RADBURN, WILDWOOD PARK, AND KITIMAT: LANDSCAPE ADAPTATIONS

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ABSTRACT

The early 1950s design for the planned new town of Kitimat in British Columbia, Canada, was a late-career project for Clarence Stein, who had designed the revolutionary Radburn community in Fair Lawn, New Jersey, about twenty-five years earlier. In Radburn, Stein had rejected the premise that houses should "address" a street with a formal architectural or landscape gesture; instead, homes faced an inner pedestrian commons. At Kitimat, Stein was able to finally build his "Radburnian" scheme on a town scale. The primary research question is to discover how the landscapes of Kitimat have evolved over 70+ years to reflect the preferences of the community's residents. While the designer's intentions at Kitimat are well understood, residents have made their own adaptations in structuring neighborhood space.

The study also compares Kitimat to its predecessors. The author's previous studies of two forerunners of Kitimat—Radburn (Fair Lawn, New Jersey, circa 1928) and Wildwood Park (Winnipeg, Manitoba, circa 1947) indicate that resident adaptations to the planned landscape have created in each place a distinctive fine-scale spatial character that reflects resident preferences for control of public/semi-public/private spaces within the respective neighborhoods. Like those earlier studies, the methods employed here include references to archival planning documents, on-site investigation, and "focused interview" conversations with residents and town administrators.

This study contributes to the understanding of how the innovative "Radburn model" fares over decades of residents' adjustments, building on scholarship established by Stein and continued through research focused on other postwar communities inspired by Radburn including case studies by Wright (1971), Martin (2001a, 2001b), and Francis (2003). For Kitimat, as with its predecessors, understanding how and why residents have made their personalized adaptations to the original planning scheme will lead to an enhanced understanding of principles of effective "Radburnian" design that can inform contemporary neighborhood planning.

Keywords
Kitimat, Radburn, Wildwood Park, Clarence Stein, North American New Towns

1 INTRODUCTION

1.1 Kitimat and Its Forerunners

Clarence Stein's design for the postwar new town of Kitimat, BC, represents a late stage in the evolution of the Radburn concept, a model for the North American suburban neighborhood that was a radical departure from standard neighborhood conformations. It was a departure in its large-scale urban pattern—the curvaceous superblock in lieu of the orthogonal grid—but also a departure at the finer resolution of block and household scale (Wright 1971). Because the traditional relationships between streets and houses and among houses were modified, built examples of the Radburn scheme reveal that residents over time "negotiate" their relationships with adjacent neighbors by structuring the landscape in particular ways that afford them some control over visual or physical access and zones of privacy. Previous studies at Radburn itself (Stein 1957, Martin 2001a) and at subsequent "Radburnian" developments (Martin 2001b, Francis 2003) have documented these landscape modifications and in some cases documented behavioral norms that have evolved over time, as residents collaborate to build an opportunistic "vernacular" landscape (that is, a landscape that expresses a localized idiosyncratic character within the planner's "establishment" landscape; Jackson 1986) in the spaces left available in the original pattern.

This vernacular landscape is itself revelatory. In some cases, it expresses the unintended consequences of decisions made at a larger scale, as residents find ways to "fix" unforeseen problems. In other ways, it reveals that the designer's "environmentally deterministic" assumptions may have been in error, and so residents over time have adapted spaces for uses according to their own needs, possibly contrary to the designer's intentions. Sometimes it reveals how cultural shifts and trends cause changes to the manner in which landscapes are perceived or utilized. And sometimes this vernacular landscape simply reveals the persistence of cultural norms as expressed in the shared spaces of a neighborhood. The "radicalness" of Radburn and its imitators had, in each instance, shaken up standard neighborhood landscape relationships, creating new kinds of possibilities (as well as constraints) and imbuing each built example with a uniqueness that is intrinsic to its identity as a place and as a community. And yet each of these unique places, over time, has paid homage to normative modes of "landscape neighboring" that are found in more conventional/typical developments.

1.2 Research Objectives

The primary research question is to discover how the landscapes of Kitimat have evolved over 70+ years to reflect the preferences of the community's residents. This paper, which represents the preliminary stage of a longer-term and more in-depth study that compares/contrasts the evolved landscapes of the various "Radburns" (Figure 1), builds on previous research that documented the evolution of the vernacular landscape within Kitimat's forerunners, Radburn (Martin 2001a) and Winnipeg's Wildwood Park (Martin 2001b). Those earlier studies suggest that by studying these finer-scale "evolved" landscapes, we can draw certain conclusions about residents' needs and preferences. Those determinations may in turn provide designers with insights on planning and design for 21st-century iterations of the Radburn concept.

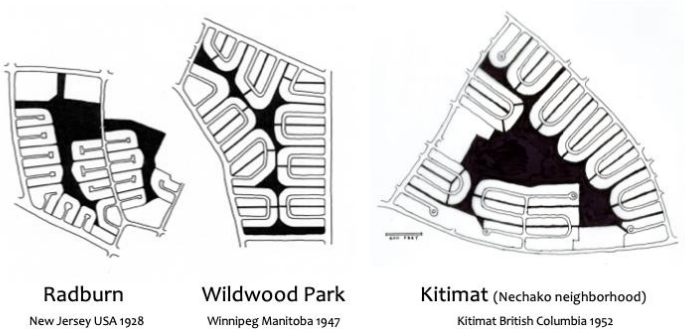

Figure 1. Same-scale plan comparison of street patterns and common-space networks (black areas). Drawing by the author. Wildwood Park was originally platted with cul-de-sac lanes, in imitation of Radburn, but Winnipeg plan reviewers recommended looped lanes for emergency vehicle and truck access. Kitimat, platted about 5 years later, followed suit.

1.3 Literature Review

Radburn has been the subject of a great deal of scholarly work since its development began almost 100 years ago. It also features in books and articles about American planning history that note its importance as the prototypical development that merged "garden city" ideals and principles with responsiveness to the problem of the automobile intruding upon the neighborhood (its developers marketed it as "a town for the motor age"). The primary Radburn texts are Clarence Stein's own Towards New Towns for America (1957) and Daniel Schaffer's Garden Cities for America: The Radburn Experience (1982). In 1971, Stein's partner Henry Wright published a well-known piece in Architectural Forum titled "Radburn Revisited", which, like Stein's book, included retrospective observations about how Radburn had evolved over the years. Another good source is Kermit Parson's 1998 biography of Stein, The Writings of Clarence S. Stein.

Schaffer's book was once considered the definitive overview of Radburn's development and history, but later researchers such as this author (Michael David Martin's "Returning to Radburn" in Landscape Journal, 2001) extended the analysis by considering Radburn in light of the burgeoning "new urbanism" movement of the late 20th century. Another thing Martin noticed was that the role of Radburn's Landscape Architect, Marjorie Sewell Cautley, had heretofore been largely overlooked or even ignored; Schaffer never so much as mentioned her. Her significant contributions to the design of Radburn (as well as to other projects, including Stein and Wright's Sunnyside Gardens) were finally acknowledged in detail by Sarah Allaback in her 2022 Cautley biography, Marjorie Sewell Cautley: Landscape Architect for the Motor Age.

Wildwood Park, relatively unknown among planning historians, has occasionally appeared in journals, theses and dissertations, but seems to have not been featured in a comprehensive sense until Mavis Reimer's 1989 self-published book Wildwood Park Through the Years. Martin's 2001 "The Landscapes of Winnipeg's Wildwood Park" in the Canadian journal Urban History Review/Revue d'histoire urbain provided a historical overview and featured the findings of two on-site studies. However, the most comprehensive work on Wildwood Park remains unpublished: University of Manitoba Professors Carl R. Nelson and Donald G. Crockett's 1984 Wildwood Park Study.

Kitimat, while far better-known than Wildwood Park because Stein was the designer, has not been treated comprehensively in planning history texts. Like Wildwood Park, it has been the subject of journal articles (one by Stein himself in 1954, in Architectural Forum), theses, and dissertations, but there did not seem to be a major study accomplished until Jennifer Herkes' 2010 Planning for Resilience: A Case Study of Kitimat BC. One excellent source for a comprehensive documentation of Kitimat's phasing and construction is the District of Kitimat Corporation's self-published Kitimat Townsite Report (1960). Finally, the Parsons biography of Stein, which features Stein's writings, offers insights into Stein's conceptual thinking about Kitimat and sheds light on his thoughts about the ongoing project through its early development phases.

2 METHODS

For the previous studies of Radburn and Wildwood Park, the author consulted both scholarly and popular-press sources on the development histories of each neighborhood, followed by site visits to the neighborhoods during which he interviewed neighborhood management staff as well as residents who either volunteered for interviews or agreed to be informally interviewed when approached during the site visits.

The conversations with residents followed a "focused interview" format, a series of five open-ended questions meant to draw out the resident's personal history (length of tenure in the neighborhood, family configuration, etc.) and experiences/perceptions of the neighborhood, with a particular focus on adaptations the resident had made to the home landscape, as well as general perceptions of adaptations made by neighbors.

This process was repeated during an on-site study of Kitimat in May of 2011, during which the author interviewed Kitimat residents and planning staff, studied each of the several Kitimat sub-neighborhoods (with particular focus on Nechako, one of the earliest phases), and made extensive observations in the

field with an eye towards understanding how the landscape had changed over time. Of special interest were any indications that the residents had made modifications that might seem at odds or at variance with design intentions that had been expressed in writings by Stein (Parsons 1998) and others in the early days of Kitimat.

2.1 Background

The Radburn concept. The “Radburn concept” is a suburban neighborhood planning strategy that has its roots in the Garden City movement, the principles of which were framed by social critic Ebenezer Howard in 1898. Howard first published “To-morrow: A Peaceful Path to Real Reform” (Howard 1902) that year without having anticipated the soon-to-come automobile age, but his principles were nevertheless translated into full-scale community form in the new town Letchworth Garden City (founded 1903) and Welwyn Garden City (founded 1920). As these experimental English towns took shape, Howard’s ideas became interesting to certain progressive Americans, chief among them planner/architect Clarence Stein. Stein and his colleagues became committed to the adaptation of Garden City principles to a suburban American landscape that was beginning to be transected and connected by roads that were carrying increasing numbers of private automobiles. Henry Ford’s affordable mass-produced Model T had debuted in 1908, and by the 1920s automobile traffic in urban America had increased to the point that it was influencing planning at all scales of community design. When Stein and partner Henry Wright designed Radburn in Fair Lawn, NJ, in 1928, they marketed it as “A Town for the Motor Age” (Shaffer 1982).

Radburn’s story has been well-documented. Located within commuting distance to Manhattan, it has been prominent as an experimental case study in American planning history. The entire comprehensive scheme of Radburn was never built, because the stock market crash of 1929 halted development after only two of the community’s several constituent superblock “parks” had begun construction. However, Radburn’s initial phase “Park A” and “Park B” were of sufficient scale and complexity that they have served as a sort of “learning lab” for the radical Radburn idea. That idea has heavily influenced later American planning ventures including the Greenbelt Towns of the 1930s and the large-scale postwar new towns such as Columbia (MD) and Reston (VA).

Despite its influence, the true radicalism of Radburn has only very rarely been copied faithfully. Its internally-focused “superblocks” as well as its cul-de-sacs have been adapted throughout the postwar American suburban landscape, but the notion of turning around houses away from streets and toward pedestrian-only spaces was too great a departure from the cultural convention of street-fronted homes. Stein had “back-doored” the streets of Radburn in order to minimize the obtrusiveness of cars, but just as Howard had not anticipated the age of the automobile, Stein had not anticipated the automobile’s centrality in the daily life of the family.

2.2 Radburn Reconsidered

Equations must be, where possible, typeset in MS-Word Equation. They must be numbered consecutively. Within the text, they must only be referred to by abbreviation and their number in parentheses (e.g., Eq. 1). All notations in the equation should be explained in the text (e.g., “r stands for the correlation coefficient”).

Stein made note of his underestimation of the role of the automobile when he revisited Radburn in the early 1950s (Stein 1957). He observed that the “back-door” cul-de-sac service lanes were treated as valuable hard-surfaced sub-spaces by residents and used intensively by children as well as adults, supporting everyday activities such as informal play, domestic use, and automobile-related maintenance, and this caused him to reconsider the role of the street within the neighborhood. By the 1950s, there were already many more cars being stored in Radburn’s lanes than Stein had planned for, and this caused him to question both the scale and pattern of streets within such a community. But Stein also observed that the interconnecting pedestrian commons had indeed emerged as the vital green heart of Radburn on the neighborhood scale. Neighborhood space at Radburn could now be seen as a duality: intimate lanes served as informal sub-spaces for the familiar few (Figure 2, left), while the large swaths of park space (Figure 2, right) served to connect everyone in Radburn with each other, through landscape edges that mediate between shared open space and the fronts of individual dwellings. This had very practical consequences; the elementary school and the recreation center, for example, were placed within this interior pedestrian space, with a grade-separated pedestrian underpass (Figure 3, left), obviating

crosswalks on the loop road (Howard Ave., a tribute to Ebenezer Howard) that bifurcated Park A and Park B. In Radburn's plan, Stein had overly constrained automobile accessibility and storage somewhat (Martin 2001a), but he had succeeded in creating a safe walking network for everyone.

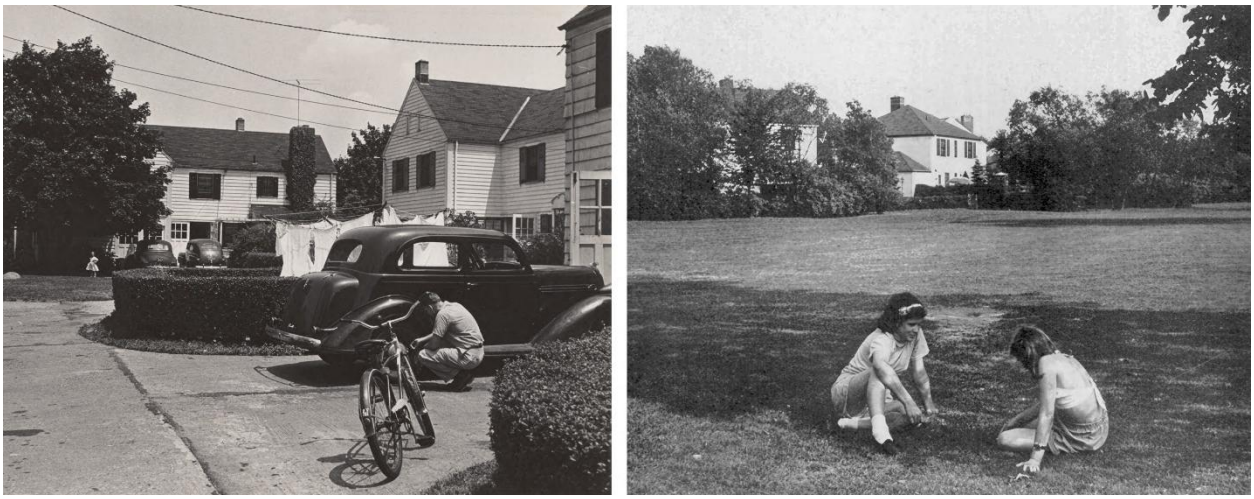

Figure 2. Radburn neighborhood space as a dual structure: intimate service lanes serving adjacent dwellings (left) and a central open park space connecting the wider community (right), 1949. Photos reproduced by permission of Stephen Taylor.

2.3 Kitimat

At the same time that Stein was revisiting Radburn and publishing his findings in his 1951 book "Toward New Towns for America" (Stein 1957), he had lobbied successfully to be retained as town planning coordinator and director for the new town of Kitimat in west-central British Columbia, not far south of the tip of the Alaska panhandle. Kitimat was in effect (although not literally), a company town for the industrial giant ALCAN (The Aluminum Company of Canada), which developed a hydroelectric facility that would provide power for an aluminum smelting operation. Alcan built the Kenney Dam on the Nechako River and built the Kemano powerhouse about fifty miles inland, connecting the power source via a transmission line to an ice-free deep-sea harbor where the Haisla First Nation village of Kitamaat (a Haisla word that translates as "people of the snow") stood. Not far from the old village, Alcan developed the massive aluminum smelting facility; up the road, they sited the new town (Boyer 1956).

ALCAN (in partnership with the Provincial Government of British Columbia) retained Stein as town planning director/coordinator, along with the New York architectural and engineering firm of Mayer & Whittlesey, in the interest of creating a community that could attract and retain workers. Stein, by now almost 70 years old, saw this as an opportunity to finally accomplish what he had set out to do before Radburn's development was cut short: create an entire self-sufficient community that was organized around an interconnected pedestrian network (Parsons 1998).

2.4 Kitimat: Planning and Landscape

In a certain sense Kitimat is Radburn writ larger; the several phases that have been built over the decades at Kitimat constitute a settlement much more extensive than the original complete plan for Radburn, but the essential premise is intact. Higher-speed (40 mph design speed) collector roads, which are generally not roads that directly serve a residence or facility, wind through the community and define the edges of superblocks.

Each superblock is a bounded unit of the overall community, although sometimes superblocks connect with each other via a grade-separated pedestrian underpass (Figure 3, right), in imitation of the underpass between Park A and Park B at Radburn. This design feature was directly inspired by Frederick Law Olmsted's grade-separated crossings in Manhattan's Central Park. The Radburn underpass also informed similar pedestrian-friendly constructions in 1960s American New Towns, including Columbia, Maryland and Reston, Virginia. Within the superblocks are the looped residential streets (20 mph design speed),

upon which homes front (Stein 1954). However, Stein made three significant concessions to “automobility” in the design of these internal streets and in the relationships of houses to streets.

Figure 3. Radburn’s famous pedestrian underpass, a tunnel under Howard Avenue which connects Park A and Park B, Radburn’s two superblocks (left) and a pedestrian underpass connecting superblocks at Kitimat (right). Photos by the author.

First, the streets are loops and not Radburn-style cul-de-sacs. The loop is a more practical arrangement for the circulation of vehicles, especially large service vehicles; it also has implications for snow removal. This very issue had been faced in Winnipeg’s Wildwood Park a few years earlier. Wildwood Park, which was not a Stein project, initially was conceived as a postwar Radburn knock-off by developer Hubert Bird, exactly paralleling the progress of the famed Levittown development on New York’s Long Island (Reimer 1989). As a concession to the increased automobile usage of the postwar era, Wildwood Park had been designed to a slightly lower density than Radburn, but in imitation of Radburn it featured cul-de-sacs in the original scheme submitted for CHMC (Central Mortgage and Housing Corporation) plan review in 1947 by the design firm of Green, Blankstein and Russell. The CHMC plan reviewers recommended looped lanes in place of cul-de-sacs (Figure 4, middle image), and this became a precedent for later Canadian developments (Nelson 1984).

The second concession to automobility was the design of the streets. Kitimat’s streets are of “normal” suburban residential width and alignment, such that they accommodate two-way traffic flow and allow for on-street parking. After unusually heavy snowfall, snow is plowed to the middle of the street, leaving a single lane on each side for access to driveways. The streets feature concrete curb and gutter and a comprehensive network of catch basins and underground stormwater conduits; as infrastructural design elements, they have little in common with Radburn’s minimalist lanes.

The third concession is the relationship of homes to streets and to the interconnecting community pedestrian space. Kitimat houses are, for the most part, unambiguously oriented to streets as “front” and interconnecting pedestrian spaces as “back” (Figure 4). Only the homes in the earliest phase feature main entrances that are not street-facing, and many of these have been subsequently modified for street-side access. This was not Stein’s preference; in his initial proposals, he stressed that houses should ideally be oriented towards the walking paths and that fences in path-facing yards be discouraged, in order to maximize incidental social interactions (Stein 1954).

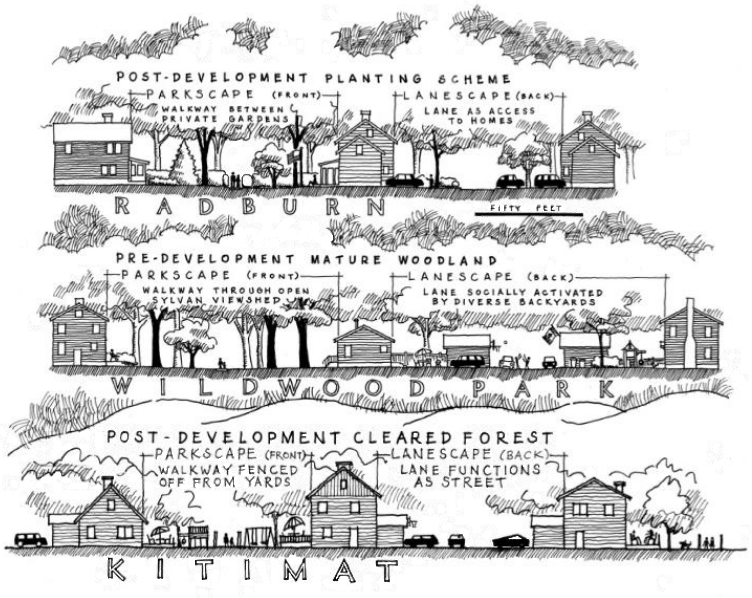

Figure 4. Same-scale section-elevation cuts through home landscapes and open space within Radburn, Wildwood Park, and Kitimat's Nechako neighborhood. Drawing by author.
The scale of these spaces, their relationship to homes and roadways, and the diversity of edge conditions permitted at their edges are all variables that define the landscape character of the neighborhood.

Nevertheless, it is this "central green" interior landscape at the backs of homes that constitutes the pedestrian and recreational armature of Kitimat as a community. It infiltrates each superblock as a dendritic pattern such that every home has access to this system through its backyard. Kitimat promotional materials noted that "(r)esidential areas have been turned inside out so that (in the full development of Kitimat) every home and store and community building faces toward peaceful open spaces, removed from intrusion and hazard by the automobile." (McGuire and Wild 1959) All together, the network includes a remarkable 28 miles of pedestrian pathways (Herkes 2010).

3 FINDINGS

3.1 Pedestrian Park Network as Social Domain

The following section constitutes a preliminary account/analysis of conditions the author encountered.

Stein believed that the open space network provided two primary benefits. First, it created a safe haven from the dangerous streets and an alternative to them as transportation routes. Second, and of equal importance, was the notion that shared open space of this type would inevitably create a high incidence of neighbor interactions. This would in turn provide for social cohesion and strengthen the sense of community (Herkes 2010). That first benefit proved to be very real at Kitimat, possibly to a greater extent than at Radburn or Wildwood Park. Because Kitimat is an entire town, as opposed to a town fragment (Radburn) or essentially a residential enclave (Wildwood Park), there is great demand for transportation along its pedestrian ways for very practical activities such as getting to and from school, going to church, and accessing commercial facilities. On the other hand, Kitimat's population is dwindling due to a gradual trend of disinvestment by its industrial employers (Herkes 2010). As Kitimat's population declines and ages, schools close/consolidate and businesses tend to centralize in the town center for mutual benefit. This leads to greater reliance on cars for short trips.

For the second benefit, results appear to be more mixed. Residents interviewed by the author did report frequent interactions within and along the interior walkways, but primarily this happens for people using the walks recreationally or for transportation—only rarely do neighbors encounter each other due to the relationship between the walking paths and the back yards. This is because Kitimat residents have structured the rear-yard landscape in a manner that establishes zones of privacy and creates

opportunities for outdoor seclusion from the eyes of neighbors (Figure 4). By doing so, Kitimat residents' behavior reaffirms findings at Radburn and Wildwood Park (Martin 2001a, 2001b) suggesting that residents will find a way to create outdoor spaces that are essentially extensions of the home without being extensions of the public realm. These are not really transitional "semi-public" or "semi-private" spaces; they are much more private than public. There seems to be a persistent impulse for making these kinds of spaces within dual-access Radburn-style developments, whatever restrictions that limit them may be in place.

At higher-density Radburn, the only place for such spaces is along the edges of the walking paths, because Radburn lanescapes are too small to afford the establishment of any private spaces along their edges (Figure 4). The manager of Radburn must enforce neighborhood rules that limit the height of screening plants, so that the front-yard landscape does not become overgrown with towering privacy hedges (Radburn Association Board of Trustees 1997). At lower-density Wildwood Park, these private outdoor spaces occur along the access lanes (which resemble back-alleys), both because there is ample room there and because the open space network on the other (front) side of the homes is kept free from barriers such as hedges and fences by neighborhood covenants and bylaws (Martin 2001b). At Kitimat, these outdoor spaces of privacy have sprung up along the walkways behind the homes because nothing legally prevented this from occurring.

A review of early promotional photographs (Boyer 1956, McGuire and Wild 1959) makes it clear that Stein had something very different in mind for the backyard landscapes of Kitimat. The commons-facing yards all connect as one seamless space, one yard flowing across or next door to the adjacent one. Children play together on a broad open lawn in full view of any of the windows on the rear side of the homes; adults converse, relax or mow the lawn in what amounts to a collective space, everything in full view of everyone. The contrast between these early-1950s scenes and the contemporary landscape condition could not be more stark. That collective landscape has been completely restructured and subdivided for the sake of establishing zones of privacy. In some cases, all that remains of the original connective open space is a narrow concrete walk that is bounded by fences or hedges that rise well above eye level. The privately-owned fences are an ongoing maintenance issue, and the residents' investment in their construction and maintenance demonstrates how important they have become. One resident interviewee, a woman who was among the first settlement wave and who had built her home in 1955, noted that her current privacy fence (a 6.5 height solid vertical-board enclosure) was the third fence that the family had constructed during their tenure at Kitimat. She noted that wet soils/frost heave as well as heavy snow loads inevitably cause wooden fences to fail, and that it is a commonplace to see many fence rebuilding projects undertaken during the summer months.

The paved walks within Kitimat are also a maintenance issue (Town Planning Department 1957). The major "arterial" walks have been well-maintained or even replaced as needed, since these are the walks that residents rely on for transportation or recreation. One resident noted that the major concrete walks in his neighborhood had been demolished and rebuilt because of drainage issues, where water pooled over the walk after a snow melt. The new walks were installed several inches above the grade of the originals. But some original walks no longer exist; in a few cases, "capillary" walks that serve a single loop of homes have been removed entirely, either from disuse or because it was necessary to remove the walk in order to solve drainage issues that had developed over time.

A pair of photographs illustrates a great many things about changes in Kitimat's landscape over 50+ years. A 1956 National Geographic feature on Kitimat (Boyer 1956) featured a photograph (Figure 5, left image) of an internal back-yard open space walkway on Partridge Street, one of the first streets completed in the Nechako neighborhood at the eastern end of the town. The photo looks like a promotional image, staged as an illustration of the sort of mingled neighborly leisure time that residents could expect to share in the generous lawn spaces that ran between the backs of houses. The backs of four houses are visible; other houses that lie across the shared open space from these houses are out of view. There is no paved walk running through the space, although there would be one installed there a few years later. In the foreground, three toddlers play in a plastic pool, as one dad plays a game of beachball catch with one of them. Two other parents lounge in the grass, watching the toddlers. In the middle distance, another dad mows his portion of the commons lawn, or perhaps he is mowing everyone else's portion as well. A bit further back, two moms and yet another dad look on.

Figure 5. Partridge Street Commons, Nechako neighborhood, Kitimat. (left photo reproduced by permission of District of Kitimat Corporation; right photo by the author).
The image on the left is from a 1956 feature story on the new town Kitimat in National Geographic; the right image is a contemporary photo taken from the same vantage point.

The author was guided to this same spot during his visit to Kitimat in order to assess the landscape changes. The view was not recognizable. A walk had been installed since the original photo, but it had by now been removed because of drainage problems. Where the walk had been was an eroded gully bordered by high wooden fences on either side; walking in this space was quite difficult due to the uneven ground and the water that pooled in low areas. The space between the fences had become overgrown with scrubby trees and other vegetation; it was clear that as an open space conduit, this corridor had completely fallen out of use. The author took a photograph in approximately the same spot, for comparison purposes (Figure 5, right image).

3.2 Pedestrian Park Network as "Nature"

Early planning documents (Stein 1954) note that regrettably, the pre-development landscape was laid mostly bare in order to establish the roads and superblocks on the sloping terrain of the Kitimat site. However, this was thought to be easily remedied by planting and reconstruction of the wooded slopes, such that Kitimat children could choose to climb trees in lieu of climbing on the play structures built into the several Kitimat playgrounds.

But for the most part Kitimat never established these reconstructed woodlands. Most of the park-like spaces contained within the superblocks are open lawns, with most tree plantings located within the zoned-off back yards of residences. There are a number of reasons for this. First, a problem of plant culture: it is difficult to establish a woodland from scratch in Kitimat's climate. The native tree species are very slow-growing, and the faster-growing introduced species are not nearly as well-adapted to the vicissitudes of the Kitimat winter. Early on, newly arrived Kitimat residents attempted to establish deciduous trees—maples, oaks, ashes and sycamores, among others—in these expansive park spaces; these were the trees they knew from their prior lives down south in a more temperate climate (most original Kitimat residents migrated from southern Canada). But the residents soon enough discovered the futility of attempting to recreate a "simulacrum" landscape that reflected residents' conceptions of a proper "park" landscape in the English landscape garden tradition. Deciduous trees could not bear the burden of the heavy snowfall, and each winter one could look forward to hearing the cracking limbs of the snow- and ice-burdened young trees. In the early years, newly planted trees died in droves.

Tree planting had another downside: an impedance to snow removal and storage. The extensiveness of Kitimat's open space network dictated the use of large snow-removal machinery for the sake of efficiency. Such machines, when employed to clear roads/walkways and to maneuver thousands of tons of snow into convenient storage piles, played havoc with attempts to establish a temperate forest upon the windswept slopes of this town.

In any case, the greater tree-planting issue may have less to do with horticulture or maintenance and more to do with the relationship between trees and people. Trees and woodlands offer a welcome respite from the summer sun, but Kitimat is not a summery place. Kitimat, in all its remoteness, presented a new world order for its settlers. As Stein (1954) himself had observed early on, the Kitimat landscape was notable for its "climate, remoteness, [and] strangeness". While residents may have originally sought to recreate the southerly parkscapes of their memories, they soon enough came to identify more strongly with the native landscape all around. Surrounding context is a key difference among Radburn-style developments. In the original Radburn, any small woodlot that emerged within that community's open spaces was a unique escape from the prevailing suburban order in the highly developed land at the edges of a neighborhood that is situated in America's most densely populated state, New Jersey. On the other hand Winnipeg's Wildwood Park enjoyed the lush context of the forest within which it had been built, but take a short drive away from the Red River's woodsy floodplain and there you are in the thick of Winnipeg's suburban sprawl.

It was different in Kitimat. Beyond its edges was a true sense of wild nature—a wilderness, forbidding and yet so accessible. Trails abound in the forests at the edges of Kitimat; motivated residents have no end of possibilities for nature hikes. An interesting question: how does the presence of "nearby nature" influence attitudes and perceptions about the interior landscape? Some residents were quite clear about this: Woodlots were for fringe areas, and not suitable for Kitimat's interior landscapes. Some long-term residents noted that Kitimat children of a certain age (old enough to stay safe, presumably) have always been "turned loose" to explore the wild edges outside of the town's borders. In effect, this was a rite of passage—younger children were confined to the playgrounds and open spaces that were easily seen from back yards (if not from windows, after fences and hedges appeared); older kids were free to roam. The sense that wildness was on the outside seems to have suggested that the broader common landscapes on the inside (the central parks within superblocks, if not the narrower pathways) should remain uncluttered and visually open.

4 CONCLUSIONS AND DIRECTIONS FOR FURTHER STUDY

The Radburn concept "writ large" is in some ways a difficult thing to assess as a landscape, because there are so few built developments extant that are "faithful" to Stein's radical ideas. Kitimat itself contains many compromises, paying homage to standard suburban conventionalism to a degree much greater than prototypical Radburn or Wildwood Park. Its streetscapes, for example, seem almost entirely conventional, and in this aspect Kitimat really more resembles "open back" neighborhoods that appeared in American PUDs (planned unit developments) and in the American new towns of the 1960s and 1970s.

The Radburn "DNA" is nevertheless apparent at Kitimat, because of the significant social orientation towards interior open spaces and because despite compromises, the place unmistakably bears the imprint of Clarence Stein's planning and design sensibilities. This is most apparent in the earlier phases of Kitimat, the parts developed in the 1950s and 60s. It is much less apparent in later phases, typified by the Whitesail and Cablecar neighborhoods.

Comparatively little has been written about Kitimat; presumably it has escaped attention due to its remoteness. From a site study, it is apparent that the landscapes of Kitimat offer both parallels and contrasts with the constructed-over-time landscapes of earlier versions of the Radburn concept. This author's continuing study will focus on that site-scale comparison, and will also begin to explore contrasts of the contexts of these developments. To build an entire town in the extremely distant wilderness is a singular thing, so completely different from a new town connected with old towns. This was the unexpected and underappreciated (by this author) dimension of Kitimat, and it is a dimension that seems to be central to any understanding of how Kitimat came to be what it is today. The modern town in the wilderness is an aspect of town-making that deserves a comparative study in its own right.

The Radburn model, as expressed in these 20th-century developments, is something of a planning-history anomaly. While it has been extremely influential in North American planning (particularly for postwar new towns), its radical premise about the relationship of homes to open space is the very thing that has both set it apart and also has caused the very few true-blue "Radburns" to engender a unique sense of community among residents. For this reason, it would make sense to utilize the Radburn concept to

challenge traditional (conservative) zoning and regulation restrictions that make it difficult to innovate in this particular way. When we look at the evolution of the idea from Radburn to Wildwood Park to Kitimat, we observe adjustments by planners that are responsive to infrastructural changes (increased ownership of cars mostly, as well as service vehicle access), but also we see adaptations by residents that can inform the design of subsequent projects. A thoughtful consideration of what residents tell us about their needs and priorities, along with due regard for technological change, along with reconsideration of who we are designing for in the 21st century (not so much young nuclear families anymore) can lead to meaningful innovations that evolve the Radburn idea.

The Radburnian open space network: experiential social landscape promoting the autonomy of childhood. As a final note, in acknowledgement of contemporary social dynamics, the Radburn concept could become a strategy for planners who address concerns for residential landscapes in the era of the "phone-based childhood". Social Psychologist Jonathan Haidt is among those who look to neighborhood design as an opportunity for engaging children in everyday real-world experiences as an alternative to the isolation of screens. As Haidt writes, "If parents don't replace screen time with real-world experiences involving friends and independent activity, then banning devices will feel like deprivation, not the opening up of a world of opportunities." (Haidt 2024) This is an argument for reconsideration of the neighborhood landscape, in particular an open space network that connects people to each other while affording children safe, autonomous open space. This is the essence of the Radburn idea.

Fragile-states expert Seth Kaplan addresses these notions specifically with regard to the contemporary neighborhood in his 2023 book Fragile Neighborhoods: Repairing American society one zip code at a time. Kaplan broadly addresses social decline in America, and hearkens back to Clarence Perry's early 20th-century thinking (Perry 1929) as well as architecture firm DPZ's late-20th-century "new urbanist" thinking (Duany, Plater-Zyberk and Speck, 2000) with his notion of the "bounded neighborhood" that affords walkable connections throughout (Kaplan 2023). The Radburn concept is in some ways at odds with new urbanist principles that venerate streetscapes as the primary social realm and eschew non-public, hidden "backyard" open space, but there is a common goal of elevating pedestrianism, and of utilizing open space networks to unify neighborhoods.

Emily Talen, University of Chicago Professor of Urbanism, has noted that "neighborhoods are an ubiquitous condition of human settlement, found in all time periods, all cultures, and in both rural and urban contexts" (Talen 2019), In the new era of the phone-based childhood, she has called for parents to increase the free-ranging mobility of children in order to give them much more unsupervised free play. The Radburn concept seems uniquely qualified to serve as the ideal open-space armature for these autonomous activities, what with its positive connections between individual homes and open space, as well as the concomitant comprehensiveness of the connections among all neighborhood homes—without the interruption of streets—that the Radburn concept affords. Talen also calls upon planners to facilitate children's autonomy, advocating that we should design and zone public space with children in mind, duly noting that children are six times more likely to visit a playground or recreational facility if they can access it on bike or foot.

What would a 21st-century Radburn look like—a scheme that incorporates the enigmatic Radburnian "reversed houses" form, along with comprehensive barrier-free, grade-separated open space connections, along with accommodation of contemporary automobility while maintaining something of the intimacy afforded for the familiar few like the Radburn lane? This is an interesting challenge for 21st-century innovators.

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