The Architecture of the Western Canadian Community Arena

By

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Abstract

This thesis presents an argument for establishment of a new understanding of indigenous architecture as an intersection of layers of context (strata) that individually are neither place specific or unique. This examination of the intersection of non-specifics circumvents the traditional problems encountered in regionalist and critical regionalist theories by separating place architecture relationships from nostalgia and regional stereotype.

This theoretical framework is tested through a study of an existing typology and through architectural design. This in conjunction with a theoretical position on place-architecture relationships, guides a design for a new community arena in the town of Rivers, Manitoba. The design provides a proof that indigenous architecture is still possible after the universalization associated with Internationalism and the superficial nature of Post-Modernism.

Figure 1-1 Proposed Rivers Community Arena

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Introduction

In the course of the last half century, the community arena has surpassed both the church and the grain elevator as the architectural icon of the Canadian prairies. This building type, while rarely architecturally significant, is nonetheless important in both its physical manifestation and in the social role it plays in the community to which it belongs. (*figure 2-1*)

In the book Hockey Night In Canada, Richard Gruneau and David Whitson enforce the cultural role that the community arena plays. They write:

“In the days before satellite dishes and paved highways were common in rural areas, hockey emerged as a centrally important communal activity in Canada. . . . On the Prairies the long winter was the slack period from farm work and thus a season when people had more time for socializing and leisure activities. Euchre, crib, and bingo were popular in the pre-television days, but men and boys played hours and hours of hockey on ponds, rivers, and outdoor rinks. Watching hockey was limited by the cold and the lack of spectator facilities. Communities that could afford it enclosed their natural ice rinks. . . .”¹

The community arena, as an architectural typology indigenous to the small western Canadian town, serves a multiplicity of roles in the establishment of community and identity. It not only serves as the place for what could be considered one of the most socially important activities of prairie life (hockey), but also as a focal point for community interaction through other events such as curling, agricultural and town fairs, potlucks, bingos, exhibitions, entertainment and other forms of celebration. Its multifaceted role in the service of the community has produced inno-

vations in the tectonics of the building type and the execution of its details.

While a rise in the rate of construction of indoor arenas is often attributed to advances in construction technology following the Second World War², it is equally important to state that construction techniques for community arenas are influenced by the indigenous and vernacular building typologies of the rural parts of the prairies. Clear influences from both traditions of barn building and the construction of grain storage facilities are evident in many of the small arenas dispersed throughout Manitoba, Saskatchewan and Alberta. Another influencing factor apparent in details of many community arenas is the methods of agricultural implement manufacturing.

Limited finances mean the construction of an arena through hiring a team of professionals to design, engineer, and build the arena, is problematic for small communities. The up-front costs associated with such professional services required for a unique building can serve as a deterrent to the project ever getting beyond the speculation stage. It was for this reason that the majority of arenas in prairie towns built prior to 1970 were brought into being through a process of active community involvement. This process, while often allowing for a significant reduction in the costs of such an undertaking, also brought about an increased sense of ownership and pride in the arena.³

The traditional relationship between community and arena through community participation in construction has recently come under increasing strain as most of the newer arenas are constructed as pre-engineered buildings by outside contractors. The resulting lack of involvement, increase in cost, and loss of community pride has, in many cases of new arena construction, led to rifts in the communi-

ties that can only be healed by very significant amounts of time.⁴

At a time when rural communities are transforming in response to changes in agriculture⁵ and existing rural arenas have reached the end of their lifecycle, I feel that it is important to demonstrate the architectural relevance of the arena both as a catalyst for social interaction and as a locus for its community. As rural community services are displaced to larger and more distant urban centres, there is an increased interest in the preservation of the arena as a means to prevent further fragmentation. This need is evidenced by the continuing relevance of arenas existing and thriving after the closure of the clinics, banks, stores, and post offices. In some communities, the arena remains as the sole collectively owned space within the town proper. It is therefore essential that it remain intact as a space where the community activities can be housed.

(figures 2-2 and 2-3)

The question then arises, and will be addressed: if the community arena is somehow linked fundamentally to the community and its surroundings, can one define a new, indigenous architecture in the face of radically changing social and economic conditions. Is there still a possibility after the impact of universalizing modernism and fragmenting post-modernity, to find an architecture that can be considered as 'belonging' to a particular place?

The primary means of research consists of a survey documentation of approximately 25 small towns in Manitoba and their arenas.⁵ The product of this documentation is a set of arena typologies and the variations as they occur from town to town. Demographics, economic factors, siting of community and of the arena, and presence of significant local industry and manufacturing are key factors. Field

research data and observations is supplemented by research on theories of the vernacular, craft, and place as well as research specific to other significant architectural typologies in the locale of the studied area. Against such an inventory of existing architectural typologies other theories of regionalism and regional identity are contrasted positioning the search for an new indigenous within the greater framework of recent architectural theory.

To further develop the research and advance the thesis, this essay includes a speculative project for the design of a new community arena for Rivers, Manitoba. This arena, appropriate to the prescribed means of investigation, will be designed in accordance with and through observation of the local vernacular, history of making, and available technologies and materials. Additionally, in the tradition of rural arena building, the design undertakes the employment of construction techniques represented by local skills and labour. In these aspects, the Rivers arena project tests and elaborates the conclusions reached in our research into the history and theory of regional and indigenous architecture.

Figure 2-1
Foxwarren Exterior- while rarely architecturally significant, buildings such as this play an important role in the community.

Figures 2-2, 2-3 Community Events in Forrest Arena - While often the largest function of building is related to hockey, it is important to recognize that the role the community arena plays is much more diverse.

Introduction Endnotes:

1 Gruneau, Richard S., Hockey night in Canada: sport, identities and cultural politics. Toronto, Garamond., 1992. P. 205.

2 Gruneau, p. 205.

3 This sense of pride is clearly illustrated in listening to someone from a small town talk about how the community rink was built. (see George Sims Interview in the appendix J) Additionally, evidence of the community pride and contribution to the arena can be found adorning the walls of the community all detailing every individuals contribution whether large or small.

4 Based on opinions of townspeople interviewed during the course of research. In most cases, it seems that those who supported the construction of the arenas are unable to recognize the divisions created, while those who did not support the construction remain opposed after the construction is complete.

5 A recent Globe and Mail article, '*Sometimes villages plain disappear*' (May 15, 2004 - page A8), states that in the census period ending in 2001 there was a 11 percent decrease in the number of farms. This drop was the largest since 1971.

6 Complete listing of sites visited and map included in Appendix A

Theory

The Crisis of Modernism, International Style and Post-Modernism

Architecture and Architectural discourse of the last 90 years has been a response to questions regarding radical changes in technological means. While the industrial revolution had certainly reshaped the ways of manufacturing and marketing products in the 140 years prior, the effect on architecture was not apparent until the beginning of the 20th century.¹ With these new technological advances, including new building materials and techniques, the aesthetics of buildings were significantly altered. The traditional cities, with heavy historical masonry buildings, were called into question. Equally significant was the desire by architects to respond to the rather squalid conditions at which the average factory workers both dwelled and worked. As a result, the first architectural proposals of modernism did not focus solely on the institutional buildings that made up the majority of what constituted architecture in prior eras. Rather, they also expressed an interest in making architecture 'man's social and moral salvation.'²

With this interest in a 'working architecture' or an architecture that addressed the needs of society, came a new set of architectural ethics. By the 1920s and 1930s, one of the most common modernist projects was the theoretical discussion and design of idealized cities based on the demands of production and leisure.³ These projects, utopic in nature, were based on an underlying principle of the inadequacy of the existing urban fabrics. Projects by Sant'Elia, Garnier, and Le Corbusier presented new cities constructed on clean and geographically neutral

sites. In any one of these proposals there was a disregard for contextual specificity.⁴ While the cited examples were hypothetical proposals, the real projects of Internationalism took similar positions on the relationship between place and architecture.

The shift in means of production from crafts based to mass-production, added to the dislocation of these utopic proposals. With modern architecture's appropriation of mass-production, the traditional link of building to local or regional techniques, materials and ways of making was challenged. The material link between a specific place and the architecture of that place was lost. The attitude toward mass production was also accompanied by an attitude of universal correctness.

It is with this attitude that architects like Le Corbusier produced an architecture that was felt to be a universally appropriate response to the ills of early industrial society. The fact that it seemed to matter little whether the project was for mainland Europe or for South America was of small or no concern. For this, modernism, beginning specifically with the utopic 1920's proposals by Mies van der Rohe and Le Corbusier, were branded as Internationalism by Philip Johnson (and Barr) in 1932.⁵

The utopic intentions and social aspirations of modernism eventually met their demise as the movement became the official style of countless banal office buildings and social housing complexes built following the end of the Second World War. Unlike earlier, idealized proposals featuring much open space, air, and light, these later projects clearly lacked the moral imperatives of Le Corbusier. The failure of the International Style can be partly attributed to a protest against the lack of connection between building and context. This is apparent in the disastrous fail-

ure of such social projects as the infamous Pruitt-Igoe public housing.⁶ In separating Modernism from the International Style Reyner Banham appropriately states:

“... if the style has finished up as the architecture of anonymous corporate domination it is worth remembering that this was not how it started out, and that its slick undecorated exterior surfaces, now found so wanting in symbolic and decorative values by post-modernists, were once generally - and genuinely - welcomed as a necessary cleansing of design from discounted and disregarded ornamental rubbish left over the Nineteenth-Century's 'Battle of the Styles.’”⁷

The dis-topic reality of the corruptions of modernism lead to a series of reactionary responses usually summed up as Post-Modernism.

Post-modernism can hardly be seen to be a single movement in twentieth century architecture. Rather, it represents a series of responses to the failure of modernism. What is shared in nearly every one of these reactions against International modernism is an attempt to re-instill architecture with a sense of meaning. Comparatively, modernism's preoccupation with production, efficiency, and technology had left little room for addressing issues such as context, history, or memory. In reaction to this, many of the departure points for post-modernism were, in fact, backward looking. They tended, in opposition to the futuristic desires of modernism, to 'embrace overt historicism, garish symbolism, vivid ornamentation, and humble vernacular models.’⁸

Characteristic of post-modernism, debates such as the 'origins' of architecture and appropriate institutional typologies re-emerged. As the post-modernists were unable to escape the functional expectations and technological efficiencies that were fostered by modernism much of the post-modernist work was limited to the facade and its decoration. The desire to reach backward to the past for inspira-

tion furthered this problem by providing examples that were not necessarily appropriate to their application. The search for meaning and authenticity gave way, for the most part, to a semiology of architectural motif.

Regionalism and Critical Regionalism

As a reaction to the global economy, the end of the 20th century saw a resurgence in the values and interests that were embodied within notions of the particular or regional. While modern architecture and, in particular, the International Style had gone great lengths to collapse traditional ideas of space and boundary into a new idea of universal, it also brought about a sense of displacement or placelessness. Ideas of home, traditions of dwelling, indigenous methods of construction were ridiculed by proponents of the new international and trans-global modernity. While it was obvious that the world had changed significantly in a short period of time, the collective response was not a complete acceptance of globalization.

At the same time as the modernist architects began to form a new architecture for the global economy, an equal response by other architects went precisely the opposite direction. Instead of embracing the idea of universalization, this response called for the inverse: a demand to re-instill tradition and the ideas of region back into architecture. By the beginning of the 1980's the calls for regionalism had become one of the most accepted ideas to 'save architecture' from the supposed damage caused by the rise of the international style, and the accompanying universalizing tendencies. Regionalism was so widely and extensively embraced, that by the fall of 1984, Architectural Review had dedicated no less than two issues specifically to the merits of the rebirth of regionalism. The focus of this movement was clearly targeted at undoing the modern. As Peter Buchanan wrote in October of 1984: "A precious harmony built up over ages between buildings,

and buildings and setting, is now rapidly being destroyed and replaced by a chaotic and dislocated sameness; and a squalid but prevalent interpretation of Modern architecture is the villain.”⁹ The problem that developed as an immediate product of this attack on modern architecture was a complete fall back upon a nostalgic view of the past. Buchanan noted that “. . . people wanted ‘proper’ buildings, shaped and built like those of their fathers and fit not just for themselves but for their children and their children’s children.”¹⁰

While this was a noble attempt to re-capture a sense of place and home that was seemingly lost in the sudden collapse of the local, it was reductive in its essential denial of a greater sphere of architecture influences. Additionally, the regionalists’ set of tools were extracted from an idealized past and implemented as a facade over new and economically convenient system of construction and ordering. In fact, this “post-modern” attitude toward history and region was most effective in reducing the significance of region and the ‘traditional way of doing’. The product of the exercise in most cases pared down a rich history of architecture and building to a style or a set of motifs that could be layered on to any building to make it ‘regional.’ The contradiction in most regionalist works was furthered by marketing of these regional styles to the masses as a consumable product. The sincerity could only be brought further into question when these regionalist styles were packaged and marketed outside of their point of context. Already in 1984, Buchanan cautioned against ‘the pitfalls of kitsch’ and warned against ‘faked up semi-replicas of traditional elements’ which accordingly ‘smack(ed) of cynical exploitiveness.’ These, he indicated, were not the products of a true regionalist attitude, but rather existed as consumerist strategies to fill a space in an insatiable market.¹¹

Although Buchanan may have been heralding regionalism as potentially saving architecture from universalization, he recognized some of the merits of modernism. Within modernism he saw benefit in the incorporation of functional planning and more efficient methods of construction.¹² His argument for a new type of 'hybrid' architecture is shared subsequently with a related and nearly simultaneous movement in architecture: Critical Regionalism. While Buchanan was a definitive proponent of regionalism, his article written in 1984, addresses many of the aspects that were first introduced by Kenneth Frampton in his pivotal 1983 paper entitled *Towards a Critical Regionalism: Six Points for an Architecture of Resistance*.¹³

The problems with the regionalist methods of producing architecture were soon exposed to the criticism of several key theorists including Alex Tzonis, Liane Lefaivre, and Kenneth Frampton who were dissatisfied with both modernist and regionalist responses. It was because of this dissatisfaction that they revisited the notions of regionalism to produce a new theory aptly titled 'Critical Regionalism' which presented a strategy of mediating between the alienating global and international tendencies of modernism and the introverted and reductive theory of regionalism. In the course of their argument they called for a recognition of both spheres of operation and mediation between them. The emphasis was on a process of identifying what was regionally significant and what was globally appropriate to derive a hybrid between the scales of the intimate and the international.

Nonetheless, both regionalism and critical regionalism fail because of their inability to deal effectively with the question of what defines "region". While both architectural theories carry a desire to build an architecture upon what is right or inherent to a specific locale or region, they both fail in defining what makes a place

unique. Instead of being able to determine what exactly is regional or indigenous, they are forced to fall on popularised characteristics of regional typologies. Keith Eggener, in an essay examining critical regionalism goes so far in this argument as to state that (critical) regionalism, also “. . . has operated as a lens that can flatten, distort, or marginalize the cultural practices it surveys.”¹⁴

Given the complexity of the relationship between place, history, built environment, and society, both regionalism and critical regionalism result in a subjective editing of influencing factors rather than objective observation. As this editing is most often applied by someone operating from outside the region it is generally based upon regional stereotypes and place myths. The selective editing, applied from outside, either conforms to stereotypes already in existence or creates new place myths. This process of selecting a convenient history, solidifying it and constructing upon it constitutes a rewriting of what is place.

Even in cases where Frampton's principles of critical regionalism are applied by one who has a rightful claim to possessing a knowledge of a place, there is still danger that the process of establishing a place identity through architecture be utilised to entrench a person's own history or experiences of place. Keith Eggener suggests in *Placing Resistance* that Luis Barragán's new image of Mexican architecture was as much an autobiographical reference to his own life and experiences as it was a documentation and interpretation of an authenticity for Mexican architecture.¹⁵

While Eggener's critique of critical regionalism points specifically at the Mexican architecture of Barragán, the same case can be applied to the vernacular of the Canadian Prairie. Like the Mexico of popular conscience, the prairie region and

the ideas thereof exist largely within the realm of preconceived ideas applied from external sources. Like Barragán's architecture, these ideas are often accepted first by the outside observer then applied back to a definition of the regional identity.

The construction and deconstruction of the Canadian Prairie is closely analyzed in a group of essays published by a number of prairie writers who examine how these notions of region have been productive or reductive in the creation of a sense of identity and place. The book, Toward Defining the Prairies: Region, Culture and History¹⁶, presents a number of compelling arguments against sustaining a regional identity that is based on popular imagination and media. To begin with, the idea of 'prairie', which has served as the foundation for more than one type of architectural regionalism, is brought into question. Gerald Friesen suggests quite convincingly, that ". . . inherited regional folk tales have grown stale."¹⁷ He continues by saying that ". . . the prairies have ceased to be a dominant citizenship image."¹⁸ Instead, in place of the now dis-functional homogeneous notion of regional identity, regions are understood as constructed or formed by three systems. These are: the formal, the functional, and the imagined.¹⁸ Simply defined, the formal region is based on geographical features, land characteristics and climate. The functional deals with economic patterns, spatial distributions or any other types of systems. The imagined, probably the most potent and potentially misleading of the three, is the concept of region that is produced through literature and imagination.

While Frampton is concerned about accommodating specific aspects of formal regions in his argument for a critical regionalism¹⁹, the end product of most regionalist architecture is more a result of the imagined region. The majority of region-

alist architecture is based on the myths that are either generally accepted or fabricated by the architects themselves as opposed to an understanding of the social and cultural fabric that make a region unique. Ella Shohat asks what may be the most pressing question regarding regionalism. The key question for critical analysis of identity, regional or otherwise, should be “. . . who is mobilizing what in the articulation of the past, developing what identities, identifications and representations, and in the name of what political vision and goals?”²⁰ The idea of a ‘regional system’ is shared by Regionalism and Critical Regionalism and this is precisely where the biggest problems with both approaches can be found. In the context of the western Canadian community arena, there are already several assumptions and generalizations made concerning the concept of region.

The formulation of a critical stance on both the ideas of region and the problems of (critical) regionalism is important in our discussion of rural community arenas. The older community arenas are consistent with the ‘imagined’ prairie and as a result new arenas are faced with the internationalism that critical regionalists were so earnestly trying to counteract. The desire to be situated between the extremes of regionalist stereotypes and universal alienation makes it pertinent that a new community arena addresses the community’s history, social situation and environment while simultaneously participating in the larger universal space. This apparent contradiction is not unlike the situation first addressed by Kenneth Frampton and other early critical regionalists.²¹

Imbuing the community arena with a sense of belonging to a specific community begins with a re-evaluation of the theories of regionalism and critical regionalism. These ideas continue to be relevant as they provide a challenge to the universalization of mass produced architecture. The failure of both theories to provide a

comprehensive solution to the problem of the local and the regional in architecture does not mean that the initial intentions were inappropriately directed. The common strand is a desire to extract an understanding of architecture from building's context and through this understanding create a work that belongs to a particular place. The question of an indigenous architecture still needs to be clearly articulated.

In comparison with a purely regionalist approach, entailing that the community arena formally and architecturally be composed in its entirety of the local vernacular, the proposed approach implies a flexibility towards the adaptation of what is specifically local in conjunction with the universal. The resultant form negates neither the traditional history, culture, or tectonics of the place nor turns a blind eye to the larger scope of architectural and social evolution that is establishing influence from outside the immediate context.

Locality versus Universal

The failure of both regionalism and critical regionalism in effectively dealing with the existence of local histories and external influences coming from globalization can be traced back a desire to separate these two spheres of influence. At the scale of the rural community arena, initial assumptions of what is local and what is global are brought into question by the history of the place in which the arena is constructed. Unlike the situation of many locations where critical regionalism was implemented as a response to the universal sameness of internationalism, the idea of local, at least in terms of the man-made environment, is more elusively defined. Frampton cited critical regionalism as an approach to dealing with architecture in areas of excessive universal influence. It was most often discussed and implemented on the peripheries and margins of globalization.²² These peripher-

al areas were most interesting to critical regionalists because they easily facilitated a distinction between the local vernacular and universal influence. This separation allowed for the convenient idealization of an architectural past which could contribute forms and gestures directly to the new architectural interventions. In this way the peripheral and marginal regions could be used fabricate the myths of past necessary to frame a new way of intervening in the built environment.

To regard the majority of sites for western Canadian community arenas as existing in a peripheral position according to the influences of universalization is potentially dangerous and reductively stereotypical. Instead, the influences that formed the local history must be weighed in the argument. When the local is examined in such a way as to permit the deconstruction of the myths that form the romantic views of prairie vernacular, it becomes increasingly obvious that the local and universal are intricately entwined.

While architecture is often ascertained to have developed through a system of vernacular evolution in places such as the prairies, the reality of a global development must be considered. Although typologies such as grain elevators are considered to be authentic marks of the small rural town, it is notable that these hardly developed as a vernacular type. Rather they were products of powerful outside, and frankly, colonial influences. Likewise, the town plan that distinguishes prairie towns must be examined in the context of the large scope of globalization and the establishment of western commerce. An examination of the history of the prairie town does not reveal a localized development but is linked intimately with a large number of national and international factors. This is analogous to the universalization that the (critical) regionalists were reacting against.

The Problem of Avoiding Style

Frampton, Tzonis, and Lefaivre were specific in emphasizing that a critical regionalist architecture was one based on a process of thinking. Unfortunately, like the products of regionalism and historicism, the architectural process most often created a style or system of ornamentation. Once the process entailed by critical regionalism had produced an architectural image for a place, no matter how sincere the process of arriving at the image had been, it produced a style that became the representative image of that place. This style, in the extremes, was promptly accepted to be an authentic representation of its context and often a greater political region.

Critiques of critical regionalism have always been quick to point out this demotion from critical process to marketable style or stereotype, and while clearly not what Frampton intended²³, it seems, that it is inevitable. Critical regionalism fails to be notably separate from post-modernism. While post-modernism touts itself as promoting variety and otherness it remains a homogenizing force within culture. Rather than recognize difference and uniqueness, post-modernism instead produces simulacra. Critical regionalism, regardless of its intentions, remains trapped within this same system.²⁴ The limited scope of the author's viewpoint of the situation becomes clearly illustrated in every case into which they propose an architectural intervention. The ensuing question then asks: what provides someone with the authority to make the decision of what belongs and what does not?

Looking back at Ella Shohat's caution, the question of "... who is mobilizing what in the articulation of the past ..." ²⁵ is rarely addressed. Instead the single interpretation of that region is often accepted and reproduced as truth. The architectural image, in the most severe cases, becomes the 'official' regional style for any

architect who wishes to built within that area. Its validity is based on a view of the context that is accepted as absolute and is forgotten to be a particular mobilization of the past from a specific author's point of view. Thus the critical process that Frampton was so careful to emphasize was often reduced to the same problems that plague the kitsch and ornamentation of the post-modern that he was rejecting. This is not to say that all critical regionalist works are necessarily victim to this trap, but it is relevant to observe that an examination of any work, especially those that claim to be critical regionalist, must be made within a frame that questions *who* is making the mobilizations.²⁶

This problem of architecture becoming style is well presented in Keith Eggener's article *Placing Resistance: A Critique of Critical Regionalism*. It is clear from the examples of Luis Barragán's works²⁷, that architecture, even loosely based on a regional understanding, could be turned into the new representative style for that region. The most alarming part is, that under the guise of critical regionalism, the acceptance of this 'fabrication' of Mexican architectural identity was applied from outside by critics of primarily non-Mexican backgrounds.²⁸ Barragán's work reduced quickly to a style supposedly representative of an entire culture.

This situation is not isolated, and there are many examples of how stylized interpretations of critical regionalism have been appropriated as the correct architectural image for whole cultural groups. This new type of universalization is potentially more damaging to identity than the placelessness of the most poorly executed modernism and international style. The creation of regional myths through architecture can only be detrimental to any sincere sense of what a place represents.

Place and Space

The common assumption of a dichotomy between place, defined in a regional sense, and space, defined by universalization, provides a problematic means of analyzing the crisis of architecture after 1960. While the modernists quickly embraced technological advance accompanying the dissolution of local systems, regionalists declared the same break down to be the source of a loss of context and belonging. The separation of the two positions is often defined simply as a split between the universal championed by the modernists and the specific as supported by the regionalists and critical regionalists. The reality, however, is more complex as there are issues beyond the simple local - universal dichotomy that come into play when examining how exactly place is formed in architecturally.

A 'sense of place' and its contributing factors are difficult to define and determine. Regionalists argued that place is closely associated with the familiarity of regional forms. Lewis Mumford defines these regional forms as ". . . those which closely meet the actual conditions of life and which most fully succeed in making a people feel at home in their environment. . ."²⁹ While Mumford's regional had no room for 'pastiche and cheap nostalgia'³⁰ the concept became distorted by early regionalist attempts. Peter Buchanan writing at the height of the regionalist resurgence in Architectural Review, draws attention to place as a phenomenon containing substantial components of historic similarity and contextual harmony. He writes:

"People wanted 'proper' buildings, shaped and built like those of their fathers and fit not just for themselves but for their children and their children's children. A certain uniformity and so harmony between buildings was inevitable. But the harmony went deeper than just between buildings - it was also present between buildings and setting."³¹

While Buchanan presents this traditional definition as a failing strategy in light of

technological change, there is an innate assumption that what is local and regional is somehow more familiar to inhabitants of that place than the universal and global.

What is, of course, glaringly absent from this sense of place is any room for change, not only in the built environment, but also in the social means and wills of the inhabitants of these places. Rather, the assumption seems to be that the 'correct form' of architecture is the one that will not only mimic (be built like) historical examples, but also carry those examples, apparently unchanging, through generations of supposedly like-minded people. Implicit within this statement lies the assumption that this 'correct form' of architecture belongs to a specific location, and is seemingly a static thing.

Buchanan subsequently attempts to distance regionalism from this mentality and the resultant mimicry and simulacra. Only one paragraph later, he presents the problem that is created by this historic regional attitude. Buchanan states: "now many people do not want to build as their fathers did, but as they do on TV or in the magazines."³² The discomfort in dealing with this apparent opposition between tradition as the creator of place and the universal products of modernity led regionalists and critical regionalists to look at architecture as a means of mediating between these two opposites.

Finding Place Beyond Critical Regionalism

Function of Memory in the Creation of Place

The link between architecture and place is one that has been addressed countless

times. Books and articles such as Sibyl Molholy-Nagy's on vernacular architecture³³ provide core arguments for an architecture positioned within a regional - historical tradition of construction. Others like Ben Buchannan's *On Connect*³⁴ present an early attempt to find a mediation between local tradition and emerging globalism. Also notable are Kenneth Frampton's critical regionalist contributions made in *Towards a Critical Regionalism*³⁵ and *Prospects for a Critical Regionalism*³⁶. Frampton goes so far as to state: "If any central principle of critical regionalism can be isolated, then it is surely a commitment to *place* rather than *space*. . . "³⁷

This link (between architecture and place) was taken for granted prior to the birth of modernism and its accompanying universal tendencies. However, it has become increasingly relevant in architectural discourses of the 1960's, that followed the end of widespread acceptance of modernism's ideals. While many architects were quick to attempt to address the gap between architecture and place resulting from universal attitudes most fell back on links to either history or vernacular.³⁸ However, a smaller faction, represented well by Aldo Rossi, theorized a more intricate relationship.

Rossi's theories of an architecture 'of place' were focused around his idea of 'locus'. In The Architecture of the the City, Rossi argues "The locus is a relationship between a certain location and the buildings that are in it. It is at once singular and universal."³⁹ As opposed to disregarding and reacting against the contributions that modernism had made in the 70 years prior, Rossi is able to find a middle position between the annihilation of specific locality (as modernism did) and the simple minded formalism that had become such an integral part of post-modern practice. Unlike the regionalist approach which entailed an appropriation of

vernacular styles and motifs, Rossi recognized a complex set of inter-relationships between the building, the site, and the society that produced it. His architecture, subsequently, was separated from the mimicry that plagued much of the historicist and regionalist attempts at establishing relationships between place and architecture.⁴⁰

unique about Rossi's 'locus' is its ability to accommodate evolving contextual and social surroundings. Where vernacular and history as inspirations for architecture could be considered to be fixed things, Rossi's architecture "changed together with the larger changes of a site, participating in the constitution of a whole and serving an overall event, while at the same time constituting an event in itself."⁴¹ This link between place and building allowed for an indigenous architecture that was no longer fixed in time, but rather responded to dynamic conditions of its surrounding environment. Rossi states:

"They (outlines) trace the relation of architecture to its location—the place of art—and thereby its connections to, and the precise articulation of, the locus itself as a singular artifact determined by its space and time, by its topographical dimensions and its form, by its being the seat of a succession of ancient and recent events, by its memory. All these problems are in large measure of a collective nature; they force us to pause for a moment on the relationship between place and man, and hence to look at the relationship between ecology and psychology."⁴²

Architecture and its relationship to a particular place, under this premise, is more than simply the adaptation of specific elements of the vernacular. Instead, equally important to a building's relationship to a specific place is the relationship to the non-physical factors that make up the memory of that place. Locus incorporates more than the material elements, extending into the realm of event and memory. Architecture, then, is more than the built environment that one constructs to dwell within. It also serves the role of capturing or stimulating the non-physical relation-

ships that it has to history and the events that led to its construction.⁴³

Equally relevant to this thesis, Rossi determined that architecture should not be regarded or examined independently from the framework of the city (or from this framework defined by the locus). This problem in doing this, or 'separating the buildings from the city' is that the individual work of architecture is reduced to a functional component of the great system. As a functional component, the individual building becomes a framework for whatever role fills it.⁴⁴ Instead, in regarding the building inseparable from its contextual surroundings and as a part of a larger set of relationships, the architecture can retain meaning beyond the functional role that it is playing.

To retain meaning and a link to place, architecture can not be separated from collective memory. Collective memory, or a version of the past shared by a group of individuals under similar situations, is important in the understanding of architecture. Rossi points out that the form of the city is a reflection of its inhabitants, or a type of constructed collective memory.⁴⁵ This memory is associated with artifacts and places. Likewise, as collective memory accesses the past in envisioning the future, an architecture that is linked to place must also access the forms of the past in order to project itself into the future. While historicists and regionalists attempted this through direct appropriation (from vernacular and historic types), the critical regionalists attempted to circumvent this direct appropriation by drawing on the past more abstractly. Frampton recognized that "critical regionalism cannot be simply based on the autochthonous forms of a specific region"⁴⁶

Rossi approached this abstraction of the past by creating an architecture that did not copy the vernacular, but rather drew upon the memory of the past (city). His

architecture, while distinctly separated from historic forms that it was based upon, had an abstract familiarity to it. This familiarity was possible by understanding and accessing the collective memory that inhabitants of the place shared. Because familiarity was specific to the collective memory shared by inhabitants of the place, the meaning or significance of the architecture also relied on its relationship to that place. Therefore, if a building form was applied universally it would no longer be understood in the same way, as the collective memory required for its 'reading' would be absent.⁴⁷

Collective memory of a place can extend beyond human recollection. In one sense that the phrase may be used, collective memory also includes the physical impressions that are posited on the landscape through the accumulated and vacated impressions left by interventions that (may) extend beyond human recollection. In this way the contextual collective memory can be activated by landscape, climate, as well as built and human memory.⁴⁸

With any type of regionalism, there is an implicit requirement to identify a pre-existent condition, or site history. What critical regionalism generally fails to recognize is that there are conditions where this history has ceased to have any significant meaning. In these cases, it might be considered that the interjection of the universal plays an important role, both historically and presently, in the formation of a sense of place. If in fact, the universal is as relevant in the formation of place identity as the specifically local, then mediation between the two is unnecessary. They can exist together and do not contradict each other.

If the means of establishing a new type of indigenous architecture can not be one based on any abstracted concept of region, then how is it possible to arrive at an

architecture that belongs to a specific place? The question can probably only be answered in first recognizing that there is little about a particular place that is specifically unique to only that location. Instead, an alternative approach would be to suggest a particular place has a set of features that are shared with innumerable other places. This new indigenous architecture then must be one that can position itself within a framework of universal and non-unique features and characteristics.

Using Strata as a Means of Deriving Context

Critical Regionalism was based on the premise that a mediated position could be found between contextual (local, historical, and geographical) influence and the universalized world. An inherent contradiction to this bridging opposites made it difficult to establish an architectural form.

As an alternative to looking at architectural context in such singular terms as historical, regional, or international, it is helpful to consider an archeological analogy. This archeology, unlike the field of research defined as 'systematic study of past human life and culture by the recovery and examination of remaining material evidence' ⁴⁹, is akin to the one defined by Ignasi de Sola-Morales. He suggests that archeology is "... a tool for discerning overlapping layers."⁵⁰ This definition provides an archeology that is not so much concerned with revealing a history, but is, instead, interested in providing a picture of the complexity of intersections. Although still interested in finding meaning and information within individual layers, the true strength of this archeology as a tool is revealed in the intersections between layers. Overlapping layers can reveal information and meaning more important and specific than that information contained within the layers. It is these intersections and overlaps that provide a new source of specificity needed for

understanding of a new indigenous architecture.

In order to better define these layers, in my argument I have employed the term *strata* (or a *stratum* in the singular sense). The word *strata* provides a more specific elaboration of the concept raised by the term *layer*. A stratum is defined as "one of several parallel layers of material arranged one on top of another."⁵¹ Such a term is appropriate as it accommodates both the idea of an archeological tool as raised by de Sola-Morales and also provides allusion to each a stratum being made up of or containing a certain material or content. These strata, arranged on top of one another and overlapping serve the purpose of defining in the archeological sense, a small portion of the history or meaning of the place. Individually they carry little value and depict a small portion of a larger picture. Together, they provide not only the completed picture, but also a sub-text of inter-relation between the contained elements of context. Another means of looking at this might be to return to a common usage of the word strata. *Strata* is also used in the biological sense as a means of describing 'a layer of tissue or cells in an organism.'⁵² Again the function of each individual component whether cell or tissue is trivial in comparison to the role that they play together and in relation to one another.

Rather than simply being one a stratum on top of another, there are points in each of these stratum that become more predominate and places where their influences are more or less secondary. A stratum may cover a larger area than the immediate site or place to which the site belongs. In this sense, strata are not unique to a specific place, but rather are a set of conditions that may be shared over a broad range of different locales. Individual stratum may be a universal factor or be limited to a more immediate area. Likewise, since strata are not necessarily specif-

ic to a geographic context, they do not always have defined edges. Instead the influence they have may become so subtle at points that they cease to have a recognizable impact.

On the other hand, there are also strata that are manifest in a strictly regional sense. These do not constitute a regional identity, however, but can only contribute to a sense of place when intersected with other strata. However unique a strictly regional stratum may be, it can not be assumed that it alone defines regional identity. Instead, it is necessary to look at how different strata intersect at a particular point, the point of architectural intervention, to gather a sense of that context.

Examples of strata therefore include: climate, topography, networks of transportation and communication, built environment, land use, and also collective memories and desires. These different layers contain both objective and subjective content and are, therefore, physical and experiential. Physical attributes of strata are those that have tactile characteristics or material substance. Strata such as a particular material, way of construction, or ordering of the landscape such as the Dominion Land Survey are physical attributes. Experiential strata are slightly more difficult to define as they contain attributes that are not material and not always quantifiable. Attitudes and traditions of a community and a sense of locale, as a component of memory, fall into this category. These things, although not always immediately apparent, play an important role in how the physical strata are perceived.

In order to separate the idea of stratification from being perceived as a new way of looking for sources of vernacular or historic references, it is important to look at

each stratum not as a history, but rather as a contextual situation. In this sense, how a stratum originated is of less interest than what it means in relation to the site in the present situation. With the connection to history being reduced through the recognition of each a stratum as a present condition, it is possible to view all influences on a site as being equally relevant to the formation of that location's sense of place.

Looking at the immediacy of the current contextual conditions as a system of strata also offers the hope of avoiding the issues that developed out of historicist and regionalist approaches to creating an indigenous. While the intent of these tactics was most often aimed at clarify and distilling what was inherently native to the place, the process almost always resulted in nothing more than distilling a particular stereotype or play myth of that region. Once established and heralded as the authentic type of architecture, this view was immediately demoted to being a mere style, detached from the search for meaning or relevance that may have inspired its coming in to being.

By regarding the contextual components of the site as a 'set of strata' architecture can circumvent critical regionalism's apparent nostalgia to the past conditions of a site. While Frampton clearly attempts to take Critical Regionalism away from being a nostalgic approach to architecture in his emphasis on looking at such factors as the way light strikes the site or climate⁵³, the emphasis on mediating between local factors and (new) universalization, clearly places the theories into the position where a nostalgia is difficult to avoid. Instead, looking at all conditions as strata and emphasizing their current implications on the site avoids the universal (new) versus local (nostalgic). The influences of history, in this case, can be regarded not as a system into which a new intervention must fall, but rather a current con-

dition which the new intervention must observe.

The concern with the current strata and its intersections with other current strata poses less danger of imitating history or regionalist elements simply under the guise of instilling a sense of meaning. This is possible because because the contents of the strata are of secondary importance to how they intersect. Meaning or the sense of place evoked by an architectural intervention can be seen to stem from how the architecture responds to (as opposed to appropriating from) the set of strata that make up the contextual surroundings. While the critical regionalist approach inadvertently established a polarity between regional and universal, stratification sees the two sides as operating together in establishing the context. 'Universal' influences are not to be seen as compromising the meaningfulness or place-ness of the locale, but rather as a significant player in formation of that place.

Since the ideas of an opposition between universal and local are negated by the breakdown of any difference in value between universal or local, the question of what makes up the 'authentic or original' place ceases to be requirement for any type of mediation. In the search for place and meaning architecture must look beyond the existing material and formal components instead building upon the connections and intersections between strata.

As Aldo Rossi suggested, additional connection to place may be found in allowing architecture to access collective memory. The integration of memory, and therefore, society into architecture firmly localizes that architecture to a particular place. Once memory is accounted for the potential meaning of architecture is enriched through what Marco Frascari would define as synesthesia.⁵⁴ The possibility that

architecture, because it is so inherently linked to the collective memory, can trigger these types of responses is made possible by two situations. First as a basic requirement, the architecture must refer not just to itself and its functions, but also to the locus, or intersection of strata, into which it was created. Secondly, these strata must be an active part of the collective memory of the inhabitants and users of the architecture. Like the quintessential Rossi building, the familiarity is triggered by the ability (through collective memory) to make the connection between the architecture and contextual situation to which it is a part.

Ignasi de Sola-Morales furthers the separation of architecture from ideas of pure functionalism or historic references. He suggests an alternative contemporary architecture comprising of three parts: Time, Decoration, and Monumentality.⁵⁵ While this might seem to be a classical composition, de Sola-Morales defines these characteristics in a much different way than traditional definitions would have suggested. Time is the event or an unfolding reality, Decoration, not to be confused with ornament, is the secondary layer of meaning, while monumentality has to do with the resonance and recollection that is provoked by the work.⁵⁶

De Sola-Morales' characteristics coincide well with the aforementioned theory of strata as well as with Aldo Rossi's locus and the ideas of collective memory. Like de Sola-Morales' 'Time', the coincidence of strata or contextual layers, serves to provide the event in which the architecture must be positioned. The event, existing in a spatial sense as opposed to being temporal provides a structure from which to derive characteristics. The event is the collision of multiple factors at a particular place, the site for the architectural intervention. Thus, this event is composed not only local factors but also of universal influences converging together in the specifically unique way at the given locale.

Decoration and Monumentality are equally significant. Between Decoration and 'Monumentality', the collective memory is stimulated into producing the synesthetic response. It is Decoration, or the subtleties of the intervention that heighten the initial response to the Monumental characteristics of the architecture. While it is often the Monumentality that initially provokes the collective recollection, it is the tactile elements, the Decoration, that further the synesthesia. In this way the form of the architecture makes the abstract illusion to its position in the landscape and context within the built environment. Likewise, the surface quality, materials, and details provoke the more specific responses.

Clearly absent from an architecture derived from the observation of strata and their intersections is the nature of mimicry that makes up many previous attempts at defining an indigenous architecture based on historicism or regionalism. As opposed to directly deriving forms and details from the vernacular past, a strata-based architecture's place relationships are established through the collective memory's response to a set of intersecting conditions. While this architecture may allude to its surroundings, it does not specifically appropriate its form or details from them. Thus the relationship between building and site remains one based on an understanding of place that is derived from that location's physical and experiential attributes and how they intersect as opposed to one based on history or vernacular and the mimicry of such.

Theory Endnotes:

1 This statement is based (approximately) on the gap between the invention of the steam power in 1773 and the advent of the first proposals for industrial cities by Garnier (1917 - Cite Industrielle) and Antonio Sant'Elia (1913 - Città Nuova). Individual buildings, bearing the markings of modernism can also be found slightly prior to these industrial cities. Examples include: Fagus factory in Alfeld, Germany, designed in 1911 by Walter Gropius and Adolf Meyer, and AEG in Berlin-Moabit by Peter Behrens in 1910.

2 Trachtenberg, Marvin, and Isabelle Hyman. Architecture: from Prehistory to Post-Modernism. New Jersey: Prentice Hall, Inc. 1986. p. 488.

3 Banham, Reyner. Theory and Design in the First Machine Age. Cambridge: The MIT Press. 1980. p. 247, 248.

4 Specifically regarding Garnier's Cite Industrielle. Banham, p. 36.

5 "Philip Johnson and Alfred Barr coined the term international style in 1932 to describe the work of Le Corbusier, Gropius, and Mies van der Rohe (among others) during the preceding decade" <http://www.tiscali.co.uk/reference/encyclopaedia/hutchinson/m0039698.html> (May 08, 04)

6 The demolition of Pruitt-Igoe occurred on July 15, 1972. It is precisely at this moment that the Post-Modern movement was said to have started. While Pruitt-Igoe was not a representative example of 'good modern architecture' its destruction represented a pivotal moment in how architecture met its social responsibility.

7 Banham, p. 9.

8 Trachtenburg, p. 553.

9 Buchanan, Peter. *Only Connect*. Architectural Review October 1984, p. 23.

10 Buchanan, p. 23.

11 Buchanan, p.24.

12 Buchanan, p.24.

13 Frampton, Kenneth *Towards a Critical Regionalism: Six Points for an Architecture of Resistance*. The Anti-Aesthetic: Essays on Postmodern Culture. Ed. Hal Foster. Port Townsend, WA: Bay Press, 1983. p. 16 - 30.

14 Eggner, Keith. *Placing Resistance: A Critique of Critical Regionalism*. Journal of

Architectural Education. May 2002, p. 230.

15 Eggener, p. 234.

16 Friesen, Gerald. *Defining the Prairies: or, why the prairies don't exist*. Toward Defining the Prairies: Region, Culture and History. Ed. Robert Wardhaugh. Winnipeg: University of Manitoba Press. 2001. p. 13 - 28.

17 Friesen, p. 14.

18 Friesen, p. 14.

17 Friesen, p. 14-15.

19 Frampton, *Towards a Critical Regionalism*, p. 21, 26,27

20 Eggener, 231.

21 Kenneth Frampton is attributed to outlining the key points of critical regionalism, while it is apparent that the ideas were first introduced by Alex Tzonis and Liane Lefaivre a few years prior in *The Grid and the Pathway*.

22 Eggener, 232.

23 Frampton, Kenneth. *Prospects for a Critical Regionalism*. Perspecta. Issue 20, 1983, p. 149.

24 Ingersoll, Richard. *Conference Review: Context and Modernity*. Journal of Architectural Education. Feb. 1991. P. 124.

25 Eggener, p. 231.

26 Speaking of Luis Barragán, Keith Eggener states "As much as anything, his work was applauded for appearing so very Mexican, or Mexican at least in a sense that people in places like New York, London, and Tokyo could readily understand and appreciate." (p.230) and in a more general sense "When one individual's image of identity is projected onto the nation, it is important to scrutinize the background, beliefs, and aspirations of that individual and his or her advocates." p. 232.

27 Eggener, p. 228 - 237.

28 Eggener, p. 230.

29 Eggener, p. 228.

30 Eggener, p. 228.

31 Buchanan, p. 23.

32 Buchanan, p. 23.

33 Molholy-Nagy, Sibyl. Native Genius in Anonymous Architecture. New York: Horizon Press Inc., 1957.

34 Buchanan, p. 23 - 25.

35 Frampton, *Towards a Critical Regionalism*, p. 16-30.

36 Frampton, *Prospects for a Critical Regionalism*, p. 148 - 162.

37 Frampton, *Prospects for a Critical Regionalism*, p. 162.

38 Robert Venturi's work can be called on to exemplify architecture adapting from history. His idea of the 'decorated shed' counts on historical symbolism to convey meaning. In terms of vernacular based work, it is probably appropriate to look at Alvar Aalto's work. Aalto borrows heavily from the vernacular materials and forms of Finland, although his sensitivity and adaptation of these aspects of Finnish vernacular leads most architectural writers to consider him to be a critical regionalist. Trachtenburg, p. 564.

39 Rossi, Aldo. *The Architecture of the City*. Trans. Diane Ghirardo and Jean Ockman. Cambridge: The MIT Press. 1982. P. 103.

40 Rossi, p. 106.

41 Rossi, p. 106.

42 Rossi, p. 107.

43 Rossi, p. 106-107, 118.

44 Rossi, p. 118.

45 Rossi, p. 130.

46 Frampton, *Towards a Critical Regionalism*. p. 22. Quote in reference to Hamilton Harwell Harris.

47 Buchanan supports this stating: "A precious harmony built up over ages between buildings, and buildings and setting, is now rapidly being destroyed and replaced by a chaotic and dislocated sameness . . . " p.23

48 Referring to Mario Botta's strategy of 'building the site', Frampton states: "This inscription, which arises out of "in-laying" the building into the site, has many levels of significance, for it has a capacity to embody, in built form, the prehistory of the place, its archeological past and its subsequent cultivation and transformation across time." Frampton, *Towards a Critical Regionalism*, p. 26.

49 Definition of Archeology (truncated). *American Heritage Dictionary of the English Language*. Fourth Edition Houghton Mifflin Company, 2000. Sourced from Dictionary.com (April 2, 2004)

50 de Sola-Morales, Ignasi. *Differences: Topographies of Contemporary Architecture*. Trans. Graham Thompson. Ed. Sarah Whiting. Cambridge Massachusetts: MIT Press. 1997. P. 65.

51 Definition of *Strata* (*stratum*) taken from *Nisus Thesaurus*. *WordNet 1.7* (Software) Princeton University, 2001.

52 Usage of in biological context for *Strata (Stratum)* taken from Nisus Thesaurus. WordNet 1.7 (Software) Princeton University, 2001.

53 Frampton, *Towards a Critical Regionalism*, p. 21

54 Frascari, Marco. *Architects, never eat your maccherroni without proper sauce! A macaronic meditation on the anti-Cartesian nature of the architectural imagination*. Nordisk Arkitekturforskning. Issue 1, 2003. P. 6.

55 de Sola-Morales, p. 66.

56 de Sola-Morales, p. 68, 71.

History and Precedent

The study of precedent constructions in the context of examining the possibility of any continued indigenous architecture is important. Precedent typologies represent the best record of the subtle variations that occur within a region and evolution over time. The relative proximity of all examples to one another suggests there be little difference in encompassing regional factors of influence, however, what is clearly revealed are the micro-variations due to specific attitudes and ways of working within a community. Within this set of typologies it is apparent that the community arena does not develop on an independent path within each community, but rather as generalized type that is infinitely variable (on a much more subtle level) to meet the specific needs of any given community.

The short history of community arena construction began shortly after the commencement of agricultural settlement in the Southwestern region of Manitoba in the late 1880's. Within the last of 125 years there have been four general periods of community arena building. Firstly is the construction prior to 1900, from which there is few remaining records and no existing examples within the study area. The second is the earliest period of extensive arena building taking place prior to World War II (1900 through 1939). This period represents the first widespread construction of permanent buildings intended specifically to serve as arenas. While many communities built their first enclosed community arenas within this period, few of those remain today with most of them being replaced during the next phase of arena building which immediately followed the the end of the war. The end of World War II brought huge advances in construction technology to Western Canada. The use of new technologies is responsible for the majority of

small town community arenas in use today. Lastly, a more recent trend to build climate controlled facilities to replace aging and decaying arenas marks the current phase. This phase is chiefly characterized by the construction of generic steel frame boxes and package buildings.

Periods of Construction

Prior to 1900

While records of enclosed community arenas in Western Canada prior to the beginning of the 20th century exist both in written form and by word of mouth, I was unable to find any record of such a building still in existence. From records in both Forrest and Alexander, Manitoba there is evidence of purpose built buildings documenting the beginning of hockey arena construction. These buildings by all records were largely make-shift structures that barely enclosed their intended functions.

For example, the first arena in Alexander Manitoba was replaced in about 1924. Unlike new arenas, the original was rumoured to have had columns in the centre of the ice due to the difficulty presented in spanning the ice surface.¹ The short span is also likely indicative of the building being constructed for another purpose (such as a barn) prior to its conversion to a hockey arena. In any case, the utilisation of an interior space specifically for the purpose of playing hockey and skating marks an important development in the construction community buildings within the small town.

In Forrest, Manitoba there is a limited record of enclosed rink building prior to 1900. The first rink is recorded to have been a non-permanent structure that was assembled each fall and dismantled again in the spring. Further rink buildings in

1902, 1907 and 1919 provided more permanent enclosures for skating and hockey, although the fact that the 1907 building was blown down in a windstorm seems to suggest that these too were, at best, ad hoc constructions that served as no more than an enclosure of space for the purpose of the playing hockey.²

Pre World War II

The era between the turn of the century and the beginning of the Second World War saw the advent of the comprehensive rink building in the majority of the western communities. While most of these arenas have succumbed to either obsolescence or the elements, there are a few outstanding examples still remaining in regular use.

These arenas include buildings in Binscarth and Alexander. (*figures 3-1, 3-2*) The close link to barn construction is evident in the construction of both of these examples and specificity of the requirements of hockey (and in both of these cases curling) is clearly illustrated in both examples. When compared to the approach used in places such as Forrest in the 1917 arena, the ambition and quality of both of these examples, is indicated by their continued existence and use.

In both examples, the question of structural span as the major challenge in the construction of the community arena is addressed. While both arenas are comparatively small by today's ice surface standards (both with ice widths are under 50' (15.24 m) in comparison to the current standard of 85' (25.9 m).) the challenge of the span must be understood relative to other regional typologies. At this point in Western Canadian history, the number of buildings with a clear span of this distance was limited to the largest of the barns³ and industrial buildings in the major urban centres such as Winnipeg. Unlike the barns, constructed almost exclusively in timber frame, these larger industrial buildings used steel members putting their technologies out of reach for small rural areas both in terms of the availability of materials and skilled trade. It is important to observe that at this time even

Figure 3-1 Binscarth Arena

Figure 3-2 Alexander - west facade and entrance

the largest buildings common to the prairies, the grain elevators, were constructed entirely with wood. In terms of building technology, it was the barn example that would become most influential in inspiring the means of construction for arenas, although each solution seems more akin to a local ingenuity and invention than a specific outside influence. These remaining pre-War arenas illustrate the almost limitless variations of barn-inspired wood frame technology. (*figure 3-3*) It is evident that each example, while likely inspired by its predecessors in the adjacent towns, nonetheless developed independently and in answer to the unique requirements of that specific place.

At this point in arena construction the one and only material of consideration was wood. This is an obvious choice given the availability, cost, and workability of the material as opposed to relative specialization required for steel construction. It is fair to point out that with volume of town development, agricultural construction, grain elevator building from about 1885 through to 1920, there was also widespread availability of knowledge and labour specific to wood construction.⁴

The economic decline of the agricultural communities by the early 1930's led to a decrease in the rate of construction until after the end of the Second World War, so there is little evidence of any building occurring between 1930 and about 1945. The Second World War saw the majority of materials and skill being devoted to the war effort both in Europe and also on the home front. While agricultural and recreational building slowed, the massive expansion of the Royal Canadian Air Force and the Commonwealth Air-Training Plan into the region focused attention on construction of massive wood frame aircraft hangers and military barracks.⁵ (*figure 3-4*) Likewise, the surveyed sample of arenas shows no remaining examples built during the war.

After World War II through 1970

Immediately following the war, there was a widespread boom in rink construction.

Figure 3-3 - Similarity between early arenas such as Binscarth (left) and barns
There is notable similarity between the sections of early arenas and many of the barns being at a similar period.

Figures 3-4 and 3-5. World War II advances in wood construction (Commonwealth Air-Training Plan Museum, Brandon, left) -
The advances in wood construction brought about by the Commonwealth Air Training Plan were rapidly adapted into arena construction. Most notably, the scale of construction shifted and arenas became much larger. The example below shows Shilo's Gunnar Arena, constructed immediately following WW II.

This can be attributed to a number of factors. While the availability of technology and advances in production that happened during the War undoubtedly impacted the rate at which arenas were constructed, (*figure 3-5*) there is almost certainly a demographic factor that came into play at the same time. Judging from the architectural make up of many of the small towns that have Post-War arenas, the twenty-five years following the end of the War also served as a period of significant population growth. The rapid growth of the young 'boomer' population would have not only increased the size of many of the towns, but also increased the demand for recreational and community facilities.⁶ The resulting surge in construction of community arenas provided the majority of arenas in Western Canada still in use today.

Another factor impacting the trend in rink construction is rooted in the increase of scale of the family farm that occurred with the advances in agricultural machinery technology brought about in the wake of the Second World War. While the number of persons actually required to work on the farm (per acre of cultivated land) was reduced, the number of people in the towns would have grown to accommodate the increase in specialization required to supply and service an increasing complex agricultural industry.

The changes in the working environment after the War would have also helped to expand the availability of leisure time again promoting the need for a centre of community events and recreation. As compared to the traditional agricultural patterns of work in which spring and fall were excessively occupied by labour and winter tended to present more possibility for leisure, those involved in trade and commerce in the towns had access for more consistent times of leisure and demanded, likewise, an increase in recreational facilities.

As pointed out in the book Hockey Night in Canada the advances in construction technology from the Second World War brought not only the ability to span longer

distances with less material, but also accessibility to these technologies throughout rural areas. There were two primary sources of the radical shift in the production of hockey arenas.⁷ These are the prevalence of Commonwealth Air Training Bases in the rural regions and the invention of reliable construction adhesives that enable the mass production of efficient arch-rib rafters that became the staple construction material in the majority of hockey areas built during this time frame. (*figure 3-6*)

The climax of the push for arena building within this time frame was linked to both the Canadian and Manitoba Centennials in 1967 and 1970. (*figure 3-7*) Many public projects, arenas and community centres included, were funded under federal and provincial construction projects that were intended to commemorate these milestones in provincial and national history. This influx of public money was often the deciding factor of whether or not a arena could be build and to what extent. Many towns still rely on such grants or loans to finance their arena construction.

After 1970 through to the Present

While the majority of rink building ended after the peak in the 1960s and early 1970s, the age and condition of many facilities in small centres has led to a subsequent interest in replacing these 30 and 40 year old buildings. This is also driven by a desire, in most cases, for more up-to-date facilities. The trend toward constructing new community arenas has not only addressed the need for new hockey facilities, but is also driven by the changing demographics in communities. Most rural communities are now building arenas that serve a diverse range of functions within the community. The majority of previous arenas were constructed with the primary concern being the accommodation of hockey and possibly curling, while other potential uses were often treated as afterthoughts that were pushed to the periphery of the program and poorly addressed. Subsequent renovation and addition to these facilities has served to document, through architectural form, changes in the demographic structure and needs of the community.

Figure 3-6 -Minto Arena interior -
Mass produced laminated arch rib rafters excelerated arena consruction in rural areas after World War II.

Figure 3-7 Forrest Community Arena -
A typical centennial project.

The standards of the hockey rink have also experienced a certain amount of evolution both in terms of the spatial requirements and quality of ice surface. Thirty years ago it may have been deemed acceptable that the length of the hockey season was determined by weather condition.

Today's season, arguable part of a more regimented competitive hockey culture, has grown much longer emphasizing the necessity to provide chilling capabilities and more climatic control within the arena buildings.⁸ While many 30 and 40 year old arenas have been upgraded with an artificial ice plant, the most common approach taken by communities seems to have been to use these deficiencies, as the motivating factor toward the construction of new facilities.

The increasing complexity of the programmatic requirements related to and unrelated to the game of hockey has also been a significant driver in this interest toward new construction. Many communities have simple out-grown or changed beyond the scope of their original arenas, and are either significantly altering their existing facilities or exploring the means of constructing a new community arena.

Tectonically the newer arenas bear little in common with the old (up to 1970) facilities. The material of choice for the structural requirements of the new arenas is almost exclusively steel. While this provides a cost effective means of spanning the necessary distance to enclose the ice surface, the use of this material has in many aspects, removed the activity of rink building from the community and placed it exclusively within the hands of an outside contractor. These arenas, unlike the majority of their predecessors, utilize little local community skill and knowledge in the design and construction. Community involvement in the actual construction is often limited to more menial tasks such as painting and other unspecialized tasks. (*figure 3-8 and 3-9*)

Figure 3-8 Souris Arena interior-
This arena, constructed in the mid 1990s is typical of many of the newer arenas.

Figure 3-9
Brandon Sportsplex

Typically the formal arrangement of these buildings involves the fitting of all programs into the simplest combination of a couple of large steel frame sheds. Formally the community hall and arena space are often given the same architectural values and material treatments. While the organic expansion of earlier arenas was documented by the appendages added over time to the main building housing the ice surface, the programmatic functions of these new arenas are less easily discernible as tectonic forms providing the community arena with no separate identity from surrounding industrial and agricultural construction.

Standard Typologies

Nail Laminated Arch

One of most economical solutions to spanning an ice surface, was the construction of arch-rib rafters by nailing small members together multiple plies wide to produce an approximated curve. This method appears first prior to World War II in arenas like Binscarth's, (*figure 3-10*) but was still used in some arenas built as late as the 1960s in places like Rivers.

Nail lamination was a system in which straight planks, usually about 1" by 10" and 8 feet long (25 mm by 250 mm and 2400 mm long) were layered together to form a curve. Usually these laminations are a minimum of 8 ply thick and each subsequent layer is offset from those beside it. The end result created a type of curved built up beam. Often the outside of the this arch was trimmed to more closely create a curve and allow for a more consistent surface to which the exterior sheeting or planking was attached. (*figure 3-11*) The advantage with this system of producing an arch was that it could be done on site without the complex jiggling, forms, and clamps required to produce glue-laminated arches. The form for the arch had simply to be marked out on the ground and each truss made to match it. Arches

Figure 3-10
Binscarth
Community
Arena interior -
An early example
of nail-laminated
construction.
Note the short
span and the
small scale of the
ice surface.

50 ft. (15.5 m)

Figure 3-11
Typical nail-laminated construction

Figure 3-12
Riverdale
Community
Arena interior-
the original nail-
laminated con-
struction had to
be later rein-
forced with glue-
laminated arches
to prevent a col-
lapse.

of this type were most often produced in two halves which were joined prior to being tilted up into place.

While the system works extremely well on small scale spaces like Binscarth with a span on only 50' (15.5 m), it resulted in many structure problems in arenas with longer spans. The low effective depth and flexibility of the nail laminated members was unsuitable for the larger spans and stress loads that resulted from the massive roof areas of these bigger arenas. In Rivers, prior to a later insertion of Glue-laminated members, the nail laminated arches had deformed so significantly that a subsequent reinforcement with secondary structural system was necessary. (*figure 3-12*) In Binscarth this deformation was avoided by the smaller scale of the span and by the buttressing of the arches by the lean-to type curling rinks on either side of the hockey arena.

The arena in Ninga, Manitoba (*figure 3-13*) is an example of a moderately successful implementation of this structural system. While this arena is approaching 50 years of age, the structural problems caused by the deformation of the nail-laminated members seem to be limited to the south end of the building where the builders attempted to eliminate the gable by building a curved variation of hip roof.

Curved Truss Variations

This building type, while quite uncommon is one of the most unique and spatially interesting. A excellent example is located in Foxwarren, Manitoba. While the arena was constructed in 1949 after the introduction of the early glue laminated wood technology, scepticism of the reliability of this new type of construction led the community to construct the arena with curved truss made of small nail laminated members. (*figure 3-14*) This method, by which small easily obtained dimensional lumber was built into large monolithic trusses allowed for all the work to be performed on site by local farmers and towns people. Although the form of the truss was undoubtedly determined by a qualified engineer, the ability for the work

Figure 3-13 - Ninga Arena
In Ninga, the oddity of the south end of the building compromised the structural integrity of the roof requiring a system of cable bracing to prevent a collapse.

Figure 3-14 Foxwarren Arena interior-
The use of site constructed wood truss stems out of a mistrust for the then new glue-laminated arch ribs. Note the steel tension rods span 12' (3.3 m) above the ice surface.

Figure 3-15 Foxwarren Arena truss detail-
Top and bottom chords are constructed of multiply members. The webbing is also wood. Steel rods are used to tie the top and bottom chords together.

to be performed with free labour greatly reduced the cost of the arena and allowed Foxwarren to build a considerable scale arena in comparison to other communities of its size.

Differing from examples that used nail lamination to produce the approximation of a curved rib (Ninga arena), this method involved the construction of a rather complex curved truss that spanned nearly 100' (30.5 m). In this case all compressive and tensile members are constructed of wood with bolted and nailed connections. *(figure 3-15)* Only the tension rods spanning across the arena at 12 feet above the ice are made of steel. Ironically, these rods are probably redundant in the design, and examination of the building suggests that these could likely be eliminated if the bases of the trusses had instead been buttressed to counteract the outward pressure exerted by the weight of the roof.

The method of construction, in this case, like many of the other arc-profile arenas was to assemble the truss lying flat on the ground and then tilt it into position once all the trusses had been completed. This tip-up construction method minimized the need for heavy equipment or scaffolding to support the trusses during the construction process. With Foxwarren, the trusses were constructed on site and the process of building took the duration of the summer, beginning at the end of the spring seeding and being mostly complete by the beginning of the harvest.⁹

Glue Laminated Arch

The most direct spin-off of war-time building technology was the introduction of glue-laminated building materials. Examples of glue-laminated construction, common after World War II, include the arenas in Dauphin, Minto, Strathclair, Rapid City and Boissevain.

The ability to take multiple smaller members and reliably and cost-effectively join them into larger monolithic members greatly changed the means of constructing

clear span spaces. While initially utilized in the construction of the Quonset Hut (*figure 3-16*), a technology invented to provide quickly deployable wartime shelters, the system's true contribution occurred in its ability to cover a much larger amount of space such as an equipment shed or aircraft hanger with a minimum of cost and erection time. Glue-lamination made its foray into Western Canada first in the construction of countless sheds with spans of less than 60 feet, but within less than ten years following the end of the War small manufacturing firms throughout the prairies had the ability to mass produce arches that could span over 100 feet (30.5 m). (*figure 3-17*) Only the steel portal frame system that appeared in rural construction around 1970 can be seen to be more influential in the way that community arenas were built.

The process of manufacturing a glue laminated arch is relatively simple. Small members of dimensional quality are glued together under pressure to form an arch. Unlike the nail-laminated arch, which utilized straight members to approximate a curve, the glue lamination system actually forced the individual members to curve. After the glue had set these small members forced into a curve become a small part of an extremely rigid wood monolith arch. (*figure 3-18*) Because the smaller members were forced to take the curve of the final arch, it was necessary that the arches be built in a factory that had the required jigging and templates to clamp all the smaller members together into their final form. For this reason, laminated arch ribs were usually manufactured in fixed number of sizes and forms whereas nail-laminated arches could be built on site to any dimensions as required.

Steel Frames

Presently the most common means of construction for small town community arenas is the steel portal frame. This system, adapted from industrial construction creates the prototypical rectangular steel shed that now makes up a large majority of low cost and mundane buildings in across the prairies. The system benefits

Figure 3-16 -
Typical Quonset hut -
The requirement for quick efficient enclosure of space led to the war-time development of the Quonset Hut. This means of construct quickly filtered into the rural areas in the form of sheds and also arenas.

Figure 3-17
Dauphin Arena interior-
The efficiency of the Quonset Hut combined with glue-laminated technology provided for a more cost effective means of enclosing huge volumes.

Figure 3-18
Typical glue-laminated members (Rivers)

from being a standard engineered package available in a variety of common spans in an essentially “off-the-shelf” kit. The ubiquity of the system throughout the province means that there are a number of manufacturers and builders who can supply and construct this type of building in an extremely short period of time. Given that the system is the current choice of many small communities, many of these manufacturers offer community arena packages directly out of their catalogs.¹⁰ The community is required only to select a few key options and colors for the exterior cladding, while the remainder of the specifications are determined by the manufacturer at the location of the factory. Arenas such as Hamiota, Oak River, Shoal Lake and Souris use construction systems of this type.

Another important reason for the increased prevalence of the portal frame is the reduced construction time. In many cases the framing and the shell of the building can be assembled in only a few weeks by a professional crew with heavy equipment. While this undoubtedly makes the construction of a rink much less of a labour commitment on the part of the community, it is detrimental to the sense of collective ownership that has traditionally accompanied the rinks constructed ‘by sweat’. (*figure 3-19*)

Also influential in the movement towards the steel frame system is the desire that arenas be insulated and climate controlled. The steel frame system usually achieves this with a low cost system of roll-fibreglass batts with attached vapour membranes. Unfortunately the thin membranes are extremely vulnerable to puncture by flying pucks. The introduction of full vapour sealing in insulated steel frame hockey arenas has also resulted in technical problems not found in wood frame predecessors. The hermetic seal created by the inclusion of the vapour barrier has turned the arenas into a trap for the build-up of moisture from the ice and occupants. In many cases, after only a few years, these steel buildings exhibit apparent problems with corrosion on the structural membranes. The cost of humidity control is often an unforeseen expense. (*figure 3-20*)

Figure 3-19
Hamiota
Community
Arena-
A typical contemporary arena.
Most are constructed as box projects where the community has control over only portions of the project.

Figure 3-20 Neepawa Arena Interior-
Many steel buildings begin to experience corrosion problems due to humidity.

Figure 3-21
Alexander Arena
Truss-
The short span of these trusses at 50' (15 m) required little expertise.

The root of the problem can be traced back to the system of construction and insulation. While the portal frame and roll batt insulated building meets the spatial requirements of the hockey arena, the system is technically flawed in terms of the understanding of vapour migration in the cold interior buildings. This was, of course, rarely a problem in the relatively free breathing and less-insulated wood arenas.

Wood Trusses

Although much less common than glue-laminated arch construction and steel portal frames, throughout the last hundred years arenas have been constructed using long spanning wood trusses. Some of these buildings, prior to World War II, bear obvious influence from barn building, while projects after are generally more akin to the truss systems used to construct Commonwealth Air Training Plan bases between 1939 and 1943. The Alexander arena (*figure 3-21*) is an excellent example of the former, while Shilo's Gunnar Arena (*figure 3-22*) is a near carbon copy of a wartime hanger. The arena in Roblin, however, probably responds more acutely to a renewed interest in wood construction after the advent of the first steel framed arenas.

Other than the material of choice being wood, these arenas have little in common. In Alexander, built in 1924, the short 50' (15 m) span required little in terms of expertise and appears to be built according to a basic understanding of truss design. It is likely that after the building was initially built members were added as needed to take account for unforeseen stresses. In Shilo, on the other hand, the the long span of 110' (33.5 m) is approached with precision. The wood trusses, comparatively, are light and obvious highly calculated. The compressive wood members, in this case, are also helped by high tension steel cables that run along the tensile stress paths in the truss. Shilo is an obvious benefactor of wartime engineer expertise and construction efficiency. Roblin's arena approaches an

equally large span with a simple but efficient variation of a double fink truss in which all members are made of wood.

Hybrids and Adaptations

A number of arenas in the surveyed area have utilised a hybrid of systems. In one particular example found in Rivers, this seems to be the product of flawed engineering during the original construction. The Rivers arena uses a combination of nail-laminated and glue-laminated arches. (*figure 3-23*)

In Rivers, the original shell of the arena was similar to Ninga's nail-laminated construction. Unfortunately, during the building of the arena, it is apparent that the outward thrust of the rafters was greatly under estimated and consequently the foundation walls were thrust outward by the load of the roof. The problem was initially alleviated by the addition of concrete buttresses against the outside of the foundation walls. However, this solution soon failed as the outward creep of the foundation walls continued. As the final resort in an effort to prevent the collapse of the roof, a secondary system of glue-laminated arches (possibly salvaged from another building) were inserted under the existing roof.

Another approach, used less often in rink construction than glue laminated arches, has been to adapt an existing building to become an arena. An excellent example of such a project can be found in Minnedosa. (*figure 3-24*)

After World War II ended the demand for the massive number of air-training bases across the prairies subsided and many of them were sold off to private enterprise. Some of the hangers buildings were then disassembled and moved to small towns to be rebuilt as hockey and curling arenas. The scale of the buildings and lengths of spans required to house aircraft made these unused hangers ideal shells for community arenas. The fact that they were so common over the prairies meant that in many cases the building could be obtained at only the cost of disassem-

Figure 3-22 - Gunnar Arena in Shilo
A larger more refined span can be found in Gunnar Arena in Shilo

Figure 3-23 Rivers structural failure -
The failure of initial nail-laminated system (on the left) led to insertion of glue-laminated arches.

Figure 3-24
Minnedosa Arena interior-
Moved into the centre of the town in 1984, this arena is derived from an old steel aircraft hanger.

bling and moving them.¹¹ The Minnedosa arena, constructed in 1984 used the structural system from an unused aircraft hanger. The span, at just over 120' (37 m) feet was of an appropriate scale for use in an arena. The entire hanger was dismantled and moved to its present location within the town.

Location

The Western Canadian town, unique from those of eastern Canada, was formed primarily as a product of the railway expansion westward to the Pacific Ocean. The primary driver for the development of the west was as a process of nation building by which early Canadian political power sought to validate the country's claim to Western Canada through a process of settlement. The railway functioned as mechanism both to provide access to the interior of the country and also to link to the west coast in a broad gesture of ownership. The mechanism of settlement employed, by virtue of the quality of the land, was the establishment of agriculture.

In addition to the railway, the second significant factor in the development of the prairie landscape and town planning was the Dominion Land Survey. This survey was the most influential and substantial intervention imposed on to the western Canadian landscape. The division of the land into a marketable grid of land plots has fundamentally affected the landscape. As an intervention, the grid makes the startling assumption that all places are equal regardless of such variation like geographic and natural context. Instead the locations of intersection of dividing survey lines of become points of importance and geographic relevance regardless of where on the landscape they occur. (*figure 3-25*)

Problematic characteristics of the grid occur at its intersections with other spatial ordering features. The most obvious is the irregularities created by the imposition

Figure 3-25
 Dominion Land Survey
 Grid -
 The 1 mile by 1 mile
 parcel orders the land-
 scape.

Figure 3-26
 Interference in the Grid -
 The intersection of geo-
 graphic features with the
 surveyed order.

of a Cartesian system over a spherical volume. The Dominion Land Survey attempts to contend with this anomaly and the requirements of maintaining the marketable 640 acre (259 hectare) 1 mile by 1 mile (1.6 km x 1.6 km) plot through the use of correction lines. On the north-south lines, the regular occurrence of these east-west shifts fracture the perfection of the surveyed division system.

The second problematic characteristic is the interference of geography in surveying. While the prairies offer seeming little resistance to this straight-line surveying, crossing rivers not only interrupted the perfection of the 640 acres (259 hectares), but also posed problems in the construction of roads that delineate each grid division. Each valley, therefore, is manifest as a tear or ripple in the grid, a type of triumph of nature over the capitalist intentions of the human interventions. (*figure 3-26*)

The railway's path was determined in a much different manner than the surveyed land divisions across Canada. Rail right of ways were chosen based on reaching the prime agricultural lands and avoiding geography that would inhibit the ease of construction. This dictated that in many places the railway seeming wanders across the landscape in comparison to absolutely linear roadways. The multiplicity of rail-lines, running roughly in parallel across the landscape and interconnected by smaller local lines formed a substantially more varied and informal grid compared to the Dominion Land Survey. The intersections of these lines did not necessarily dictate the formation of a town site. However important the intersections of these rail lines may have been in terms of transportation they alone didn't specifically create a location for a town.

The general location of the town was determined not by geographic context, but rather was influenced by the routes that rail-lines cut across the prairies. While prior to rail, town founding was based on the access to a navigable waterway, by 1885, in Canada, the train had superseded the water-craft. In order for railway

stops to meet the economic requirements for the movement of goods and servicing requirements of trains, towns were located along rail-lines every 5 - 7 miles (8 - 11 km).¹² This distance was not only based on the accepted maximum distance that goods could be transported by horse and wagon, but also upon the distance that a loaded train could be expected to travel before requiring a stop for water.

The points where the Dominion Land Survey's grid met with the railway were the ideal locations for the founding of a town. In terms of economics and commerce these intersections were the points of interference between the rural agricultural livelihood and the universal and global market that was brought about by the rapid transportation of goods by rail. The creation of a town, therefore, was often an exercise finding a context within a layered network of man-made organizational structures, as opposed to one that was guided by nature and geography. This network usually lacked (a recognized) history and specific orientation. Organic town planning and growth was also suppressed in favor of the grid and uniform infinitely repeatable patterns.¹³

Interestingly while nearly all western towns are based on the same planning principles, there is a sense of uniqueness that can be understood through an examination of the intersections of the survey and railway at a town's location. The intersection of these two was often the deciding factor of how an otherwise prototypical town would be positioned. Since the location of the Western Canadian town (at least the majority founded between 1885 and 1950) is on the convergence between the Dominion Land Survey and the railway, this intersection is the primary generator of any uniqueness of town layout. This convergence's influence is not unlimited, though, as most small towns follow one of several pre-defined examples.¹⁴ This repetition assured that while town planning could be conducted at the rate of agricultural expansion, all towns would observe little of the surrounding environmental and geographical conditions.

The consistent dispersion of towns across the landscape, however, is a much more specific product of commercial speculation. As railway companies were largely responsible for the founding of towns, their placements in relation to other centres was highly specific.(figure 3-27) As Mahar-Keplinger points out, towns had to be far enough apart not to be in direct competition with one another, but not so far as to provide the opportunity for a rival rail company to squeeze in-between and steal the valuable market associated with buying and transporting grain.¹⁵

The speculative approach to town planning had further implications within the internal relationships of the towns buildings and infrastructure. In almost all cases the full extents of the town including the necessary infrastructure and roadways were determined prior to the beginning of construction. The result was a very clear hierarchical order to each town. Every town has a distinct main commercial street, a distinct industrial region and residential area. The relationship between these areas is determined by the intersections of the town planning grid. At the most dominant intersection, the most important buildings in the community would be located. As a result, in most towns, locating the oldest banks, the post office and church is a matter of driving down the widest and most prominent street.

Since towns were most often constructed as commercial nodes for the sale and transporting of grain, the railway plays a critical role in the overall form of the town. Usually towns founded after the railway follow the orientation of the rail lines which is often different from that of the Dominion Land Survey. At some point a correction between the survey orientation and the railway orientation must be made. Sometimes this adjustment occurs at the periphery of the town, while other times the railway intersects the town grid at an angle. Either situation results in subtly unique variation while the basic components of the town plan are shared between one site and the next.(figure 3-28)

Within the prairie landscape, the town offers a variation from the strong horizontal

Figure 3-27
Town Distribution -
Towns could be neither
too close nor too far
apart. Usual distances
varied from 5 to 7 miles
(8 - 11 km). (Mahar-
Kepfinger, p. 47)

Figure 3-28 Town Plans -
Binscarth (left): oriented to railway.
Hamiota (below left): hybrid plan with
older parts of the town oriented to the rail-
way, while new parts are built to the grid.
Shoal Lake (below right): planned
according to the grid with diagonal inter-
section by the railway.

datum established by the horizon. Prominent features such as churches, grain elevators, and arenas serve to position the town as a node point on the horizontal plane.(figure 3-29) As the largest constructions within the town, these structures serve to mark the position of the town in the landscape. While features such as grain elevators vary little from place to place when regarded as independent objects, their orientation and arrangement within the town serve to identify the community. Like the intersection of the grid and the railway, these common and readily repeatable structures create differentiation not as individual objects, but rather in the relationships they form with other repeatable and common features.

The position of the community arena within a town is characteristically one of prominence.(figure 3-30) The traditional position, like that of the grain elevator, bank and post office, is in the center of town. In almost all cases the arena will be found on one of the largest streets adjacent to both the commercial quarter of town and the railway tracks. The only exceptions occur in situations where the community arena is built as part of the exhibition grounds. In some cases, such as in Dauphin, the siting is part of both the original core of the town and the exhibition grounds. This is by no means coincidental as the functions of the arena extend beyond hockey and curling. In often cases, the arena also serves to provide a space for livestock exhibition and farm trade-shows. This traditional link to agriculture necessitates the both the physical and poetic relationship to the railway and to the commercial core of the town.

Figure 3-29 Town Position in the Landscape -
The presence and orientation of features like elevators places the town within the landscape.

Figure 3-30 The arena within the town -
The position of arena within the commercial core and near the railway tracks affirms the structure's importance within the community beyond simply fulfilling the leisure requirements.

The Role of the Arena in the Community

The hockey arena is an architectural typology indigenous to the small Western Canadian town that serves a multiplicity of roles in the establishment of community and identity. It serves as a focal point for community interaction through events such as hockey, curling, agricultural and town fairs, potlucks, bingos, and other forms of celebration, exhibition and entertainment. Its multifaceted role in service of the community has dictated obvious innovations in the tectonics of the building type and the execution of the details. Its range of roles include a wide range of functional uses as well as being representative of a set of values and ideals that make up the community.

Arenas built prior to World War II were often much smaller than the typical arena that has been built within the last 35 years. Originally the focus was on the space required for skating and curling with little attention paid to ancillary spaces that are now deemed necessary. However, after World War II, the community arena evolved to incorporate a larger range of functional and pragmatic requirements. All arenas built after the War have, in their programs, included kitchen facilities, community halls, and changing rooms. While some of these changes can be attributed to an increase in the level of organization in sports, most of these functional additions have been directed at making the arena more integral to the community.

Although this increase in the programmatic scope of the arena has occurred, the focus of the design, nonetheless, stayed on the construction of a space for hockey. Especially evident in examples prior to 1970, formally the rink space takes precedent, not only in terms of scale, but also in terms of the specificity of the design. Any additional spaces such as community halls are generally provided as a appendage to the main form and often provide little more than a basic area for

other activities to take place. Functionally these spaces, to which little attention was paid during planning, often serve some of the most important events of the community. While they are treated as little more than nondescript rooms, they play host to important towns meetings, weddings, socials, and political events.

Differing from the arenas constructed prior to 1970, many of the new arenas are constructed to accommodate much larger range of programmatic requirements than their predecessors. Examples at Souris and Hamiota have addressed these additional programs with nearly the same amount of intention as the ice surface spaces. The shift in the amount of program dedicated to extra functions can be clearly seen in a rough comparison of Binscarth Arena to the Souris complex. While Binscarth hardly provided space to put on skates, never mind a community hall, the Souris arena features a large hall, kitchen facilities, meeting rooms, and recreational office. While these facilities vary greatly in scale and finances, the increased attention of the ancillary function is undeniable. Though the rationale for this shift can be linked to a changing rural demographic and aging population, it can also be attributed to the efforts of community to reduce their facilities operating cost by trying to consolidate as many functions into a single building. In such cases the new arenas are often encompassing programmatic elements previously fulfilled by community halls, curling arenas and town offices as well as providing a space to play hockey.

The diversity of this growing range of programs occurring simultaneously with a radical shift in the construction of arenas is not without consequence. New arenas, built often by a firm hired from outside the community meet only the functional needs of the community and have offered little opportunity for the local citizens to engage in the planning, construction, and maintenance of the building. While the functional aspects of the arena play a very significant role in whether or not the arena is programmatically successful, the success of the building as a focal point for the communities interaction is determined by the vested interests of each indi-

vidual member of the community. This vested interest is fostered by involvement in planning, construction and maintenance for the arena. It is apparent from my research, that these factors, not only the functional fulfillment of the arena program, are the keys in determining whether or not the building is viewed as a success by the majority of the community.

Economics

Traditionally a community that desired an arena would proceed by raising money and support within the community. It would be expected that construction could begin as soon as the money for the purchase of materials was available. The consideration of labour costs was irrelevant as it was expected that those within the community and from the surrounding arena would be responsible for the construction. As arenas were rarely complex buildings, it was generally accepted that anyone who had built so much as a shed on their farm would be able to participate in the construction process. Those who were not actually involved in the construction would help out with the building in other ways such as spearheading the fundraising or helping in the administration.

A newspaper clipping from Rapid City in 1963 (*figure 3-31*) shows that during the construction of their arena the only workers who received compensation were a single carpenter and his helper (likely acting as overseers to the masses of volunteers). Interviews from Foxwarren, Manitoba have shown a similar organization and implementation based on volunteer time and labour.

The change in construction systems and regional demographics has significantly reduced the practice of building arenas primarily through donation and volunteer time. New arenas such as Hamiota and Souris have demonstrated the difficulty of continuing to operate in this manner. Instead, in these cases, the arena has

Volunteers To Canvass District For Donations To Help Finish New Skating Rink **1963**

Rapid City community are helping receiving any remuneration of the new building. In order to complete the rink, the need now arises to call upon the citizens of this district for financial assistance. Keeping in mind that so far very little expense has been involved by anyone and that not a penny is being raised through taxation of property. A generous donation now will do the job.

Canvassers will be calling on you during the first week in October. If the canvassers miss you, or you are outside the area visited, even former residents now living some distance from their old home town, and you wish to contribute to the Rapid City Citizens Skating Rink, please to receive your cash donation. The following is a statement of the approximate cost to date of the rink, and the amount required to finish closing it in so that it can be used this winter.

Spent by Agricultural Society on Display Building	
General, shingles, gravel, plywood, etc.	\$1,500.00
Labor	100.00
Value of used lumber (\$65 per M)	585.00
Floors, posts, cement blocks	275.00
Total	\$2,760.00
Spent by Skating Rink Committee on building	
Rafters	\$7,167.00
Gravel	282.50
Gravel (donated by A. Harrett)	80.00
Reinforcing iron, bolts, plates (salvage and donated)	124.00
Used lumber for plates and ties (\$65 per M)	200.00
Used lumber (donated by C. Christie)	195.00
Labor	550.00
Total	\$8,998.50
Total spent by Agricultural Society and Rink \$11,758.50	
Estimated amount required to make rink usable	
Outstanding account for lumber purchased	\$2,000.00
400 sheets of plywood	1,000.00
Electrical wiring	1,500.00
Windows	240.00
Furnace	300.00
Insurance	304.00
Advertising and tickets (carnival, rink, dance)	37.50
Labor	1,100.00
Total	\$8,681.50
Estimated value of building \$20,440.00	
(minus shingles of metal sheeting on the outside)	
Rapid City Agricultural Society	
Rapid City Skating Rink	

Figure 3-31 Cost of rink construction in Rapid City - Donations and volunteer labour were critical in the realization of many arena projects.

been financed through public moneys such as taxes. Volunteer contribution has been more limited. In the case of Souris arena, volunteers were involved in some of the finishing, painting and cleaning.¹⁶ While this may have affected the bottom line cost subtly and likely generated some interest in the building project, it would have been a far cry from the massive involvement that was common in older arenas.

From a technical standpoint new arenas constructed after 1970 have seen vast improvements in terms of indoor environment over buildings built prior to 1970. All new arenas (after 1970) have included insulated ice spaces, artificial ice, full plumbing, and other amenities not deemed necessary in the past constructions.¹⁷ While these features have all contributed in making the small town facilities closer in calibre to those of the large centres, the obvious trade off cost has been that the price of construction has risen beyond the reach of many towns that were previously able to build community arenas. Additionally, the change in the construction systems has meant the end of direct community involvement in the majority of construction related tasks. The new steel portal frame buildings, while an efficient means to cover a space, are most conducive to construction by contract as opposed to volunteers. When handled by an outside company, as is the case most times, the involvement of the community is often at the level of paying the bills.

Community involvement, however, has not be completely eradicated, and in some examples the attention has instead be redirected to planning and fundraising instead of involvement through the donation of materials and time for the construction of the actually arena. In Rivers, for example, the rink committee (a volunteer group) had implemented a series of fundraising ventures to help off-set the costs constructing a future arena. As part of these fundraisers, a local builder has been commissioned to build a home which will be raffled. Proceeds from the raffle, less the cost of the house construction, will be directed to financing the new arena.

Unfortunately, while generating interest, this approach offers little opportunity for the whole community to be involved. The house is being constructed by the builder and a select number of volunteers while other involvement is limited to donation of materials and the sale of raffle tickets. Because the activity has been removed from directly contributing to the construction of the arena it has failed generate as much interest.

The least desirable and potentially most damaging situation through which an arena can be built is by increasing taxes. This method has, in more than one community, divided the population base into pro and anti-arena factions. The resulting rifts are often so damaging that they undermine any positive contribution that the arena can make to the community. In a small community, where change happens slowly, this type of animosity is long lasting.

Summation of Precedent Characteristics

Within the diversity of approaches and strategies that had been used within the last 110 years of community arena construction in the rural communities of Manitoba, it is possible to extract a number of characteristic to which each successful arena typology has conformed. These are flexibility and function, iconic presence, and economics of approach.

The flexibility of the community arena is the characteristic which has made it such an integral part of the small community. The arena must be able to accomodate the multiplicity of roles ranging from providing a place for amateur hockey to serving as the space to celebrate an anniversary or social gathering. As a typology, it is important the arena does not ignore the fact that it is generally the largest col-

lective space within the community and therefore is expected to be able to contain collective community events. In terms of design, it should be able to host the summer fair and livestock exhibition, while at the same time be hospitable enough to serve an intimate function such as memorial luncheon.

The community arena must also be flexible in a second sense. While any construction can be made to meet its criteria at the time of construction, the community arena must be conducive to accommodating functions that may arise in the future. Older community arenas grew appendage constructions as the community grew and its needs changed. This was possible because the means of construction was such that renovation, addition, and alteration could be done with simple materials and construction systems as the town saw need. New arenas should answer to the same basic requirement of being able to be renovated easily, but should also be designed and built in such a way as to expect change.

As one of the largest buildings within a community, the arena is naturally a landmark and icon of that community's presence. This is becoming increasingly relevant as the grain elevators are disappearing leaving many towns with indistinct and unannounced skylines. The arena can be seen to appropriate some of the role of serving as a marker for the town to outside. Equally important, though, is the internal identity that the arena carries as the hub of recreational and social interaction.

The final requirement for any successful small town arena is that it must address the needs of the community in an economically viable manner. Since, in the small town, there are limited resources for large scale undertaking and capital projects, the way in which the arena is design and built must address this requirement for economy. In the precedent examples these economics were obtained through a variety of means. The inhabitants of the town would pool resources, partake in the planning and construction, provide the programming and participate in the upkeep

of the arena. Likewise, the methods of construction were often tailored to the resources and skills that were common and available in the general area of the town. The combination of these factors of economics often meant the difference between the town being able to construction a community arena and the project being unattainable.

Precedent Endnotes:

1 This record seems only to exist as oral tradition with no support written or photographic material. The estimate of the date of destruction of the first arena is based on the date of construction of the second (current) arena that is painted in its exterior. The record of columns in the middle of the ice surface is from an interview with Darren Carter (current care-taker) on September 26, 2003 in Alexander.

2 Forrest Special Projects Group and The Millennium Bureau of Canada / Manitoba Heritage Foundation. Family Trees and Rural Roots: A History of Forrest and District. Brandon, MB: Leech Printing Limited. 2001. and also see The Elton Historical Committee. Homesteaders and Homemakers: A History of the Elton Municipality in its First Century. Ed. Garth Stouffer. Steinbach, MB: Derksen Printers, 1973.

3 Records and examples of typical barn spans can be found in Barns of Western Canada: an illustrated century. (Bob Hainstock) Victoria [B.C.]: Braemar Books, 1985.

4 Hainstock: Evident from the diversity and intricacy of Western Canadian barn construc-

tion.

5 On December 17, 1939 the British Commonwealth Air Training Plan agreement (BCTAP) was signed. This effectively started the massive construction of training bases throughout Western Canada. By the close of 1943 there were a total of 97 schools and 187 ancillary units on 231 sites throughout Canada. (<http://www.ualberta.ca/EDMONTON/CONTRIB/airmuseum/aam-bcaip.html>)

6 Of the 1120 people living in Rivers (as of 2001), 410 were born in the period between 1947 and 1976. The number of people born within the following thirty years (1977 to 2007) there will be approximately 415 (divided over a currently larger population base) See Statistical Information for Rivers, Manitoba in the appendix C. (Statcan Population Statistics for Rivers, Manitoba)

7 Gruneau, Richard S., Hockey Night in Canada: Sport, Identities and Cultural Politics. Toronto: Garamond., 1992. p. 205.

8 Of the arenas that I visited in the end of September, Souris, Dauphin, Shilo, both Brandon arenas, Neepawa and Russel already had ice in for the season. Rivers was one week away from having ice. In comparison, the natural ice arenas could rarely expect to have ice prior to the beginning of December and expect to lose it sometime in March. A 180 day season is entirely common on artificial ice, while natural ice surface rarely lasts more than 100 days.

9 Information on the Foxwarren Arena construction derived from an interview with George Simms in Foxwarren Arena on September 23, 2003. (See Appendix J)

10 Companies such as Behlen Industries and Crane Steel Structures of Brandon offer standardized Community Arena Packages.

11 The Recreation Director of the City of Dauphin informed me that the town was considering giving away their existing curling arena (a converted WWII era hanger) to anyone who was willing to tear it down.

12 Mahar-Keplinger, Lisa. Grain Elevators. New York: Princeton Architectural Press. 1993. p. 44. Also apparent in turn of the century survey maps of Western Manitoba.

13 Mahar-Keplinger, p. 44.

14 Mahar-Keplinger, p. 46.

15 Mahar-Keplinger, p. 46.

16 Interview at Souris arena, September 19, 2004.

17 The Oak River Arena, built in 1984, is the only exception in this group being neither insulated or having an artificial hockey ice surface. However the curling portion of this arena does have these features.

Project

Site: Rivers, Manitoba

The Town of Rivers in the Rural Municipality of Elton is located 35 km northwest of Brandon, Manitoba. This community, because of its proximity to the City of Brandon, has a significant percentage of inhabitants commuting to the larger centre for work. However, Rivers is also surrounded by prime agricultural land dictating that the town also serves as the supply and service hub for the outlying farming community. (*figures 4-1, 4-2, 4-3, 4-4*)

Between the town population of about 1100¹ persons and the outlying agricultural community of several hundred persons, there is significant interest in constructing a new community arena to replace existing hockey and curling rinks. A committee has been formed to guide the development of a schematic design for a new arena including a community hall, hockey arena and four sheets of curling ice.² Some general engineering reports have also been commissioned to examine the possibility of renovating the existing hockey arena to meet the changing requirements of the community. These reports have examined low cost band-aid solutions as opposed to looking at full redesign.³ It is the committee's feeling, however, that the best course of action lies in proposing an entirely new facility.⁴

The relative stability of the community of Rivers in terms of demographic growth and the preservation of the majority of core small town services (even in light of

Figure 4-1 Location map - Provincial and Regional scale

Figure 4-2 Topographical map

Figure 4-3 Rivers aerial photo (c. 1965)

Figure 4-4 Aerial photo of immediate site - the examined site area is highlighted in red, while the proposed building outline is in white.

the proximity to Brandon) is indicative of a community that will continue to survive. At a time of rapid expansion of commercial farms in the area, the relative stasis of the town population makes it inappropriate to place it into the (already comprehensive) list of towns which will cease to exist within the next generation.⁵ Rather, a town that has survived and sustained itself thus far can serve as a test project for a community arena aimed at re-defining an indigenous architecture appropriate to that community's contextual and social identity.

In order for the continued survival of the town of Rivers, there is a necessity to focus energy toward building a town environment that can offer a desirable alternative to migrating to the city. It seems, based on the demographic data compiled by Statistics Canada, that one of the biggest advantages that the town has capitalized on is the lower cost of housing as compared to nearby urban centres.⁶ This is significant, as the disparity in the cost of housing is more than enough to offset the cost incurred in daily commuting to larger centres in the pursuit of work. The offering of discount lots⁷ has further positioned the town as a desirable place to live at least in terms of the cost of obtaining a home.

While these incentives provide an initial attraction to a small town, in too many cases opportunities of offering a qualitative difference are missed in favour of promoting quantitative aspects. By focusing on the town's strengths in terms of services and community instead of focusing on cost advantages, the attraction of the town will appeal to a broader spectrum rather than only appealing to those who are looking to live cheaply.

Ironically, it is the small town lifestyle that has become attractive to many urban dwellers in the last 20 years, and as a result many new urban developments are

attempting to recreate what already exists in small centres. Features like the closeness to services, and recreation facilities, tighter neighborhood atmospheres and the perceived safety of a small community are all desirable within the city and can be found at some level in small towns (those that have managed to retain their banks, grocers, post offices, and coffee shops.)⁸

The town's participation in community focused projects like a community arena can help to re-establish the attraction of the small town as a place that offers qualitative benefits to dwelling rather than only the oft desired and marketed quantitative aspects of lower living cost. The benefits of improving the qualitative aspects of small town life through a focus on leisure and community facilities also plays the role of providing a new centre for community involvement and activities. Providing these services prevents that town from becoming a suburban community to the larger urban centre.

While the small town can never compete on the level of offering the full range of services available in larger cities, it does make sense to focus the community's energy in offering the facilities to cater to some specific and historically relevant aspect of community life. For the small Western Canadian town, the community arena still a very relevant typology in the community's social well-being.

While a committee has undertaken the responsibility of initiating a feasibility study examining the construction of a new community arena, the approach has focused on addressing purely functional issues. The group has largely ignored the social, geographic and tectonic cultures that are inherently embodied in the community.

My effort, therefore, is to imbue the design and construction of the community

arena with the factors that Aldo Rossi has aptly defined as *locus*.⁹ Redefining a relationship between building and place is a key goal of the project. This indigenous architecture must be a part of, and contribute to the community on the scale of the social, geographic and tectonic landscape.

Program

While the largest specific function in the project is the hockey arena, it is important to note that the facility will also play a diverse range of roles within the community. It must serve as more than a building for sports. As indicated in introduction, the town's community arena also provide a space for community interaction, social gathering, political forums, and a multiplicity of other functions dependent on specific community needs.¹⁰

By looking at the many community arenas included in the study, it is clear that programmatic requirements can not be looked at as a static set of functions. Rather, they must be examined in such a way as to recognize the probability and likelihood of a series of changes and alterations occurring over the life-span of the building. In the case of my proposed site, Rivers, Manitoba, the program includes the following elements which are described in terms of their primary functions as well as secondary uses as determined by the needs of the community. These requirements are closely aligned in terms of program with the scheme being proposed by the Rivers rink committee.

Primary Program Selection

The largest enclosed space within the facility is the hockey arena. While newest examples of arena facilities have dictated climate controlled environments with heated spectator seating, the incurred cost of such a proposal could lead to undue

community debt load. It is more important in a community the size of Rivers to redirect this cost to other parts of the facility that have a wider range of use to the community.

Under these considerations, the hockey arena is planned as an uninsulated space with an artificial ice surface. Allowances in the design should accommodate the future addition of insulation and climate control as changing needs may demand. Limited 'cold' seating area is provided within the space of the hockey arena. This seating space will be augmented by the addition of heated seating within a central spine.

The new community arena must serve other events that the existing arena has accommodated. Since the current arena is used as a large gymnasium for sports like badminton, volleyball, and tennis, these functions have also been retained in the new design. Additionally it would be unwise to overlook the likelihood of hosting concerts and a regional fair within the space. The ice area, of standard international hockey dimensions ¹¹, can also be used for public skating events or converted to extra curling sheets as needed.

In order that the new facility has the ability to host small scale hockey tournaments, the provision of at least four change rooms for hockey is essential. Also necessary are additional changerooms for use by referees. These change-rooms are separated from those of the hockey players and would also serve for curling and other events where additional changing space is required. Unlike the existing facilities at Rivers, these change-rooms will have proper showers and plumbing in each space. Each space is equipped to be non-gender specific.

As curling remains one of the most popular winter sports in the rural areas, the second largest portion of the program is dedicated to the provision of four sheets of curling ice.¹² All four sheets feature artificial ice surfaces and climatically moderated environments to ensure consistent ice quality for both competitive and recreational play.

These curling facilities also include viewing space for curling spectators. Although it is likely that both hockey games and curling may be held at the same time, the heated portion of the spectator space is shared between both uses to ensure the most effective use of space. The division of the curling ice into two sets of sheets facilitates separate use of the spaces. One of the rinks can then be an ice surface while the other serves as a hall or barn depending on event demands.

The proximity of Rivers to the City of Brandon and ease of traveling between them means that currently many residents leave the town for leisure. Even though many residents are willing to travel half of an hour to attend movies, dine, or take in concerts, the population base of Rivers suggests that a small entertainment venue within the community arena would be viable. The new community arena design proposes a bowling alley. In addition to requiring less floor space per participant, compared to hockey or curling, the availability of used equipment¹³ suggests that constructing a bowling alley would be a relatively low cost venture for the entertainment value it would add. Given the spatial requirements for a pair of lanes, bowling is an excellent match to make use of some space in the upper portion of the building's spine.¹⁴

As an added benefit, the introduction of a small bowling alley would be helpful in ensuring the facility remains in use outside of the times of hockey and curling

events. This year round use is important in terms of providing a more consistent revenue and also in ensuring the building is occupied more often and less likely to become a target of vandalism by bored youth.¹⁵

One of the most important spaces in the facility is the community hall. In a town the size of Rivers, this is the largest collectively owned and usable space in the region. Although formally very simple, the programmatic functions of the space are nearly limitless. Though the community hall is designed with public functions in mind, it is likely that much of its use will come from private events such as socials and weddings. It is under this awareness that the hall is designed to be both simple and versatile, but also architecturally appealing enough for important celebrations.

While it is not necessary for the hall to accommodate the entire town population, the ability to hold open town meetings in the space is important. For that reason the hall has been designed with maximum seating capacity (in row format) of 200 persons. Any events with larger spatial requirements would have to be redirected to the hockey rink. The adjacency of the accessory programs such as wash-rooms, a kitchen, and a bar are also essential in determining the full extent of the usefulness of the community hall space.

Site Specifics

The site selected for the new community arena project is situated on the southern edge of the town. It is bordered on one side, the south, by the railway and partially abandoned rail yards. The north boundary of the site is defined by Provincial Highway 25 which travels roughly east-west parallel to the railway tracks. On the eastern and western sides of the site there are older railway related structures.

On the west are a pair of wood grain elevators likely built shortly after the end of World War II. They are currently privately owned by a local seed company. On the east side of site immediately adjacent to the new construction is the former River's train station. This building is current not in use and has been boarded over to prevent further degradation. (*figure 4-5*)

While the rail yard once served as an important switching yard for the local gravel quarrying industry, most of the tracks have been torn up over the last ten years. Aerial photographs from the 1970s show a more extensive yard with a roundhouse and turning spurs. Currently there is one through line and three long siding tracks in addition to a couple short sidings for the grain elevators. Nonetheless, the rail line is still used regularly and the siding tracks are occupied daily as a stop over for switching train engineering crews. (*figure 4-6*)

Beyond this rail yard that defines the edge of the town, the landscape gently roles down into the Little Saskatchewan valley. While the valley is only 1/4 mile (.35 km) from the tracks, its presence is not obvious from most points in the town, as a small rise on the far side of the railways tracks obscures most of this geographic transition. (*figure 4-7*)

The old community arena, Riverdale Gardens, is adjacent to the new arena's site but on the north side of Highway 25. (*figure 4-8, 4-9*) While this site was considered for the development of the new arena, it does not offer enough space for the inclusion of both hockey and curling facilities. Instead the site adjacent to the rail yards was deemed equally as appropriate for development because of its proximity to the core of the town. Alternative sites on the east and west edges of the town are felt to be less appropriate as they were too far from centre of the community.

Figure 4-5 Site and relevant structures - The proximity of the site to many of the town's other institutions and businesses.

Figure 4-6 Railyards - The railyards form an boundary to southern portion of the town.

Figure 4-7 Looking south - A slight rise beyond the railway obscures all indication of valley beyond.

Figure 4-8 Riverdale Community Gardens west facade

Figure 4-9 Riverdale Community Gardens interior

Observation of arena placement in other towns indicate the precedence and relevance of keeping the arena a central feature in a town. The proposed site fulfills this requirement both in terms of being physically close to the core of the town, and also in providing a high visual profile for the arena. Placing the arena in this location serves to provide a landmark building at the primary gateway to the town. *(figure 4-10, 4-11)*

Building - Site Relationships

The formal arrangement of the arena departs both from examples prior to 1970 as well as those buildings constructed more recently. Unlike most older arenas, the design intention is to shift the massing away from presenting the hockey rink as the primary space. Instead of delineating a building massing in which the dominate form is the massive 'shed' and all other programs are presented as additions to this, the design attempts to present all component parts more equally. Different from the newest arenas, usually contained in a single large box, the new design still distinguishes the various programs of the community arena programmatically. Therefore, it is still tectonically understandable as facility that serves a diverse array of functions.

The principle architectural form of the new arena is a large central spine that runs the length of the building parallel to the railway. This spine is a core to which all other programs can be 'plugged in' as needed. *(figure 4-12)* For this reason the western end can be extended at future need to accommodate an increase in programmatic requirements. The shift from the hockey rink being the dominate form to the spine also reflect the changing mentalities that drive community arena construction. With this shift, the community arena is no longer primarily about playing hockey, but rather is about community interaction in and around a number of

Figure 4-10 The proposed arena - Helps to form a gate way to the town (viewed from the east).

Figure 4-11 Proximity to the commercial core

recreational and social functions. This shift in focus will also increase the appeal of the facility to the broad range of interest represented in the community.

Arena proposals in other communities where the hockey program was emphasized over ancillary programs inadvertently pitted the hockey playing and supporting factions of the community against those who felt that capital expenditure should be directed to facilities that could be better used by all community members. In the design for Rivers, shifting the focus of attention from hockey arena with a community hall to community arena with space for hockey in addition to other programs is useful to increase the range of community support.

Although the spine's purpose is to form a link between programs and their forms, it also serves as a spectator space for both curling and hockey. Unlike the hockey rink enclosure, this space is climactically controlled allowing for the enjoyment of games without the necessity to sit in the relatively cool rink environment.

In observance of the theory of stratification proposed in the first chapter, one of the most important layers in the context of the site is the railway. As an contextual attribute, it serves as the defining characteristic in the form and orientation of the town. The twenty degree clockwise shift of the town plan from the Dominion Land Survey is a direct result of the intersection of the railway and town location. Given that the entire town plan is oriented in observation to this adjustment, it is easy to overlook its variation from the Dominion Land Survey's grid. While this oversight exists within the town proper, at the periphery, the abrupt correction orients the town with the greater grid.(figure 4-13)

The arena design calls attention to the intersection of these two grids - the town

Figure 4-12, Schematic plan of the Spine - All programs plug into a shared spine.

Figure 4-13 Orientation of Rivers Compared to Survey North - The town follows the railway orientation, shifting 20 degrees off of the Dominion Land Survey

Figure 4-14 Circulation node in the spine - the Node in the spine breaks the building and town grid to reflect the orientation of the surrounding landscape.

plan and the Dominion Land Survey - through realignment of the edge of the vertical circulation node between the hockey rink and the curling sheets. This shift serves to recognize the variation and relationship between the principle alignments of the building, the town, the railway and the greater landscape. *(figure 4-14)*

The growing void at the edge of Rivers left by the gradual disappearance of rail yards and associated buildings creates an opportunity to establish a new southern boundary to the town. The new community arena is seen to fill this void, reinforcing the fading existing boundary. While the rail yards and trains continue to exist - at least currently - the new arena design observes the linearity and orientation of the rail lines. It does not seek to obscure or replace the trains, but rather draws attention to their form and presence (or absence). As the rail yards continue to disintegrate, the arena will both continue to allude to their memory, and also serve to redefine the edge condition of the town. *(figures 4-15, 4-16)*

Another set of layers in the strata that influence the community arena are the local tectonic forms. These range for the grain elevators on the west side of the site to the railway station on the east. The disparity in scale and form between these two typologies and their flanking positions at either end of the site necessitate that the new arena moderate between two extremes. While the grain elevators literally tower far above any other building in the town, the railway station observes the low sweeping datum of the landscape.

The station's form places a strong emphasis on horizontals, mimicking the horizon and the typically low forms that make up the majority of the built environment throughout the town. This differs greatly from the elevators which forcefully break

Figure 4-15 (above) and 4-16 (below) Before and after the construction of the new community arena.

the strong horizontal datum that is established by relatively flat landscape. In doing so they mark an interruption and point of significance within the open landscape of the prairie.

The community arena desires to construct an intersection between these two architectural orders without directly appropriating stylistic elements from either. Instead, the influence of both the horizontal datum and the tall narrow section of the elevators are referenced respectively within the form of the arena. Like the train station, the points of threshold in the arena are treated at a human scale. While the complete arena will likely remain the largest building in the town, the primary entrance reveals a compressed and more hospitable space prior to entering into the larger volumes of the main arena. (*figure 4-17*)

At the other end of the issue of scale are the grain elevators which literally tower above the rest of the town. While not reaching the vertical scale of the elevators, the arena's central spine supplements the vertical delineation of the town that was once established by a row of grain elevators. (*figure 4-18*)

Labour Resources and Construction

So much of the community's opportunity in building a new arena is based on maintaining a low cost and gaining maximum value. Labour donation has played an important role in the creation of many other arenas in the region and would be an appropriate practice to continue. It is, consequently, important to consider the local availability of labour and skills that could benefit the arena construction.

Unlike most of the newer community arenas within the surveyed region, constructed as package buildings by outside contractors, the design for the arena in Rivers

Figure 4-17 Relationship between human scale and the arena

Figure 4-18 Relationship between the grain elevator and the arena

attempts to minimize the amount of work contracted to non-local companies. Instead, it is desirable that construction materials and methods used observe the typical local means of building. A immediate implication of this decisions is the elimination of steel frame systems, such as those used in Souris and Hamiota. *(figures 3-8 and 3-19)* Implemented in their place is a wood frame construction system based on the typical shed and barn building methods and practices. The use of this wood construction system means that more people in the community are able to participate in the construction. While a community's contribution to construction in arenas like Souris' is mostly limited to finishing work, the design for Rivers utilises the amassed experience of people in community. Experience gained in building sheds, homes and farm buildings can be directly applied to the construction of the arena.

Construction of the central spine is derived from typical post and beam systems that are common in rural buildings from barns and sheds to the War era aircraft hangers. This system allows for relatively quick erection of a building shell at the large scale and is both familiar and readily executed. In the case of the new arena, this system has been designed to allow for repeating frames to be assembled lying down in a similar fashion to a tradition barn raising. Tilt-up frame construction is of interest not only because of historic relevance to the region (it is the standard system throughout the continent) but rather because it allows for the erection of large scale project without requiring cranes or other large construction equipment. For this reason, tilt-up frame construction was utilized in the most hockey arenas built in the first 70 years of the twentieth century. *(figure 4-19)*

Like every other community arena, the largest challenge of construction is spanning the 100 feet (30.5 m) required to enclose the ice surface. Unlike the tradi-

Figure 4-19 Basic structural arrangement of the arena

Figure 4-20 Construction with agricultural implements

tional wood frame arenas, the latest facilities have relied on steel framing for the most part. While the efficiency of this system is undeniable, it can not be manufactured on site and generally requires larger equipment for erection than earlier wood frame buildings. Larger component sizes have moved the construction process from the scale of the agricultural tractor loader to that of the construction crane. (*figure 4-20*) In order to make the construction process executable with smaller scale equipment, the large members of the steel portal frame have been abandoned in favor of using a 'kit of parts' approach to the spanning over the larger volumes of the hockey rink and curling sheets. While technically more complex than the simple portal frame or the glue-laminated arch, this approach allows for the construction of a large truss from the smallest possible component size. (*figure 4-21*) The proposed design has allowed for members of only 12 feet (3.65 m) in length to be assembled into the 108' foot (32.9 m) truss. (*figure 4-22*) As a result of their dimensions and low weight (about 150 lbs (68 kg)), these components can be handled on the ground by two workers, and during erection, can be positioned by a tractor and loader. (*figure 4-23*)

The structural roof panels, composed of plywood skins sandwiching foam cores, are also light weight allowing them to be carried across the roof by two workers and placed without the need for heavy lifting. These considerations are important because they provide the possibility that the arena can be assembled (at least in part) by volunteers or semi-skilled labour.

The small component parts of the arena, such as the steel connectors for the roof structure, are designed with agricultural implements in mind. The choice of material and manufacturing techniques are derived from the metal fabrication that is done in countless small shops that specialize in producing custom agriculture

Figure 4-21
Comparison of
structural systems

Trusses allow for a much smaller component size and smaller construction equipment.

Figure 5-22
Truss assembly

Figure 4-23 Roof truss components

Figure 4-24 Agricultural connections - typical plate steel and bolted connections are found on all agricultural equipment.

Figure 4-25 Typical connection for the truss - the bolted parts allow for the same components to be used on parts of the truss.

implements. While these pieces could be mass-produced in some distant factory, it is more relevant that they are made using means that are easily duplicatable locally. This is important as it can be expected that eventually parts building will require expansion or repair. *(figure 4-24) (figure 4-25)* The roof structures are not the only place where such an approach to the component detailing is desirable. The use of easily reproduced parts and connectors ensures that the system of construction can be continued as needed at a future time with minimum effort.

Typical Materials

In order to make the best use of standard and locally available materials, the structural components of the building are constructed of wood. This follows the common trend to continue to construct agricultural buildings such as barns and sheds out of wood. As a raw material it is more readily renewable and available than steel, and also requires less expertise and specialized tools for construction. In a minor departure from the historic examples of post and beam wood construction, monolithic timbers (increasingly expensive due to short supplies) have been used only in the vertical members of the spine. The remainder of the structure, including the roof structures make optimal use of smaller standard dimensional lumber. *(figure 4-25)*

Effort has been made to keep spans short, at 12 feet (3.65 m), to allow for the use of 8" (200 mm) members in most cases. In situations where a larger cross section is required, multiple plies are favoured over larger members. In addition to allowing for the use of low cost common materials, smaller members improve the ability for the building to be constructed without the use of heavy equipment for lifting and positioning parts. This potentially reduces the cost of construction, and makes the construction schedule more flexible to allow for broader community

Figure 4-25 Typical segment of the spine construction - Vertical members are large monoliths while all other parts are constructed of standard dimensional lumber.

Figure 4-26 Concrete inland terminal 10 miles (16 km) east of Rivers

involvement. Conventional steel buildings require that a crane be booked longer periods in advance of the construction. The resulting tight schedule means significantly more risk for a community involvement based project.

The skin the building derives from the favoured low cost means of cladding agricultural buildings. Corrugated steel has a long tradition as a reliable means of protecting buildings from the elements. While it is readily accepted on agricultural buildings and industrial buildings, its uses in a town context have been more limited. However, given the ease of installation, maintenance and replacement, it seems only appropriate to use it on the arena.

For the foundations of the building, the material of choice remains concrete. With the distance from Brandon and the nearest large capacity concrete production plant easily covered in under 40 minutes, it is appropriate that this material be used. Concrete is available at a relatively low cost and is easy to use in comparison to constructing wood or concrete block foundations. Its prevalence in the construction of new 'inland terminals' for grains storage in the area suggests its relevance as an appropriate construction material in rural environs. (*figure 4-26*)

Only the spine section of the building requires a full depth basement to accommodate changerooms and mechanical requirements for the community hall and spine. This means that the remainder of the building is constructed using perimeter footings and slab-on-grade.

Landscaping

The diversity of the of uses create interesting implications on the landscaping and site development for the project. Basic requirements dictate having enough park-

ing for the number of people that potentially would use the facility, however given the proximity to the commercial core of the town, it can be safely assumed that a sizable portion of those attending at a capacity crowd would be able to park on the main commercial street. This, however, does not negate the need for large open surface around the building. As the site around the arena must also serve as the fairground and accommodate any exterior elements to exhibitions it is appropriate to maintain the majority of the space around the arena as gravel surfaced lot. Around the periphery of this area, to protect the site and buildings from the prevailing west and northwest winds a small shelter-belt has been provided. This row of trees does not continue across the entire north side of the site, as this would create a separation between the community arena and the rest of the town. (figure 4-27)

The exterior functions of the program also entail a certain amount of threshold flexibility between the interior of the hockey rink area and the northern wall that faces the rest of the town. This linear edge can be opened up at numerous points to allow both a visual connection and a spatial link between the town and the largest interior space of the arena. This array of openings serves to provide ventilation for the rink space during the summer months and on warmer winter days. Additionally, the opening facade presents the possibility of using the north edge of the arena for events like farmer's markets and anything else demanding the arena assume a 'store-front' presence in the town. (figure 4-28 and figure 4-29)

Climatic Considerations

The dramatic shift in both length of a typical day and also sun position between seasons in Manitoba dictates a certain approach to some elements of the design. Issues such as reducing solar heat gain in the summer can play a role in making

Figure 4-27 Basic site arrangement - The Arena features parking space on the east and west, an opening wall on the north and space for the fair on the west.

Figure 4-28 and 4-29 North edge of the rink opens to the town - This space could be used as for a local farmers market in the summer months and also provides ventilation to the arena.

the facility more useful throughout the year. Additionally, the difference between taking advantage of natural light and requiring electric light dependent on the season has an impact on the position of windows, eaves, and other lighting and shading features. Prevailing winds play a role in the orientation of the principle forms of the building in order to make best use of heating capacity during the winter months.

Issues of solar gain can play a role in whether or not an arena is usable throughout the year. While many arenas have been constructed in attempt to gain heat through solar gain in the winter by facing the roofs of the ice surface south (Hamiota is intended to function this way) the low sun angle (15 degrees) and likelihood that snow will remain on the roof means limited effectiveness. As an adverse consequence, the higher summer sun leads to excessive solar gain. As no small town arena is air conditioned, this often means that the arena space is too warm to be of practical use during the summer months. In the proposed project for Rivers, the hockey rink has been positioned on the north side of the complex. While this negates any benefit of winter gain, it also lowers the potential of summer heat gain greatly. The less direct summer sun, in conjunction with the opening north wall will help to prevent an uncomfortable amount of heat from being trapped in the space during the summer months thereby increasing its usability.

While the curling arenas face south., they are both better protected from the summer sun by the color of the roof material and the insulation in the panels. Additionally, the curling arena spaces are less likely to see regular use in the summer months as they lack the direct connection to the town and are of a smaller usable area. The principle portions of the spine are either behind the curling rinks

or treated in a similar reflective corrugated metal as the south facing curling rink roof. This will help to prevent heat build up in this portion of the building during the summer.

The building's east-west orientation reduces the amount of surface facing the prevailing west winds in the winter. Additionally, the hockey rink and the curling rink serve as buffers to reduce the amount of exposure the spine has to these winds. In terms of planning, the primary climactically controlled spaces of the building are placed on the northeast where they are both sheltered from the western winds by the hockey arena and by the spine that contains the stage.

Day-lighting the community arena has some challenging implications. Given that in the winter, the sun sets as early as 5:20 pm and most community functions, socials and other public events are not likely to occur until later, it is more relevant to position windows in such a way that they serve as beacons to the community to mark an event than to position them to allow light into the building. The windows on the north facade of the spine create an illuminated top band to the building at night, showing its presence at the south edge of the town. While these serve to allow some diffused light during the day, the majority of the day-lighting in the spine comes from windows on the south side of the building. These narrow strip windows at eye level allow both for sight out to the Little Saskatchewan River valley and also for controlled amounts of light to enter. During the summer months, the high sun position means that little light is admitted directly, while the lower sun angles of the winter allow maximum light penetration. The windows on the south portion of the administrative offices and community hall are designed to serve a similar purpose, omitting summer sun angles, allow winter light and views to the south.

Collective Participation and Buy-In

One of the biggest hurdles in the process of the bringing a new community arena into being is obtaining a comprehensive support base within the community. While in larger centres, civil projects can often be pushed through a bureaucratic system with a majority support, the smaller social networks of the small town are more demanding. This is due, in part, to the reality that the construction of a community arena is the single largest undertaking for the town. Active participation by the largest possible majority of the residents, therefore, is not simple an asset but rather a core necessity.

The traditional construction of a hockey arena has take this very approach. The only way that such a project was possible for any small community was if the *entire* population of the centre was actively supportive of the endeavor. In most of these case, being actively supportive not only meant being in agreement with the proposal, but equally important, being an active participant in bringing that facility into being. Roles that were assumed by members of the community included, but were not limited to designing, fundraising, construction and maintenance of the complete facility. A typical project would be built by the community precisely to the means and demands of the community.

In the case of the proposed project for Rivers, a hybrid of the traditional means of buy-in combined with some more indirect systems of participation would be most successful. As paying for a community arena through direct taxation raises the most controversy and resistance, the initial freewill participation is extremely important.

Given the proposed system of construction for the arena - a system based on human labour as opposed to heavy equipment - a core necessity is volunteers. Unlike traditional arena construction that placed the majority of the work on site, the structural systems proposed for the Rivers arena are more akin to being divided up among those who have the resources to complete particular tasks. For example, the sizing and assembly of all the wood struts for the hockey rink roof could be handled off site in small garage based shops. The basic tools required for preparation of each component part prior to the final erection allows the tasks to be 'farmed' out to individuals or small teams. Whereas traditional arena construction like the project at Foxwarren required large numbers of workers to be on site at the same time, this system does not require all participants' schedules and availabilities to align. As significantly less of the population is now involved directly in farming and is working regular hours, dividing up work on portions of the arena would allow for a wider range of participation.

As an alternative to donating time, the Rivers project must recognize that some members of the community would feel more comfortable simply donating or loaning money. While obviously outright donation offers the least amount of risk for the centre, it would be wise to consider the monetary values of selling advertising space and investment opportunity in the arena. (*figure 4-30*) With the popularity of youth hockey in western Manitoba, there is a ice space shortage in the larger centres such as Brandon. Since Rivers is only 30 minutes away, many hockey parents and players are willing to commute out of the city to play hockey. Ice rentals in Rivers can offer a return on invested funds.

Like Rivers has recognized, fundraisers such as the new home raffle (*figure 4-31*) offer a means of raising money for the new project. The obvious downside is that

Figure 4-30 Indoor advertising - the sale of advertising space can help supplement income.

Figure 4-31 New home raffle

Figure 4-32 Donor walls - features such as this wall in Souris help to recognize those how donate directly to the project.

these initiatives should only target those unlikely to donate directly to the arena. If the raffle tickets are sold to those in the town, a smaller portion of the money that they may be willing to donate (or spend on the raffle) would be directed towards the construction of the arena. However, the raffle is a successful means of receiving financial benefit from those either outside immediate area or who have no or little interest in the viability of the community arena.

A more effective means of raising funds directly has been the sale of plaques and name spaces in other arenas. In Glendale Community Arena in Souris, the main hall includes a tiled wall of supporters who donated or gave money in memory of someone. *(figure 4-32)* Similar schemes see the sale of seats or other components of the arena. Unlike advertising, this should be regarded as a type of recognition to remain in prominence for the entire life of the building as a legacy from those who built it. This type of system provides a both a recognition to the generous and also provides an important link between the building and the community.

While the largest undertaking is undoubtedly the initial construction of the arena, the future upkeep and maintenance of the building are also significant factors for the community. In the Rivers example, materials used on the building are specified according to minimal maintenance requirements. Surfaces such as corrugated steel siding requires little to no maintenance throughout its expected life-span of up to and beyond fifty years.

Community participation is also essential in making the project work in the long run. While a maintenance person should be hired for look after the core functions of the facility (such as the ice plant, mechanical systems, lighting etc) much of the more seasonal upkeep should be covered by community work bees. The use of

stone aggregate landscaping around the proposed arena reduces the amount of landscaping that requires constant care such as lawn mowing and pruning. However, seasonal maintenance presents the opportunity to organize work days and community dinners, where an afternoon of contribution to regular cleaning and upkeep is rounded off with a community event. Given that such work days should only be required at the beginning of each principle season of use, the demand on the community would be acceptable. Special functions such as curling and hockey should also have their own work days to provide function specific maintenance and improvements.

Meeting the Precedents

In the *Precedents in Community Arena Design* (p. 73-74) a group of four core precedents was presented. These, to paraphrase, stated that any new arena design must be flexible, functional, iconic and economical. The proposed project in Rivers meets all of these.

Flexibility is obtained through both the spatial arrangement of the project and the possibility of linking and opening space depending on use. Additionally, the means of construction adapts a system of infinitely repeated components and plug-in modules allowing for expansion and addition within the original methods of construction. The spine of the building may be lengthened and further functions plugged into it as demand requires.

Like flexibility the functional-ness of the building is essential in meeting the communities needs. The range in scale of spaces from the small boardroom in the community-hall portion of the building to the multipurpose possibilities for the main arena space allow for a wide range of the uses and activities to take place within

the same facility. Other approaches such as separating the four curling sheets into two groups allow for the use of one as curling space while the other might be used for exhibition. Critical to the design is the ability of each space to both meet its basic functions as well as be flexible enough to accommodate a wide range of variation.

The third characteristic, that the building be iconic, is met in a similar fashion to Aldo Rossi's ideas regarding collective memory (*see Theory p. 22-26*) and Ignasi de Solà-Morales ideas of monumentality. (*p. 31, 32*) The iconic characteristics of the community arena are those that are able to allude to the surrounding context. While the Rivers arena does not attempt to directly mimic any of its precedent surroundings it refers to these and its predecessors through triggering memories that belong to the inhabitants of the place. The arena is both a focus point for the community in terms of being a shared space, and also provides constant reference back its surroundings such as the grain elevators, railways, and town plan.

Finally, the requirements of economics are met through a sensitivity to the design and construction that allows for as much of the arena as possible to be built directly by the community. The use of standard and readily available materials adds to the economics. The design, based on the spine with program spaces attached to either side, allows for the arena to be built in stages and expanded as the needs of the community change.

Project and Implementation Endnotes:

- 1 See Appendix B and C for Demographic Information on Rivers and Manitoba
- 2 See Appendix D for River Rink Community Proposal Sketch
- 3 See Appendix E for Riverdale Gardens Engineering Report
- 4 Dianne Kowalchuk interview in Rivers Manitoba. (September, 2003)
- 5 0.2 percent population growth between 1996 and 2001. This compares to the 0.5 percent population growth in the entire province within the same time frame and 0.25 percent population growth in Rural Manitoba (excluding Winnipeg and Brandon) - Statistics Canada Online. Based on census data collected in 1996 and 2001.
- 6 The average house cost (per month) in Rivers is \$387 (rented), \$481 (owned) as compared to Brandon: \$543 (rented), \$673 (owned) and Manitoba averages: \$523 (rental cost), \$685 (owned cost). (Statistics Canada, 2001)
- 7 Rosburn currently offers lots for \$1.00. The following notice can be found on www.cheaphomes.net: "Any town owned lot can be purchased for \$1.00. Any new family or individual moving into Rosburn that is purchasing a home or constructing a home will receive a property grant equivalent to the property tax bill to a maximum of \$1500.00 per year for the first two years. A water bill credit of \$400.00 for two years. plus many more incentives through our recreation facilities in the Town of Rosburn." (<http://www.cheaphomes.net/rossburnlots.html>) (May, 2004)
- 8 A reality of the changing demographics in the Western Canada has led to the closure of core services, schools, post offices, and churches in many small communities. This point is addressed in Graeme Smith, 'Sometimes villages plain disappear', The Globe and Mail. May 15, 2004. p. A8.
- 9 Rossi, Aldo. The Architecture of the City. p. 103. Rossi defines locus as: "The locus is a relationship between a certain location and the buildings that are in it. It is at once singular and universal."
- 10 See Appendix F for Program Specifics.
- 11 International Ice Hockey dimensions are 85 feet by 200 feet (25.9 m by 61.0 m) See Appendix G for standard ice hockey surface measurements. Total ice area is approximately 17000 square feet (1579 m²)
- 12 See Appendix H for dimensions and layouts for Curling

13 Both of Brandon's older facilities (Recreation Lanes and (the old) ThunderBird Bowl have been replaced with a newer and larger bowling allies recently suggesting that used equipment may be available. Online listings value complete refurbished bowling lanes at about \$10 000 (plus shipping costs).

15 See Appendix I for information on the dimension of bowling alleys.

16 The visit to Rapid City's arena revealed a great deal of vandalism within the arena facility. A town maintenance staff person, Morley Cornig, indicated that some youth in the town had been routinely breaking into the building over the summer while it was generally unoccupied.

Conclusion

In conclusion it is appropriate to return to the initial questions posed by this thesis. Is there still a possibility, after the impact of universalizing modernism and fragmenting post-modernity, to find an architecture that can be considered as 'belonging' to a particular place? Is an indigenous architecture still a plausible hypothesis in the face of a radically changing social and economic landscape? Specifically the thesis has questioned if the community arena, traditionally a building innately attached to community, can be re-envisioned as a product of such an indigenous architectural process. In light of what evidence has been presented in the aforementioned argument, the answer to both questions, is that it is possible.

After the impact of universalization that occurred in the wake of the global technological revolution, there is still a possibility to construct an architecture that has a specific link and meaning to a particular place. This architecture, necessarily, must be separate from both of the primary twentieth century directions. While International Modernism effectively collapsed any notion of specificity to locale, the equally destructive narrow-mindedness of most of Post-Modernism's superficiality entrenched place myths and nostalgicisms that were equally as destructive to a sincere place identity. Thus a new indigenous architecture must both address that which is specifically a product of the universal while at the same time be able to identify what is unique about a particular context.

Initially this goal places indigenous architecture close to the theoretic stance that Kenneth Frampton took in arguing for a Critical Regionalism. However, it is important to note that Critical Regionalism advocated a mediation between regionalist - historicist positions and the universal. The separation, and consequent, opposition of these two frames made the architecture a type of moderator in search of a middle ground. Rather, as this thesis proposes, the two 'extremes' are inseparable in that they are inherently present in any contextual situation. To argue that one or the other is more truthful or appropriate to the meaning of a place is in both ways reductive of all the layers of that make up the contextual situation.

This thesis has instead drawn upon an idea of archeology in terms of deriving contextual meaning as the foundation for an indigenous architecture. The idea that every site is composed of a series of strata allows an escape from the search for a specific unique characteristic to derive an architecture from - a situation that often proved problematic in regionalist architecture. Rather, the idea of strata accepts the notion that there might not be any one characteristic that is specifically unique and instead examines the junction between various different characteristic layers. These layers are not specific to any particular place and are often shared over a wide range of locales. It is only at their intersections and the way in which they overlap that there can be any specific sense of a place. Thus, a universal influence can carry an equal weight in the formation of place as a more regional trend.

Strata, unlike the mostly physical characteristics upon which regionalism and critical regionalism were based, can be made up of non-physical aspects. The biggest of these is collective memory. Like Aldo Rossi's idea of 'locus', an indigenous architecture based on strata takes into account issue of memory and access-

es recollection to allude to contextual characteristics as opposed to directly appropriating and mimicking them.

In the hypothetical project for an new community arena in Rivers, Manitoba, an indigenous architecture based upon the aforementioned theory of strata is demonstrated. The design corresponds to layers of universal influence, precedent arena construction, technology, the ways of making, and social - demographic issues of the locale. In the discussion of precedent arenas and the location of small towns, it is apparent that these examples do not develop as specific to a place, but rather as extensions or variations of ideas and general ways of the making. This supports the continued interest and positing of a theory of indigenous based on a intersection of situations rather than one of unique specificity.

On the larger scale, the examination of the town plan and position in the landscape affirm the relevance of the universal (illustrated by the railway and Dominion Land Survey) in the formation of a idea of place. In terms of precedents, the use of community involvement in the construction of many of the previous examples also provides a stratum that cannot be ignored in any new proposal.

The proposed arena has been designed in accordance with and through observation of the local vernacular, way of making, and available technologies and materials. These factors provide additional strata that are not as universal as some of the aspects of the town planning, but are neither solely specific to Rivers. Obviously, given the agricultural region in which the project is situated, it is also appropriate to incorporate aspects of the technology and materials inherent to the practices of agriculture in the design for the arena. Following the tradition of rural arena building, the design undertakes the employment of construction techniques

represented by local skills and labour. This is necessary not insomuch as achieving an appearance of vernacular (in the aesthetic sense) but rather because if it is to be expected that the participants in the building of the arena are from the community, the means of construction and the details should be derived from the methods understood and common to the area. For this reason, details such as the connective nodes in the truss over the main hockey rink have been designed with a similarity to the types of connections common to agricultural implements. Such an approach entails the possibility that the parts can be fabricated by a manufacturer within the region, installed with common tools, and replicated and repaired as needed in the future by the widest range of participants.

The program for the arena is also an illustration of another set of strata that affect the Rivers site. The shift in demographics over the years, from initially being agriculturally based to serving, at least in part, a commuter population employed in the nearby City of Brandon has accompanying implications in the programmatic requirements of the arena. While traditional arenas served first and foremost as a place for hockey and secondly as a community hall, new arenas in evolving towns such as Rivers present a need for more dynamic programs. The multiplicity of roles that the arena plays reflects the specific needs. Additionally, a new indigenous architecture represented in the community arena recognizes the lack of a static nature of program. The Rivers arena, therefore, has been designed under the expectation of both minor and significant shift in programmatic requirement as the community's needs evolve. This means the arena is designed in such a way as to provide a flexible set of spatial conditions, with the possibility of adapting various spaces to widely diverse activities. For example the prospect that the hockey rink will also serve as a concert venue, a show space for livestock and for trade-shows, has been addressed by the inclusion of a stage, the ability

access the space with large equipment, and provisions to open segments of the north facade to the community.

Like concern with detailing the building appropriately, the expectation of change means that the methods of construction address the likelihood the community arena will be renovated throughout its life-span. The choice of materials and means of construction, based on their commonness to the area, provide the opportunity for the community to add to the arena as needed with the use of the skills available in the town. Unlike the pre-engineered solutions so commonly used in many towns, the proposed design presents the possibility to return the control of construction and renovation to the community.

In these aspects, the Rivers arena project proves that an indigenous architecture is not only still possible, but also a desirable enterprise in this context. While previous indigenous proposals based on historicist or regionalist attitudes have solidified place myths in architecture, the framing of an indigenous architecture within the intersection of overlapping strata puts forth new possibility for affirming the idea of place within architecture. It does not fall to the trap of narrowing the definition of place through entrenching stereotype or attempting to resurrect past architecture, but rather builds on the complexities of that place.

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Figure 5-1 North elevation

Figure 5-2 South elevation

Figure 5-5 Site plan and general building arrangement

Figure 5-6 Typical north hockey arena wall module shown in open position for ventilation or use in a farmers market

Figure 5-7 and 5-8 Typical hockey arena truss details. Upper left shows lower connections. Bottom right shows upper brackets

Figure 5-9 Axonometric view of structural framing.

Figure 5-10 Night view of the community arena from the East on Highway 25.

Figure 5-11 Interior perspective of the hockey arena looking east toward the stage and community hall portion of the building

Figure 5-12 Community Arena from the northeast and above.

Figure 5-13 Inside the community hall looking toward the kitchen area and the stage

Figure 5-14 Interior of the east curling rink (looking east)

Appendix A - List and map of sites visited.

Research trip: Sept 16, 2003 through Sept 30, 2003
 Second Site Visit: March 24, 2004 to Rivers, Manitoba

Visited sites:

Alexander	Douglas	McCreary	Rivers
Binscarth	Erikson	Minnedosa	Russell
Birtle	Forrest	Minto	Ste. Rose du Lac
Boissevain	Foxwarren	Ninga	Shilo
Brandon (Keystone and Sportsplex)	Hamiota	Neepawa	Shoal Lake
Carrol (curling only)	Kernay	Oak River	Souris
Dauphin	Margaret	Roblin	Strathclair

Appendix B - Community Profiles: Town of Rivers, Manitoba

Manitoba Community Profiles (<http://www.communityprofiles.mb.ca/cgi-bin/csd/index.cgi?id=4607077>) May, 2004.

Town of Rivers Community Profile:

Welcome

Geography

The Town of Rivers is located along Provincial Trunk Highway 25, in the Westman Region of the province. Rivers is approximately 25 minutes north of Brandon, Manitoba's second largest city.

Rivers is nestled on the edge of the Little Saskatchewan Valley. The valley is known for its scenic natural beauty. The valley's landscape is gently rolling and the soil produces a wide variety of agricultural crops, suitable for many different types of farming.

Rivers, with a population of just over 1100 people, sits almost exactly half way between the cities of Toronto and Vancouver.

History

Rivers was first founded in 1908 by the Grand Trunk Pacific Railroad. The community was named for the then president of the railroad, Sir Charles Rivers-Wilson. Rivers was first incorporated as a village in 1911, and then incorporated as a town in 1913.

During the Second World War, many soldiers from the British Commonwealth were stationed at the Rivers Air Base a few kilometres southwest of the town. Following the war, the base was used as a Canadian Joint Air Training Centre and remained active well into the 1970's.

Economic Base

Agriculture accounts for much of the economic base for the Town of Rivers. Agricultural related businesses in the town and area include seed cleaning plants, grain drying operations, grain elevators, machinery and equipment sales and repair, and fertilizer and chemical dealers. Crops grown in the area include barley, canola, flax, oats, wheat, and peas. A small number of producers have diversified into specialty crop farming. A number of livestock operations also operate in the surrounding area and grow both hogs and cattle.

Rivers is also home to the Riverdale Health Centre. This modern facility provides quality care and services to residents of Rivers and the neighbouring areas. The health centre also employs many people from the community. Rivers' business district houses many small and large businesses that include a grocery store, an auto dealership, a drug store, a lumber yard, a hardware store, and several restaurants and many other assorted retail outlets.

Major Attractions

Rivers has many recreational activities and events for both residents and visitors alike.

During the winter months, the Riverdale Community Gardens Skating Rink and the Rivers Curling Club are busy centres that are home to many organized events. Residents find friendly competition in both competitive and recreational curling leagues, which are housed in the Rivers Curling Club. Skaters can always enjoy a leisurely skate at the skating rink. snowmobile trails in the area are great for those looking for a little fast-paced fun.

During the summer months, the activity picks with many local facilities being constantly busy. Several baseball diamonds, two tennis courts, soccer pitches, a lawn bowling green and a network of hiking trails, are just a sample of the facilities open to those wishing to get out and enjoy the outdoors.

The Riverdale Golf and Country club is open all summer, for anyone wishing to brush up on their swing. For a more relaxing activity and annual sailboat regatta held on Lake Wahtopanah, attracts boaters from all across the province. The lake and Provincial Park also provide an opportunity to enjoy the outdoors year-round with many exciting facilities.

Appendix C- Rivers and Manitoba Demographic Data Overview

Statistics Canada - 2001 Canada Census Data for Rivers, Manitoba.

(<http://www12.statcan.ca/english/profil01/PlaceSearchForm1.cfm>)

Characteristics	Rivers	Manitoba ⁽¹⁾
Population in 2001 ⁽¹⁾	1,119	1,119,583 ±
Population in 1996 ⁽²⁾	1,117	1,113,898 ±
1996 to 2001 population change (%)	0.2	0.5
Total private dwellings	518	477,085
Population density per square kilometre	140.5	2.0
Land area (square km)	7.97	551,937.8

Characteristics	Rivers			Manitoba ⁽¹⁾		
	Total	Male	Female	Total	Male	Female
Industry ⁽⁴²⁾						
Total - Experienced labour force ⁽⁴¹⁾	445	225	225	577,340	307,465	269,875
Agriculture and other resource-based industries	70	50	20	48,700	36,350	12,350
Manufacturing and construction industries	60	45	10	96,860	74,340	22,315
Wholesale and retail trade	55	25	30	84,185	44,790	39,400
Finance and real estate	25	10	15	28,780	11,140	17,635
Health and education	115	20	100	114,265	28,220	86,050
Business services	65	45	15	87,955	55,825	32,135
Other services	55	25	35	116,800	56,800	60,005

Characteristics	Rivers	Manitoba
Selected Household Characteristics		
Total - All private households	480	432,555
Households containing a couple (married or common-law) with children ⁽¹³⁾	125	127,915
Households containing a couple (married or common-law) without children ⁽¹⁴⁾	125	118,405
One-person households	155	121,755
Other household types ⁽¹⁵⁾	70	64,475
Median household income (\$) - All households	28,220	41,661
Median household income (\$) - One-person households	16,290	20,020
Median household income (\$) - Two-or-more-persons households	36,957	52,250
Number of rented dwellings ⁽⁵⁵⁾	120	127,030
Average gross monthly payments for rented dwellings (\$)	387	523
Number of owner-occupied dwellings ⁽⁵⁶⁾	365	276,735
Average monthly payments for owner-occupied dwellings (\$)	481	685
Selected Occupied Private Dwelling Characteristics		
Total number of dwellings ⁽¹⁶⁾	480	432,550
Number of owned dwellings ⁽¹⁷⁾	365	293,295
Number of rented dwellings ⁽¹⁸⁾	120	128,930
Number of dwellings constructed before 1991	450	393,615
Number of dwellings constructed between 1991 and 2001	30	38,940
Average value of dwelling (\$)	57,507	97,670

Appendix D- Rivers Community Arena - Committee Proposal
From Rivers Community Rink Committee, Dianne Kowalchuk (September 22, 2003)

E- Rivers Engineering Report Summary

From Rivers Community Rink Committee, Dianne Kowalchuk (September 22, 2003)

Appendix F- Program Specifics

Sports Facilities

- 1.1 Hockey Arena
- 1.2 Curling Arena (East)
- 1.3 Curling Arena (West)
- 1.4 Bowling Alley

- 6.6 Referee's Changeroom
- 6.7 Referee's Washroom
- 6.8 Men's Washroom
- 6.9 Women's Washroom
- 6.10 Upper Level Washroom

Spectator Areas

- 2.1 Cold Seating for Hockey East
- 2.2 Cold Seating for Hockey West
- 2.3 Warm Seating for Hockey
- 2.4 Spine Concourse Space
- 2.5 Curling Seating East
- 2.6 Curling Seating West
- 2.7 West Viewing Lounge / Meeting room

Mechanical / Electrical / Storage

- 7.1 Spine Mechanical Systems Room
- 7.2 Shop
- 7.3 Lower level Storage
- 7.4 Plant room
- 7.5 Chiller Enclosure
- 7.6 Upper Storage
- 7.7 Community Hall Janitorial Closet

Administration Spaces

- 3.1 Boardroom
- 3.2 Administration and Reception Desk
- 3.3 Administrator's Office
- 3.4 Programmers Office
- 3.5 Director's Office
- 3.6 Administrative Supply Room

Community Hall Spaces

- 4.1 Community Hall
- 4.2 Circulation Lobby
- 4.3 Stage
- 4.4 Stage Wings
- 4.5 Cloak Room

Services Space

- 5.1 Kitchen
- 5.2 Canteen
- 5.3 Curling Kitchenette

Changerooms and Washrooms

- 6.1 Changeroom
- 6.2 Changeroom
- 6.3 Changeroom
- 6.4 Changeroom
- 6.5 Referee's Changeroom

Appendix G- Dimension of International Hockey Arenas

Appendix H- Dimension and Layout for Curling

Rules of Curling for General Play. Heritage Canada and the Canadian Curling Association. 2003. p. 5

Appendix I- Dimensions of Bowling Alleys

World Book Encyclopedia Electronic Edition 2003

Bowling Alley:

"The lane is 62 feet 10 3/16 inches (19.16 meters) long, and 41 to 42 inches (1.04 to 1.07 meters) wide. The approach area, at the bowler's end of the lane, is at least 15 feet (4.6 meters) long. The foul line separates the approach area from the lane. Shallow, hollowed grooves called gutters run along either side of the lane. A gutter is 9 inches (23 centimeters) wide."