

PUBLIC INSIGHTS INTO THE PLUS-15: PERSPECTIVES OF CALGARY'S GRADE-SEPARATED PEDESTRIAN NETWORK

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How to cite

McCormack, Gavin R., and Justin Eng. "Public insights into the Plus-15: perspectives of Calgary's grade-separated pedestrian network" In *Proceedings of 4th Valencia International Biennial of Research in Architecture. Wellbeing for all*. Valencia. 2024. <https://doi.org/10.4995/VIBRArch2024.2024.18168>

ABSTRACT

Designing pedestrian-friendly environments with a focus on human-centered placemaking is crucial for creating vibrant, inclusive, and safe urban spaces, conducive to promoting wellbeing and health. There is a dearth of evidence concerning user experiences of Grade-Separated Pedestrian Networks (GSPNs). GSPNs encompass infrastructure including bridges and tunnels designed to improve pedestrian mobility, separate pedestrians from motor vehicle traffic, and protect pedestrians from inclement weather. Applying a placemaking lens, we explored public perceptions and experiences of the "Plus-15" – an elevated GSPN in downtown Calgary (Canada). Recognizing that interpretations of quality in the built environment are subjective, context-dependent, and socially constructed, we utilized qualitative descriptions to explore public comments on the Plus-15 posted on the Reddit® social media platform. We searched post threads from the r/Calgary subreddit from October 2008 to September 2023, extracting comments concerning the Plus-15. Using a placemaking framework, we conducted deductive coding of comments. We interpreted and translated coded comments into domain summaries based on 10 placemaking dimensions, including *density, destinations, accessibility, permeability, legibility, attractiveness, inclusiveness, maintenance, safety, and character*. Our

analysis of comments, contained within 26 relevant post threads, revealed that people shared a strong connection to the Plus-15 and its distinctive destinations, which invoked feelings of nostalgia and sense of belonging. People voiced concerns about the presence of homeless populations affecting the Plus-15's character and safety. There was positive sentiment towards the Plus-15's role in enhancing pedestrian connectivity and providing shelter from adverse weather. People highlighted maintenance issues as adversely affecting their experience and perceived safety. They also noted that ongoing renovations and the unclear responsibility for network maintenance negatively affected pedestrian movement within the network. Our findings suggest there are opportunities for improving the built quality of the Plus-15 to enhance user convenience, safety, and comfort.

KEYWORDS

Placemaking; pedestrian; walking; built environment; indoor environment

1. INTRODUCTION

Human-centered placemaking is central to the (re)design of vibrant, inclusive, accessible, and safe urban spaces that have the potential

to enhance health, wellbeing and sense of community. While not the only element necessary for creating vibrant, inclusive, accessible, and safe places and spaces, providing high-quality pedestrian infrastructure is important. Pedestrian networks that are highly-connected and easy to navigate, provide convenient access to destinations, transit, and points of interest, enhance personal safety, provide refuge from motor vehicle traffic, and offer interesting experiences can encourage walking (Southworth 2005, Forsyth 2015). Despite extensive research evaluating pedestrian network performance (Jabbari et al. 2023) and pedestrian route choice (Basu et al. 2022), and investigating outdoor built environments in relation to walking and health, including sidewalks and pathways (Sundling and Jakobsson 2023, Saelens and Handy 2008, Salvo et al. 2018), there has been less research attention on public perceptions and experiences of indoor pedestrian networks (e.g., Maitland 1992, Robertson 1993).

2. GRADE-SEPARATED PEDESTRIAN NETWORKS

Grade-Separated Pedestrian Networks (GSPN) encompass infrastructure including elevated and subterranean walkways designed to improve pedestrian mobility and flow (i.e., promoting convenience), separate pedestrians from motor vehicle traffic (i.e., enhancing safety), and provide refuge from inclement weather (i.e., offering comfort) (Cui, Allan, and Lin 2015, Robertson 1993). GSPNs are typically located in densely populated urban areas. GSPNs predominantly include linear interconnected thoroughfares, vertical transportation features (i.e., stairs, escalators, and elevators) that connect to the street-level, manual and automated doors that control network accessibility, and conformity in architecture. These networks contain enclosed routes linking transit stations, commercial, government, and education buildings,

entertainment and recreational destinations, parking garages, plazas, and public open spaces (e.g., indoor gardens). Despite enhancing pedestrian mobility, GSPNs may have broader implications for downtown vibrancy, diversity, safety, aesthetics, and equity. GSPNs, such as the Calgary Plus-15, primarily serve the needs of middle-to-high income office workers who typically occupy downtown office buildings but also attract other visitors such as shoppers and tourists (Byers 1998).

3. THE PLUS-15: CALGARY'S GRADE-SEPERATED PEDESTRIAN NETWORK

Calgary is a city geographically situated in the South West region of Alberta (Canada) and east of the Rocky Mountains. Calgary is located 1000m above sea level and experiences continental climate (warm summers and harsh cold winters). Calgary has a population of at least 1.5 million, with approximately 8000 residing in the city's downtown commercial core (The City of Calgary 2023). The City of Calgary built the Plus-15 to provide a weather-protected climate controlled network for pedestrians and to enhance the efficiency and experience of walking in the downtown. Since its inception in 1969, the Plus-15 has expanded, resulting in it being one of the most extensive indoor weather protected pedestrian network in North America. The Plus-15 is elevated 4.5m (15ft) above street level and includes approximately 18 kilometers of walkway, including 86 bridges, which link numerous buildings and commuter train stations. Semi-public spaces within the Plus-15 are managed by building property owners, while structures such as the bridges and easements, as well as the overall design and planning, is regulated and managed by the municipality. The Plus-15 is open to visitors from 6am-9pm on weekdays and from 9am-7pm on weekends and statutory holidays. Pedestrian volumes are highest during the winter, with some sections of the Plus-15 reaching 19,000-22,000 visitors per weekday (McElhanney Consulting Services Ltd

2019). Moreover, frequency of Plus-15 use is highest on weekdays relative to weekend days and highest at midday (i.e., lunchtime) relative to morning and afternoon periods.

As the municipality begins to implement policies to transform vacant downtown commercial buildings into residential living spaces, the characteristics of visitors and purposes for using the Plus-15 are likely to change. A City of Calgary commissioned evaluation of the Plus-15 identified design issues associated with the network's legibility, accessibility, integration, and placemaking (McElhanney Consulting Services Ltd 2019). Enhancing the pedestrian experience of the Plus-15 has the potential to attract more visitors to downtown, better support the needs of current and future downtown residents, and contribute to vibrancy and livability. Perspectives and perceptions of the Plus-15 have yet to be fully explored, however, this knowledge is vital for informing planning and design decisions aimed at addressing the networks current shortcomings and improving its built quality. Applying a placemaking lens, we undertook a qualitative study to explore public perceptions and experiences of the Plus-15.

4. METHOD

Research approach

Placemaking, as outlined by Dempsey (2008), goes beyond just the focus of aesthetics and functionality of built spaces. Placemaking recognizes the value and quality of a built space not just in physical form, but also in its ability to encourage and support human connection, social interaction, and cultural expression. Built environments designed from a human-centered placemaking perspective foster a sense of identity, attachment, and belonging. Applying a placemaking lens (Dempsey 2008), our study focused on public perceptions and experiences of the Plus-15 in relation to 10 key placemaking dimensions including *density*,

destinations, *accessibility*, *permeability*, *legibility*, *attractiveness*, *inclusiveness*, *maintenance*, *safety*, and *character*. Recognizing that interpretations of quality in the built environment are subjective, context-dependent, and socially constructed, we utilized qualitative description to explore public perceptions concerning the Plus-15 posted on Reddit®. In undertaking qualitative description, the researcher remains close to the data, presenting the perspectives or experiences as reported (Bradshaw, Atkinson, and Doody 2017).

Reddit is a prominent social media website where users can view and pseudanonymously share information via posts across millions of different sub-communities about any topic (Proferes et al. 2021). There are multiple topic-specific communities devoted to Calgary, but r/Calgary is the main community (or subreddit) with the highest membership (n=322,000), viewership, and activity. The r/Calgary subreddit does not require moderator permission to view or post comments, thus these data were available for our study. We developed Python code utilizing the PRAW (Python Reddit API Wrapper) library to conduct an automated search of the r/Calgary subreddit content from its inception in October 2008 to September 2023. This code retrieved post threads containing the key terms 'Plus 15', 'Plus15', or '+15' mentioned in the post thread titles, descriptions, or comments. The post threads were imported into Excel to allow the comments to be viewed and screened for relevance. For each relevant post thread, we extracted and recorded post (i.e., title, description, and date) and comment (author, text, and date) information. Comments from each Plus-15 relevant post thread was imported into Nvivo 14 for analysis. Our analysis included 487 comments from 26 r/Calgary post threads published on Reddit between 2011 and 2023.

Analysis and positionality

The two authors (JE and GRM) familiarized themselves with all Reddit comments prior to

coding. We

conducted deductive coding, organizing Reddit comments into one of 10 placemaking categories: *density, destinations, accessibility, permeability, legibility, attractiveness, inclusiveness, maintenance, safety, and character*. JE conducted the initial coding, which was reviewed by GRM and finalized. JE and GRM generated domain summaries for each of the 10 placemaking dimensions. Domain summaries aimed to capture both the shared and nuanced perspectives and sentiment towards the Plus-15. Selected unformatted quotes, taken verbatim from the comments, were incorporated to illustrate these summaries.

Researchers’ identities and experiences influence the research process. JE is a young adult cis-male of Asian descent, native to Canada, with an undergraduate education in public health and political science. GRM is a

middle-aged white cis-male and immigrant to Canada, with a graduate education in public health and exercise science, who leads an academic research program investigating the relationships between urban built environments and health. Both researchers have extensive experience in using the Calgary Plus-15 within the context of performing work-related and personal activities. Our own experiences as Plus-15 users provided us with firsthand knowledge, allowing us to better contextualize the perspectives of Reddit users.

5. FINDINGS

Table 1 lists the salient Plus-15 related topics relevant to placemaking discussed by Reddit users. Comments concerning the Plus-15 primarily reflected social and built dimensions of the network.

Placemaking category	Topics discussed	Placemaking category	Topics discussed
Density	● Residents ● Vibrancy	Attractiveness	● Aesthetics ● Discovery
Destinations	● Preferences ● Economic impacts	Inclusiveness	● Shared space
Accessibility	● Convenience ● Transportation	Maintenance	● Responsibility
Permeability	● Connectivity ● Barriers	Safety	● Personal security ● Protecting health
Legibility	● Digital wayfinding ● Environmental cues	Character	● Personal bonds ● Social challenges

Table 1. Domain summary topics related to Plus-15 placemaking emerging from Reddit comments.

Density: Density reflects the degree of use and level of activity within a given geographical area. Depending on the time of day or section of the network, the Plus-15 could be crowded or desolate. During the morning, lunchtime, and evening rush hours, the Plus-15 is crowded with pedestrians (*"This was at about 8:30 when the plus 15's were full of people."*), yet at other times it could be quiet and peaceful, offering refuge from the flurry of the work environment (*"It's quite calming walking when it's so quiet. Beats the madness that is walking there at lunchtime pre-pandemic for sure."*). The COVID-19 emergency public health measures resulted in restricted access and closures to the Plus-15. The closures affected businesses located within the Plus-15 and pedestrians who typically used the network to commute. The Plus-15 became devoid of human activity (*"Place was a ghost town. I think having the +15 closed means whatever small amount of essential foot traffic becomes even less."*). Moreover, Reddit users speculated as to how the development of new downtown apartments and condominiums might impact the Plus-15. Some forecasted increased use of the Plus-15 for commercial and leisure activities and pedestrian traffic (*"Increased foot traffic I would assume"*). Others appeared to appreciate the construction of the Plus-15's expansion for supporting pedestrian traffic and attracting growth to the downtown.

Destinations: Destinations are places people aim to reach at the end of their journey that are reflective and supportive of their unique interests, preferences, and needs. Reddit users commented on their personal preferences for services and facilities connected to and in proximity of the Plus-15. They held positive attitudes towards the local businesses and in particular, the 'mom-and-pop' shops scattered throughout the Plus-15. Discussion of food-related destinations was popular, as Reddit users shared the names of restaurants and eateries they frequented during lunch breaks. Some were critical of fast-food chains that had replaced local businesses and detracted

from the unique character of the environment (*"My dad is going to lose his shit. He was so angry when a Subway moved in across the hall."*). Comments also reflected the Plus-15's role in supporting walking, recreational, and entertainment activities (*"I used to take transit downtown after school and walk the +15 while I waiting for him to finish up work."*). Some Plus-15 spaces were sought out because they were secluded and offered opportunities for escape (*"It seems like just yesterday I was going for a lunch walks in the +15 to pass the time of an otherwise monotonous day of work."*). However, some Reddit users viewed the Plus-15 as being absent or limited in essential services. Supermarkets were considered to be inaccessible because apartment buildings were not connected to the Plus-15 (*"I dont understand why there aren't any apartment buildings properly connected to the +15 and why there isn't a supermarket in it. If I could never need to go outside in the winter that would be amazing."*). During the COVID-19 pandemic, the Plus-15 was perceived to help pedestrians reach the few businesses that remained open for service (*"Gyms, Barbers and restaurants are all allowed to open so plus 15 will help those who are around get around."*).

Accessibility: Accessibility in the built environment affects the extent to which people can reach desired services and facilities taking into consideration cost, time, and ease. Comments concerning accessibility tended to focus on experiences related to gaining entry to and use of the Plus-15 at different times of the day and week. Reddit users commented on barriers to accessing Plus-15 bridges and outside street entrances before their stated closure times (*"Just yesterday we tried to open a +15 door at 8 pm that was locked with a 'hours of operation until 9 pm' posted."*). Some also noted that the unexpected early closures of the Plus-15 prevented people seeking shelter from inclement weather (*"Just wanted to give everyone a heads-up since I don't want someone locked out of a +15 entrance and stuck in the cold."*). Some buildings disabled

automatic doors leading into the Plus-15 near closing hours while entrances via certain buildings remained unlocked. Some Reddit users described this situation as both confusing and challenging (*"automatic doors don't work after 6pm but you can sometimes still open them. They're a mess lol."*). One Reddit user reflected on an instance where a section of the Plus-15 was closed on Sundays when it should have been open according to the municipality's published operating hours.

Permeability: Permeability reflects the extent to which the built environment allows for uninterrupted movement. Reddit users expressed mixed sentiment regarding the Plus-15's connectivity. Users commented on how construction and maintenance (*"The bummer is the +15 system has been let to suck. You used to be able to get across the whole core without going outside. So many places closed them off or they're under repair."*) and the absence of connections between certain buildings, negatively affected pedestrian movement (*"I wish someone would step up and connect the main downtown +15 system to the stubby +15 system that connects Bow Valley College, City Hall, the Glenmore Museum, the Tower Center, and the Palliser so I don't have to walk outside! poor me."*). The permeability of the Plus-15 differed between daytime and nighttime. When they could not access the Plus-15, Reddit users spoke of reluctantly walking outside (*"It was closed I just ended up walking in the shade to prevent dying of heat stroke today"*). The closure of Plus-15 linked buildings in the evenings meant that some sections of the network were no longer a viable route option for pedestrian travel (figure 1). One Reddit user suggested not using the Plus-15 altogether (*"Walk outside way easier plus it may not be open at night."*) while another recommended entering before the posted closing time (*"My girlfriend and I roamed the +15 one night...had entered around 7:30 and was my plan just to just walk to our destination ... well... we really enjoyed it and once you are in past closing... you are in..."*).

Legibility: Legibility reflects how easy the built environment is to navigate. Access to wayfinding resources can enhance legibility. Reddit users commented on the usability and functionality of existing wayfinding tools including the '+15' smartphone application ('app'). The free downloadable Apple or Android '+15' app provides maps and information regarding open and closed routes. Some users valued the utility of the '+15' app for providing basic information such as directions (*"I've lived in a fair few cities, and the Apps the City of Calgary provides are just amazing and so useful."*). However, many comments mentioned the app's poor functionality (*"I wish I could add bookmarks onto the plus 15 app, either that or overlay the plus 15 map onto my google app."*) and lack of updated information (*"...it looks like the city hasn't prioritized updating this data, and the last revised date for pathway data was all the way back in 2019."*). Reddit users also spoke about experiences of accessing the Plus-15 map available on the City of Calgary website. This map provides a detailed layout of the Plus-15 including notable landmarks, points of interest, transit stations, and Plus-15 bridges with elevator or stair access. Despite these functions, some users noted that the information provided by these maps were outdated (*"These maps are generally very out dated and not very accurate. For example there is a chunk of +15 locked off near City Hall."*). In terms of built features, one Reddit user drew comparison between legibility of the Plus-15 and Toronto's downtown underground pedestrian walkway system (*"So much better than Toronto's PATH. Because you're underground almost all the time and the signage is horrible, it's impossible to find your way around."*). The Plus-15 is elevated, with some sections offering sightlines to outside buildings and landmarks, which may assist wayfinding (figure 2). There was no Reddit discussion of signage or other built features affecting the Plus-15's legibility.

Attractiveness: The attractiveness of the built environment reflects how people ascribe

positive qualities to places that align with their interests and preferences. Reddit users referred to the visual contrast of different physical features within the Plus-15. Reddit users spoke positively about the public art on display in the Plus-15. Pedestrians enjoyed the change in scenery and the opportunity to appreciate creativity as they travelled through the network (*"Wandering around finding cool spots...all the art!"*). The public art and other interesting landmarks within the Plus-15 offered opportunities for adventure (figure 3). Some Reddit users reflected on exploring and seeking out unfamiliar spaces and places within the Plus-15 (*"I really and truly love all of it. I've been going for YEARS and I always find something new."*). The visual appeal was not just discussed in relation to the indoor environment. One Reddit user welcomed a new Plus-15 bridge because it obscured the unpleasant sight of a multi-story parking lot (*"It's also nice they are covering up that unsightly parkade."*). Another user also remarked on architectural quality of this new bridge (*"Huh, who knew +15 can curve!"*). Destinations located within the Plus-15 also contributed to the overall attractiveness and visual experience of the Plus-15 (*"I'm gonna miss their pastel 80s décor honestly. It was a little nostalgia time capsule on my morning walk."*).



Figure 1. Temporary sign noting of a Plus-15 bridge closure and electronic security access door.



Figure 2. Entry to Plus-15 bridge to Nexen building showing doors, sightlines, and signage for destinations, directions, and bridge operating hours.

Inclusiveness: Inclusiveness describes the ability for all people to have equitable access to places and spaces. There was little discussion by Reddit users related to the Plus-15's inclusiveness and equity. There were no Reddit comments regarding the Plus-15 features or barriers affecting the experience of network use among marginalized populations (e.g., youth, elderly, Indigenous peoples, people with disabilities, women, and ethnic/racial minorities). Reddit users did however, comment on the potential of the Plus-15 to shelter or provide refuge for the homeless population. Users mentioned the regulated indoor temperature of the Plus-15 as providing comfort to the homeless population during inclement weather (*"A lot of vulnerable people could probably use the shelter the +15's could provide this weekend..."*). Other Reddit users viewed the presence of homeless people in the Plus-15 as a systemic social issue, reflective of the ineffective municipal policies or programming that provided this vulnerable population with no other option but to congregate within the Plus-15 (*"we're mostly a winter city but we hate homeless so we don't actually build anything that makes traveling or staying in the core easier for 8 months of the*

year.”). Some Reddit users spoke of offering tangible items (e.g., food, money, and gift cards) to homeless individuals in the Plus-15. One user even reflected on a scenario during the holiday season where they noticed gifts had been accidentally misplaced or left in a particular spot within the Plus-15 and hoped that a homeless individual would retrieve them (*“Thought about it. Decided to leave them for someone who needed it more. That spot is a hangout for a few homeless guys. I hope they get a hold of them.”*). However, some comments embodied negative sentiment and even sarcasm towards the homeless population present in and around the Plus-15 (*“New homeless shelters. Looks good!!”*).

Maintenance: The maintenance of the built environment relates to the upkeep of infrastructure and cleanliness. Reddit comments related to Plus-15 maintenance focused on the delineation of responsibility for and the impacts of renovations and construction. Private building owners and the municipality share responsibilities for maintenance of different sections of the Plus-15. This division of responsibility results in some network sections being regularly maintained while other sections are neglected to the point of being potentially hazardous to the health and safety of pedestrians. There was uncertainty as to which entities were responsible for the management and maintenance of various spaces within the Plus-15 (*“The City definitely has some involvement. But the building operators do seem to deploy their cleaning staff to them.”* and *“Honestly there is a lot of confusion and unclear boundaries when it comes to the +15 system. That’s probably why you can’t find any concrete info. It is not straightforward across the board with who is in charge of what.”*). Moreover, some Reddit users expressed bewilderment by the municipality’s decision to undertake construction on the Plus-15 immediately after the end of the COVID-19 pandemic restrictions. This bewilderment was

due to the negative impacts these restrictions had on local businesses and the ongoing impact these businesses might encounter due to the construction (*“So typical of this poorly run city that all the businesses on the +15 struggled for two years during Covid and as soon as people come back down town they close a large swath of them for construction.”*).

Safety: The built environment shapes perceived and real threats to safety. These threats can influence decision-making and behaviour. Reddit comments concerning safety centered on risks of injury and health

and a sense of personal security. Reddit users discussed experiences during which the Plus-15 posed a risk for injury (*“The security guard said, ‘Don’t worry. We have everything under control, but you’d better get out because the ceiling is about to collapse’”*). Despite the Plus-15 offering pedestrians protection from inclement weather, at times indoor features such as floor surfaces posed a hazard to pedestrians (*“Anyone notice how slipper portions of it becomes when people track snow and water to the nice shiny floor? This morning, I didn’t wipe out walking on the street but wiped out inside...”*). Nevertheless, Reddit users appreciated the weather protection offered by the Plus-15 (*“It’s way too much fun to walk around without getting frostbite. Cancelled.”*) but also expressed dismay and the potential health risks when the network was closed (*“I just ended up walking in the shade to prevent dying of heat stroke today”*). Reddit users also commented on aspects of the Plus-15 affecting their sense of personal safety. The presence of security guards patrolling the network during opening and closing hours was considered a positive feature (*“Wandering around finding cool spots... all the art! Security guards were chill. Was a really fun time.”*). However, some perceived the presence of homeless individuals in the Plus-15 as a threat (*“Also I know to stay well away from these people.”* and *“On another occasional there was a man being poked by security as he*

had passed out and pissed himself on a table in suncor. 1/4 bottle of Purel hand sanitizer in his hand.”). Reddit users also commented on the Plus-15 in relation to risk of disease transmission during the COVID-19 pandemic. From April 2020 to February 2021, the municipality announced a complete closure of all sections of the Plus-15. From February 2021 onwards, the municipality proceeded with a gradual reopening of most sections of the Plus-15 but with reduced operating hours. Reddit users expressed mixed perspectives concerning these Plus-15 closures. Some acknowledged that the Plus-15 closures during this time were necessary (“I agree the +15 is amazing but you probably should not be out wondering around. I know my building is basically closed as 90% of the building is now working from home or layed off.”) while others questioned the effectiveness that these closures would have on reducing disease transmission (“Might be an unpopular opinion but I’m not sure how this will help prevent the spread of the virus. Assuming that the doors to the +15 are being held open/automatic and that the main issue is not being able to have enough space to properly social distance yourself from others in this walkway then wouldn’t closing the network just move the problem outside and onto the sidewalks?”).

Character: The character of the built environment affects people’s attachment and emotional connections to places and spaces. Reddit users reflected on positive experiences of exploring and wandering the Plus-15 (“I really and truly love all of it. I’ve been going for YEARS and I always find something new.”) and expressed personal attachments to specific Plus-15 destinations and landmarks within the network (“The far end of the +15 level of the Gulf building is perfect for getting away from work during a break and relaxing.”). Comments reflected nostalgia and personal connection to Plus-15 (“That was one of my favourite chill relaxation things to do after-hours downtown... Exploring a chill and serene +15 network.

Lovely.”) and for its restaurants, lounge areas, and public art displays (figure 3). Some reminisced about their positive experiences over the years whilst visiting an iconic, but now closed, restaurant (“Rita’s Sandwiches” and “A true hidden gem downtown and one of the best sandwiches I’ve had!”). Others mentioned their joy in observing the ‘Udderly Art’ cow sculptures displayed throughout the Plus-15 (figure 4). Some Reddit users, unaware that these cow sculptures have been relocated to a central location within the Plus-15, expressed a sense of relief that they were still on display (“IS THAT WHERE THE COWS WENT? God I’ve lived here all my life and when they were removed I was just like “aww, that sucks” and never looked into it further. I’m glad they’re still around.”). Several Reddit users also referenced an obscure early-2000’s low-budget movie (“Waydowntown”) that was filmed entirely inside the Plus-15. The movie presented the Plus-15 as a place of oddities. Reddit users commented on how the movie reminded them of their own Plus-15 experiences (“This just reminded me of waydowntown!”). Sentiment towards the movie reflected feelings of enjoyment and light-heartedness (“You could film a 20 year anniversary of waydowntown.”). Reddit users also appeared to express irritation and weariness towards the Plus-15’s homeless population (“I recall being yelled at by a crackhead one day. He said “if I wasn’t homeless I wouldn’t be here yelling at you, I’d be at home”. No sir, if you weren’t homeless you would be at work getting yelled at by the homeless.”) and street performers (“I’ve seen many cases of buskers, passed out people, and even one team of 2 wanna be con artists that only operate on the bridges.”).

6. DISCUSSION

Our qualitative analysis of comments posted on the Reddit social platform provided novel insights into public perceptions and experiences of the Calgary Plus-15. Reddit

users represent a specific demographic including an overrepresentation of young adult males (Proferes et al. 2021), and their views and experiences may not reflect the broader Calgary population or full spectrum of Plus-15 users. Applying a placemaking lens (Dempsey 2008), we deductively coded Reddit comments to generate domain summaries; however, we acknowledge that the domains and comments expressed are overlapping and interrelated, and should be interpreted from a holistic perspective. The comments analyzed varied in detail and length, ranging from verbose to succinct. While these narratives do not delve into the motivations, beliefs, or the range of experiences informing the different perspectives of Reddit users, they do provide a glimpse of the important issues associated with the Plus-15, relevant for placemaking and considered important by some members of the public.

The Plus-15 and its specific destinations and landmarks are considered iconic. The Plus-15 has been the

focus of a fictional film, is known for its “Udderly Cow” art displays and boasts a reputation for being the longest GSPN in North America. Its mention in 26 subreddits also suggests the Plus-15 is an important and topical landmark in Calgary. Our findings suggest people can and have formed strong personal connections with the Plus-15. Our findings also suggest that the Plus-15 is viewed by many as an important feature of the Calgary landscape that enhances pedestrian connectivity, provides weather protection, and offers opportunities for undertaking leisure, entertainment, work, shopping, and transportation activities. Including more art displays, interesting landmarks, and independent retailers (e.g., niche, concept, non-chain, and mom-and-pop shops), and hosting regular community events within the Plus-15, may not only attract more visitors but may draw a more diverse spectrum of visitors, thereby enhancing the vibrancy of downtown Calgary. These Plus-15 placemaking improvements

align with and expand upon those previously recommended, including the provision of greenspace within or adjacent to the network, improving connections to the street, as well as creating cultural, social, and active destinations offering programmed activities within the Plus-15's bridges (McElhanney Consulting Services Ltd 2019).

The Plus-15 includes a mix of private and public spaces and our findings suggest there may be issues and inconsistencies related to how these spaces are managed, maintained, and operated. Renovations and construction within the Plus-15, inconsistent hours of operation, and challenges associated with navigating the network are barriers to its use. There were also strong feelings towards homeless individuals, whose presence within or near the Plus-15 was perceived by some as affecting the network's safety and character. These perspectives reflect issues of social justice and raise questions about who has rights to occupy public spaces. For the Plus-15, its intergration but often unclear delineation of public and private spaces, adds complexity to determining who should be allowed access to the network and what activities are considered socially acceptable. The Plus-15 offers a place of refuge from inclement weather and should be seen as a critical part of broader city-wide strategies needed to address homelessness. These strategies should target systemic and economic barriers associated with access to affordable and subsidized housing and mental health resources.

Our analysis of Reddit comments revealed little discussion related to inclusiveness, which is concerning. The absence of dialogue about the inclusivity of the Plus-15 on Reddit likely reflects the demographic of platform users. It might also suggest that members from marginalized groups are less likely to use the Plus-15, thereby not participating in related discussions on Reddit. This lack of discussion highlights the need for more targeted research to gather and analyze perspectives from marginalized populations (e.g., youth, elderly,

Indigenous peoples, people with disabilities, women, and ethnic/racial minorities). Such research would likely require different traditional and culturally sensitive methodologies than those used in our study. This targeted approach should also involve collaboration with community organizations that work directly with these groups to ensure that all voices are considered. Additionally, integrating the voices of marginalized groups into urban planning and policy-making could help ensure that future developments enhance accessibility and inclusiveness, creating a welcoming environment in the Plus-15 for all users.

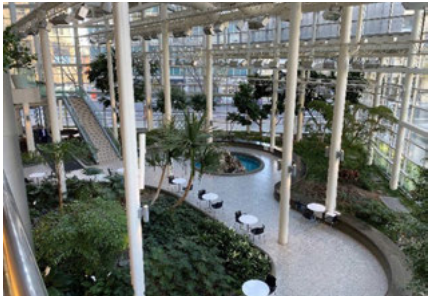


Figure 3. Nova tower garden located at the street level with stairs to the Plus-15.



Figure 4. The Udderly Art cow sculptures displayed in the Plus-15.

7. CONCLUSION

The Plus-15 appears to be meeting its original aim of supporting pedestrian mobility, separating pedestrians from motor vehicles, and sheltering pedestrians from poor weather, yet it faces design and social challenges that inhibits its ability to be a more vibrant space. Many of the design and social challenges of the Plus-15 are shared among other GSPNs (Byers 1998, Maitland 1992, Robertson 1993). Better communication and coordination between the municipality and building owners, investing resources in improving and updating electronic maps and apps, widely distributing public notices of network renovations and construction with suggested alternative pedestrian routes, and improved avenues for public consultation, might address some of these issues. Embracing a holistic human-centered approach to placemaking has the potential to create more vibrant and successful urban spaces.

ACKNOWLEDGEMENTS

This study was undertaken as part of a Social Sciences and Humanities Research Council of Canada (SSHRC) Partnership Grant (#895-2022-1003; *Quality in Canada's Built Environment: Roadmaps to Equity, Social Value + Sustainability*).

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