Towards a Prairie Architecture*

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Whether we define architecture as "the development of significant form" or, as I prefer, "space structured to serve man and to move him" the fact remains that architecture is necessarily related to man and his functional needs and consequently primarily utilitarian. This has always been the great dilemma: can an object as utilitarian as a building be a work of art? Can there or should there really be expression of other, "higher" values?

Utility is not essential to architecture—a space could be constructed merely for its beauty. A gratuitous space for the pleasure of man. A space for its own sake. The utilitarian requirements of architecture, on the other hand, do not lessen the potential of art but rather contribute to it. The spaces derived from functional requirements must be structured to evoke an emotion in man as he experiences these spaces and moves through them. As is the case in any true work of art, the man who experiences it is not only moved but transformed by it. In architecture, where man is encompassed both by space and time, the transformation is continuous. A man who inhabits a space for thirty years will emerge deeply affected by that space. If it is a work of art he should emerge enriched by it, a more enlightened and sensitive human being. That is the breadth, the potential of architecture. Seldom considered is the most fundamental function of architecture which is the creating of spaces that stimulate the mind to greater thoughts, that move man to greater love, that elevate him to greater aspirations. Our present buildings house the body but not the soul.

The Significance of Space

Space is the very essence of architecture—but to become architecture space must be defined or given limitations. It must also be organized so that there is an underlying order—the order of space itself and not only the order of the materials and methods used to define it. Finally, the space must be expressive, that is, it must reveal its purpose and significance.

In architecture, it is the void that is all-important—in contrast to sculpture where the solid is really the important element. There must be a willful definition by which man 'creates' the space by the simple act of containing and shaping it. Space can be contained by placing three poles in a field or by gouging a hole in a mountain, and though we may

*This paper was re-worked from a presentation made by Mr. Gaboury at the Festival of the Arts, University of Arkansas, 1967.

have in each case the essence of architecture, the space defined by man, we may not have architecture since a hole in a mountain is not necessarily a work of art. Space becomes architecture when it has an order to it and when that order expresses its reason for being as well as the process by which it came to be. The order is also that of the logical relationship of one void to another or the logical variation or modulation within a void. It is through this relationship or variation of voids that the "raison d'être" of architecture is expressed. It is known more prosaically as the "function."

Within this order of space for function there is the order established by the means of construction. These may be technologies, materials, methods or processes. The expression of function, materials and structure of space necessitates a qualitative as well as a quantitative aspect of space. The dimensions or proportion of space, the structured system, the materials used, the quality and quantity of light—all combine in defining the space but they do more—they in themselves establish an order, a meaning to the space.

Programming: Hierarchy of Functions

The pursuit of "form" is basic to all artistic endeavours. The search for "significant form," as American architect Louis Kahn would

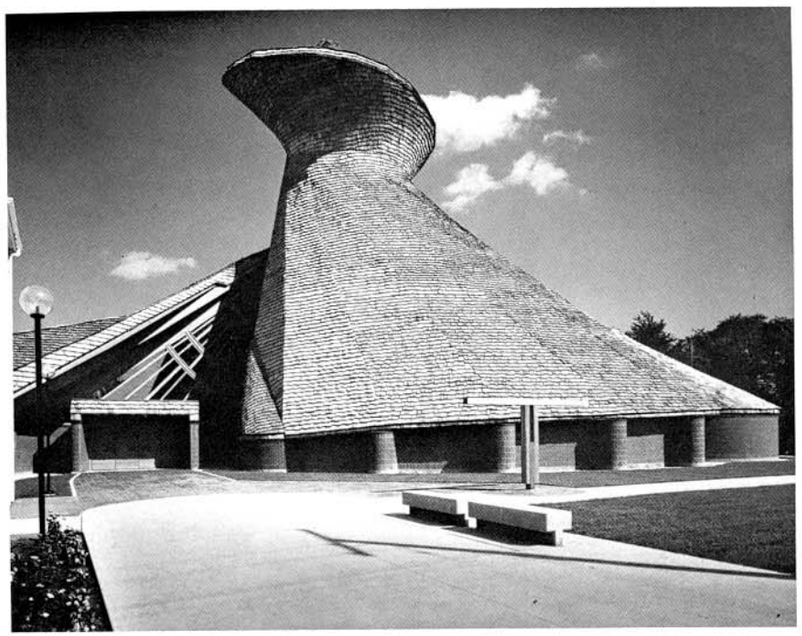

Figure 1. Eglise de la Précieux Sang, by Etienne Gaboury, Architect, St. Boniface, 1969.

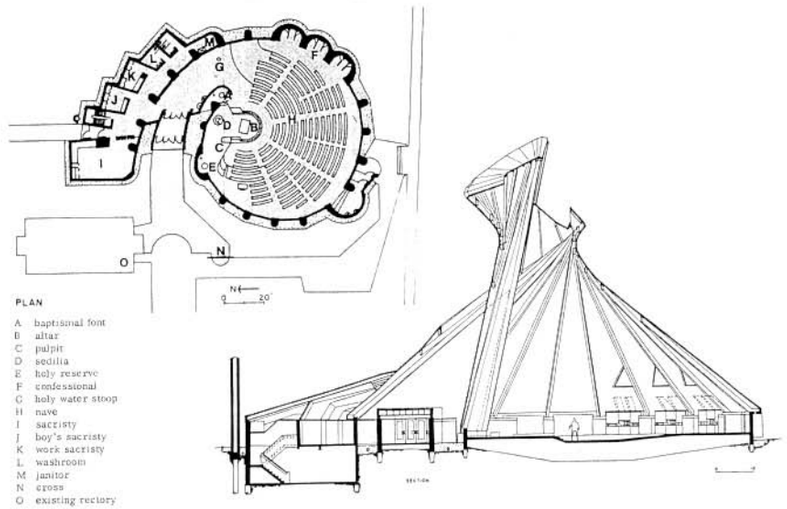

Figure 2. Gaboury's plan and section drawings of Précieux Sang.

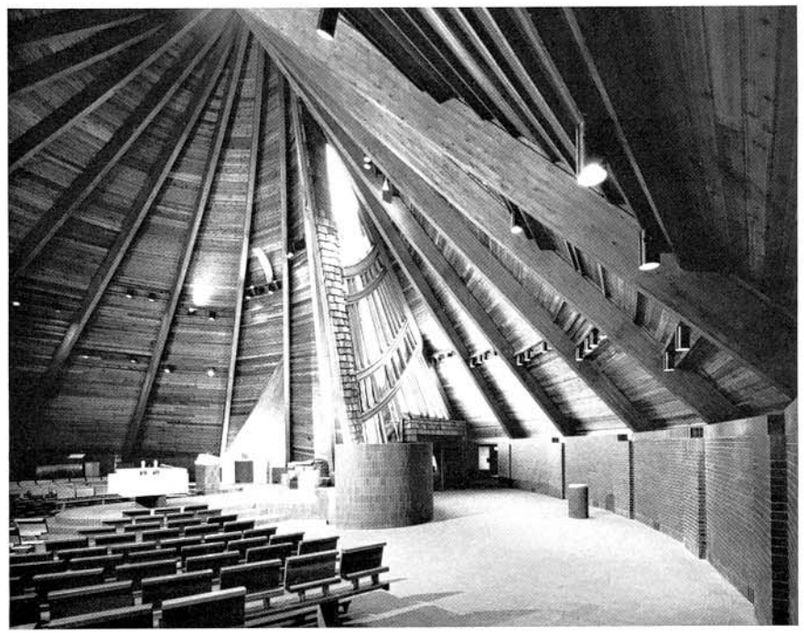

Figure 3. Interior view showing glulam beams of the St. Boniface Church.

have it, should be our sole preoccupation as artists/architects. In architecture, as in sculpture, we naturally associate form with shape and therefore limit the concept of meaningful form to imply only shape. This is not completely false—however it is very misleading since shape is only one aspect of form.

If you dwell upon the meaning for a shape, its reason for its lines, contours and textures, you should discover its intrinsic form, the very principle of its existence. The process of analysing the extrinsic form (exterior shape) to discover its intrinsic form or principle of existence is the reversal of the creative process. It is not necessarily the exact reverse, since this analytical process is purely rational, while the artist's work can never be purely rational. The creative process is not, as so many would like to believe, the action of imagining, then making something. The French master Modern architect, Le Corbusier, has said that creation was a patient search, the search for meaningful form—the search for the ultimate or inner reality of things. This is the true creative process. The question in this case is just as important as the answer since the correct answer is possible only if the right question is asked. Merely providing the answer is not sufficient since this can be a purely technical process that can be easily assigned to the computer. Evaluating and selecting the significant, and establishing the hierarchy of value of functions, followed by the choice of relative emphasis and expression of the matter at your disposal is the human component of architecture.

In architecture asking the correct question is so fundamental to design that it *is* the basis of design, the source from which the creative work springs. As Swedish arctic architect Ralph Erskine implied in his statement "It is better to have an ugly building that is correct than a beautiful building that is wrong,"—the asking of the question is the search for intrinsic form. This search must be undertaken at all levels—from the broadest philosophical considerations of a building program to the most detailed analysis of the least of its functional requirements. Furthermore, not only must the program be analysed from its broadest terms to its most minute details, but each aspect, each section of a program must undergo this same rigorous analysis.

The establishment of a program, the listing of needed spaces and their qualities, is the first phase of design and as such the architect must be thoroughly involved in its preparation. The architect's role is not only to provide answers but to ask some of the questions. Providing some of the answers will be his greater responsibility since he must find the means to express, to give proper significance to each aspect of the program—he must give it a meaningful *extrinsic* form. Each problem being necessarily different in total scope as in each detail, each solution must then be fresh, different and significant.

Intrinsic form and extrinsic form are so bound up that it is usually

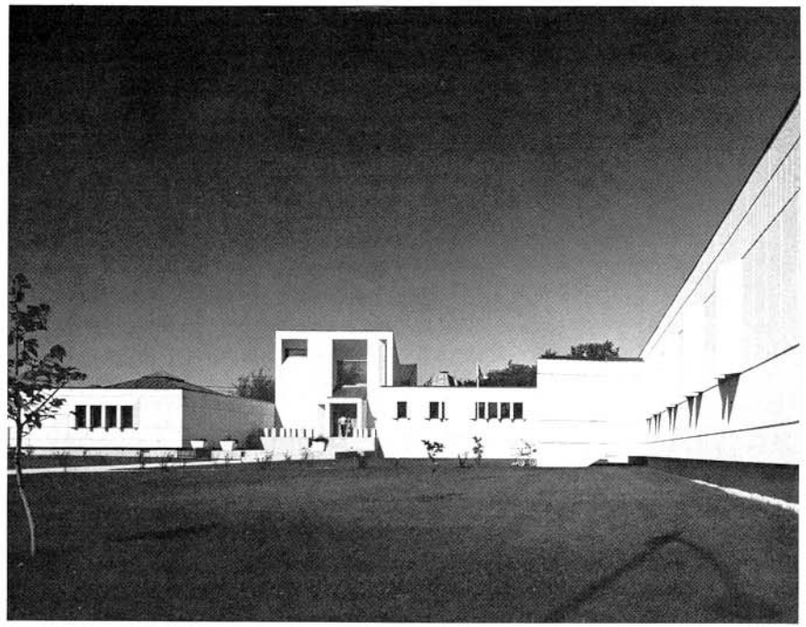

Figure 4. St. Boniface Civic complex by Etienne Gaboury.

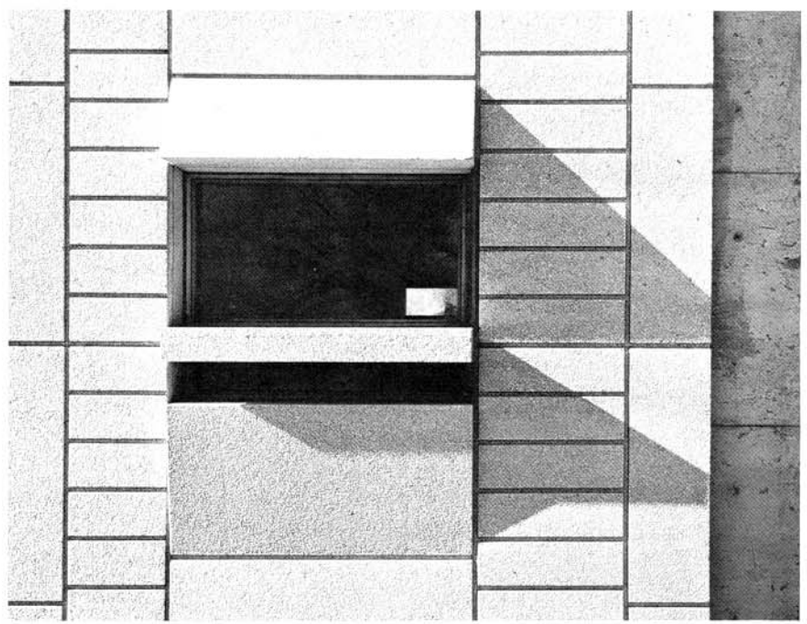

Figure 5. Detail of window and concrete cladding, St. Boniface Civic Complex.

very difficult to separate or differentiate them. Form not only follows function but function and form are often synonymous. Each form embedded within larger formal structures in nature is a direct derivative and expression of the function it performs. The form "leaf" within the form "tree" has a shape, colour, texture, structure consistent with the function it performs and the conditions under which it must perform.

In architecture each building element must have a form and expression consistent with the function it performs—from function in the broadest sense, that is, the total function (for example, the classroom in a school), down to the most minute role of the brick in the bearing wall. Each space within the overall building structure must have a dimension, a quality, a "form" consistent with the function it served within the whole so that this space takes on a meaning, a value in relationship to the whole. Since space is the basic medium of architectural expression, we can conversely deduce that each function must have a "space" commensurate with its heirarchy in the total gamut of functions.

The building program must determine the hierarchy of functions and the architect must interpret them in spatial terms. When we discuss planning in architecture we invariably talk about the relationship of one function to another. I would never for a moment repudiate the value of good functional planning, but good planning is not the end product—it is the beginning of architecture—it is the *prerequisite* to architecture. Good planning is the bubble diagram pushed further to an actual scaled design.

The plan must be modulated to create the sequence, the progression and evolution of spaces according to the hierarchy of building functions it encloses. The plan must be not merely an abstract layout of functions but "a generator of form," as Le Corbusier describes it. The plan itself must reveal the principles inherent in the program.

Structure

We must never lose sight of the fact that "space" is the all-important matter of architecture and that structure is a means by which space is enclosed. Structure is therefore always subordinate to space. The requirement for space must always precede the selection of the structure. Structure is a means; space is the end. We must not draw from this the conclusion that structure is of no importance or that structure must be hidden. The means can sometimes be as important as the end—since one, as in nature, often implies the other. Spanning space by use of brick, to again paraphrase Louis Kahn, *implies the arch or the vault.*

The space required and the structure employed to achieve it

Figure 6. The Canadian Mint, Winnipeg, by Etienne Gaboury, 1978.

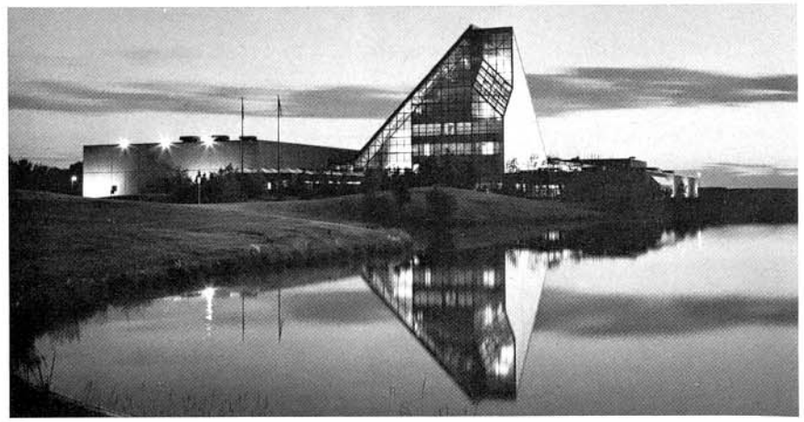

Figure 7. Night view of the Canadian Mint, Winnipeg.

should be so complementary that one implies the other. The structure will of necessity define and modulate the space since space cannot be achieved without structure, in the sense that structure is the three-dimensional extension of the plan. Except when structure becomes the central architectural problem, as in a bridge for example, structural systems must serve, not dominate.

Light

Space has no colour—it is neither black nor white, neither dark nor bright. Space is the void—architectural space is a void defined by structural and cladding elements. The sense of touch, of smell, of hearing, greatly assist in evaluating architectural space, but in themselves are totally inadequate as a sensory medium. Sight is therefore the prime sensory medium for architectural appreciation. It follows that light is one of the most important component elements of architecture. If we consider that the space itself is not lit, but rather that the surfaces defining the space or within it are lit—how light falls on these surfaces is of great importance since the definition of space depends on this. If space itself could be lit (and the best example I could think of is a light in a heavy fog), space (and with it architecture) could be defined and constructed by light alone.

Light is just as important to the definition of space as the materials that contain it. Light must visually strengthen the architectural properties of the container rather than ignore or counteract them. It is possible to change the height of a ceiling or even make it disappear completely (as in many night clubs) by painting it dark and having no light fall on it. This is a case in which light is used to distort to desired dimensions. Light must be used to emphasize the application of colour.

The Door

The entrance to a building is the beginning of the spatial/architectural experience. It is both the passage that links the world outside to the interior and the temporary barrier that separates. Entrances should always be invitations to enter. The invitation can be either a very personal one, or an open invitation to the public, as in a supermarket. It can be open and obvious or it can be discreet and suggest the mystery within. The entrance, regardless of its shape and form, is the umbilical cord that links the outer space to the inner space.

In our northern climate we cannot dismiss entrances as secondary elements—the sheer physical problem of protection from cold and wind warrants an architectural expression. Even if we were not faced with our extreme climate, our doorways should set the rhythm and the theme of the building.

Mechanical Integration

I would compare the mechanical system of a building to the vascular system, the respiratory system, the digestive system, or any other system in our bodies. They are such an integral part of the human mechanism that they cannot be removed or altered in any way, lest the whole system fail. Secondary systems are not entirely exposed but subtly expressed or suggested. Exposed and expressed are those parts which link the internal system to the exterior. The nose, as the aperture to the respiratory system, is fully expressed and has a form completely consistent with its requirements. The nose is such an important and integral part of the face that, without this protuberance, a face is less beautiful.

In architecture, chimneys, air vents should be wonderful things that attest to the living quality of a building. They should be such an integral part of the structure that a space should have character, not only by its composition and the materials, but by the heating, ventilating and lighting systems. In a climate as austere as ours, where such great demands are made on our heating and air conditioning systems, why should we go to such great effort to camouflage them? I cannot help but be saddened by the incredibly ludicrous attempts that have been made to obliterate cooling towers and exhaust outlets. Such wonderful opportunities to express the reality of things, the man-controlled environment, the regional climatic forces, lost to the inhibitions of discreet taste.

The light fixtures of a building should emerge from the ceiling as though they were drawn from within. They should be so integrated with the surface that they become part of it, transforming it to a new surface incomplete without them. The subtle inflection that should exist at the transition from one surface material to another is not enough, since this is a transition from one function to another—the light-receiving surface to the light-producing surface.

Regionalism

Over and above our ingenuity in technically overcoming regional climatic conditions, a regionalism of design and style should be expressed in architecture. We may become extremely clever in artificially controlling heat, cold, humidity, the wind, the rain—in simulating in our prairie buildings the fairness of Florida—but even in so doing, we will not obliterate regionalism. It has been argued, by some architects and engineers, that it is not necessary to control the sunlight, because we can, through a well-designed air-conditioning system, overcome all the problems of heat build-up occasioned by an over-exposure to the sun. We could build a glass house and make it physically viable at the

equator or in Gimli, Manitoba. In so doing, a major impetus for regionalism is destroyed. Regionalism does not necessarily imply that buildings in the North must look like igloos or those on the plains like tee-pees. It does imply, however, that buildings in the North honestly approach the problems of cold and snow and wind—and that these conditions must be acknowledged, either by design concept or by mechanical or other means taken to overcome these environmental pressures.

If the exposure to natural forces must be overcome by indirect means, the effort of doing so will in some indirect way acknowledge regionalism. How many wonderful opportunities have been lost to directly express in architectural forms the forces of nature on our buildings? Why not let them be a source of inspiration? Why not let them be expressed directly and imaginatively rather than trying to compensate with technical "fixes"?

The very necessity for controlling our thermal environment demonstrates that universality in architecture is a fiction. The International Style in architecture of Mies van der Rohe, Walter Gropius and others acknowledged a new approach to construction and to space; but at the same time it did not and could not obliterate all remnants of architectural regionalism. How could a building in Alaska possibly look like a building in the Sahara? To me the natural elements are the most powerful source of design inspiration. We have somehow forgotten that the sun rises in the East and sets in the West and that this rhythm establishes the cadence of life; that our activities are programmed by the pulse of night and day.

Reflecting as they do patterns of life, it would seem logical that buildings would have a consistent pattern and orientation recognizable within a region. For instance, a bedroom might automatically have an eastern exposure to aid in rising and the dining room a western exposure to enrich the evening meal with light. Fundamentally, all buildings, streets and cities in the plains should have a predominant north-south axis. Structures should be like big sunflowers reflecting homage to their god Helios. In the prairies, where the landscape has the bleakness of a desert, the sun is the overpowering visual element. In this northern region our sun is highly cherished. In the cold winters it must be drawn right into our dwellings where it will swell the interior with light and warmth. We must reach out for the sun and bring it in where we need it, in all the spaces where man hibernates.

The Place of Man

Grave concern has been expressed in recent years concerning the ability of man to adapt to his rapidly changing world. We are worried that man will be crushed by his own ingenuity, condemned to be

entangled and finally dominated by the very social, industrial or technological creations he has devised. In the nineteenth century, the industrial revolution promised a new Paradise for man. The machine would reduce the work hours and heavy labour while increasing human efficiency and output, so that enough goods could be produced at a lower cost that more people could enjoy them in their increased leisure time. With this promise of plenty came the inevitable dangers of unemployment and monotonous work for those fortunate enough to find employment. Just as we have learned to cope reasonably well with recent technological innovations, we are now thrust into a new and even more fantastic era of automation and information. All these extraordinary inventions are merely the extension of man's physical and intellectual limitations along with his abilities.

Through all of this man remains virtually constant. That, to me, is the saving grace! No matter how far you extend man's arm, and increase his leverage, his own feeble arm, without the mechanism that he invented to extend it, remains as it was for centuries. From the spoken word to the written word to the typewritten word to the computer, the scope of man's intellect has been forever increasing. But as long as we do not change the physical properties of the brain itself, it remains a fairly constant entity whose range can be readily determined. If the time comes when we can mutate and change our own physical properties completely, our present norms will have no more meaning, and along with them, our architecture.

Until such time, man remains the constant centre of attention, he remains the constant dimension, the measure, the criterion. It is extremely important to realize that in architectural terms space has value and significance only in human terms. If a space does not provide joy, protection, inspiration to its users, it is not truly an architectural space. Space related to the human dimension is architecture.