly scoped tasks, with each task affecting the performance

of the other. Innovation may occur within any one task; however, its acceptance is hindered if it involves more than one trade, or if a change in the work of one trade affects the work of another.

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References

1. Doepke, M.; Hazan, M.; Maoz, Y. The Baby Boom and World War II: A Macroeconomic Analysis. NBER. No. 13707. Available online: http://www.nber.org/papers/w13707 (accessed on 28 December 2024).
2. Government of Canada. Census Profile, 2016 Census La Prairie, Ville, Quebec and Canada. 2021. Available online: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=2467015&Geo2=PR&Code2=01&SearchText=La&SearchType=Begins&SearchPR=01&B1=All&type=0 (accessed on 14 April 2024).
3. Government of Canada. Home Alone: More Persons Living Solo than ever Before, but Roomies the Fastest Growing Household Type. 2022. Available online: https://www150.statcan.gc.ca/n1/daily-quotidien/220713/dq220713a-eng.htm?indid=32985-2&indgeo=0 (accessed on 14 April 2024).
4. McKinsey Company. Americans are Embracing Flexible Work-and They Want More of It. McKinsey & Company. 2022. Available online: https://www.mckinsey.com/industries/real-estate/our-insights/americans-are-embracing-flexible-work-and-they-want-more-of-it (accessed on 18 October 2024).
5. Cox, W. Costly Construction Isn't to Blame for Housing Crisis. Costly Land Is. Financial Post. 2023. Available online: https://financialpost.com/opinion/opinion-costly-construction-isnt-the-culprit-behind-unaffordable-housing-costly-land-is (accessed on 14 April 2024).
6. Ellen MacArthur Foundation; SUN; McKinsey Center for Business and Environment. Growth Within: A Circular Economy Vision for a Competitive Europe. 2015. Available online: https://www.ellenmacarthurfoundation.org/assets/downloads/publications/EllenMacArthurFoundation_Growth-Within_July15.pdf (accessed on 28 December 2024).
7. Hobson, K. Closing the loop or squaring the circle? Locating generative spaces for the circular economy. *Prog. Hum. Geogr.* **2016**, *40*, 88–104. [CrossRef]
8. Moreau, V.; Sahakian, M.; Van Griethuysen, P.; Vuille, F. Coming Full Circle: Why Social and Institutional Dimensions Matter for the Circular Economy. *J. Ind. Ecol.* **2017**, *21*, 497–506. [CrossRef]
9. Keena, N.; Friedman, A. Circular Economy in the Built Environment of North America: Toward Housing Affordability and Sustainability. In *Handbook of Sustainability Science in the Future*; Leal Filho, W., Azul, A.M., Doni, F., Salvia, A.L., Eds.; Springer Nature: Cham, Switzerland, 2022; pp. 1–26.
10. Fernandez, C. The Circular Building: The Most Advanced Reusable Building Yet. Arup. 2016. Available online: https://www.arup.com/news-and-events/the-circular-building-the-most-advanced-reusable-building-yet (accessed on 23 January 2023).
11. GXN; Assets, R. *Circle House: Denmark's First Circular Housing Project*, 1st ed.; GXN: Copenhagen, Denmark, 2018; Volume 248.
12. Friedman, A. *Fundamentals of Innovative Sustainable Homes Design and Construction*; Springer Publishing: New York, NY, USA, 2023.
13. Friedman, A. *Choice, Adaptability and Circularity in Housing*; Cambridge Scholars Publishing: Newcastle upon Tyne, UK, 2024.
14. CCP Handbook: Comprehensive Community Planning for First Nations. Indigenous Services Canada. 2018. Available online: https://www.sac-isc.gc.ca/DAM/DAM-ISC-SAC/DAM-REGIONS/STAGING/texte-text/ccphandbook4ed_1613061207384_eng.pdf (accessed on 18 October 2024).
15. McKinsey. Losing from Day One: Why even Successful Transformations Fall Short. McKinsey & Company. 7 December 2021. Available online: https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/successful-transformations (accessed on 18 October 2024).

16. Site Planning and Architectural Integration Plan (SPAIP). 2024. Available online: https://www.ville.rosemere.qc.ca/site-planning-architectural-integration-plan/#:~:text=The%20Site%20Planning%20and%20Architectural,and%20integration%20in%20its%20environment (accessed on 18 October 2024).
17. Ville de La Prairie. Site Officiel de la Ville de la Prairie. 24 September 2024. Available online: https://www.ville.laprairie.qc.ca/ (accessed on 18 October 2024).

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