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**Architect Dan S. Hanganu:
École des Hautes Études Commerciales and Work From 1980 – 1995
From Remembrance to Renewal**

by
Barry R. Craig, B. Arch

A thesis submitted to
The Faculty of Graduate Studies and Research
in partial fulfillment of
the requirements for the degree of

Master of Architecture

School of Architecture
Carleton University
Ottawa, Ontario
March 27, 2001

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“Architect Dan S. Hanganu:
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Abstract

This thesis will examine the architecture that Dan S. Hanganu executed in Québec between 1980 and 1995, focusing on his largest completed building, the École des Hautes Études Commerciales for the University of Montréal. The architect's work will be studied in relation to the Modern Movement of the second and third quarters of the 20th century and 'Post Modernism' during the last quarter of the century. It will also be examined in the context of the cultural and political climate in Québec during the fifteen-year period in question. The thesis will explain the popular success of Hanganu's architecture by showing how his work, and especially HEC, is a manifestation of three factors that define Québec society: it is an interpretation of the province's unique history, an expression of its geography, and a metaphor for the francophone Québécois' attempts to secure their cultural identity.

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Barry R. Craig

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Chapter I

Introduction

This thesis has evolved from the chance meeting of two thoughts. The first was a question, or perhaps a doubt, about the popularity of the buildings designed by Dan S. Hanganu. During the last decade of the 20th century, Dan Hanganu has secured an impressive number of public commissions, many of which were won in competitions. These include the Archeological Museum at Pointe-à-Callière, the Chaussegros-de-Léry expansion of Montreal's City Hall with its integral city block condominiums, the Pavillon du Design at the Université de Québec à Montréal, the headquarters for the Cirque du Soleil, the abbey church of Saint-Benoît-du-Lac, the University of Montreal's Hautes Études Commerciales, and the expansion of the École Viger to house the Archives of Québec. His lucid free-hand drawings filled with evocative notes have intrigued clients who, by and large are delighted with the executed buildings that followed. Those who visit or work in his buildings have made them their own, and his structures are perceived as destinations as much as places of contemplation, study or work.

His work delights not only the public, but the architectural community as well; no mean feat in a city such as Montreal where competition is fierce for limited contracts and where over a third of the architects are said to be without work. When the newly completed Hautes Études Commerciales received Heritage Montreal's notorious 'Prix Citron', awarded annually to the building that does the most harm to its site and historical context, several architects and planners rallied to Hanganu's defence.

During a number of informal surveys of practicing architects, architectural historians and teachers that I conducted during the spring of 1997, I asked the interviewees to name a recent building or architect whose work could be said to represent Québec's cultural identity. Several respondents named Dan Hanganu or one of his buildings [1]. Hanganu's work has spawned a following among some younger architects in Québec and his influence can arguably be detected in the buildings of such rising stars as Saucier et Perrotte, Eric Gauthier and Atelier in-situ, to name a few.

Although seen by many as the 'Golden Boy' of Québec architecture, Hanganu is much less known outside his province of work. Students of architecture in Ontario are quick to name the recent buildings of Nova Scotia's Brian MacKay-Lyons, Ontario's Kuwabara Payne Blumberg or British Columbia's Patkau Associates, but are uncertain when Hanganu's name is mentioned. These observations led me to my first question and its corollary: Why is Dan Hanganu's work perceived as a model for contemporary architecture in Québec? Given his considerable success at home, why is Hanganu's work so little known outside Québec?

Articles appearing in ARQ, L'actualité, Azure and Canadian Architect have assisted our understanding of how Hanganu's creative process and his response to program and planning constraints have led to the realization of functional and imaginative buildings, but have not been equally helpful in describing the widespread appeal of his architecture. These studies and the themes they describe do not account for the compelling, pervasive and immediate response elicited by his buildings. Which

of Hanganu's themes cause the resonance that seems to be felt by the Québec public and architectural community? How and why do these themes influence the visitor and the critic? Why is this influence so much more apparent in Québec? These are my first questions.

The second thought seems at first glance to be quite unrelated. I had been reading a recent essay entitled 'Genèse de la société québécoise', or 'Genesis of Québec Society' by the respected sociologist Fernand Dumont [2]. This well-researched document chronicles the development of the cultural identity of the Québec people and their emergence as a society. Dumont has taken a historical perspective that spans from the founding of New France in the 17th century to the political and economic crises of the present. He has identified three forces that have emerged repeatedly over a span of 350 years and have helped to shape and define Québec society. According to Dumont, Québec's society has been shaped by a profound identification with its history, a deep attachment to the land and the river, and modern utopian 'projects' to ensure its survival in the future. The interactions of these three forces have produced not one, but two distinct and parallel societies which for over two centuries have coexisted and are often in conflict.

Though Dumont has to my knowledge made no attempt to apply his theory to architecture, such a project seems to offer a rich field for investigation since it holds clues to the values and spatial choices of a distinct people. That this was in fact the same population that is currently using and judging the buildings designed by Hanganu, seems particularly relevant to my investigation.

With the question of the popularity of Hanganu's work on the one hand, and Dumont's theories on the other, it occurred to me that the themes of the one seemed to mirror the themes of the other. Some of Hanganu's buildings contain analogies to the historical, geographic and utopian themes which Dumont claims have shaped Québec society. On closer examination I discovered that the buildings that Hanganu has completed during the last two decades of the 20th century contain an extremely rich array of references to Dumont's themes, acting at several hierarchical levels. Moreover, these analogies in Hanganu's work appear to occur in such a systematic and repetitive way that they might be perceived as the signature elements of the architect's creations. Could it be that Hanganu has developed a consistent architectural vocabulary that stimulates powerful, culturally conditioned responses from a specific population while it produces different responses from another? Might this explain the geographic spread of Dan Hanganu's appeal?

Chapter II

Research Methodology

1. Review of Literature on Hanganu

The first stage of my research involved the study of the articles devoted to the architect and his work. For the most part, Dan Hanganu's work has been published in newspaper articles and magazines including *The Canadian Architect*, *ARQ* and *Architectural Record*. To date, there have been no books written about Dan Hanganu aside from a monograph of his early work published by the Université de Québec à Montréal (UQAM), and an interview of the architect by Georges Adameczyk that was published by Section b. A chapter in 'L'abbaye de Saint-Benoît-du-Lac et ses bâtisseurs' by Claude Bergeron and Geoffrey Simmons is devoted to Mr. Hanganu's Abbey Church, and one in 'Modern Canadian Architecture' by Leon Whiteson describes the architect's Nun's Island housing.

2. Review of Other Relevant Literature

Architecture is a complex art produced from necessity, knowledge and intuition. The forces which shape a building are numerous and varied, and sometimes arbitrary, and as a result the discipline resists scientific evaluation. I felt it was important not to study my subject in isolation, choosing instead to look at Hanganu's work first in its

historical context and in the light of Québec's culture. As a product of the Modern Movement, his work invites comparison with the trends of the avant-garde and the counter-trends of Post-Modern. And because it was built in Québec during a period of significant social, political and economic change, it is appropriate to examine its meaning in this unique cultural landscape. The second stage of my study involved the review of several books on modern architecture in which I attempted to identify the practitioners and buildings that may have influenced my subject. Hanganu is European and has studied and traveled extensively around the world. As a result, I was interested in the works in Europe and America which would have been formative to architects of his generation.

3. Site Visits

The third stage included visiting and photographing Hanganu's executed buildings. Because the majority of his works are public or institutional, I was able to arrange for unrestricted access to his buildings by day, and in some cases after hours. Mr. Hanganu made his sketches, drawings, study models and photographs available for my perusal, some of which have been reproduced in this manuscript. During the course of my numerous visits to rue Corot and rue de Gaspé, Val de L'anse, Pointe-à-Callière, UQAM, St.-Benoît-du-Lac, Hautes Études Commerciales and the architect's office, I compiled an extensive library of photographs of each building that served as references for my written investigation. In the absence of a body of literature on the architect's

work, I have used my own pictures and my direct experience of his buildings.

I used two approaches in the selection of the architect's buildings. The first is a longitudinal method in which I chose a sample of works covering a variety of building types and representing a chronology of Hanganu's work. This includes rue de Gaspé (1979-80), rue Corot (1982-84), Val de L'Anse (1984-89) and Complexe Chaussegros-de-Léry (1987-1993). The second is a transverse method in which I chose four institutional buildings that were completed during a five-year period. These include the Église abbatiale de Saint-Benoît-du-Lac (1989-1994), the Musée Archéologique Pointe-à-Callière (1992), the Pavillon du Design UQAM (1996), and the École des Hautes Études Commerciales (1996). Although the two schools were inaugurated in 1996, the architect had completed the designs more than a year earlier. Thus, these buildings fit within the fifteen year period I chose to investigate. I have concentrated on the latter work and examined the others primarily as a means to observe the themes which run through Dan Hanganu's work.

I selected HEC for four reasons. At the time I began my research it was the architect's most recent completed work and could thus be seen as a culmination of his developing themes. Despite its place in the continuum of Hanganu's work several factors make HEC atypical, such as its size and budget which are considerably greater than the largest of his previous works. Moreover, it has been the most controversial of his buildings, causing a protracted public outcry in which opinions were divided between those of the residents and conservationists, and those of the design professionals. Finally, apart from the volley of newspaper and magazine articles which

accompanied the public reaction to the building, there had been no critiques of HEC published in books or architectural magazines which might bias my own observations.

4. Interviews

All of the buildings that are the subjects of this investigation were in Québec and primarily for French-speaking clients and users. Thus, I believe an analysis of Hanganu's work should also examine its meaning and relevance to the culture of the Québécois. I had examined the role of architecture in Québec culture during the course of an independent study that I undertook in 1997 concerning the preservation and promotion of Québec's architectural identity in an era of high technology and globalization [3]. For the study, I interviewed sixteen professionals who practice, research or teach architecture in Montreal and Québec City, and one official of the Ordre des Architectes du Québec. The interviews lasted an average of one hour, during which the candidates were asked ten questions designed to explore how Québec might sustain its architectural identity through the promotion, practice and teaching of the profession. The questions were sent to candidates one week before the interviews, giving them time to prepare their responses. The implied question was whether Québec has a unique architectural identity and, if so, how this identity is manifested. The interviewees were chosen to represent three disciplines: researchers and professors of architecture (8), practicing architects (7), and the architectural profession (2). To ensure regional representation, I interviewed eleven architects who were currently

working in Montreal and six in Québec City. Fifteen of the interviewees are francophones and two are anglophones, which approximates the linguistic distribution in the province of Québec. Transcripts were made of each interview, as well as a summary of the answers to the questions. Although no scientific analysis has been made of the information gathered in the interviews, it has served in this thesis as a frame of reference for the interaction between Québec's cultural identity and its architecture.

Chapter III

Education and Early Work

At the end of the 1960's Dan Hanganu decided to leave his native Romania for the intellectual freedom of the West. Professor at the University of Bucharest and a practicing architect predominantly engaged in the design of industrial and administrative buildings for the State, he could not accept the limits placed on his profession. A mood of schizophrenia ruled in Romanian society where "[...] in this world whose values were reversed, one could not afford the luxury of making a mistake. One was called a saboteur for the smallest gesture which did not correspond to the norms" [4].

Hanganu was born in 1939 in Isa in northern Romania and grew up in Bucharest where he was educated by the communists. The son of a military father, Hanganu felt that he was too resentful of authority and lacking in discipline to pursue a career in the military, and chose architecture instead. At that time, Stalin figured prominently in Romanian education and the architecture favoured by the Party was heavily inspired by Greek and Roman Classicism. Although he hated the socialist realism of his education, the obsession with order, form and presence and the powerful axial organization that Hanganu found in Classical architecture would frequently emerge in his mature works. He would later look upon his education as a good investment that provided him a solid base for his architecture. But, like many of his contemporaries he found the practice of architecture under the control of a repressive

regime to be stifling and looked to the West to stimulate his interest in design.

1. Totalitarian Critiques of Modernism

Monumental architecture has been employed through the ages to represent dominant ideologies and as an instrument of state propaganda. The totalitarian regimes that emerged during the 20th century on the European continent attempted to legitimize their positions through building and planning and to convey their values to their subjects and neighbors using the devices of symbolism and association. Nationalist sentiments were kindled by new construction that made reference to earlier architectural traditions or, in their absence, to the invention of bogus traditions - fictitious affiliations that served the needs of the State. Parallel to this trend was nostalgia for what the State perceived to be 'noble' indigenous values, which needed to be preserved from the attack of a 'foreign' modernist movement. In order to assert their right to rule, the fascist and communist regimes in Germany, Italy, the Soviet Union and Romania had to be perceived as defending the deepest values of their populace. Their public works sought to create a balance between evocations of past imperial power and expressions of populist support, in order to maintain the perception of the State as the voice of the community. Their colonnaded façades bordering or enclosing spaces for public assembly, symbolized at once the power of Imperial Rome and the Greek origins of 'civitas'. It was natural for the regimes to turn to Roman Classicism, as Viollet-le-Duc seems to have anticipated in his *Entretiens*: "The Romans were necessarily Classic, in the modern acceptance of the word; for nothing assimilates better with administrative

direction than classicism, as we now conceive it, and nothing is more contrary to the administrative spirit than discussion” [5].

A new movement began to take root late in the first quarter of the 20th century in which the leading architects in Europe and Russia agreed to an international approach to building that exploited the newest technology to repair the devastation left by World War I. The principles of the new architecture were ratified at the CIAM (Congrès international de l’architecture moderne) conference in Switzerland in 1928, and the code of practice that ensued came to be known as ‘The Modern Movement’, or ‘avant-garde’. The goals of the new architecture were to liberate society’s perceptions and tastes and transform them into those of a modern industrial one, and to change the way of building to benefit from the manufacturing processes of the new society. Dubbed ‘The International Style’ by Henry Russell Hitchcock and Philip Johnson [6], the movement was seen by the totalitarian regimes as a threat to the goals of society, and was often depicted by the State as an elitist novelty created by a marginal avant-garde acting independently of the populace. Modern architecture was also discredited for being an ‘international’ phenomenon, not having grown from national cultural roots and traditions. The subtle adaptations of the modernist ideology and symbolism within different societies was often ignored in these often vague and imprecise criticisms. Moreover, modern architecture was devalued for its relative novelty and seen by the propagandists as temporary and insignificant when compared with the enduring appeal of Classicism. Perhaps the most serious criticism was that the Modern Movement’s democratic tendency to treat all types of buildings as equal, blurred the

distinctions between building typologies. This made it unsuitable for a regime that needed to use the hierarchy of building types to illustrate the hierarchy of power.

The new architecture wasn't always rejected out of hand. Its machine age efficiency and material economy could be acceptable to a regime whose political and military power depended in part on industrial and technological strength. The Ceausescu regime had no precise monolithic doctrine about architecture and could thus borrow from the Modern Movement those qualities such as efficiency and structural rationalism that suited the State. The new architecture was sometimes acceptable when restricted to buildings such as offices and factories which were deemed to be low in the hierarchy, or when confined to areas unlikely to be seen by the public. Important buildings would display an easily legible monumentality, employing devices such as axial planning, grandiose scale and repetition to enhance the status of the ruling party. They borrowed the devices used for crowd control in Imperial Rome - the procession of spaces aligned in enhanced perspective, framed by imposing façades fronted with giant orders – to inspire awe, respect and a measure of fear in the citizenry. Traditional sources - Egyptian, Babylonian, Classical and Neo-classical - provided the elements of monumental scale to adorn the public faces of the buildings while Classical and Baroque planning defined the spaces for gatherings and processions. In the absence of any real Greek or Roman Classical traditions in its building, the Regime attempted to create imagined Classical roots through the propagation of an instant skin-deep traditionalism.

In 1960, when Dan Hanganu began to practice architecture in his home

country, he possessed the education and skills to become an outstanding architectural figure. He was interested in the Modern Movement that had swept through Western Europe, and soon began to distance his work from the academicism of his education. His earlier work is testimony to his struggle to reconcile the Classicism that was preferred by his patrons with the abstraction and structural rationalism that he felt were more appropriate for the post-War era. He was drawn to the works of Mies van der Rohe and Le Corbusier who, along with Walter Gropius and J. J. P. Oud had been singled out by Hitchcock and Johnson as the heroes of the 'International Style' [7]. In the exhibition mounted by Hitchcock, Johnson and Barr at the Museum of Modern Art in New York in 1932 and in their book 'The International Style' published the same year, the authors identified the three essential principles of the 'Style'. First, the new architecture must detach the structural frame from the enclosing wall, enabling the latter to be designed as a lightweight membrane, which they called 'surface of volume'. The effect of mass and static solidity had all but disappeared, leaving in its place the effect of plane surfaces bordering a volume. The new architecture was conceived not as dense supporting walls, but as enclosed volumes. Second, the new architecture must express a characteristic orderliness in its fenestration and in the composition of the spaces within by emphasizing the underlying regularity of the structure. This followed naturally from industrialized construction methods which favoured standardized structural grids and repetitive dimensions that could be used as ordering devices. Third, the new architecture must relinquish all applied ornament so that the details were the only decorative elements that remained. The development of simple forms and standardized details of window frames, parapets and railings were important aesthetic considerations

to the architects who designed in the Style.

In their book, Hitchcock and Johnson chose to ignore some of the variants in the architecture of the International Style when they summarized its essential principles. Although the buildings of Mies van der Rohe and Le Corbusier complied with these principles, they differed from the other proponents of the Style in that they contained overt references to Classical tradition. Mies characteristically placed regular colonnades around the base of his buildings and attached vertical I-beams to the surface of the walls of his glass towers, thus producing a columnar rhythm in a contemporary language. Similarly, Le Corbusier's 'pilotis' were conceived as a modern tribute to the Classical temples he had visited in Greece.

Hanganu seemed to understand Le Corbusier's use of pure form, his grasp of the classical principles of structural order and his fondness for vernacular traditions. He began to develop his own vocabulary of simplified Classical forms that were firmly rooted in the technology of the 20th century, yet at the same time embodied local building traditions. Hanganu was a traditionalist in the same sense that Le Corbusier was, and believed that the fundamental architectural principles of antiquity could be re-examined in the light of current technology and successfully incorporated into a modern form of expression, so as to enrich our experience of his buildings through the associations they produced. He saw in the work of Le Corbusier an approach to form, order and abstraction that was destined to influence much of his mature work, which will be examined later in this chapter.

2. The Faltering of the Modern Movement

Although the avant-garde was still the dominant philosophy of the architecture of the 1960's, its expansion through Europe and America had begun to slow as its promise of a new world order failed to materialize for several reasons. First, the Modern Movement had failed to generate the social reform promised by its original protagonists, and the social justice and sweeping benefits of industrial society now seemed illusory. Architecture cannot bring social change without the concurrence of political, economic and social forces, and these were often more interested in preserving the status quo. Second, the avant-garde encouraged their contemporaries to forget the past and to build in a way that was true to the technology of their time. But, societies do not willingly break their bonds with the past, which would mean erasing a part of their identity. Third, the avant-garde erred in their initial assumption that the technologies and materials that supported its mode of design would become universal. They believed that one method of building and one set of urban solutions were valid everywhere. Although the new materials – steel, glass and concrete – were used universally in the architecture of commerce and industry, they were too expensive for most residential construction and too sophisticated for the pre-industrial states. Even highly industrialized societies remained attached to traditional building materials and methods because of their familiarity, their tactility and the associations they provoked. Fourth, the refute of ornament and monumentality was appropriate for factories, hospitals, schools and office buildings which weren't in need of a representational

image, but was often unsuitable for theatres, churches and government buildings whose owners sought to portray an image suitable for the function and prestige of the building. Hitchcock was aware of the dogmatism of the book when he wrote an article for the Architectural Record called 'The International Style Twenty Years After'. He acknowledged that the principles of the 'Style' should not have excluded ornament, and that the authors of the original book had been negligent in failing to discuss Wright and others, whose work did not correspond fully with these principles [8].

In spite of the shortcomings of the narrow dogmatism of the 1920's, the Modern Movement continued to evolve and adapt to climates and cultures while retaining its fundamental principles. In spite of its earlier predictions, it was far from becoming a homogeneous formula, and even its heroes – Mies van der Rohe, Walter Gropius and Le Corbusier – had found their own particular languages. The conventions of the International Style had by now evolved and adapted to the realities of the post-war era and found expression in the hands of a new generation of architects. Aalto, Kahn and Rossi were at the apex of their careers and their work was well known to Hanganu who, in his reaction to the mannered historicism of the communists, was searching for an architecture which expressed the realities of his era. It is logical that he would be studying the contemporary works of these architects and be drawn to the West whose post-war prosperity would provide him the opportunity to explore and expand his craft.

Hanganu left Romania in 1969 and moved to France. The following year, he and his wife, Anca, herself an architect, sailed to Toronto to join some Romanian

friends and to find work in various design offices. "We arrived here with a suitcase and a lot of dreams. Canada was the new world where anything could be built. Toronto was, at that time, the city which had the highest per capita construction value in the world "[9]. Hanganu applied to the Ontario Association of Architects for a license to practice but the Registration Board, in a split decision, refused to recognize his qualifications. The couple moved to Montreal the following year, feeling the need to establish themselves in a society whose culture and language, like their own, had Latin roots.

3. Québec Modern

Architecture in Montreal was in the midst of a small renaissance. The 1960's had witnessed the completion of several prestigious buildings by internationally-known architects such as Place Ville Marie by I. M. Pei and Canadian Industries Ltd. by SOM, (both completed in 1962), Westmount Square by Mies Van der Rohe (1966), and the Stock Exchange by Nervi and Moretti (1964-1966). Québec architects had lately completed several buildings of exemplary quality such as the Student's Residence at the University of Montreal by Papineau, Gerin-Lajoie & Leblanc (1962), the Canadian Imperial Bank of Commerce by Peter Dickinson (1966), and the Château Champlain by D'Astous & Pothier (1967). Above all, Montreal had recently taken its place as a world-class city by hosting the World's Fair of 1967.

Expo 67 was perceived by many as a coming of age for architecture in Québec and signaled a widespread public acceptance of modern architecture. The urban design, infrastructure and crowd control methods were an unmitigated success, and the international pavilions presented a spectrum of modern and traditional architectural motifs. In addition to the French Pavilion by Faugeron & de Mot (1967), and the United States Pavilion by R. Buckminster Fuller, two significant buildings by Québec architects would have a lasting influence on the province's evolving modernism. Habitat 67 by Moshe Safdie (1967) was an ambitious project comprising some 200 self-contained precast concrete dwelling units, grouped in a pyramidal form around three vertical service shafts. [Fig. 1] Conceived as a modern hill town, Habitat

67 represents one strain of the plasticity movement that would endure for a decade until it reached its apotheosis in the notorious Olympic Stadium by Roger Taillibert. The modest Québec Pavilion by Louis-Joseph Papineau is an elegant reflective glass cube, its four curtain wall surfaces detached at the corners and tilting outwards at the base. Held in a tense equilibrium like a house of cards, this delicate prism inspired by Mies (Papineau had worked in Mies van der Rohe's office), explored the potential of slender steel mullions and glass spandrels to enclose space [Fig. 2]. The influence of these two buildings; one an exploration of the compressive strength of massive wall planes, and the other an expression of the tensile resilience of thin sheets of glass and slender steel frames, would be apparent in many of Dan Hanganu's later works.

Expo 67 demonstrated to the world the cultural duality of Québec and hinted at what could be accomplished when the dominant French and English speaking societies were engaged in attaining a common goal. The design and execution of the project was managed primarily by the City of Montreal under Mayor Jean Drapeau with a planning team including professionals from the francophone and anglophone communities. The massive construction project included the enlargement of the Cité du Havre peninsula and St. Helen's Island in the St. Lawrence River, and the creation of a new island, called Isle Notre Dame. The three water-bound sites comprised a marvelous new town, like a modern Venice, linked to one another by bridges, causeways and a monorail, and to the mainland by a viaduct and a new subway system. The completed exposition had an appropriately international character, yet was infused with the ambience of French Canada, clearly present in the language, food and

Fig. 1
Habitat 67, Cité du Havre
 1966-67. Moishe Safdie with David, Barott & Boulva

Fig. 2
Quebec Pavilion,
Expo 67, Montreal
 1964-67. Papineau
 Gerin-Lajoie LeBlanc
 with Luc Durand

music that animated the fair. The critical success of the project was hailed by architects as evidence of a popular acceptance of modern architecture, and by the general public as proof of the coming of age of the French-speaking Québécois, or 'Québécois'. But the atmosphere of harmony between anglophones and francophones that appeared to reign during the year of the World's Fair would soon dissolve into conflict.

The movement in Québec for political independence had been brewing for over two centuries, and was experiencing a resurgence during the last half of the 1970's. A separatist group called the Front de Liberation du Québec, or F.L.Q. had begun to spread fear in Montreal's English-speaking neighbourhoods by staging a number of random bombings. Although their methods were suspect, their cause had won the support of a large portion of Québec's francophone intellectuals who feared the loss of their language and cultural identity. Fear of the F.L.Q. escalated with the 1970 kidnappings of British diplomat James Cross and Québec businessman Pierre Laporte, and came to a head when Laporte's body was discovered in the trunk of a car. Prime Minister Pierre Trudeau enacted a state of martial law and sent the armed forces into Montreal, Ottawa and Québec City, ostensibly to ensure the safety of the public and the politicians. Hundreds of Québécois agitators and intellectuals were arrested and imprisoned, many without charges, in the days that followed and the opinions of the country's anglophone and francophone populations became polarized as a result. After the F.L.Q. kidnappers capitulated and released Mr. Cross, unharmed, the citizens remained divided over the issue of Québec's sovereignty, with the anglophones against separation and many francophones in favour.

The separatist political party, called the Parti Québécois, under René Lévesque won the greater share of the popular vote in the next provincial election, but the Liberal party took more seats and formed the government. Buoyed by what he saw as a 'moral victory', René Lévesque re-organized his Cabinet and strengthened his party's resolve to improve conditions for the Québécois, gaining enough popular support to win the following election. He populated his government with Québec's leading intellectuals and invested heavily in education and the arts, which encouraged the cultural renaissance that blossomed in the province at the end of the 1970's. However, Lévesque's principal goal was Québec's political independence from Canada, and he focused his attention on preparing his party and the province for a referendum on 'sovereignty association', which he defined as political independence from, and economic association with Canada. Pierre Trudeau's federalist Liberal party did everything it could to discredit Levesque's project for independence, and when a province-wide referendum was held in 1980, only 40 percent of Québécois voted for independence. In the period followed the failed referendum, confusion and frustration reigned in the Parti Québécois, and Trudeau saw an opportunity to gain support for the cause of federalism. He initiated the process to prepare a new constitution for Canada and to secure the country's independence from the British Crown. The Charter of Rights and Freedoms was prepared following country-wide consultations and all provinces signed their agreement, except Québec. Lévesque insisted on retaining certain powers which had been given to Québec in the Constitution of 1791 and which gave the province the status of a 'distinct society'. Trudeau refused to negotiate a

special status for Québec, and in a gesture that shocked and insulted the Québécois, took the Constitution to London without Lévesque's signature, where it was dutifully patriated by the Queen. The forces of federalism had outmaneuvered the separatists, and secured a Charter for Canada to which Québec has not, to this day, subscribed.

A subtle change had taken place in the spirit of many Québécois, who felt more isolated than before. A curious, though unrelated, change had occurred on the streets as well. The slogan on the province's vehicle licence plates that, during the Quiet Revolution, had announced: 'la belle province', or 'the beautiful province' had been replaced with new ones. They now contain a cryptic message that reads: 'je me souviens', or 'I remember'.

4. The Québec Context: 'Je me souviens'

Any contemporary investigation of Québec society should lead to the writings of Fernand Dumont. A respected sociologist with an international reputation and one of the visionaries of the 'Quiet Revolution' that began in the 1960's, his seminal work 'Genèse de la société québécoise' traces the growth of a Québec society from the founding of New France in the 17th century to the political and economic developments of the present [10]. Dumont's social theories have influenced the writings of several architectural historians in Québec, including Luc Noppen and France Vanlaetham, and were brought to my attention by two Montreal architects during the course of a study of the expression of cultural identity in Quebec architecture that I undertook during the spring of 1997 [11]. In a mosaic of conditions, forces and defining moments that have shaped the collective identity of the Québécois, three recurring themes emerge in 'Genèse' which differentiate this society from others that have taken root in the American continent: the pervasive influence of the historical roots of Québec society, a profound attachment to the land, and the need for a contemporary project to preserve the Québécois' cultural identity for the future. Simply stated, Dumont characterizes Québec society as one that is firmly rooted in the landscape, and where the past and modernity coexist. We will briefly examine these themes before investigating the means by which they are expressed in architecture.

4.1 History: Two Solitudes

Dumont has shown how a Québec society has evolved from a unique history, genealogy, language, religion and laws. Settled in the early part of the 17th century, New France was carved out of a hostile environment by French soldiers, farmers and entrepreneurs. The Jesuits from France were responsible for the education of the settlers and indigenous people, and for the spread of the Catholic faith and French language in North America. A community of farmers, fur traders and wood cutters evolved on the shores of the St. Lawrence River, which was governed from Paris and tenuously connected by river transportation routes, French law, a common language and religion, and a predominantly Norman ancestry. Most of the original settlers of New France had come from Normandy, bringing with them a French culture that had been influenced by Scandinavian invaders some six centuries earlier. It was fitting that these people would prosper in an untamed new land with savage winters that resembled those of their ancestors. Following the Conquest of New France in 1760, the British victors recognized the strategic importance of sustaining this French-speaking colony with its unique system of laws, language and religion as a buffer to the possible northward expansion of the United States, and enacted the Act of Québec in 1774 as a means to legitimize these institutions. Dumont sees the adoption of the 'Acte de Québec' as a crucial event in forging the identity of the Québec society, because it guaranteed the survival of the Seignorial system of land tenure and governance, as well as the French language and Catholicism. Moreover, it differentiated the Catholic, French speaking Québécois from the English-speaking Protestant colonists, or 'others'.

The conquerors were foreigners with a different language, religion and laws, who had suddenly been granted political status equal to those who had struggled to tame the land for over a century. As it had first declared itself against the adversity of the Nordic landscape a century before, now the fledgling French Canadian society would mark its identity in resistance to the parallel society that had conquered its territory.

When he helped to bring about the Constitution of 1791, William Pitt hoped to establish a distinct entity for French Canadians known as 'Lower Canada' and another for English speaking colonials and Americans known as 'Upper Canada', in which each group would be a majority within its own territory. The former would be Catholic with French laws, and the latter Protestant with English laws. Many of his British colleagues were less democratic and believed that French Canada should be treated as a cultural 'reserve' where it would be destined to remain marginal. They opposed a Legislature dominated by anglophones to the elected Assembly dominated by francophones, so that the latter couldn't effectively govern. Others such as Durham believed that by keeping the francophones as a minority in the political institutions, they would gradually assimilate '[...] by the working of natural causes' [12]. Facing the threats of languishing as a cultural reserve, or being assimilated into the legislatively and economically dominant English society, French Canadians would develop a conscience of their own identity which would be always be animated by the presence of the colonizer. The enactment of the Constitution in 1791 separated Lower and Upper Canada, and gave the francophones the status of a 'distinct society' that has prevailed to the present day. After the Conquest, the population of Lower Canada

would be comprised of two societies; one an agricultural collectivity operating beneath the halo of the clergy; the other an urban industrial bourgeoisie monopolizing the nation's commerce. French would remain the language of domestic life, and English would become the language of commerce. Having been granted limited political powers and being obliged to submit to the economic dominance of the anglophones, the French-speaking majority was forced into a perpetual struggle to resist assimilation and to preserve their unique identity. All future discourse concerning the political status of the francophone society would continually oscillate between compromise and independence.

4.2 Geography: The River and the Rock

Québec's geography has also contributed to the formation of the identity of the Québécois. Since the 17th century, what is now Québec has consisted of two narrow strips of cultivated land on either side of the St. Lawrence River, marked at each end by a large city. To the north, endless forests and the Canadian shield stretch to the arctic, while to the south, the United States presses against the border. The French colonists measured and divided the new territory according to their system of 'arpents' based on a unit of area roughly equal to an acre, and 'rangs', a unit of length, and instituted the seigneurial system to govern the land. In this system of land tenure descended from feudalism, the king of France granted tracts of land measuring thousands of arpents to the Seigneurs who, in turn, rented 'lots' to farmers. Initially, all properties had river frontage, thus giving rise to the division of land into deep, narrow strips perpendicular to the St. Lawrence, Saguenay and Richelieu rivers. Because they were colonized after the fall of the French Regime to encourage the settlement of Loyalists and immigrants from the United States, only the Eastern Townships were subdivided according to the British system. The American presence that was first perceived as a military threat and later became an economic and cultural one, contributed to the evolution of a resistant Québec society that defined its existence against the adversity of climate, conquest and cultural imperialism. Until the railway was constructed in the 19th century, the river was the principal transportation link between settlements and with Europe, and the axis for the fur trading, lumber, agricultural and ship building economy which emerged. North of the St. Lawrence lies

a parallel axis of mountains that extends from the Gulf to the Outaouais, or Ottawa Valley. While it provided the resources for French Canada's primary economy, it also limited the northward expansion of the settlements and concentrated them in a narrow strip between the river and the mountains. South of the St. Lawrence, a level plain containing fertile agricultural land extends to the Appalachian foothills and the border with the United States. Thus, the settled plain was dominated by the river in the middle and bounded by two parallel chains of ancient mountains, giving the inhabitants precise geographic references to define their territory.

Québec's architecture evolved naturally from the use of abundant pine and cedar from the forests, and the limestone and lime deposits found in the hills. Early log and plank construction was covered with lime plaster for durability. Later, as towns and cities evolved and the threat of fire became more acute, the wood walls were supplanted by the grey stone that is most characteristic of the province. Brick came into use during the 19th century and the beige and red hues of the indigenous clay began to adorn the façades of the less important buildings, while local stone remained the choice for structures of greater symbolic value. In response to the harsh climate, limited land and constant threat of fire in the cities, a dense urban form evolved in which perimeter blocks of superimposed dwellings were erected in rows and faced with non-combustible stone and brick. Buildings were closely spaced in the countryside as well, resulting from the system of land division mentioned earlier, and from a communal social order that was built around the parish. The building types that have resulted are, for the most part simple and unadorned, employing modest materials

in a manner expressing manual craft rather than industrial technology. New France was, after all, an agricultural society in which the settlers built their dwellings with materials close at hand in a manner that resembled the modest buildings they had known in France. They had neither the means nor the inclination for opulence, except in the buildings they erected for the Church [Fig. 3, 4].

Fig. 3
18th. C. Townhouses, rue
Ste. Genevieve, Quebec City

Fig. 4
18th. C. Commercial Bldgs.
Place Royale, Quebec City

4.3 A Project For an Identity: Stagnation or Change

The dilemma that has faced Québec's founding nation since the Conquest is how to preserve its identity as a distinct society against the threats of stagnation on a 'reserve', or of assimilation into the more powerful economy of the British conquerors. Should Québec attempt to remain unchanged as a condition for survival, or free itself to develop according to its potential, at the risk of being absorbed into the parallel society? Étienne Parent summed up the dilemma facing Québec in his discourse in 1831: "This people wants a brilliant existence for itself and for its posterity, but it wants to attach its (existence) to that of its ancestors, so that the same life communicates from the men who cut down the first forests, up to those who God permitted to found a Canadian power. It is a triple existence for a people, to have a past, a present and a future"(Translation by author) [13]. As a means to ensure the continued existence of the francophone majority, the society has embarked on a number of utopian 'projects' in the course of the last two centuries, which include the colonization of the North and West by French Canadians, the creation of agricultural communities and the cultivation of political parties and agendas geared to the needs of the French-speaking citizens. The goal of many of the projects has been to reclaim Québec's French heritage from which the nation has drawn a large part of its civil and ecclesiastical laws, its teaching and medical establishments, its religion, language, habits and the customs of the majority of its inhabitants.

Other projects were of an economic nature. In 1832 the *Maison Canadienne*

du Commerce was founded, and in 1835 the Banque du Peuple, both with the intention of re-conquering Québec's economy for the francophone population. Parent argued for schools and colleges to provide special education for industry, commerce and agriculture. Acknowledging the need for French Québécois to compete in the economy, the Catholic Church founded twelve new classical colleges between 1841 and 1875 that provided commercial and industrial education, and several technical colleges modeled after the French École polytechnique. Hautes Études Commerciales would be one of the offshoots of this enterprise. One century later, after the conservative Duplessis government was defeated by the Liberals, a grass-roots movement was born which rapidly spread to all facets of Québec's francophone society. Named 'The Quiet Revolution' by an English-speaking journalist, its outcome was to place a greater share of the province's politics, education, commerce and artistic expression into the hands of the French-speaking majority. The government took control of industries and utilities including Hydro Québec and the Lévis shipyards, and invested heavily in cultural programs. Education was removed from the control of the church, to be administered by secular boards, and the school system restructured and modernized. Cégeps were introduced to provide post-secondary education geared to preparing its students for the work force. A new movement in art called 'les Automatistes' was launched with Paul-Émile Borduas' 1948 publication 'Refus global', or 'Global Refusal'. Jean-Paul Riopelle and other artists joined the movement, which replaced representational art with a manifesto for modern abstract expression. Québec received international recognition when it successfully hosted Expo 67 and the 1970 Olympics, and the cultural renaissance that ensued did much to

improve the self-confidence of its citizens, and to re-kindle thoughts of the project for political independence. For nearly half the Québécois and the majority of the French-speaking populace, their notion of 'nation' had been separated from that of 'state' since the Conquest, and could only be reconciled when sovereignty had been attained. The modern projects are essential to the survival of Québec society because they force the population to seek a sustainable position in the middle ground between international capitalism and a reactionary return to their pre-industrial past.

When he settled in Quebec in 1971, Dan Hanganu unwittingly inherited some of the collective angst that had fermented in the province during the two centuries following the Conquest. The majority of the population was divided between two distinct societies with different languages, laws, religions and heritage. The larger, French speaking population was the dominant culture, yet it was essentially stateless, like the architect. Henceforth, he would live and practice in Montreal and would likely never work again in Romania. It was natural for the architect to feel an affinity for the francophone Québécois, and to observe in their lifestyles, customs and way of building, some qualities that defined their society. Possibly due to his foreignness - his judgment unclouded by the enduring friction between the two societies, his observations spontaneous and objective and his origins perceived by both societies as non-partisan - Hanganu's work was quickly accepted in his adopted province.

More probably, his personal approach to architecture resonated with the Québécois because it recognized what they respected most in their buildings – the importance of their traditions, their sense of belonging to a unique geographic area,

and their need for renewal in order to survive. During the last two decades of the 20th century, he evolved an architecture that managed to encompass Québec's social traditions within a modern vocabulary. This synthesis may be compared with the approach of Kenzo Tange, who sought to fuse the aesthetic traditions of his Osaka region with what he saw as universal Modernism. In an essay entitled 'From Self-Enclosed Modern Architecture toward Universality', he summarized his position: "Born and bred in Japan, I do my architectural work here. And I suppose it would be possible to say the method I have selected is to apply the vocabulary and techniques developed by an open, universalist Modernism in an enclosed realm of individual lifestyles and regional differentiation. But it seems difficult to me to express the sensibilities, customs, aesthetic awareness, distinctive culture, and social traditions of a given race by means of an open, internationalist vocabulary of Modernism" [14].

We shall now examine how Hanganu interpreted these cultural preferences in some of his buildings executed between 1980 and 1995, concentrating on the years after 1990 in which his architecture achieved a stylistic synthesis between the conflicting objectives of traditionalism and renewal.

5. Nun's Island Townhouses: Reinterpreting the Street Row

In 1979 Dan Hanganu started his own architectural office and a small development company. Acting as both architect and builder, he secured a tract of land on rue de Gaspé on Nun's Island and in 1980 built eighteen town houses. Nun's Island, or l'île des Soeurs, situated minutes from downtown on a broad expanse of the St. Lawrence River, had previously belonged to the nuns of the Congregation of Notre Dame and was now being transformed into a medium and high density residential neighbourhood. Although built in a suburban setting, these small buildings initiate an urban collective form that the neighbourhood might one day assume and are part of the larger existing context of the city. They construct a unified, but varied street front with their stepped parapets, brick inlays and whimsical details of pipe rails and recuperated elements recalling the subtle variations and individual embellishments found in traditional perimeter block dwellings. With flat roofs, taut red brick masonry walls, sharply profiled vertical openings and slender steel window frames, these dwellings are modern abstractions of the working-class townhouses scattered through downtown Montreal. But, despite their similarities, these designs are vastly superior to their historical counterparts, as indicated by the subtle elevation of the floor levels and surrounding landscape to conceal the parking, and the dramatic quality of spaciousness arising from oversize landings flooded with natural illumination from skylights over the bedroom hall. The stairway and fireplace together form a central sculptural mass from which the house spreads horizontally and vertically and about which the floor

Fig. 5
Rue Corot, Montreal, 1981-82.
Dan S. Hanganu . Floor Plans.
Longitudinal Section

levels pivot [Fig. 5]. From the entrance the spaces ascend, almost magically, in a vertical architectural promenade of successive impressions. At each change in plane or direction something new is discovered: an overhang, a shaft of light, an unexpected opening, leading upwards towards an increasing brightness. The exterior stairs spill from the front entrances in short flights that change direction at the landings, recalling the characteristic open stairs on the Victorian dwellings in the nearby city [Fig. 6]. Referring to these houses and a similar development completed one year later on rue Corot [Fig. 7, 8], Kenneth Frampton claims: "[...] Hanganu had already realized the best two-storey inner-suburban housing of the decade" [15].

Fig. 6
Townhouses, rue de Gaspé, Ile des Soeurs
1979-80. Dan S. Hanganu

Fig. 7
Townhouses, rue Corot,
Ile des Soeurs 1981-82.
Dan S. Hanganu

Fig. 8
Rue Corot. Detail at Entrance

6. Val de l'Anse: Refining the Slab Block

In these first projects could be found many of the characteristics of Dan Hanganu's ensuing work: the balance and precision of his façades, the abstract planes whose stark, clean surfaces and precisely cut openings express the thinness of the cladding, his mastery of interior volume and the seemingly spontaneous urbanity which binds his buildings to the greater context of the city. His choice of masonry to represent weight, rusticity and permanence, juxtaposed with steel to imply lightness, precision and change, became hallmarks of his designs. His design of the Val de l'Anse condominium apartment building at l'île des Soeurs, completed in 1988, stands next to a concrete frame apartment tower conceived by Mies van der Rohe. Recipient of the Prix d'excellence of the Ordre des architectes du Québec in 1991, Hanganu achieved in Val de l'Anse a level of technical refinement seldom encountered in residential construction. When viewed from a distance, one notices six distinctive bowed projections on the north façade that on closer inspection are paired two-storey balconies. At each of the narrow ends of the building, a massive tower-like element containing bedrooms rises to one storey above the roof, and appears to anchor the floors to the ground. No other projections interrupt the taut, smooth skin of the front and sides of the building. The remaining balconies and openings have been cut out of the simple volume of the apartment block, leaving its original form intact. A slender column rising the height of the building at each end and tied into the lateral balcony fronts, is all that remains of the corners. In a subtle reference to Mies van der Rohe,

Hanganu increased the balconies and the apparent width of the window openings above the fourth and thirteenth floors respectively, thus creating the illusion of the walls becoming more massive near the ground where the weight of the building is greatest. In much the same way, the columns on the building next door increase in cross-section as they near the ground. The parapet over the paired central balconies on the top floor has been cut away, visually lightening the roof and implying that this is not one buildings, but two. This illusion is strengthened by the two black painted steel entrance canopies that are suspended by cables from four tapered steel masts [Fig. 9].

The logical and balanced placement of solids and voids in the elevations conceals several surprises in plan and section. Instead of placing single-aspect apartments on either side of a central corridor, Hanganu has grouped two dual aspect units around each of four cores, each core containing an elevator and a scissor stair [Fig. 10]. This unusual gesture eliminates the central corridor and provides most apartments with cross ventilation as well as river views to the south and island views to the north. This is a refinement of Le Corbusier's Unité d'Habitation, in which two-storey cross-block apartments are served by 'streets' on every third level. In Val de l'Anse, only two apartments share an elevator stop, which creates the kind of intimacy one finds only in townhouses. Stretched across the south face and carved into the slope of the land are ten townhouses, linked to the main building by an enclosed swimming pool. A descending promenade leads from the entry foyers to the pool and townhouses behind, the experience heightened by changing vistas and volumes which tighten, then abruptly expand. The pool ceiling soars to a luminous central light well two storeys

Fig. 9
Val de l'Anse, Ile des Soeurs
1984-89. Dan S. Hanganu
View from North

Fig. 10
Val de l'Anse. Partial Plan

Fig. 11
Apartments. Ile des Soeurs, 1967-69.
Mies Van der Rohe with Philip
Bobrow

above, filling the great volume with shifting patterns of light.

Hanganu's debt to the Modern Movement becomes apparent when the building is viewed from the south. The stark white concrete surface of the three-storey townhouse projection with its large black industrial windows dissolves into a syncopated grid of deep horizontal and slender vertical elements, recalling Mies van der Rohe's apartment block in the Weissenhof settlement in Stuttgart [Fig. 12], and reinterpreting the same architect's apartment block built on the site immediately to the east [Fig. 11, 13]. The shallow projecting steel balconies with white slabs at Weissenhof are repeated here, but Hanganu has pulled them back into the façade and dissolved the wall surface into a grid of slender metal mullions to give them depth and emphasis. The lateral handrail is extended outward into a delicate pergola, its slender vertical supports doubling as frames for a glass block privacy screen. But, unlike his avant-garde predecessor, Hanganu has abandoned the horizontal windows for vertical and square openings that create an illusion of stability and counter the horizontal tension of the façade [Fig. 9, 13].

At Val de l'Anse, three architectural themes emerged which Hanganu repeatedly explored in his later work. The first was his expression of the building as a powerful primary solid from which elements such as balconies and windows had been subtracted. The resulting sculptural volume retains its original form despite the intervention of the programmatic constraints. The second was to give the building a distinct profile against the sky, which was partially achieved by cutting away the roof over the top row of balconies and removing the lintel over the middle balconies. The

Fig. 12
Weissenhof, Stuttgart, 1927.
Mies Van der Rohe

Fig. 13
Val de l'Anse. Terrace Houses,
with Mies Van der Rohe's
apartments in background

penthouse apartments were given emphasis by the use of spandrels linking the windows of their two floors, which together would be perceived as an abstract cornice. The projecting towers of the cores and the building ends are powerful verticals that cut a regular stepped profile against the sky. The third was his use of large surfaces of industrial glazing which, when carved into masonry or concrete planes, produces a dramatic tension between weight and lightness, permanent and temporary, hand craft and machine production.

7. Musée Archeologique Pointe-à-Callière: Layers of Meaning

Winner of the 1993 Prix d'excellence en architecture of the Ordre des architectes du Québec and the 1994 Governor General's Award, Dan Hanganu's archeological museum at Pointe-à-Callière demonstrates his capacity to embody the history of a place in built form. Taking his inspiration from the vestiges of five centuries of human settlement inscribed on this wedge of land that was the original site of Montreal, he has crafted a modern building that captures and reveals multiple layers of meaning. The museum first impresses the spectator with its understated urbanity, completing the axes of the Place Royale and Place Youville, and continuing the sea wall of façades that form the southern edge of the Rue de la Commune [Fig. 14]. Here the planar wall surface appears to be pressed against an invisible barrier that deforms even the rigid shape of the cylinder at the apex of the triangular site. Hanganu explains: "In spite of its intrinsic strength, the Museum finds itself facing something stronger than itself: the vertical plan, the real limit of the city" (Translation by author) [16]. Viewed from the north, the cylindrical tower marking the place where the three streets converge is a mirror of the turret on a 19th century commercial building situated one block west. Completed with a concave cylindrical imprint in the top of its northwest corner, the north façade sets in motion a double reference; the proportions and form of the new building equate with those of its predecessor, and the 'casting' connects it metaphorically to its historical counterpart [Fig. 15, 16]. In keeping with its centuries-old neighbours, the museum's stone facing meets the ground tight to the sidewalk and acknowledges the city's legacy of grey limestone, or 'pierre grise' construction.

Fig. 14
Archeological
Museum, Pointe-
a-Callière,
Montreal,
1992. Dan S.
Hanganu with
Provencher Roy.
South Façade,
rue de la Commune

Fig. 15
Archeological
Museum, Pointe-
a-Callière. North
Facade, Place
d'Youville

Fig. 16
19th. C. Office
Building, Place
d'Youville

A vertical cleft in the north wall aligns with a soaring glass atrium on the south, splitting the volume into two unequal parts. A third part comprises the cylindrical 'lighthouse' that has been pushed to the Rue de la Commune street alignment where it has been flattened to reinforce the planarity of the sea wall [Fig. 14, 18]. The resulting blocks map the perimeters of the original stone structures of the Berthelet, Papineau and Royal Insurance buildings built during the 17th, 18th and 19th centuries, respectively, whose foundations are preserved in the museum crypt. Hanganu's new turret is a tribute to the latter whose square clock tower was a landmark until its demolition in 1937 [Fig. 17]. The 'Éperon', as the wedge-shaped building is named, has been placed in a formal dialogue with the Customs House to which it connects beneath the Place Royale. The Tuscan columns, pediment and sober richness of this Neo-Classical façade are appropriate for a conservative British colonial institution, set against the liberal modernity of the museum [Fig. 19]. The museum itself is not monumental, but by completing the alignment of the façades on the Rue de la Commune and containing the Place Royale, it elevates the grouping of pragmatic buildings to monumentality. Even the cut stone cladding with its narrow, punched openings echoes the smoothness, scale and colours of the neighbouring buildings, thus completing a system of historical references which extends from the local morphology, through the Éperon's massing and proportions, to the execution of its materials. The museum has proven to the observer its historical lineage even before one has crossed its threshold.

Fig. 17
Home Insurance Building,
Place d'Youville. View from East

Fig. 18
Archeological Museum, View from East

Fig. 19
Custom's House, Montreal.
View from South on Place Royale

7.1 South Façade

The river façade was inspired by the naval architecture and 19th century industrial buildings in the port, and is a contemporary interpretation of the horizontal volume and tower of the No. 4 Grain Silo in the nearby dockyards [Fig. 20, 21]. The cylindrical ‘lighthouse’ rises to a terrace two storeys above the main roof, where its stone wall breaks away to reveal a steel and glass cube containing the elevator and observation platform. Behind the observatory the northern half of the cylinder extends another four floors, punched with narrow vertical slots that recall the loopholes, or ‘meurtrieres’ in traditional battlements. Ten evenly spaced steel pipes rise a further two storeys to the apex of the tower to suggest that the Museum and the excavations beneath it are still incomplete, and that the building might one day be unearthed by a future civilization. The array of pipes makes reference to the rigging of the ships nearby, recalling Montréal’s maritime history. Using the subtractive approach of Le Corbusier’s early work and which is now a signature of Hanganu’s designs, the architect deftly carved away the smooth surfaces of the prismatic stone volume to shape a composition that appears to have been eroded by the action of the waves. Employing the terms of a sculptor to describe how he models his art, he explains: “I am very sensitive to materials, to the primary volume, to the strength of a block of stone from which you remove what isn’t needed and which you chisel this way and that, accentuating the resistance that nature opposes to you” (Translation by author) [17].

Four subtle gestures serve to integrate the avant-garde expression of the south

Fig. 20
Archeological Museum.
View from South on rue de
la Commune

Fig. 21
No. 4 Grain Silo, Montreal

Fig. 22
Archeological Museum.
Entrance and Link to Tower

façade with the elements of the neighbouring 19th century architecture of Old Montreal. To mitigate the height difference between the five-storey volume of the museum and the four-storey façades of the adjacent buildings, Hanganu has carved away the front three metres of the top floor, leaving a stone pergola in its place. Without resorting to mimicry or pastiche, he has maintained the modern planarity of his façade and made an oblique reference to the mansard roofs used in the older buildings. A symmetrical group of eight punched windows on the fourth floor of the museum's otherwise asymmetrical façade makes reference to the regular window spacing of the 19th century building to the west [Fig. 14]. A notch in the southwest corner into which is fitted a delicate steel bracket, alludes to the cornice which traditionally separates roof from wall. The façade of smooth cut stones sized to match the neighbouring buildings, is divided with narrow precast belt courses into five storeys that equate with the floors and roofs of the adjacent structures. The precast inserts are hollowed out to cast a line of shadow across the taut surfaces of the exterior walls, except in the places where portions of the building volume have been removed. Where recesses have been 'cut' into the wall surface, these belt courses remain smooth and flat to draw attention to the feature exposed by the act of removal [Fig. 24, 25]. This gesture is a tactile interpretation of the archeological process. Three additional belt courses in the lowest storey correspond to the rusticated bases of the classical buildings nearby, suggesting the stratification of the settlements that have occupied the site and setting in motion the archeological theme that dominates the experience of the interior.

Fig. 23
Archeological Museum. Lobby

Fig. 24
Archeological Museum.
Detail of Outside Corner

Fig. 25
Archeological Museum.
Detail of 'Cut' Corner

Fig. 26
Archeological Museum. Piles
and Lateral Braces, Original Foundations

7.2 North Façade

The visitor mounts five wide steps to an elevated plaza on the north and east sides of the tower, leading to a triangular fore court containing a bronze urn by Andrew Dukewych. On the opposite side of the Place d' Youville, the raised square in front of the Customs House acts as a counterpoint to this triangular wedge of granite pavement symbolizing the original settlement of Montreal at Pointe-à-Callière. Through two narrow windows on the north façade can be seen the exhibition hall and, beneath a spectacular receding floor that recalls the disappearing windows in Mies van der Rohe's Tugendhat House, the ruins of the original foundations appear. The clefts in the northern façade permit daylight to break through the stone shell and draw one's attention to the protected entrance on the Place de Youville. The larger breaks in the wall surface which define the three parts of the composition are covered with flush glass curtain walls which set in motion a dramatic tension between solid and void, opacity and transparency, tradition and modernity [Fig. 22]. A translucent marquee of tapered steel armatures supporting a translucent plexiglas canopy fans out from an array of slots or loopholes cut into the cylinder high above the entrance, recalling the sails of the square-rigged ships which once crowded the harbour.

7.3 Plan and Section

The entrance lies behind an arcade over which the name of the building is engraved in stone in the manner of Montreal's great institutions. The chiseled Roman script and bronze urn are the only symbols on the exterior that suggest this modern building is a museum. A pair of elegant glass doors beneath the name lead to the interior. The lobby, or 'Hall' is a wedge-shaped piazza enclosed by an interior colonnade of cylindrical concrete piers on the south and the double window to the north. It is like an interior street, serving at once as a place of meeting, a space for exhibits and a stage for ceremony. Entered at its narrow end, it widens towards a raised platform that leads to the auditorium. Unlike similar spatial sequences in Hanganu's other work that contract and then expand skyward, the museum lobby is low and forces the eye towards the floor and the ruins below. The slate floor is divided into a square grid of glass tubes that allow light into the basement and allude to the practice of mapping archeological digs. A grid of diminutive spot lights hangs from the exposed structure above, repeating the pattern of the glass tubes and directing slender shafts of light towards the basement [Fig. 23]. Exposed ducts and a circular reception desk made of exposed steel studs remind us that we have entered a working archeological site, and that the process is still in evolution. Behind bronze doors by Peter Krausz depicting the veils of time and entitled 'Les voiles du temps' a small theatre hovers above a floor that silently retracts, unveiling the ruins of the original settlement of Montreal.

The spiral 'Captain's Stair' built of flat steel plate descends to the basement,

or 'Crypt', providing views through the large south window to the river and the grain elevators that inspired the building. As in many of Hanganu's works, the stair is a piece of sculpture which dominates the three storey volume it occupies and transforms the act of descending the steps into a celebration of movement, of shifting views and interpenetrating spaces. In the 'Crypt', one encounters multiple layers of civilization unearthed in the graves of the native peoples who first lived here, and the stone walls and floors of the first buildings. The weight of the new museum is carried on an array of slender steel piles, or 'pilotis', that thread deftly between the ancient walls to the bedrock thirty metres below. The masonry and curtain wall revetment meet the ground slightly outside the old foundations and are braced to the 'pilotis' with diminutive red steel pipes, giving the impression that the exterior wall is a protective membrane distinct from the supporting structure. The horizontal tubes provide lateral support to the exterior wall and the piles, enabling both to be reduced to minimal thickness [Fig. 26]. Here, the architect has resisted his preference for expressing the weight of the base of the building, and for pragmatic reasons employed Le Corbusier's device to free the space containing the ruins. In contrast with the metre-thick stone foundations of the original buildings, the narrow piles appear to work in tension to hold the floating superstructure down, seemingly denying the weight of the five floors above. Hanganu has inverted the logic of the structure, making the exterior masonry appear as a protective fabric or metaphorical tent and the interior compression members work in tension. The simplicity of the former is set against the technical complexity of the latter, producing a dialogue that spans centuries of building. The contrast between the techniques of construction draws attention to the traditional masonry construction of

the ruins. Benefiting from the strength of the slender steel braces, the new masonry construction appears surprisingly light when compared with the massive walls of the ruins. During construction, the historic foundations were filled with sand to protect them from vibrations from the piling operations. The sand was carefully removed when the new structure was complete, thus unearthing the ancient foundations in a manner that repeated the experience of the archeological excavation.

A network of delicate ship ladders and nautical-style gangplanks fabricated from metal mesh weave between the relics, hovering over the foundations without touching them as they lead the modern pilgrims through a vaulted chamber that once channeled the St. Pierre River to the St. Lawrence. Before abandoning the idea because of budget restraints, the architect had intended to use this chamber to connect the building to the port, allowing the spectators to experience a vertical section through layers of rock and rubble that reveals three centuries of Montreal's history. Hanganu explained his vision: "[...] On one side, terraces. On the other, the appreciation of a section on which the visitors could read the successive layers of occupation since the arrival of Maisonneuve. History teachers could have explained to their students how all of this happened, and what it signified, the sewers, the fortifications, the stakes, and the rest" (Translation by author) [18]. Accompanying the design drawings, a freehand sketch by the architect illustrating this vision is simply entitled 'Surprise' [Fig. 28].

Other surprises await the visitors when they step from the elevator onto the top floor 'bridge' that links the tower to the main body of the building. The narrow

passage crosses a vertiginous space whose curtain wall glazing offers dramatic views of the port and the city, then enters an expansive top-lit restaurant that is dominated by a mirrored wall reflecting the harbour. The experience is disorienting, as one notices the panoramic reflection before seeing the actual windows, and the threshold between the real and the virtual is blurred. The window wall and full-height mirror converge at an acute angle, creating the impression of a funnel-shaped space surrounded by windows such as is often found on ships. Beyond the windows, a narrow terrace behind a chest-height wall evokes the exterior passages of ocean vessels. The height and opacity of the wall and the width of the terrace were intended to convey the impression of being aboard a ship. Nautical associations abound, from the funnel-shaped air intakes to the crow's nest from which is conducted the annual 'Symphonie portuaire', or 'Port Symphony' comprising an orchestra of church bells, ships horns and locomotive sirens.

The expansive view from the roof terrace contrasts with the compressive sensation of the Crypt, where the weight of the past is almost palpable. To prolong the encounter with history and demonstrate the continuity of past and present, Hanganu extended the subterranean promenade beneath the street and Place Youville, where shafts of light descend from a cleft in the paving to light the ruins below. The promenade turns and rises through a series of short flights of steps, to terminate in the ground floor boutique in the newly renovated Customs House [Fig. 27]. The visitor has thus encountered more than three centuries of Montreal's civilization, to emerge suddenly in the full light and din of the present.

Fig. 27
Archeological Museum.
Ground Floor Plan (above).
Basement Plan (below)

Fig. 28
Archeological Museum. Sketch of
Proposed Connection to River

Among the multiple layers of meaning that can be read into the Archeological Museum, what are most important are the role that it plays in the organization of the urban fabric and the degree to which it completes a series of built interventions that have evolved in Montreal over a period of three and a half centuries. Not only does it provide the setting for the visitor to experience and appreciate the ruins and artifacts, it changes the way one perceives the built environment by exploring and validating the evolution of Montreal's architectural heritage.

8. Pavillon de Design UQAM: The Domestication of the Street

The Pavillon de Design for the Université de Québec à Montréal (UQAM) was awarded the 1996 Prix d'excellence of the Ordre des Architectes du Québec.

Completed the same year, it was a testing ground for many of Hanganu's themes which we will examine subsequently, including the use of regulating grids, the arrangement of the functions in a hierarchical order, the use of primary forms to shape the building, and the elaboration of the historical and geographic context of building and site. It is the last theme that the architect most eloquently articulated in the School of Design, for here he elaborated the building's social function and the contribution it makes to its immediate neighbourhood.

Situated in the heart of the Latin Quarter on an irregular site fronting on four streets including a major commercial artery, the new school was destined to have a strong urban presence. The continuation of the building along rue Sanguinet as far as rue Ste. Catherine, the placement of a commercial activity at the intersection of these two streets and the location of exhibition halls as extensions of the foyer and landscaped courtyard, gave the School of Design the open and public character the owners desired. Its location above an important subway interchange ensured that a heavy flow of visitor traffic would pass through its public spaces. This suited the school administrators who envisioned a transparent educational facility to showcase their students' designs, and that would give their institution a highly visible presence in the city. In a bold gesture, Hanganu pushed the five storey building envelope tight to

the streets and reconstituted the perimeter block which had suffered from the ravages of demolition and neglect. By consolidating the block and extending the dead-ended rue de Boisbriand to the campus square to the east, the new building creates a proper edge to the open space of the Jeanne Mance housing to the north, and restores the character of a traditional neighbourhood street. The neglected buildings and vacant lots were replaced by a smooth five storey wall which continues the height and alignment of the existing building façades on the adjacent block to the west, and consequently frames the southern edge of the Jeanne Mance property. Two sleek volumes sheathed with coursed cut stone contain the new school and transform the neglected service lane into a landscaped courtyard. The character of the lane with its mature trees and typical Montreal form and the placement of large doors along the lane that give access to the auditorium and exhibition spaces, encourage the students to use the space for spontaneous events and social gatherings. A modern arch, or 'porte cochère' slices through the façade, leading to the reclaimed courtyard where the thin wedge of building facing St. Catherine and Sanguinet Streets joins the elongated cubic volume of the main building. Here, a glass stair tower and recessed arcade mark the entrance to the School of Design, strategically placed opposite the University square where students from the subway and adjacent university buildings can easily find it [Fig. 29].

8.1 East Façade

The principal eastern façade comprises three distinct parts: the shallow four storey office wing adjoining the commercial strip, the larger 5-storey classroom wing enclosing the northern half of the block, and a tower-like service core which joins together the other two components. Three symmetrical rows of square punched windows hover above the oversize glazing of the commercial frontage, at once asserting the weight of the masonry and establishing a link with the century-old store fronts. To compensate for the difference in height between the existing and new buildings, the architect has bracketed a tubular metal frame from the wall, aligned with the projecting cornice of the neighbouring building. This gesture transforms the top floor into an abstract mansard without diminishing the contiguity of the wall surface. The roof over the end bay is pulled back slightly from the south façade, as in Val de l'Anse, to complete this illusion. As though to confirm that the bracket is both decorative and functional, Hanganu has extended it beyond the end of the building and across the curtain wall stair glazing, and attached four slender light standards which project above the roof [Fig. 38].

The greater scale and industrial character of the classroom block create a dramatic tension with the office block. An arcade cuts into the stone facade, marking the entrance and repeating the scale of the retail frontage of the other wing. Like a large billboard, a three storey high glass curtain with horizontal steel mullions tilts slightly out from the wall on slender braces. Designed by Pierre Leclerc, it is both an

abstract map of the smaller wing and a marquee, its lightness and transparency expressing the character of the School of Design and emphasizing the weight of the masonry wall behind.

8.2 North Façade

Turning the corner, a massive corrugated steel drum protrudes from the masonry to terminate the arcade and identify the exhibition hall behind. Suggesting a silo or water reservoir, this primary volume is a preview of the industrial aesthetic that reigns inside. Diagonally opposite the silo, the top floor is cut away to contain a roof terrace, its open sides framed by a giant order of steel pipes supporting a narrow trellis which, like the pipe rail on the entry façade, projects beyond the walls. The random spacing of the columns suggests a forest, at odds with the industrial imagery of the pipes. Moreover, the absence of this portion of the top storey is a departure from Hanganu's preference for simple volumes, thus drawing attention to itself. This is intentional, for this outdoor terrace is perhaps the best 'room' in the house and the culmination of the architect's trademark promenade.

The classroom wall is penetrated by large factory windows grouped four-square to mark the studios on the upper levels. Two horizontal strip windows near the base provide north light to the classrooms, recalling the early buildings of Le Corbusier and what became a signature element of the International Style. This fenestration is a curious contrast to the punched openings that dominate the façade and

Fig. 29
Pavillon de Design,
Université de Québec,
Montreal, 1993.
Dan S. Hanganu.
View from East, rue Sanguinet

Fig. 30
Pavillon de Design.
View from North

causes the upper portion of the wall to appear lighter than the more impervious base. The lower of the two windows, measuring one half metre in height and scarcely more than a stripe on the massive wall, divides the façade into an inferred foundation and superstructure. The varied shapes and placement of the openings in the façade map the hierarchical layering of the functions within: the ground floor containing the exhibition spaces, the piano nobile containing lecture rooms, the studios behind the factory windows where the creative process takes place, and the hanging garden where rest and contemplation ensue. Obscured by day, these activities project outwards at night, as the walls fade and the windows expand with artificial light. Indeed, it is at night that the structure makes its full presence visible, and the boundary between school and city seems to dissolve [Fig. 30].

8.3 Plan and Section

One enters the building through the curved galvanized steel wall near the juncture of the two wings, where a vertical glass recess cuts into the smooth perimeter walls. To one side, the transparent glass stair well soars the full height of the façade; to the other, a two-storey arcade punches through the smooth stone masonry. Behind the arcade the entrance is rotated slightly to face the campus square on rue Sanguinet, thus asserting the presence of the school in the university community. Inside lie the foyer and auditorium with a grand staircase to the left. The stair has a rustic, material quality in its cast concrete treads and railings, framed at the bottom by two cylindrical steel

columns, like bedposts. Tapering toward the top, it magnifies the sense of depth and draws the eye upwards to the dramatic central gallery that splits the building in two. The full impact of this space, only hinted at by the vertical cleft in the façade, is felt as the stair meets the piano nobile at the internal street which is the heart of the school.

The street, called the 'gallery', extends the length and height of the building and connects all elements of the program both visually and functionally. Narrow and high (it is barely four metres wide and eighteen metres high), the space is illuminated with diffuse natural light from skylights above and evokes memories of real or imagined alleys in North American cities. Polished concrete floors, ribbed galvanized steel columns and a towering wall of black painted wafer board on exposed steel studs leaning into the street, are naturally associated with exterior finishes and create an impression of a back lane. This impression is enhanced by the garage doors that the architect has placed at the ends of the corridors, leading to studios and exhibition spaces. Stainless steel café tables and chairs spill out into the street from a widening in the space, where a checker-board tile pattern and heightened illumination signal the cafeteria. From here, the students can observe life in the internal street and the numerous stairs that climb upwards through the volume, or relax on the south-facing balcony which overlooks the tree-shaded lane. Here, one experiences the urbanity of Hanganu's work at several levels of consciousness, from his choice of materials through the function of the volume, to its connection to the city. Indeed, the architect has fulfilled one of the objectives of his social agenda in giving back to the city a climate protected 'street' that possesses all the qualities of a successful urban place: it

is socially active, visually stimulating and programmatically flexible. And unlike other urban places in our northern cities whose use is limited after dark and during the winter months, this space can be used day and night and year-round.

From the piano nobile to the top floor, the section adjusts on either side of the street to accommodate three floors of offices and lecture rooms on the south side and two floors of studios on the north. Short flights of stairs spring across the central void, each one a different visual and tactile experience: a wire mesh guard stretched over a steel frame, folded sheet steel risers and treads, a serpentine concrete wall with a stainless steel handrail [Fig. 31]. The volume tightens with the inclination of the black wall and the visual weight of cylindrical galvanized steel air ducts which hang like stalactites from a mechanical room above [Fig. 32]. As though defying the physical tightening of the space, natural light spills down from above and increases with the ascent, much like the diffuse light that filters down between tall buildings lining narrow streets. Eventually the stair reaches the top floor beneath a narrow skylight that extends the full length of the gallery. An open garage door at the top of the stair leads to an exhibition room, its space flooded with light from a wall of north windows. Lecture rooms are disposed along the north wall, facing across the five-storey void to the offices of the faculty. An inclined glass wall with slender stainless steel mullions opens out to the roof terrace and a panoramic view of the Montreal skyline. Enclosed by the glass walls of the building to the south and east, and by the abstract colonnade on the north, the uncluttered earth floor and rotated grid of paving slabs evoke an ancient archeological site, a timeless relic from another age.

Fig. 31
Pavillon de Design.
Detail of Handrail
Plan of Fourth Floor

Fig. 32
Pavillon de Design.
Atrium. View to West

To move through the ascending promenade is to experience the building section that organizes the themes of the architectural parti. The different activities of the School of Design are arranged according to a logic whereby the identity of each functional grouping is expressed on the building's interior and exterior. The exhibition rooms are at ground level with oversize doors leading to the exterior lane, permitting spectators to circulate and objects to be moved with ease when displays and presentations are mounted. One level above, the 'street' is enclosed by classrooms on the north, and the cafeteria and lounge on the south, permitting student activities to be concentrated within sight of one another. The studios occupy the floor above, their lofty spaces visible through wide doors to the central gallery and the distinctive double-height glazing which faces the city street. Places of rest, of work, of assembly and of exhibition are visible as one moves vertically through the volume. As it winds its way through these changing uses, the street touches all activities and thus has become the repository of the school's identity. Choreographing the promenade from the entrance to the roof garden, the street provides the delight of discovery through the play of solid and void, transparency and opacity [Fig 32, 36].

As a consequence of integrating the existing cul-de-sac into the building and extending the campus walkways into the internal street, Hanganu has taken the urbanity of his work to a higher level of resolution. Seldom has a new building, and an institutional one at that, been more integrated into the city fabric [Fig.33]. Set against the solidity of the masonry walls, the transparent entrances are reduced to the minimum physical separations required for climate and security, and psychological

Fig. 33
Pavillon de Design
Square Viewed from East Stairway

Fig. 34
Pavillon de Design.
Plan of First Floor (above)
Plan of Ground Floor (right)
Pavillon de Design.
Longitudinal Section (below)

barriers - steps, gates and obstructed views - have been avoided to ensure that the space is both visible and accessible to everyone. Here, the ascending promenade has been given new meaning. More than a device for private discovery as in rue de Gaspé and rue Corôt, the 'gallery' makes visible the elements, functions and experiences of the school and, as such, is an instrument of learning [Fig. 34]. Hanganu felt that education should be open and transparent, and expressed this principle by hiding nothing in the building. Knowing that the students would be stimulated and learn from the building he crafted for them, he placed such things as ventilation ducts, plumbing and samples of the construction process in plain view. His details were designed to reveal the methods of fabrication and the wealth of products and approaches available, and to direct the students' attention to the materials themselves, which he expressed with brutal honesty. Concrete is site cast and left unfinished, or sealed and polished to set off its aggregates. It expresses plasticity in the serpentine balustrade and strength in the squat column at the northwest corner [Fig.35]. As though to deny its opacity and prove it is no more than a membrane, the architect punched holes, or inserted glass blocks in the concrete floor [Fig.36]. He used only clear glass - never mirrored or smoked, to make it appear weightless and transparent. He used masonry in large, smooth surfaces to suggest strength, weight and permanence, and set it against steel for emphasis. When designing with steel, Hanganu used flat, punched and perforated sheets and common sections of slender proportions and in unexpected ways, to express lightness, novelty and change. He fabricated guardrails with steel plate, expanded or welded mesh, and sometimes glass to challenge the spectator to discover the thinness,

Fig. 35
Pavillon de Design.
Detail of Northwest Corner

Fig. 36
Pavillon de Design.
Atrium. View to West

transparency and strength of the materials. To read his materials is to understand their essence.

The School of Design is a complex weave of fabricated materials that retain their natural colours and textures throughout [Fig.37, 38]. Where function required a durable finish, as in the windows, doors and stairs, the steel was painted white or black; rarely was colour applied. The architect exposed the natural warmth and vitality of his materials to counter what he saw as the starkness, emptiness of spirit and lack of warmth that had come to be associated with modern architecture. He made his buildings understandable and familiar by choosing materials that were familiar to the occupants - ashlar stone, steel, wood and glass – and using them in ways that are easily comprehended. Contrary to the contemporary obsession for concealment of all the mundane things – studs, conduit and ducts – that make a building work, Hanganu took every opportunity to reveal the logic of his construction so the public, encouraged to explore his materials and components by sight and touch, would make these experiences their own. He has given his buildings personality, where most architects who designed in the modern style had settled for anonymity.

Although the notion of architecture as volume, the regulating structural grids and the absence of applied decoration were considered by Hitchcock and Johnson to be essential principles of the International Style when they introduced it to North America during the 1930's, these qualities were common to the movement for only a brief period between the Wars and were soon adapted to the changing requirements of different societies and climates. The lean restraint and regularity of the 'avant-garde',

Fig. 37
Pavillon de Design Cafeteria (right)
Sketch of Ground Floor by Dan S. Hanganu (below)

Fig. 38
Pavillon de Design
View from South, rue Ste.-Catherine

as the new architecture was called, were products of the need, especially in Europe, for large-scale replacement of housing, industries and institutions with affordable buildings which could be built more quickly and efficiently with the use of current industrial processes. The proponents of the Style had a mission and a message – they believed they should change the world with a new way of building, and that it must be one which capitalized on the quality and efficiency of industrial production. The architectural historian Charles Jencks believed modern architecture corresponded to the International Style during the 1920's and was exemplified by the work of Mies Van der Rohe, Le Corbusier and Gropius. Jencks defined it as “[...] a ‘universal’ international style stemming from the facts of the new construction means, adequate to a new industrial society, and having as its goal the transformation of society, both in its taste, or perception, and social make-up” [19]. The Spartan appearance and minimalist detail of the work which followed could hardly be justified by social needs during the relative prosperity of the second half of the 20th century and came to be associated with the commercial goal of profit maximization. Although many exquisite buildings were erected in North America by the purveyors of the Style during the second half of the century, even more had failed to meet the demands of the climate and the needs of an increasingly affluent society which had turned its eyes nostalgically towards the past.

When Dan Hanganu began his practice in Montreal in 1972 the backlash to the avant-garde, christened ‘Post-Modernism’ by Jencks, was gaining public acceptance. Jencks claimed that “[...] Post-Modernism includes a variety of

approaches which depart from the paternalism and utopianism of its predecessor, but they all have a double-coded language – one part Modern and part something else. The reasons for this double-coding are technological and semantic: the architects seek to use a current technology, but also communicate with a particular public. They accept industrial society, but they give it an imagery which surpasses that of machinery – the Modernist image” (20). Mies Van der Rohe’s philosophy of ‘less is more’ was being challenged by Robert Venturi’s ‘less is a bore’, and the buildings that dominated the pages of architecture magazines contained overt and sometimes whimsical references to past traditions. Aldo Rossi’s Gallarate Apartment Block in Milan (1969-76) is supported on an obsessively linear colonnade that might have been inspired by a Greek stoa. Yamasaki’s World Trade Centre in New York (1969) is covered with a mesh of columns forming ogive arches, vertical mullions and glazing that recalls the High Gothic cathedrals of the Middle Ages. Charles Moore’s Piazza d’Italia in New Orleans (1975-59) is a Mannerist assemblage of classically inspired columns, arches and entablatures painted with fake marble graining, lustrous chrome and brilliant reds, oranges and yellows. Even Philip Johnson who collaborated with Mies Van der Rohe in the design of the quintessentially modern Seagram Building in New York (1954-58) felt obliged to place a six-storey high Greek temple form on top of his American Telephone and Telegraph Building (1979) in the same city. During the boom in office construction in the United States in the early 1980’s, the tripartite façade with a decorative cap had become the fashion, and arches, columns and broken pediments vied for attention on the skyline. This applied historicism which masked otherwise conservative buildings, was as banal as the avant-garde glass prisms it intended to

replace, and in time could no longer disguise an emptiness of meaning. The novelist Charles Newman captured the spirit of the time when he wrote: "What we inevitably end up with is a gesture of historical pathos without content; the restoration of historical images with no co-ordinates – a Romanesque arch which holds up nothing, a Greek pilaster in mid air, a trapezoid window in a neo-classical façade...testimony not to a new eclecticism but merely to the artists' erudition. What we have recently – in painting, music and architecture, no less than in literature, in opposition to uncritical rejection of the past...is an uncritical reception, an all-embracing nostalgia, in which all historical styles are dredged up simultaneously, history as gesture to a 'pastness', which disguises the real pain of history and struggle for knowledge. The ideology of making it new becomes the ideology of making it (sort of) old. As Modernism has become the respectable culture, 'tradition' becomes the Avant-gard." [21].

Hanganu never fully subscribed to the Post-Modern counter trend, but instead made the principles which Hitchcock and Johnson attributed to the International Style the basis of his own architecture. First, his buildings were conceived as volumes contained within non-supporting wall surfaces and benefiting from the freedom given to plan and elevation when the structure is independent of the skin. Steel and reinforced concrete technology from the late 19th century had made possible the 'free plan' and 'free façade' that Le Corbusier deftly explored, but few architects since have investigated the potential of architecture as volume as consistently as did Hanganu. Second, Hanganu's designs were controlled in plan and section by the regularity of the structural grid that was often free of the walls, and occasionally detached from the

floors. The importance of the grid can be seen in an early sketch showing the ground floor of the School of Design contained within a regular grid three bays wide by eight long [Fig. 37]. Third, his buildings have generally lacked decoration. But here he diverged from the tenets of the Style by using decorative elements for a particular purpose, such as the symbolic cornice on the rue Ste. Catherine façade, and in the pipe rail implying the eaves of the neighbouring buildings [Fig. 38]. What distinguished his work from the avant-garde was his insistence on using traditional materials for their ability to impart a sense of belonging, of being historically connected and relevant, and of juxtaposing them with contemporary construction for dramatic emphasis. It might contain fragments of history and familiar items that are used in unexpected ways to shock and amuse. Thus his work shares Post Modern's contextualism and a rich and complex architectural language based on historical imagery, metaphor and humour.

8.4 'Classical' Modernism

Like the architects of the avant-garde, Hanganu has given shape to the utopian sentiments of his era by exploring new relationships between construction methods, the community and the people within. Yet, his work is never purely modern in the way of the International Style. The structural potential of steel and concrete has made possible the modernist hovering volumes, spatial ambiguities and transparencies found in the School of Design, but its stone walls bind it to the ground, linking it to Québec's building traditions. Hanganu's building contributes something to the street in a rational

and intelligent way, prompting Kenneth Frampton to claim that his “[...] creative posture is rational and ethical, rather than overly aesthetic and self-indulgently competitive” [22]. Hanganu used the structural frame that permitted such spatial richness to regulate his building in plan and section. This allowed him more freedom to explore the potential of the volumes, shapes and textures without loss of coherence. The regular framework of his disengaged columns brought order and cadence to a collage of visual, tactile and emotional experiences, as did the colonnade during the Classical past and the regulating grids of the International Style. The place-bound dialogue cultivated by Hanganu between Québec’s modern present and its traditional past has distinguished the architect’s work and made it relevant in its place and time.

The architect has claimed to draw a large part of his inspiration from ancient Latin and Greek traditions. Unlike the dictators from his homeland who used the Classicism of Imperial Rome as a means to control the populace and display their power, Hanganu has found a different spirit in Greek Classicism. The architecture of the latter was more spontaneous and democratic. The exterior spaces framed by their colonnades were seldom rectangular, with obstructed and forever changing views that differed from the axial predictability of Roman vistas. Hanganu planned his promenades much as the ancient Greeks had done, leading his subjects on a controlled, but somewhat meandering journey of discovery. The walk through his building is like the promenade to the Acropolis; one climbs numerous flights of stairs, turning at each landing and experiencing a particular view before continuing. Spaces tighten, become lower, then expand into unexpected volumes – large, light-filled and often precisely

framed – like the view of the Parthenon from the Propylaeum. The implicit randomness of the experience is an illusion; it was controlled within a rigorous geometric order and staged by the architect to deliver a powerful sensation to the visitor. These aspects of order, control and discipline were derived from Greek Classical architecture and, although present in all of Hanganu's buildings, were usually suppressed from one's initial experience of the architecture. A remnant of his communist architectural education and travels in Europe, Classicism had played a part in shaping Hanganu's work, and he, like Le Corbusier, adjusted its devices of order, scale and proportion to suit his purposes. We will now examine how the architect has interpreted Classicism in his next major work for the University of Montreal.

Chapter IV

École des Hautes Études Commerciales: Cultivating the Site

When in 1996, the organization 'Sauvons Montréal', or 'Save Montreal' awarded its notorious 'Lemon Prize' to the new Hautes Études Commerciales (HEC), the construction judged to "most impoverish the architectural landscape of Montréal", the building by Dan Hanganu in association with Jodoin Lamarre Pratte, was compared to an aircraft carrier, a battleship and a Soviet nuclear power station. Jacques Godbout, the writer and film maker who grew up in the neighbourhood, lamented "[...] this need to be modern at any price...It seems to me that there was a past here, and I would have liked the building to integrate itself into this past [...]" (Translation by author) [23].

Comparing this comment with those of some members of the architectural profession, one can see to what extent a work of architecture is open to interpretation. Anne Cormier of Atelier Big City chose HEC as an example of the embodiment of Quebec's cultural identity in architecture [24]. Jean-Claude Marsan, an architect and Dean of the faculty of Planning (architecture) in the University of Montreal, was a member of the jury that selected Hanganu's design from among the submissions of seven competing firms.

Marsan, a pioneer of the preservation of architectural heritage in Québec and co-founder of Heritage Montréal and Sauvons Montréal that were instituted during the 1970's to preserve the city's heritage, has a different interpretation. "[...] by placing the HEC on the mountain, questions about heritage were raised, trees had to be cut...Except heritage is also the institutions. The École des Hautes Études Commerciales, founded by French

Canadians, is classed second in the world” (Translation: by author) [25].

The University of Montreal anticipated some neighbourhood resistance when it initiated a competition in 1992 for the design of a 45,000 m² building on a wooded slope of Mount Royal in upscale Outremont. The site is an elongated rectangle measuring 250 x 750 feet, situated at the eastern limit of the campus between the 1930's seminary style School of Architecture on the east and the Classical Revival architecture of the College Jean-de-Brébeuf on the west. The narrow ends face the prestigious Côte Ste. Catherine to the north and the backs of late Victorian apartments on rue Edouard Montpetit to the south. The southeast corner abuts the cul-de-sac of rue Louis-Colin, which leads to a major subway stop a short distance to the south. The site is remarkable for its ten metre slope from south to north, a forest of mature hardwoods which follows a rock outcrop westerly to the rear of Brébeuf College, and its prominent street frontage. For decades the forest had belonged to the religious order and the college, and was perceived by the community as a priceless natural feature. Thus, the future of the forest was one pole of the public outcry when plans to build the new facility were announced. The other pole was the building's bulk.

Hoping to present itself not as a developer, but as a corporate citizen and a part of Québec's collective heritage, the University wanted a building that would reflect HEC's international reputation, and that inscribed itself harmoniously into the physical and cultural environment of Outremont. Hanganu's winning proposal placed a powerful, horizontal volume into the slope on a north-south axis and a tower-like appendage for future expansion on its east façade. The tower paid homage to Cormier's

famous one, located a half kilometer away on the mountain flank [Fig. 40]. In a bold gesture intended at once to foreshorten the building and acknowledge the landscape, an irregular gash in the west wall lets the forest enter the volume. Referred to as a 'bite' by the architect, this ragged hole exposes the building's entrails and affirms the importance of the natural forest. On the opposite wall and nearly touching the indentation, a full-height atrium behind a wall of east facing glass envelopes an interior wooded area. Beyond the glass, the forest is transformed into a park-like space abutting the School of Architecture. The proposed tower divides the park into two areas and affirms the alignment of rue Louis-Colin. In a gesture that went beyond the limits of the program, the School of Architecture parking lot was turned into a park as a means to replace the trees lost to new construction. The forest would, therefore, appear to flow through the building and out the east wall, terminating in the park [Fig.39]. Traffic to both HEC and the School of Architecture would be confined to the Côte Ste. Catherine arterial, and a pedestrian promenade would meander through the eastern portion of the forest from Côte Ste. Catherine to Louis-Colin. In a plan that appears deceptively simple, Hanganu has tamed the conflicting forces of nature, pedestrian and vehicular access, program and image.

The citizens were not to be easily satisfied, and produced a petition, bearing some 700 resident's signatures, to halt the project. At their insistence, an environmental study was ordered to determine the effect that the new building would have on the forest. The directors of HEC were asked to reduce the height of the

Fig. 39
Hautes Etudes Commerciales
Université de Montréal. 1996.
Dan S. Hanganu with Jodoin LaMarre & Pratte
Site Plan

Fig. 40
Université de Montréal,
Pavillon Centrale, 1943.
Ernest Cormier

building by 15 metres, eliminate the tower, rotate the main building parallel to Côte Ste. Catherine, or move the project to another site on the mountain or downtown. In the end, a compromise was reached: the Phase II tower would be eliminated and the building lowered and shifted slightly away from its residential neighbours. However, its north-south orientation would remain unchanged. Since the building would be carved into the slope, the heights of its walls would be similar to those of the surrounding buildings: 19 metres at the rear compared with 16 [dwellings]; and 34 metres at the front compared with 27 [School of Architecture], 33 [Brébeuf] and 40 [St. Justine Hospital]. About 120 trees, or less than ten percent of the forest, would be cut down and 400 trees planted in the new park adjacent to the Faculty of Planning. The Executive Committee of the City of Montreal granted approval for the revised submission on August 20, 1993. The ecological study showed the forest to contain a variety of species and assessed the stand of trees as having moderate heritage value.

.1 The University and the City

The selection of the site for Hautes Études Commerciales is the result of more than a century of evolution. When McGill University was founded and its first building, the 'McGill College Building' by John Ostell was completed in 1839 on the southern slope of Mt. Royal, an English-speaking community began to spring up around it. The leaders of industry and commerce made this their home, and it grew in wealth and prestige. The French-speaking workers lived in the working-class suburbs to the east and north, where land and housing was cheaper. When the Université de Montréal acquired a large tract of land on the northern flank of the mountain, the francophones now had an opportunity to assert their presence. Following its completion in 1931, Ernest Cormier's monumental Pavillon Central became the pride of the francophone community [Fig.40]. Like its English counterpart on the opposite side of the mountain, a wealthy French-speaking residential quarter grew up around the new university. Government educational funding during the 1950's fueled a post-war boom and by the close of the century the university was in need of new building sites in the vicinity of the campus. When the Collège Jean-de-Brébeuf offered to sell a 3 hectare lot with a prestigious address within 200 metres of the U. of M. campus, the University secured the site for their flagship School of Commerce. Hautes Études Commerciales would soon take its place between Collège Jean-de-Brébeuf and the old 'Sister House' that now houses the School of Architecture.

The choice of a site for HEC outside the Université de Montréal campus was

of strategic importance. Hoping to attract funding from the private sector, it was prudent for Hautes Études Commerciales to appear to be independent of the university, and an address on a prestigious street that had a significant commercial presence supported that image. Moreover, the site would benefit from the prestige of its neighbours: the School of Architecture had produced many of Québec's leading architects; the Jesuit Collège Jean-de-Brébeuf had educated many of Québec's intellectual elite and some elected officials including Pierre Trudeau and René Lévesque; and Ste. Justine was a highly-respected hospital. The presence of politics in this forested property was almost palpable, and was certain to find expression in the building erected there.

.2 The Forest and the Rock

The site is an irregular rectangle 230 metres in depth by 80 in width, increasing to 120 metres in the middle. Dominated by two natural features, a mature hardwood forest and an ancient rock outcrop, it slopes ten metres in its length from rue Montpetit down to Côte Ste. Catherine, bisected by the forested ridge. The forest and rock outcrop, and their interface with the city, are the generating elements of Hanganu's design for the HEC. He responded with a simple, formal volume, its axis parallel to the slope, which slices through the forest and ridge. Recalling the work of Le Corbusier and Mario Botta, the building is a primary form, profiled against the topography and sky. Having thus opposed the randomness of the forest to the regularity of the building face, the

architect carved away a section of the western façade in a gesture of submission to the landscape. Here the building and the wood coexist in a tense balance where neither is dominant and none is at rest. The wall has resisted the advance of the forest, but appears to have been damaged in the process. The forces of nature have been held in abeyance, yet seem ready to rise up and hurl themselves against the structure that was placed on the landscape. The forest floor has been cleaned but left natural, a winding dirt path the only testimony to the human presence. The rock strata and the trees stop inches from the wall, continuing their advance on the eastern side. There, too, the glazed wall is inflected, but this time to frame and contain the woods. The eastern forest has been thinned and cultivated, and the path through it is paved and wide. Submitting to the needs of the city, the woods have been transformed into a park.

The 10 metre gradient was a challenge which Hanganu addressed with gusto. Many of the competing designs had placed the school in pavilions that stepped with the slope of the terrain. The changes in level would occur in increments within and between the volumes distributed over the site. The architect put all the functions into one box, and carved it into the hillside, the compact volume consuming less land surface and saving trees. In order to differentiate the experiences of the students and staff from that of the visitors, the architect placed the formal, guest entrance at the northern edge of the site facing Côte Ste. Catherine, and the student entrance on the eastern side facing the park. This asserted the school's civic presence on its urban frontier while integrating it into the natural landscape. The floor of the structure now follows the rock, which in turn generates the section. To experience the building in

section would be to experience the profile of the rock. Where the ground rises steeply to the southwest, the architect has shaped the contours into an amphitheatre that terminates the axis of the building. Evoking a Roman Classical theatre, the south wall is an abstract proscenium and the terrace a natural stage. Near Côte Ste. Catherine, the rock level drops twelve metres below the street. Five floors of parking fill the natural depression, the terraced roof serving as a manufactured grade. Broad stone steps lead to four wide landings, an abstract expression of the rock strata that lie below [Fig. 41].

The slope to the west is retained by a wall, on top of which sits an aedicule: like a miniature temple to the commercial god, Nike. The temple is the pivot of a grand promenade inspired by the famous walks of the Greek philosophers with their students, during which the issues of the day were debated and truth and meaning were sought.

The as yet unexecuted 'Promenade des aspirants' would lead the aspiring professionals along a tree-lined terrace a storey above the road, following the edge of the plateau in front of Collège Jean-de Brébeuf to the aedicule [Fig. 42, 43]. From this belvedere overlooking Côte Ste. Catherine, the promenade steps down to the HEC portico and continues to the eastern edge of the property, where a ramp slopes in stages to the street. Here it turns and follows the east façade to the forest-park, where it forks to the School of Architecture or continues to rue Louis-Colin and the metro beyond. When completed, this 'grand gesture' will link the three schools to one another and connect them to the city infrastructure by means of a formal architectural promenade.

Fig. 41
École des Hautes
Études Commerciales
Monumental Stairs
to North Entrance.
View from Côte
Ste-Catherine

Fig. 42
École des Hautes
Études Commerciales
Promenade des
aspirants. Sketch by
Dan S. Hanganu

Fig. 43
École Jean-de-
Brébeuf.
View from North,
Côte Ste-Catherine

3. Plan and Section

The building is best experienced in an architectural promenade that begins at the steps leading to the formal north entrance. The plan is organized about a structural grid five bays wide by twenty deep. All bays are 9 metres wide except the middle longitudinal bay and the northern transverse bay, which measure 12 metres. After mounting four short flights of steps and passing beneath the colonnade, one enters through doors in a concave, half-cylindrical wall to a two-storey volume in the central bay. The plan resembles a Roman basilica with a wide central aisle extending the entire 171 metre length of the main floor, and two narrower aisles on either side. However, it differs in section from the Roman model, in that the central bay of the archetype was double height, while in HEC, it is usually only one storey high. To give the central aisle the lofty quality of the ancient models, the architect placed four towering lanterns at intervals along its length, and raised the ceiling of the library, which is the only room in which the entire expanse of the floor plate can be observed as a unit. The wide lobby floor is tiled with lustrous grey tiles etched with the names of graduates. The echo of footsteps on the reflective surface of this 'sacred' floor, whose chiseled slabs conjure vague impressions of cemeteries and crypts, asserts the continuity of the institution and the unyielding presence of history. An undulating white surface bent from steel plate, forms the guardrail of an overhanging balcony whose edge traces the profile of a past president.

Two forms dominate the space: a circular cut-out in the ceiling through

which light pours from above, and a monumental staircase which climbs in front to the main floor. Above the circle, a hollow glass and metal cylinder rises through two floors to a sloped glass roof, through which the sky is visible. The scale and finish of the cylindrical lantern, with concave walls of corrugated steel and multiple reflective glass planes, are startling in an institutional building. Measuring six metres in diameter by about eight in height, the sharp metal edge that hovers below the ceiling has an eerie resemblance to a cookie cutter or a mechanical punch, and is an aesthetic more suitable for an industrial building than a school. Like the architects who designed in the International Style, Hanganu preferred to democratize his buildings by blurring the distinctions between typologies, thus making them less intimidating to their users. The prismatic glass and concave metal surfaces diffuse the light and reflect the roof mullions on a hundred surfaces. Four storeys above, the horizontal boxes of a corridor and a girder slice through the drum and appear to lock it in place [Fig. 44]. This is the first of four similar skylights that mark one's progression along the architectural promenade.

The grand staircase is wide and comfortable, its black travertine treads widening at two intermediate landings to break the climb. On the left, the tubular steel railing is suspended from a plate glass wall, which in turn is bolted to an array of black steel channels. Bright chrome bolts arrayed in groups of four add symbolic importance to their tectonic purpose by demonstrating that the act of connecting is worthy of our appreciation. On the opposite side, a black-painted, folded steel handrail narrows the stair towards the top and distorts the perspective, giving the volume an appearance of

grandeur that is appropriate for a world-class school. Like the stair itself, the heavy rail narrows towards the top, causing both to appear longer in ascent. Welded brackets stiffen the steel profile that, too rigid to bend at the stair landings, slopes uniformly to the top of the stair. The contrast between the two rails - one slender, weightless and ductile, the other bulky, heavy and rigid - make palpable the structural properties of the metal components. The architect used this opportunity to teach about the properties of steel, through visual and tactile sensations. Sliding one's hands over the cold metal surfaces of the handrails, one can sense the material's hardness and strength and be struck by the variety of interpretations of the idea of a handrail [Fig. 45].

At the head of the stair, a serpentine form clad with flat steel sheets, stands over a cluster of lounge chairs. Suggesting the bridge of a large vessel, it creates a small backwater of tranquility in a sea of circulation where three traffic routes collide. Here the northerly flow of the central aisle ends, its traffic having been deflected up the stair or to a bank of elevators to the east. A transverse corridor follows the curved wall to the west, where a two-storey glass wall closes the volume. Behind casual seating bathed in western light, a shimmering, wavy surface intersects the wall of glass and marks the projecting auditorium mass. A narrow corridor runs north, passing banks of lockers fit into the theatre undercroft, until it meets the inflected glass screen near the rock outcrop. From there, it follows the undulating wall of glass at the forest edge to a second transverse corridor which links the stair from the student entrance to the second elevator bank. The meandering passage tightens or widens as it moves from dark to bright, and each change in direction along is enhanced by views, volumes and

Fig. 44
École des Hautes
Études Commerciales
Light Well. View from
below at Ground Floor

Fig. 45
École des Hautes
Études Commerciales
Grand Staircase.
View from Ground Floor

light that orient the visitor and assert the presence of the land. To one side of the grand stair, a gently leaning, undulating wall draped with blue plastic sheeting transforms the structural frame into sculpture. Overhead, a folded textile canopy diffuses artificial light from concealed fluorescent fixtures and dulls the echos from the hard surfaces around it. The top of the stair meets the main floor, or 'rez du jardin', where a dramatic gold-painted stair climbs two storeys through a large square opening in the floor above. Triangular in plan, the steel stair emerges from a plate glass circle cut through the concrete floor, through which one can see people and the etched tiles on the floor below. Like the limpid water of a deep pool, the curious circle challenges our assumptions about surface and depth, and the illusion of solid and void. Reflected in the glass are the three principal shapes that Hanganu has used in his buildings: the square of the balcony, the triangle of the stair and the circle of the skylight above. The triangle inscribed in a circle invites comparison with Khan's stair in the Yale Art Gallery, and the circle within square motif recalls Scarpa's windows in the Banco Popolare di Verona, although this association might be coincidental. Here the juxtaposition of the shapes is implicit, and their functions are more separate and discrete. While Khan's cylinder encases his stair, Hanganu's skylight drum hangs above, but never engages his stair. The latter uses forms more liberally and allows them to occur where they will. Indeed, his stairs aren't centred in the skylights and their landings occur outside the circumference of the drums [Fig. 46].

Behind the stair, the aisle continues northwards between parallel walls, then contracts under the pressure of a cylindrical form emerging from the western wall.

Fig. 46
 École des Hautes Études Commerciales
 Plan of First Floor (above), and (below)
 Plan of Ground Floor 'Rez de Jardin'

A segment of the lustrous metal skin has been removed to expose a group of doors in a field of wafer board. This unpretentious entrance belies the splendid space inside. Two groupings of plump leather seats, one mustard yellow, the other electric blue, descend in rows to an elevated stage in front of the serpentine exterior wall. The flanking walls are an elegant expression of the most modest construction materials, proving Hanganu's conviction that elegant architecture can be achieved with the simplest of means. Black-painted wafer board panels with randomly spaced diagonal grooves are fastened to metal studs and trimmed with minimalist stainless steel frames. All components of the panel assembly are visible, including the screw fasteners, allowing the spectator to understand the method of fabrication. By demystifying the construction process, the architect enables the user to become familiar with the building on an elemental level and to appropriate the artifact. The wall behind the angled rows of seating comprises black acoustic panels bolted to two overhead doors which, when open, permit the seating to extend into an adjoining assembly room. The economy and elegance of the interior attest to Hanganu's ability to give to ordinary construction a new meaning and formal vitality.

Beyond the auditorium, the volume expands in width and height and spreads to the exterior through transparent glass walls. The 'Winter Garden' volume soars four floors, as though it were forced upwards by the pressure of the park and forest on its sides. The trees and rock strata press against the glass, colouring and filtering the light and dominating the space with their natural presence. A kind of magnetism reigns, drawing the students to tables beside the glass, where even the heavy vertical mullions

seem to dissolve and merge with the dense stand of trees. Across the hall, the urban park is framed behind the glass. Stainless steel chairs and café tables are clustered beside rows of potted trees, where students can relax and observe the passing throngs. Here, circulation dominates as traffic ebbs and flows along the interior street, and where an angled, blue-painted stair beside a quilted acoustic wall offers a kinetic panorama of shifting points of view. The open, metal stair rises above the circulation, delighting the spectators with the dramatic views while surprising them by the ease with which the low steps are mounted. The architect explains: "I like discovery, perspective, the contrast between tight space and space that explodes. And I multiply the points of view because I can never decide. I multiply the gestures of transparency, no doubt because I'm a bit of a voyeur. I want to see what's happening on the other side" (Translation by author) [26]. Much of Hanganu's architectural system is revealed in this space, as is his debt to the Russian Constructivists. Hierarchies of varying functions are expressed as asymmetrical volumes, linked in a dynamic equilibrium across space. Circulation is a principle of organization in which the primary and secondary axes are used to define major routes and events. The 'Winter Garden' is a natural cross-axis to the urban central aisle of the basilican plan. The natural landscape which presses through inflected lateral walls creates an inverted transept in what is the secular equivalent of a cathedral [Fig. 47, 48].

The complexity of the shapes and views is regulated by orthogonal enclosing planes. Eighteen freestanding columns sustain the rhythm of the structure, their corrugated metal forms providing a soft lustrous finish. Viewed against the glass wall

Fig. 47
École des Hautes Études Commerciales
Winter Garden. View from 2nd. Floor

Fig. 48
École des Hautes Études Commerciales
Curtain Wall and Circulation Spine.
View from West

and forest, these slender cylinders merge with the window mullions and the trees behind. Their coiled metal surfaces might be interpreted as metaphors for the spiral of life. To assert their importance in the structural order, the columns that engage the wall surfaces are painted red. A diagonal grid of stainless steel insets divides the polished terrazzo floor into large squares that delineate the interior street. The repeated use of the guardrails made with flat steel and stiffening ribs, reminiscent of marine architecture, links by association all elements of circulation. The steel guardrail of the first floor corridor slices through the upper volume, to emphasize the major axis. Meeting the western glass wall that presses slightly into the central bay, the yellow-painted corridor wall emerges, unimpeded, through the glass [Fig. 48]. This powerful sculptural gesture asserts the importance of the central spine and elevates the role of circulation in the hierarchy of organization.

The major points of vertical movement converge at the northern limit of the Winter Garden. A transverse aisle leads from the elevator bank protruding through the western glass wall, beyond a second gold-painted triangular stair to the student entrance. Near the entrance, a yellow dogleg stair descends to the lower corridor and links the ground floor circulation with the main floor, or rez-de-jardin. These nodes are marked by natural views and light from full-height windows in the lateral walls. Like its northern counterpart, the southern triangular stair is illuminated with natural light from the skylight drum suspended above. Having reached its first objective at the Winter Garden, the architectural promenade begins to disperse amongst the secondary axes of circulation that are oriented east-west and vertically. The building volume is

reconstituted beyond the transverse aisle where the central aisle contracts between parallel walls and terminates at the south façade, its glass projecting in a shallow bay beyond the principal wall. A transparent glass screen crossing the corridor delineates a student lounge that characteristically occupies the circulation area, yet which is distinguished from it by its increased width and its double height volume.

The triangular stair is a scaffold of welded channels and flat steel sheets. A tectonic frame of slender inclined stringers and projecting horizontal landings appears distinct and separate from the sheet steel surfaces. Identical channels serve as handrails and newels to which plate glass guards are bolted, all systems of attachment exposed to view as testimony of the construction system. The treads and risers are bent from a single sheet into a fluid, undulating membrane that climbs in three equal flights and ends at the first floor. The reflective facets of the suspended drum channel daylight through the two storeys overhead. A transverse corridor extends from the elevators on the west to a projecting circular belvedere, where a circle of bench seats hovers in the upper volume of the glass entrance cube. In contrast to the triangular stair whose structural logic is readily understandable, the belvedere seems to defy gravity, causing the viewer to feel uneasy. The contrast between this improbable cantilever and the structural logic of the triangular stair plays the emotional appeal of the former against the cognitive value of the latter [Fig.72].

A fundamental shift has taken place in the circulation. With the exception of the yellow spine that was visible from the Winter Garden below, the central aisle of the rez-de-jardin is no longer present on the upper floors. In its place a series of loops have

been positioned a few metres inside the perimeter walls. To preserve their connection with views and natural light, the corridors extend to the exterior walls at all intersections, creating several quiet seating areas near windows. Large expanses of glazing flood these nodes with daylight, and serve as counterpoints to the narrow bands of horizontal windows on the elevations. The planning hierarchy that previously gave prominence to the central aisle, now places emphasis on the lecture rooms that are situated within or adjacent to the central bay. Eight large lecture theatres occupy the twelve metre wide bay, where most are paired on either side of the lanterns. One theatre at each end of the central axis projects beyond the plane of the exterior wall, Thus providing a pragmatic reason for the dramatic projecting bays that are visible on the north and south facades [Fig. 46]. Four identical lecture theatres occupy the corners of the floor plate, and ten smaller ones are grouped beside their bigger siblings in the middle. The remaining perimeter space contains classrooms and the stair towers, visible on the elevations. Hanganu has employed a functional hierarchy that places the rooms of lesser importance in the outer aisles, and the most important in the wider central aisle.

The corridors are wide so that they may also function as rooms or interior streets. Tables and chairs line the yellow corridor where it overlooks the forest and ridge, and work areas are installed on the opposite side where it passes over the lofty Winter Garden. A small projection on the north wall conceals a dramatic loft, suspended over the void. The projecting bay on the south façade permits a widening of the corridor, where a cluster of lounge chairs has been placed below the skylight. The

acoustic walls of the two lecture rooms that face one another across the corridor, are adorned with metal trims which divide them into horizontal slabs. When these mechanized shutters are retracted into the ceiling and screens drawn across the corridor, a top lit amphitheatre can be created in minutes for lectures, presentations or drama. The central stair tower on the west façade unexpectedly stops on this level, and exits across a triangular roof terrace to a cantilevered observation tower that projects behind the auditorium [Fig.69]. Hanganu's provisions for lounges, street-rooms and terraces have transformed utilitarian corridors into 'streets to live in', much like Le Corbusier's social program for his Unité d'habitation in Marseilles. They differ from the French prototype in that they are intensively used for movement and leisure, due in large part to their proximity to nodes of activity and to the natural light and views.

The natural ascension by stairway has almost come to an end, only one stair remaining near the elevators at the forest wall. In this way, the building signals to the visitor that the spaces above are off limits, except for those who have business there. The remaining stair leads to a small lobby, squeezed between the elevator bank and full-height glass facing a wall of trees. Elegant doors, the colour of ebony, lead into a splendid foyer flanked by display cabinets and a semi-circular counter. Following the curve of the counter, one arrives in the two-storey central aisle of the library, which is flanked by double aisles extending the length of the floor. Resembling the nave and aisles in a Roman basilica, the formal plan can be perceived from here almost in its entirety. The narrower aisles contain the stacks, washrooms and smaller rooms required by the program. The double-height nave contains the reading room, with rows

of elegant black chairs and tables interspersed with precise clusters of black upholstered chairs on chrome frames. A narrow corridor follows the exterior walls, leaving space for rows of study carrels pressed against the horizontal expanse of the glass. The windows are pulled in from the wall surface so that the floor above shades them from the sun. This is the pragmatic reason for the horizontal recess in the elevations [Fig. 65]. The symbolic purpose of the reveal is to mark the separation between the public and private domains, and will be discussed in more detail in the chapter dealing with the elevations. Thus, the hierarchical organization of space is clearly expressed in plan and section, with prominence given to the central volume [Fig. 49, 50].

The continuity of the reading room is interrupted by the four skylight drums that punch through its central bay. Portions of the grey aluminum skin that covers the lanterns have been peeled away to reveal full-height windows, making them transparent and admitting natural light. Hermetic glass-enclosed corridors slice through the upper portions of the cylinders and link the wings of the third floor above the stacks, conspiring with the light wells to divide the central volume into 'rooms'. The upper volume of the Winter Garden bites halfway into the aisle, juxtaposing the vertical stress of the former with the horizontal repose of the latter. Daylight enters through a double row of skylights, diminishing the weight of the roof and revealing the beams which cross the volume and rest on a grid of red painted columns. The suspended grid of ceiling tiles has been pulled away from the wall to reveal the perimeter beams that transfer the roof load to the engaged columns. One of the beams

Fig. 49
 École des Hautes Études Commerciales
 (From top to bottom:)
 North Elevation, South Elevation,
 West Elevation, Longitudinal Section,
 Transverse Section thru Winter Garden

cuts through each of the cylinders, tying the skylight into the structural hierarchy that controls the building. The exposed structure divides the surfaces into modules, which in turn are subdivided by the unit dimensions of the surface panels. The construction syntax dramatizes the system of loads and supports and reveals the wall surface as a thin fabric infill, thus demonstrating Perrault's contention that beauty is tectonic, based on material substance and geometric order [27]. The walls are clad with sheets of common wafer board, painted a lustrous gold and edged with thin aluminum channels, drawing warmth, texture and an unexpected elegance from such humble materials.

Hanganu has made an effort to reduce costs by using inexpensive materials, yet has shown us their natural elegance, as the architects of the International Style proclaimed the properties of steel, glass and stucco during the period of rebuilding after the First War. The architect has carried his tectonic expression into the design of the exquisite reading tables, each containing four surfaces connected, yet kept separate, by deep reveals formed by recessed brushed aluminum channels. The grid of channels that separates the wall panels is repeated in the reading tables, and finds a metaphorical expression in the vertical control joints and horizontal recess on the building façades [Fig. 50, 67]. Shallow boxes set in the channel support a double column of metal pipe, to which a horizontal pipe is attached. A funnel-shaped light pendant is attached to each end of the pipe, projecting a cone of task lighting onto the middle of each work surface.

The concave profile of the western glazing presses in on the space, impinging

on the central aisle. Here, a subtle architectural gesture makes the force of the wind and weight of the forest palpable. A small section of galvanized floor can be seen projecting out beyond the glass, where it caps the yellow box of the corridor below. Its pattern and orientation matches the library's checker plate floor surface so precisely that there can be no doubt it is part of the interior. Yet, knowing intuitively that flooring cannot be used outside, we interpret this as proof that the glass wall has been pushed inwards by the forces of wind, rain and time, causing the glass membrane to appear unsubstantial. Hanganu may not have been so successful with the glass itself. True to his principle that glass must be transparent so that one may look into the building as well as out, the curtain wall is made with clear, non-reflective glass. When the forest is in leaf, a splendid filtered sunlight pours through the two-storey windows, tinting the library with the colours of the trees. But, during the winter months the bare trees allow the low afternoon sun to burn through the glass to such a degree that the heat and glare are at times unbearable. Light-diffusing shades have been placed over the windows in an attempt to reduce the heat and glare, but are unsuccessful in controlling the dramatic temperature swings and unable to make the space comfortable. In the end, the volume remains rather empty of human activity; testimony to the powers of nature and the limitations of our technology to control it.

The reading room is terminated near the north and south façades by the first and fourth cylinders, each marking the beginning of a roof terrace. The north terrace extends to the curved wall of the entrance marquee and, although it is illustrated with pavers and trees on the design drawings, it was still unfinished at the time of this writing. The south terrace likewise extends to the projecting wall of the lecture room

below, and is contained between the two-storey wings that house the library administration and computer rooms on the floor above. The walls define an exterior volume that is almost a perfect cube and frame a southern view of Cormier's Pavillon Central on the side of the mountain. The terrace has a symbolic purpose in asserting the presence of the natural site on the building, by claiming a portion of the central aisle that lies at its core. The stepped profile of the floors above is also indented in the middle, suggesting that nature has penetrated into the building even further than was first apparent.

Above the library, the remaining floors are divided by a longitudinal cleft that comprises most of the central aisle. Although visible to the lower floors by way of the glazed corridors and cylindrical wells, the fact that they can be reached only by the service stairs and elevators makes them separate and distinct. Like the aluminum channels that at the same time connect and separate the reading tables, the deep ferro-vitreous grooves in the east and west facades mark the place of contact and separation between the student and the administrative realms. Two architectural devices have been used to organize the administrative floors. The aisle that occupies the middle bay of the lower floors is not present on the two top floors. In its place, three open-air terraces divide the administrative floors into two narrow wings, permitting natural light to flood into the offices. Projecting through the north and south terraces are the familiar light wells that are now visible from the roof gardens and offices. With their metallic walls rising about two metres above the terrace floor and their glass tops

Fig. 50
École des Hautes Études Commerciales
Library. View to South

Fig. 51
École des Hautes Études Commerciales
North 'Hanging Garden' with Light Wells

angled towards the nearest ends of the building, these factory aesthetic tubes allow natural light and views from the roof gardens through four storeys to the internal street below. These metaphorical 'periscopes' have therefore connected the natural with the human domains, the administrative with the student world, and the functional with the aesthetic [Fig. 51].

The transverse corridors adjoin and overlook the cylinders, and the two internal ones connect with the elevators. Thus a visual link is established from the roof gardens via the light wells to the circulation system for the upper floors. In the absence of the central aisle, the transverse corridors have become dominant and the important rooms are grouped near the cross axes. The fourth floor conference room occupies a prestigious site on an isthmus that divides the first garden from the second. Plate glass doors recessed in an angled wall lead to a rectangular room whose north and south walls bow outwards to contain a circular space ten metres in diameter. Inscribed within the circle, a square recess in the ceiling filled with 'clouds' made of rippling reflective foil is illuminated with dozens of tiny bulbs suspended on inverted tees. Chrome chairs and modular tables float on a lustrous redwood floor [Fig 52]. The north wall comprises a wide plate glass window opening, unbroken by mullions, framed by walls with glass doors which open to a central garden forty-five metres deep and twelve wide, and enclosed with eight metre high beige stone walls. The window looks out to a tailored patch of ground cover containing parallel rows of hardwood trees, in the middle of which hovers an unexpectedly thin sheet of checker plate steel. Two rows of steeply pitched glass skylights rise out of the steel plate to capture the light and

channel it to the library below. Emerging from the spaces between the twelve roof lights, two rows of stainless steel lamp posts are oversized versions of the fixtures on the reading tables. A sculptural form stands on the steel slab between the skylights, its metallic blossom opening from a slender stalk, drawing life from the inanimate and balancing nature with technology [Fig. 53]. Like the Winter Garden near the forest, the power of this room derives from the external view it has framed, and drawn within its walls. This 'beauty by association' is a quality found in great buildings whose architecture draws its presence from the objects and spaces that surround them, and in turn gives enclosure, shape, form and meaning to its surroundings. Hanganu's courtyard vista might have been inspired by the view into the roof garden of Le Corbusier's Villa Savoye, or the view from the interior of Mies van der Rohe's Barcelona Pavilion towards a lone sculpture in its walled court.

The central court is the most formal of the three 'hanging gardens', as the architect calls them. Evoking the tranquility of an Islamic courtyard or a medieval cloister, this exterior room derives its character from its atmosphere of complete containment, the agreeable proportions of its surfaces, and its near-perfect symmetry. The view from the south towards the large drum of the mechanical penthouse might be a modern interpretation of the forecourt at Borromini's St. Ivo, only here the temple that completes the vista houses machinery. The smooth walls on three sides are divided into horizontal layers by a thin stone insert at every fourth course, giving them the appearance of a woven surface, like a textile. As we will observe on the exterior façades, Hanganu has made the stone surface appear thin by extending the window

Fig. 52
École des Hautes Études
Commerciales
4th. Floor Conference Room
Sketch with Sculpture

Fig. 53
École des Hautes Études
Commerciales
Central 'Hanging Garden' with
Library Skylights, Sculpture

frames out to the masonry face and spacing it two centimeters from the stone with a shallow reveal, as well as by inserting a control joint at every structural grid. The masonry has been omitted beneath the lower windows and a panel inserted in its place to emphasize the wall surface as a fabric infill. The galvanized steel surface on the mechanical penthouse has been peeled away on the east side to expose the rigid structural frame inside and display the thinness and ductility of the cladding. What first appeared to be a homogenous mass, is shown to be a dynamic interplay between load, support, covering membrane and fastener. On the south side of the drum-shaped penthouse, the wall of the cylinder has been pushed back behind sharp folded corners to contain a delicate mechanical louvre, left with neither frame nor housing to conceal its construction. But the most tangible expression of the thinness and stiffness of a material is the steel plate floating above its concrete base, which supports the skylights. Less than a centimeter thick, this checker plate steel raft floats above the terrace floor and casts crisp shadows on the stone paved surface. Hanganu has again set in motion a dialogue between the strength and lightness of metal and the durability and weight of stone, reminding us that we should benefit from the possibilities of modern methods while learning from the ways of the past.

Dominated by an imposing mechanical penthouse and the two skylight funnels, the southern court evokes the upper decks of ocean liners. The penthouse projects somewhat precariously over a concave wall that follows the rear face of the second skylight. To compensate for the perceived instability and to allow additional light into the skylight, a deep wedge has been cut from the large cylinder. Although this was an

opportunity to expose the tectonic construction of the drum, the architect chose to fold the metal skin into the opening and cover the 'wound'. The precise folds, smooth curves and acute angles negotiated by the steel cladding attest to the flexibility of the material and show the architect's fascination for its properties. A break in the masonry where the west face of the courtyard meets the mechanical room, allows the contained volume to flow out to the exterior. The cut sides of the two-storey mass are clad with flat stainless steel that meets the masonry face at an exposed edge. Where a corridor crosses the break in the wall, the siding continues across the interior walls, and the exterior paving extends through the glass enclosure to emphasize the 'rupture'.

Although enclosed by full height glass walls that face the garden and western skyline, the space containing the stair feels as much outdoors as indoors. Clad with the same flat siding, the parapet over the corridor bends in an arc and transforms into a convex ceiling that resembles the hull of a lifeboat [Fig.54]. A white-painted ship's stair climbs through the corridor and lands beneath the belly of the 'boat'. The treads and risers are bent from a continuous sheet of perforated metal, with holes so dense that the material is almost translucent. The same material is stretched over the handrail frame, resembling a canvas sail. Continuous vertical joints with minimalist trims, plate glass windows pulled flush to the wall face and a seemingly arbitrary change of material over the corner window group, conspire to express the taught flatness of the wall plane. High on the wall, a black painted steel balcony demonstrates the rigidity and strength of the material. A guardrail framed with diminutive angles supports a series of slender bars, resembling cables, that terminate in an array of bolts. On the

face of the channel that supports the deck, regularly spaced clusters of bolts mark the attachment of the vertical angles and complete the industrial construction syntax [Fig.55].

The skylight drums are situated at opposite ends of the courtyard, the northern one seemingly glued to the wall. Seven inclined trusses and three transverse girts support the angled plane of the glass lens. Like an intake on a ship, one of the drums is rotated westward in a gesture suggestive of machinery and movement. At night, a greenish glow the colour of water emanates from the glass lens as a counterpoint to the pale yellow of the terrace lights. The soft glow of incandescent lighting transforms the garden terrace from an open space into a room. Rows of short cylindrical spotlights near the perimeter cast vertical beams of light against angled reflector disks on the ends of armatures that, in turn, direct the light at the walls. Like many other components of the building, these sophisticated light fixtures were designed to reveal the basic principles by which they function and, by inference, the workings of the light wells nearby. In the same way that the fixtures light the sidewalks on the roof terrace, the large cylindrical lanterns light the promenade along the street below.

Hanganu has given meaning to our experience of his building by providing a rich selection of forms, volumes and tactile sensations that provoke in the visitor a series of associations. These operate on many levels; his building is readily associated with the institutional type form, and corresponds to the users' expectations of a school. He uses views and natural light to connect his building to its Nordic landscape and he

Fig. 54
École des Hautes Études
Commerciales
West Corridor. View from
North 'Hanging Garden'

Fig. 55
École des Hautes Études Commerciales
Balcony and Roof Terrace

reveals the natural contours by way of the stepped building section and carefully selected views. He associates the school with the Catholic institutions that preceded it by choosing similar materials, repeating the scale and proportions of the walls and windows, and by creating a memorial to past graduates and professors in the foyer. Finally, he reveals the building's construction through its explicit details as a means to connect it to the technology of our era, and to Québec's craft tradition.

The architecture of Hautes Études Commerciales is what Charles Jencks would call 'multivalent'; it stimulates the mind to reach beyond its familiar abstractions and to search for new interpretations. The associations that Hanganu elicits are veiled and seldom obvious; indeed they are often peripheral to one's primary experience of the building. Thus, new associations, or meanings emerge with each experience of the work. This corresponds with the intentional asymmetry of the plan, in which the important events – Winter Garden, auditorium and 'bite' - and the dominant forms that mark them – cubic volume, cylindrical wall and undulating glazing - are situated off the central axis [Fig. 46]. Although the public circulation follows the building's central axis, the vistas are always angled or perpendicular to the path of travel, causing the visitor to experience the space through his peripheral as well as his central vision. This was doubtless intended as a metaphor for one's life experience, which is composed of a wealth of secondary associations that attach and give meaning to a central course of action. Explaining how his designs draw from a library of photographs and experiences which he has amassed during a lifetime of travel, Hanganu claims "[...] these images reveal also the play of solids and voids, the

relationships between objects, the shadow that a stairway projects on a stone wall, for example. I examine them, then analyse them closely in relation to a particularity of our field of vision: when we look in front of us at an object which attracts our attention, we also record lateral and peripheral images, captured in the corners of our sight. These images do not form part of the stored information which, together, add to our cultural baggage. They are a collection of sensorial images, impressions and fugitive imprints situated in the confines of our retina. We forget their origin, we even forget their existence. We record them, however: they plunge to the depths of our memory and come to the surface from time to time, without our being conscious. Thus, when they emerge, we call them 'intuition', 'imagination' and sometimes even 'innovation'" (Translation by author) [28].

4. Form, Scale and Volume

Having established physical and visual connections to the geography of the site and spiritual and aesthetic associations with the adjacent Catholic institutions, Hanganu's building appears as a critique of both the natural landscape and the institutional architecture. Viewed from the north, the front elevation towers above four flights of six broad steps that lead to a raised platform. The initial impression is that the site has been leveled and shaped to make a level base for the building's prismatic volume, in the way the ancient Greeks prepared the podiums for their temples. The horizontal dominance of the lateral walls seems to deny the presence of the hill, which can best be experienced from within the building. The stepping in section is barely visible in the elevations as a result of three devices. The ground floor is surrounded on the west and south where adjacent grades are highest, by a wide moat whose grade is lowered to match the floor level. Where the floor of the moat steps up three metres in the middle of the west wall, it is masked by the projecting form that contains the auditorium. The lower portion of the north, or front elevation is asymmetrical, and masks the rise of the grade on the west side. This lack of symmetry is somewhat unexpected when compared with the regularity of the projecting wings and central entry bay of the School of Architecture, and the classical symmetry of Collège Jean-de-Brébeuf, but the architect has succeeded in balancing the façade by making the shorter columns appear wider, and displacing them one bay towards the west [Fig. 56].

Due to the change in grade, Hautes Études Commerciales' eight floors only

slightly exceed the height of Jean-de-Brébeuf, and the façades of the two buildings are equally imposing. The tripartite divisions and dominant colours of the older building are echoed in HEC and reinterpreted in modern terms by way of a colonnade made with steel trusses, a pragmatic interpretation of an attic, a terraced base that conceals underground parking and walls clad with manufactured stone. Hanganu's two-storey entablature containing the fourth and fifth floor offices, towers above the School of Architecture and has raised the ire of the citizens [Fig. 77]. But, the most dramatic affront to tradition is the rotation of the new building's axis relative to its neighbours. By orienting HEC on a north-south axis and drawing it close to the street, the architect has set it off from the adjacent buildings and placed a critical distance between HEC and the Catholic Church that founded these institutions. As a result, the new building appears to assert its independence from the Catholic schools while at the same time establishing its links with the city.

For over three centuries the Catholic Church has been the purveyor of French education in Québec, and its links with Rome can be observed in the legacy of Classically-inspired institutional buildings which are spread across the province. Grey stone and buff coloured brick, vertical openings and symmetrical façades set well back from the road behind wide front lawns, are the signature qualities of these Catholic institutions [Fig. 43]. When the Province of Québec took charge of colleges and universities following the 'Quiet Revolution' of the '60's, these architectural conventions began to change and what Jencks named 'Late Modernism' became the style of the day. By that time, the monotony of the strip windows and smooth stucco

walls of the International Style had given way to a free expression of the construction method and material – usually concrete – in its raw form. The student residence for the University of Montreal, designed by Papineau, Gerin-Lajoie & Leblanc (1962), the Louis-Colin parking garage by Ouelette, Reeves and Alain (1968), and the previous home of Hautes Études Commerciales by Dumais (1970), are Brutalist expressions in raw concrete and precast. With its overt references to Greek Classicism, the new building for HEC bucked this trend, which raised a question. Why would a modernist such as Hanganu resort to traditional references in a building that symbolizes the educational prowess and economy of a modern Québec as it enters the new millennium?

One answer is the importance to French Canadians of their cultural traditions, and the Church that provided education and sustained their language for three centuries. For many, Catholicism was a guarantor of their identity by erecting a wall between them and the anglophone ‘others’. A new institution whose architecture contains references to the Classicism favoured by the Church would be an affirmation of the school’s Catholic cultural heritage. A second answer lies in the typology of the Classical Greek temple and its relation to society and site, which appealed to Hanganu’s preference for an open and democratic building. As Frampton has observed: “The Greek temple with its walks and colonnades is open to the world, it invites ingress and egress. It’s gay and pleasant. It is flat, low and wide... This flatness and horizontal extension represent extension outward into the external world” [29]. It would hardly be a surprise if the architect had chosen that most democratic of

structures, the Parthenon, as the generator of his façade. Another compelling answer can be found in the history of the École des Hautes Études Commerciales, when, in 1907 it began construction of its first building on rue Viger. Built in the Classical Revival style of its day, the imposing four-storey stone building has its narrow front to the main street and its long sides on the side streets. The tripartite façade is divided into a rusticated base, a mid section dominated by a giant order, and an attic with a curious carved pediment containing the HEC coat of arms. The scale and proportions of the front of Hanganu's Hautes Études Commerciales unmistakably resemble its century-old predecessor, but the execution is different [Fig. 56, 57]. Although both façades appear to be divided into nine bays, the old school has two pairs of wide bays flanking five narrow ones which project in a shallow porch, while the new school has four narrow bays flanking a wide central one in a flat façade. Both have the effect of centering one's approach on the front doors, but the entrance of the old school is opaque and defensive, while the new one is transparent and inviting. The rugged stone base and punched openings in the old HEC resist penetration. The base of the new school is an array of broad terraces beneath a protective portico that draw the visitor up and in, symbolizing the institution's transparency and openness towards its multi-ethnic, multi-cultural student population.

Fig. 56
École des Hautes Études
Commerciales . View from
North, Côte Sainte-Catherine

Fig. 57
École des Hautes Études Commerciales.
Original Building, now Archives of Montreal.
View from South, rue Viger

5. North Façade

Schopenhauer believed that the essential form and significance of architecture is expressed through the dramatic interaction of load and support. This is illustrated in the dominant feature of HEC's main façade: a matrix of delicate steel trusses beneath a two-storey entablature, suggesting temporary industrial shoring or a work in progress. Four of the western 'columns' are enclosed by a giant order of steel cylinders, the last one standing beyond the west wall of the building. A second row of cylinders stands behind the first, suggesting by their large diameter, close proximity and towering height, a Greek portico or a modern hypostyle hall such as the Temple of Amon at Karnak, Egypt [Fig. 58]. Asserting their decorative role, the silver painted cylinders stop one storey below the entablature and thus deny any allusion to a structural purpose. Horizontal slots in the tops of the drums attest to their true function as intake air manifolds for the ventilation system. This exemplifies a theme that became a trademark of Dan Hanganu's work: the columns have a double meaning wherein a symbolic role conceals a pragmatic one, elevating function to art form [Fig. 59, 63].

The eastern truss grid supports a curtain of transparent plate glass bearing lines of etched text. Although they perform the same structural role as their western counterparts, these trusses are one storey higher and do not benefit from the implicit strength of the cylinders. As a result they appear to be too weak to support the load of the overhanging entablature, and the balance that is characteristic of Hanganu's buildings is missing. The entablature, which appears from a distance to be a monolithic skin punched with two rows of square window openings, reveals two anomalies. The

vertical control joints occur above every second column and mark the structural bays inside, but one joint occurs in the middle of the central bay where no column exists. This joint is open to the sky, and the two windows on either side contain no glass. The architect wanted to break the impenetrable hardness of the pediment and provide a view of sky and trees, in order to draw attention to the importance of the site. Thus, all his preliminary sketches of the front elevation contain tree-like elements in the center of the pediment where one would place an object of great symbolic value (Fig. 60, 61].

On the inside wall of the porch, a galvanized steel surface bows out over the entrance. Recalling the porch of the old HEC, it draws attention to the centre of the façade. Above and behind this factory aesthetic marquee, an opening in the smooth stone wall leads to another view of trees and sky. The wall has been dematerialized to allow nature to enter. What appeared solid is void; what seemed heavy is now lightened, and what is man-made contains nature. This juxtaposition of opposites leads to the shock of recognition. The building membrane is not necessarily a support, but a means to enclose space, as the architects of the International Style believed. The process of reconciliation can now begin. Freed from the need to provide support, the membrane may become whatever the architect wants it to be. Hanganu's synthesis is more than a stylistic characterization; it is a synthesis of cultural values and structural rationalism, of historical memory and technical power. Its references to historical precedents and nostalgic memories are never literal; they are intentionally indirect so that the visitor can furnish his own impressions and experience a personal connection to the work. It corresponds with Aldo Rossi's definition of a good urban building,

Fig. 58
École des Hautes Études Commerciales
Mechanical Ducts. View from East

Fig. 59
École des Hautes Études Commerciales
North Entrance Portico

which he claims should: “[...] evoke communal memories of the past by reminding people of places, things and ways of life that the cruel velocity of modernization and its market civilization needlessly erased. This kind of memory is not fueled by the comfort of nostalgia for the good old days. It should come as a shock, as meaningful encounters with history do, reminding us that the present is not some inevitable outgrowth from the past” [30].

The development of the final front elevation can be followed through ten early freehand sketches by Hanganu and his associates, that were done during the design competition [Fig. 60, 61]. In spite of their differences, some constants prevail which may illuminate his thought process and priorities. The colonnade has a higher base line on the west as a result of the change in grade. To compensate for the disparity in height, the western columns are thicker or more frequent than their eastern counterparts, and in three sketches extend beyond the west wall in a gesture that visually detaches them from the entablature and their roles as supports and that suggests movement towards the west. The entrance feature consists of two vertical pillars or slots, with a horizontal or square projection above, no doubt referring to the marquee. The vertical element might represent a draw-bridge, which Hanganu at one time considered. All but one of the sketches show trees above the marquee, indicating that the opening to a landscaped roof terrace was anticipated from the start. Four of the sketches show a continuous horizontal line near the lower third, or just above the middle of the elevation. In three cases, it occurs at the top of the columns and seems to indicate a datum, a separation of functions within the building or a change in the wall

finish. Curiously, while all sketches indicate a pediment or attic of similar proportions, all but one show the central bay recessed or broken, or as a landscaped void. In the case where the attic is continuous, a detail shows the vertical slot at mid span. The architect appears reluctant to depart from his notion of a broken pediment. Indeed, his sketch on the cover of the design submission shows a two-storey high central void with a tree [Fig. 61].

The buff stone front wall is punched with crisply detailed vertical windows that frame the upright human and indicate his presence, like the School of Architecture next door and the Catholic schools of the Duplessis era. Hanganu shares the opinion of Auguste Perret who, a century ago, argued that windows should be vertical to frame the person. Although he has used square fenestration when the need for light requires it, he never subscribed to the International Style penchant for using only horizontal strip windows, believing that punched openings are more appropriate to express the contiguity of the wall surface, and to suggest a historical lineage. This preference makes his horizontal fenestration more dramatic when it does occur, as we will see on the east and west elevations. The design and execution of the masonry wall is so authentic that one might assume that the lower portion of HEC is an older building. To the right of the entrance a helical stair in a perforated drum painted yellow-green, leads up to a raised terrace. Emerging at a narrow aisle between the three storey silver air ducts, a spectacular view awaits the visitor of the western sky framed by the shimmering columns of a modern-day Karnak. This marks the beginning of the 'Promenade des aspirants', or 'Promenade of the Hopeful' which, when completed,

Fig. 60
École des Hautes Études Commerciales
Concepts for North Elevation. Sketches by
Dan S. Hanganu

Fig. 61
École des Hautes Études Commerciales
Concept for North Elevation, used on
Cover of 1993 Design Submission.

will extend to the tree-lined drive which leads to Collège Jean-de-Brébeuf. To the right is the aedicule, dominated by a modern hipped roof supported on four trees. Recalling the primitive hut from the frontispiece of Abbé Laugier's *Essai sur l'architecture* [31], these tree-columns have a double meaning when juxtaposed with Hanganu's air duct-colonnade, and help to explain his views on function and decoration [Fig. 63].

The engraving made in 1755 by Ch. Eisen for Laugier's 'Essai' shows an elemental shelter consisting of a roof of branches interlaced with four living trees. The joints that occur at the forks where the branches spread from the trunks were made with primitive hands guided by need and intuition, and without the aid of technology. The essential elements of architecture are here: shelter, load, support and technique. The aedicule displays the concept of shelter, but its message is subtly different. The trees are now lifeless, precisely arrayed and planted in a concrete floor. The roof is a pyramid of four steel plates that meet only at their bases and are held together with precise mechanical joints. Where Eisen's technique was revealed in the fitting of the branches, here it is seen in the preparation of the base, the choice and placement of the trees, the manufacture of the roof and the attachment of the parts. Where in Laugier's engraving nature and intuition were dominant, in the aedicule, industrial technology hovers above nature and it is uncertain as to which of the two reigns.

The HEC portico interprets shelter with means that are inventive, but contrived. The palpable load of the roof is borne by supports that are intuitively too thin to resist it. The mystery is solved with technology, using statics and manufactured connections. The columns are as much decorative as functional, yet are curiously

Fig. 62
École des Hautes Études Commerciales
Aedicule. View from West.
'The Primitive Hut', Frontispiece from Abbe Laugier's
'Essai sur l'architecture', 2nd. Ed.

Fig. 63
École des Hautes Études Commerciales
North Entrance Portico with Aedicule.

unconvincing as supports. Perhaps to correct this perception, the architect has inserted the air ducts, like the artist who used the decorative trees to support the roof of the aedicule [Fig.62]. The concept has now been inverted by means of employing a functional element for a decorative purpose to complement a decorative one performing a function. Laugier's primitive hut and the aedicule both find in the organic world, a fundamental element with which to synthesize mechanics and nature.

Acknowledging the difficulty of superimposing traditional symbolism onto the light-weight skeletal structure, Hanganu has turned to technology and, as a consequence, has reinterpreted the iconography of classical form. Botticher acknowledged the potential for interpretation of pictorial and architectural symbolism in an address in 1846: "Pictorial art cannot represent an idea as such, but must represent it through a symbol and thus embody it. Architecture follows the same method. It takes its symbols and art forms only from those natural objects that embody an idea analogous to the one inherent in the members of the architectural system. Therefore, an idea for which no analogue exists in the external world cannot be represented by pictorial art nor for that matter by architecture. The essence of pictorial art and its relation to nature rests in the interaction between concept and object, between invention and imitation" [32].

In his 'The Four Elements of Architecture' published in 1851, Gottfried Semper elaborated a counter-thesis to Laugier's Primitive Hut [33]. Corroborated by anthropological evidence of the Caribbean hut, compiled by Gustav Klemm and displayed in the 1851 Great Exhibition, Semper's model of the primordial dwelling

consisted of (1) a hearth, (2) an earthwork, (3) a framework/roof, and (4) an enclosing membrane. Semper perceived the joint as essential to fabrication and indispensable to the notion of building. By expressing a fundamental syntactic transition between the stereotomic base of a building and its tectonic frame, these joints were the essence of architecture. His theory gave prominence to the tectonic frame and infill as opposed to the stereotomic mass of the earthwork base and hearth, and became a point of reference for architects and theorists through the end of the nineteenth century and into the twentieth. Parallel developments in ferroconcrete, steel technology and glass contributed to a growing tendency among architects to express the structural frame and suppress the load-bearing wall.

The emphasis on the tensile structural frame as a hierarchical grid with which to organize a building into discrete parts, and the expression of the wall and roof surfaces as thin membranes or fabrics, are hallmarks of the International Style and characteristic of Dan Hanganu's work. His truss colonnade for HEC imitates a traditional trabeated structure with a modern invention - the space frame - whose joints express the transition between the building's stereotomic base and tectonic frame. The architect's fascination with the design and expression of mechanical connections in his buildings invites comparison with Semper's theory. In the tripartite north elevation of HEC, the implied stereotomic weight of the attic is transferred through pin joints at the truss ends and intersections of the members, to the 'earthwork' podium. The tectonic frame is woven together from small steel members and obtains its strength from the design and configuration of the joints. It would be productive to apply Semper's thesis

to the elevations and plans of Hautes Études Commerciales, as a means to further our understanding of this complex structure.

We have observed the manner in which the building's base has been merged into the site contours, and the garage roof carved into a terraced podium. Pragmatic responses to program and site, these modern-day earthworks express the building's ontological status as a system of support and enclosure, and its representational role as an elevated base for a prominent institution. 'Building the site' by using the stepped section to fill the hollows and match floor levels to the natural rock contours, the architect has made it possible to successfully negotiate the slope. At the same time, the 24 steps leading up to the entrance from Côte Ste. Catherine ensure the building's prominent appearance. The façade can be appreciated for its representational role as a prestigious temple of learning as expressed by its giant order, monumental portico and grand stair, or for its pragmatic role as an elegant synthesis of structure and cladding. With this distinction and Semper's theory in mind, we will examine HEC's remaining elevations.

6. West Façade

The solid masonry wall breaks away at the corner and is replaced by a corrugated steel column, curiously disengaged from the window [Fig. 64]. The column draws attention to a dramatic feature that animates the adjacent wall. After turning the corner to the west façade, the window becomes a deep slot that continues the length of the wall, dividing it into horizontal strata. The lower half of the wall continues the Catholic vocabulary of the front, with trios of vertical punched windows, detailed to reveal the thickness of the stone masonry. Stainless steel channels set vertically into the masonry at 9 metre intervals, slice the wall into bays which mark the underlying structural grid. Emphasizing weight and planarity, the lower wall at once anchors the building to the earth and binds it with traditional ways of building. There can be little doubt that the lower portion representing the foundation of HEC belongs to the dynasty of Neoclassical institutions that crowd the University of Montreal campus. Yet the Catholic school reference does not apply to the upper floors, where the repeating pattern of windows and grids set against horizontal punched openings and large factory glazing, suggests a modern commercial enterprise. On closer inspection, the implicit permanence of the foundation is questioned. A bay projects out with a glass curtain suspended beneath a skeletal roof structure; a privileged belvedere or a hint of changes to come [Fig. 65].

Above the masonry base, the character of the wall changes. Like the deck of a great ocean liner, the horizontal slot divides the volume into base and superstructure.

Fig. 64
École des Hautes Études Commerciales
Corner Window

Fig. 65
École des Hautes Études Commerciales
View from Northwest.

Immediately above, a parallel band of flush horizontal glazing over a galvanized spandrel, restates the horizontal stratification and underscores the projecting attic of the front façade. This two-storey volume is faced with matching buff stone and patterned with evenly spaced square punched openings. Its modern industrial aesthetic is expressed with smooth horizontal planes of taut masonry and minimalist detailing that recalls the free façades of the International Style during the 1920's and 1930's. In keeping with the International Style's principle of architecture as volume, the aluminum jambs of the square windows stretch to the face of the masonry to conceal its thickness and emphasize its function as a membrane enclosing the building volume. The stainless steel channels divide the wall membrane into panels whose smooth edges meet the sky without visible flashings. Having no observable depth, the brick is a dematerialized skin that can be altered or removed at will, were it not for the onerous demands of the Nordic climate. Wall surfaces recede or project as expressions of the building section within, each change in plane expressed with steel or glass. The masonry in the upper portion of the wall is never permitted to project or return into the recesses, for this would make it appear thick and confuse it with the structure. Three stair towers clad with glass and steel are placed flush with the brick face to link the superstructure to the base. Projecting from the foundation to slightly above the roof, their reflective skins and impossibly thin edges seem to slice through the stone and the sky [Fig. 66].

The building's smooth planes have been carved away at the roof, allowing views and light to penetrate its envelope and giving it a distinct profile against the sky.

Like Le Corbusier and Mario Botta, Hanganu wanted to create a poetic relationship between the building and its site that required the landscape to penetrate the structure. Le Corbusier accomplished this by placing his houses on pilotis so that the landscape could flow beneath them. Botta carved slots into bold cubes and cylinders, implying that his robust structures could be penetrated by the forces of nature. Like the two Swiss architects, Hanganu wanted his building to appear as a simple and bold volume that possessed the landscape, but preferred to break away the top of the structure. This permitted him to accomplish three objectives. First, the school could have a solid base where it met the ground, and thus affirm its association with traditional building practice. Second, by removing part of the roof, large amounts of natural light could be brought into the middle of the building. Third, the volume would have a distinct and recognizable profile against the sky and become an identifiable feature on the skyline.

The powerful, simple volume that contains the plan and section has been retained or implied, a consequence of the architect's subtractive approach to design that we have discussed earlier. The portions that were removed from the volume assert, rather than diminish, the original prismatic form, and the thin edges that are exposed at the indentations reinforce this impression [Fig. 66, 67]. The masonry cladding has been confined on each façade to a single plane that maps the primary volume. A delicate steel truss spans a two-storey crevice at the top of a non-existent wall. The strong horizontal and vertical lines created by the masonry compression joints at floor levels and vertical control joints at the grids, regulate the composition and etch the wall surface like the grid lines on the architect's drawings [Fig. 49, 67]. Although the

Fig. 66
École des Hautes Études Commerciales
Stair Tower. View from West

Fig. 67
École des Hautes Études Commerciales
Detail of West Elevation

control joints are a pragmatic response to the demands of our severe climate and allow the revetment room to expand or contract with changes in temperature and humidity, Hanganu has detailed them in a way that draws attention to them. Not only does he emphasize the tectonic assembly of his building, he interprets the 'regulating grids', one of the principles of the International Style, in a deliberately literal way. Even at the height of its popularity, the architects of the Style only implied the regulating system beneath the cladding by the strategic placement of openings and mullions, and preferred to stretch a formless and colourless stucco skin over the surface of their volumes.

At the base of the second stair an undulating metallic form with battered walls emerges from the masonry base. Clad with a diagonal grid of shimmering metal tiles, it weaves around the auditorium like the flank of a great fish. The fluid form penetrates through and beneath the building mass, as though it were an outcrop of the site, recalling Le Corbusier's chapel at La Tourette [Fig. 68. 69]. These two structures resemble one another in many ways. The chapel is a low, ambiguous form appended to a severe rectangular box, approximately 50 metres long and 25 high. The HEC auditorium is a two-storey meandering form that protrudes from a flat wall 80 metres long and 27 high. The drama in both structures derives from the juxtaposition of forms that contrast in shape and size. Hanganu took the contrast a step further by opposing the metallic luster of his auditorium with the stone of the main wall, while Le Corbusier rendered his surfaces in rough-cast concrete. Viewed against the smooth walls of the main buildings, the chapel and the auditorium both resemble lifeboats

pressed against the hulls of ocean liners, which for Le Corbusier, were symbols of the machine age. Hanganu used the ship form as a metaphor for Québec's maritime existence and as a symbol of his own landed immigrant status; associations that cause the building to appear impermanent, as though it were tethered to the slope rather than dug into the ground. The south auditorium wall angles to a fin, where an exquisite stair in steel and glass descends from a hidden terrace on the roof [Fig. 69]. Evoking a forest observatory or a maritime pier, this playful structure is an exit stair. The delicate steel frames of the cantilevered flights and the transparent glass curtain enclosing them, contrast with the muscular masonry mass around which they coil. Balancing the tensile strength and novelty of the cobalt blue steel frame with the mass and tradition associated with stone, Hanganu has given magic to an otherwise mundane fire escape.

A dirt path follows the curve of the auditorium wall and passes through an arch in the fin. From here, one can climb to the terrace or descend to the stage level doors. From this point, the architect's most powerful gesture comes into view. The smooth surface of the 'hull', deck line and superstructure abruptly terminate on a grid, and for the next five bays the planar wall has been torn away. In its place, the forest and rock outcrop advance eighteen metres into the implied volume of the building, and stop before an undulating wall of glass. The deep sections of the closely spaced vertical mullions soar from the ground to the roof. Shallow horizontal mullions divide the large glass panes and stiffen the serpentine wall. One storey above the rock and about level with the deck, a yellow box section slices through the glass wall and returns inside, announcing the central circulation spine. The dense natural vegetation is

Fig. 68
La Tourette, at Eveux, near Lyons.
1956-59, Le Corbusier

Fig. 69
École des Hautes Études Commerciales
Auditorium and Exit Stair. View from
West

Fig. 70
École des Hautes Études Commerciales
Inflected Curtain Wall at Rock Outcrop.
View from West

mirrored on the glass wall, and the building temporarily dissolves from sight, to emerge again with the fading illumination of evening. The glass wall has an eerie ambiguity and seems to lack Hanganu's customary discipline and control. The volumes and voids in his buildings are usually composed of simple cubes, oblongs and cylinders divided into orthogonal panels or grids. The randomness of the glass wall plays against the regularity of the building, like an act of nature colliding with an artifact of man. Observing that its profile and divisions are arbitrary and never correspond with the building's ordering grids, one might surmise that it was placed there by another hand, or else intentionally built in a manner foreign to the construction syntax, appearing like a scar on healthy skin. Only the corridor spine and a bank of elevators project through the glass veil, asserting the building's vitality against the elements and resisting any further advance of the forest [Fig. 70]. If the building symbolizes an ocean liner, the tear in its flank must represent the impact of the iceberg on the hull of the Titanic. The doomed ship might be a metaphor for the Separatist dream of independence that has been narrowly defeated, but not destroyed in two referendums. Lying deep in the consciousness of all French Canadians as it has since the Conquest, it waits to be brought back to the surface.

The missing wall reappears in the four southern bays, reinstating its masonry base, horizontal reveal and superstructure. From a large glazed opening low in the wall, a nautical gangplank stair springs to the forest floor, where it balances precariously on an embankment. A favourite gathering place for students, the gangplank establishes a tenuous link with the natural world and looks as though it

could be raised at any moment as the 'ship' prepares to depart. The architect has stepped the southern façade in a series of terraces that dematerialize the wall surface and bring the internal spaces into contact with the natural world outside. The top two floors of the southern bay have been cut away, causing the volume to lose some of its coherence. Unlike the roof terrace at the Pavillon de Design, there is no colonnade to reinstate the form. The two-storey pergola in the architect's original design was not executed, and the roof terraces lack the appearance of containment that characterizes such places in Hanganu's other work [Fig. 49].

7. South Façade

The south façade appears compact and low, due to the stepping back of its upper floors. Two smooth masonry walls flank a convex, projecting bay that hovers one storey above the ground. A scaled-down mirror of the entrance marquee, it marks the end of the central aisle. At ground level, continuous full-height glazing fills the space below the bay and seemingly removes all means of support. Behind the glass wall, the student lounge closes the end of the central bay and spills out onto the terrace and amphitheatre, a possible metaphor for the submerged fore deck of a ship. Two massive steel drums stand on either side; ducts for the mechanical services in the basement or vents from an implied 'engine room'. The walls behind are punched with random openings that, because they are deep and small and placed in a large, flat surface, emphasize the height and mass of the wall. A corner window set in behind a disengaged cylindrical column, breaks through the edge of each wall to terminate the lateral reveals. A glimpse of greenery above the bay gives a hint of one of the building's concealed treasures. A private terrace, tucked into the stepping roofs between the two-storey wings of the library, is a fair weather reading room with a view of the mountain.

The elevations of Hautes Études Commerciales are tangible illustrations of two components of Semper's theory that were adopted by the architects of the International Style. The walls are expressed as membranes enclosing a volume and are detached from the role of support. The structural frame is independent of the enclosing

membrane and consists of a free-standing matrix of exposed beams and columns. The interaction of the two principles make possible the free plan and free façade that were characteristic of the Style, because walls are now free of the task of supporting dead loads and can be located at will. In truth, the walls support the wind loads and some are called upon to give stiffness to the structural frame; however, these dynamic loads are accommodated without sacrificing the appearance of lightness and transparency of the upper storeys. The metal revetment is flat or folded with the shallowest profile needed to ensure its stiffness, then joined with minimalist detail to express the thinness of the material. Having reduced the stone cladding to a thin, smooth fabric devoid of belt courses, headers or soldiers that would conspire to give it depth, Hanganu has sliced the material in line with the structure to ensure it is perceived as a skin.

The narrow stainless steel flashings and aluminum channels set into the stone cast precise shadows, which make palpable the solidity of the smooth surface and reaffirm the structural skeleton behind. By way of validating the structure's vertical presence and affirming the role of gravity, the deep horizontal groove peels away the skin to expose the actual columns within. No other assurance is needed, as the implicit grid controls the composition of the surface treatments and establishes the hierarchy of the components. The flat steel edges and planes are pulled out flush with the masonry wall and designed to deflect the climatic elements to the exterior so that, excepting the terraces and the horizontal reveal, no surfaces would permit the rain or snow to gain a foothold. In his façades for HEC, Hanganu has achieved what Viollet-le-Duc had sought to attain a century before: an architecture which demonstrates the art of

construction, predicated on logic, climate, economy, and the pragmatic precepts of intelligent craft production [34].

Hanganu was clearly concerned with the economy of structure and used lightweight flat, hollow, or textured metal construction as the means to transform every conceivable tectonic element in HEC, from window frames to metal roofs. His steel and glass syntax draws its expressive strength from its contact with the masonry veneer, where the tensile strength of the steel plays against the compressive strength of the stone. Against the softness and ductility of the former with its allegiance to modernity, he contrasted the hardness of the latter and its suggestion of durability and history. Expressing its fundamental interaction with nature and its debt to history, the thickening of the masonry wall where it meets the ground reveals how the building resists gravity, and the mullions in the large sheets of glazing show how glass resists the wind. Hanganu acknowledged the traditional ways of building that he encountered in his adopted Québec, and juxtaposed them with his personal interpretation of those of a modern industrial society. HEC can be appreciated as a modern outcome of the Québécois' architectural traditions, thus validating Herder's belief that every society has its own particular guiding theme or manner of expression, unique and irreplaceable, which should not be suppressed, and could never be replaced by attempts to copy others.

8. East Façade

With its tripartite layering and vertical modulations recalling the western façade, one might be tempted to dismiss the east elevation as a variation on a theme. But a brief appraisal of its surface reveals that it has a different presence and another story to tell. Unlike the formal west wall that places a smooth edge against the edge of the forest, the east wall is informal and contains several variations on the elements of which the former is composed. Moreover, the composition of the east wall was derived from an additive process in direct opposition to the reductive form of the remainder of the building, and of Hanganu's work in general. This additive form has more in common with the city at large and appears familiar and penetrable. Its character is what Charles Jencks would call 'multivalent', meaning that the building could be interpreted in many ways [35]. Indeed, the façade may be read as a map of the hierarchical structuring of the building, or as a grouping of separate buildings on a street. The resulting composition of walls of masonry and glass with projecting bays, stair towers and a freestanding chimney, is spontaneous and urbane. The architect generated the overall volumes from a stringent rationale that took account of natural features, patterns of use, circulation, structure and economy. This functional diagram was then translated into an aesthetic vocabulary for the elevation that suggests stratification, transparency and balance.

By virtue of recessing the six bays near the rock outcrop the depth of one bay and projecting forward the stair towers, the primacy of the cubic volume is diminished.

In its place are three distinct blocks linked together by explicit or implied horizontal strata. The central zone is, for the most part transparent, marking the main entrance to the building and revealing the core of the program. Dominated by a plate glass wall that soars five levels to the floor of the offices, it affords views into the school's important activities [Fig.71]. Behind the glass, a soaring volume filled with potted trees and café tables, stretches through the building to the other side. This is the Winter Garden that was described in Chapter IV 'Form, Scale and Volume'. It is the place for gathering, nourishment, study and repose, the symbolic 'hearth' of the school. It occupies the place where the 'noble floor' meets the natural one, where the forest has been contained and tamed. At the south end the rock outcrop is visible; at the north looms the drum of the auditorium. The density and rhythm of the circulation identifies the next level as the classroom floor. The yellow box section of the circulation spine is visible from the exterior as it passes over the outcrop like a bridge. One level above, the library comes into view with stacks, study carrels and reading rooms. At the top of this three-dimensional organigram, glass bridges soar across the upper volume of the Winter Garden, connecting the computer studies and graduate offices.

This glass box is roughly aligned with the undulating glass wall on the west side and faces the remnant of the forested slope that has been turned into a park. Here, the tectonic expression of the structure and mullions is more precise, delicate and controlled. The slender mullions backed by delicate horizontal truss braces divide the glass curtain into a three-dimensional matrix that is a direct extension of the structure and building strata. The grid stops short of the floor, leaving only the columns and a

plate glass wall devoid of mullions to engage the ground surface, which is precisely aligned with the floor. By night, the transparent boundary of glass and steel appears to dissolve and the Winter Garden and park seem to merge, the tables, chairs and potted trees appearing to spill onto the terrace. Bearing their weight on a grid of cylindrical columns, the stone faced office floors cap the winter garden and bind together the lateral wings of the elevation. In this system of curtain wall components, a tectonic hierarchy is neatly expressed in descending order: roof, columns, lateral braces, mullions, glazing stops and glass.

The student entrance marks the transverse axis of the plan and by way of a broad, descending sidewalk, completes the functional link with the University of Montreal campus. Situated where the recessed wall of the winter garden meets the projecting south wing, a cluster of painted I-beams leans precariously against the glass entrance cube. A sloping sheet of plate glass and an angled metal gutter crudely complete this primitive shelter, deflecting the rain and snow from a gang of doors below. From the lower end of the gutter, a taut metal chain descends to a galvanized drum set into the ground, both to channel the rainwater and to visually portray the incessant pull of gravity [Fig. 72]. The simplicity of the porch-like structure and the economy with which it explains the fundamental qualities of shelter, invites comparison with Lauzier's hut and the aedicule, which were discussed in Chapter IV 'North Façade'. Here, the architect has contrasted modern technical production with Lauzier's expression of craft construction. His random planting of columns reinterprets the natural randomness of the grove of trees, while the vivid red, yellow and blue of

Fig. 71
École des Hautes Études
Commerciales
Winter Garden.
View from East

Fig. 72
École des Hautes Études
Commerciales
Student's Entrance.
View from Southeast

the steel sections contrast with the neutral greys of the tree trunks. Hanganu presents his steel as a product of standardized production, yet the spontaneous placement and startling colours of the girders hint at the inner vitality of the material and its resistance to human control. Like the primitive forest, the contemporary industrial process has its own life force that at times is beyond our control. Behind the girders, a glass-enclosed vestibule is framed with thin aluminum tubes in a clear finish to show their natural colour and patina. A matching metal flashing no thicker than a mullion is the only visible sign of the roof. Six perforated metal sheets are draped below the ceiling, like machine-age clouds. Slender horizontal braces run inwards from the mullions and skewer a hovering, white cylindrical mass. Defying structural logic and loads, this atectonic belvedere is suspended in space on an invisible cantilever, caught in a dramatic interplay with the earth-bound painted porch. Having presented one manifestation of gravity, Hanganu challenges us to explain the next one [Fig. 72].

The north wing continues the layering, materials and fenestration encountered on the west elevation. The dominant horizontal recess and the regulating planar surface are evident, yet are now interrupted by the projecting ferro-vitreous towers for the stairs. Expressed as delicate scaffolds clad with thin panels of steel and glass, these powerful vertical lines of stress appear to hold the dominant horizontal layers in balance. The opposition between the vertical glass stairs and the horizontal masonry of the wall recalls Gropius' Fagus Works in Cologne (1914) and City Employment Offices in Dessau (1928), and reminds us of Hanganu's debt to the International Style. The institutional aesthetic of the lower storeys gives way to a

Fagus inspired factory aesthetic superstructure, enhanced by the punched metal stairs and silver-painted walls that are visible through the glass. A soaring green-painted metal chimney marks the recess of the Winter Garden elevation and re-states the industrial syntax of steel and glass components that dominates the façade. As in the west façade, the mass of the top two floors projects over the colonnade, but here is broken by a deep cleft behind the first stair. The planar surface of the stone gives way to a deep recess containing a steel and glass turret that rises from the terraced floor of the void. The masonry surface of the lower floors no longer engages the ground, but is borne on the elevated slab of the entry platform. The artificial grade of the terrace continues the length of the north wing, permitting the student promenade to be separated from the parking garage entrance below and providing a safe zone for pedestrians. As a result, the grade continues around the building, uninterrupted by cars and service vehicles, and subtly changes in character as it mediates the impact of the site and the program [Fig. 74].

The architect has fashioned the west elevation into a fitting backdrop for the park that occupies the interstice between HEC and the School of Architecture. Providing the first impression of the building for the students, most of whom approach the site from the campus and Metro station to the North, the west elevation appears to be the most transparent and penetrable of all the façades. Its panoply of forms suggests the variable landscape of a city street rather than the monumental form of the other façades, which makes this elevation more familiar, urbane and democratic – qualities which the architect attempted to provide in all of his buildings. This is HEC's student

Fig. 73
École des Hautes Études
Commerciales Student's
Entrance. View from East

Fig. 74
École des Hautes Études
Commerciales
Parking Garage Entrance.
View from East

face and corresponds to how these users expect a school should look [Fig. 73]. The north façade is the public one and represents the formality, pretensions and adherence to tradition that the public and stakeholders expect in a prominent institution. Although suggesting an attachment to the monumental schools of the past, Hanganu has never subscribed to monumentality, preferring buildings that invite the human presence and provide spaces for varied and spontaneous activities.

The elongated volume has subdued the site without consuming its identity. The western slope has been sanctified by the inflected glass wall, its sacred presence flowing into the heart of the building. The southern and eastern slopes have been tamed with terraces and sidewalks that transform them into urban parkland. The northern slope has been rebuilt in response to the demands of its urban presence and to provide the prominent setting that such a building requires. The Classical columnar porch on its raised podium does not surmount the site as a Greek or Roman structure would; instead, it 'builds the site' with a series of stepped terraces that fill a natural depression, then merges with the native rock further up the hill to give value and prestige to the rock outcrop. Thus, the architect has managed to adapt his normative typology to the specific qualities of the site, respecting the primitive identity he found there. This intervention, which Kenneth Frampton calls 'topographic mediation' isn't new to Hanganu, whose Archeological Museum at Pointe-à-Callière and Abbey Church at Saint-Benoît-du-Lac have been praised for their adaptation to, and enhancement of sites rich in heritage.

Different functions of Hautes Études Commerciales are expressed with

varying materials and window sizes, unified by the grid lines in the masonry, and set off against steel supports and transparent glass, areas of shadow and details which enhance the effect of lightness and planarity. The transparent stair towers are perceived as discrete elements that supply the façade with lines of vertical stress. The recessed horizontal accent is relieved by verticals and detailed to express the thinnest possible surfaces of reflective steel and glass, to deny any impression of mass. Like the first architects of the International Style who displayed the steel and glass construction made possible by the industrial might of the 1930's, Hanganu wanted to represent the leanness, strength and precision of the technology of the 1990's. He too, expressed the 'free façade', but used steel and masonry in place of the stucco favoured by the early modernists. To express this freedom in the revetment itself, the thinness of the masonry details in the upper levels make the material look modern, while the thickness of the stone near the base binds the material to traditional building practices. The elevations are held in check by the system of regulating lines that comprise the horizontal layers and the vertical control joints at the structure. These lines are part of a hierarchical expression of the interplay of load and support, which begins with the placement of the building masses over exposed beams and columns, and carries through the demonstration of the structural rationale in the cladding and finishes to the display of the fasteners themselves. The architect's concept of syntactic construction where the assembly joints become the symbolic components of an expressive system, serves as a means of revealing and augmenting the essence of construction. This will be examined in detail in the next chapter.

9. Architectural Syntax

Six themes, which were identified in the plans, elevations and details of HEC, are the fundamentals of Hanganu's architectural syntax. These are: 1] the hierarchical ordering of functions, 2] the use of regulating grids, 3] the use of natural light and views for orientation, 4] the use of primary forms and volumes, 5] the expression of syntactic construction, and 6] the elaboration of the historical and geographical context. His principle of arranging functions in a hierarchical order is more than a planning tool to satisfy the requirements of the program; it endows his works an inner logic and clarity that enables the visitor to quickly understand and appreciate the building. His use of regulating grids supports the hierarchical planning and gives his buildings a rhythm, cadence and a sense of movement through time. His use of light and views is calculated to inform and guide the visitor through the architectural promenade, and is often a device for orientation. These devices were used in buildings as early as the third millennia B.C., are present in most of the works of the International Style, and are not the invention of a single architect. It is in his way of using these devices that Hanganu appropriates them and makes them his own.

Perhaps it is his personal use of the last three principles which invests Hanganu's HEC with his signature style. Hanganu shared with Le Corbusier, Kahn and Bota, a passion for primary forms and volumes - squares and circles, cubes and cylinders - and used them to identify and dramatize the important elements of HEC. We find bold cylindrical forms in the penthouses, portico columns, corridor skylights,

auditorium and internal stairs, and the boardrooms are generated by circles. The Winter Garden approximates a cube, and the overall building volume of HEC is a rectangular prism. The predominant shape of windows and patterns of mullions, ceiling grids and stiffener ribs is square. His skill in discovering and elaborating the historical and geographic context of the Université de Montréal and its Outremont site, have given HEC some of the 'layers of meaning' which were attributed to his Archeological Museum by Architectural Review [36]. However these elements are deployed in unexpected and playful ways, and used to best advantage in the numerous places of contemplation and repose where they are endowed with an almost mystical power. What sets his work apart from that of his contemporaries and gives character to the spaces he conceives is his predisposition to use these elements to shape the interior space as much as the exterior, so that they in turn shape our experience of the building. For his own amusement and to bring this experience within the grasp of the uninitiated, the architect has consistently expressed the syntactic construction of the building components at all stages of the hierarchy, which heightens the visitor's experience and comprehension of the building. The construction is made to appear simple, provoking memories of things the visitors have assembled themselves and making the building seem familiar. Thus, the work may be appreciated not only for its visual and spatial richness, but also for the tactile and cognitive experience it provides.

The value placed by the architect in the discovery and elaboration of the historical and geographic context, and his exploration of syntactic construction have a particular relevance in Québec society, and might account for the success that

Hanganu has enjoyed in his adopted province. These two principles are key to the architect's understanding of what is an appropriate architecture for Québec during the final years of the 20th century, and will be examined in more detail in the next chapter.

10. Historical and Geographic Context

True to the principles that we have observed in his work to date, Dan Hanganu has created in HEC a balance between the generality of architecture derived from the global economy and the particularity of one suited to a given place. In this way his work mediated between the universal architecture that is a product of the technology and economic forces of the era, as the avant-garde tried to achieve, and a place-specific architecture that contains references to context and history, as the Post-Modernists hoped to produce. Charles Jencks who took credit for coining the name 'Post-Modern', claims that "[...] Post-Modern architecture developed a city-based morphology known as contextualism, as well as a richer language of architecture based on metaphor, historical imagery and wit" [37]. Hanganu adopted the social principles of the avant-garde, which were to produce architecture of the highest quality, made possible by the efficiency of the standardized processes of modern technology used to benefit the largest segment of society. But he avoided producing the hermetic and monotonous buildings to which this social code ultimately led when confronted with the goals of optimization and profit maximization of international capitalism. Instead, he infused his architecture with references to site, context and history to give it meaning, without succumbing to the skin-deep façadism or the decorative stagecraft of leading Post-Modernists such as Michael Graves and Charles Moore [Fig. 75]. Where most of his contemporaries perceived the goals of modernism and Post-Modernism as contradictory, Hanganu has found ways to bring them together in a dynamic

equilibrium. His architecture has mated the technical efficiency and spatial variety of the former with the contextualism and emotional depth of the latter. His buildings have a duality of meaning: Those aspects of architecture which the architect perceived as universal and immutable, such as technology and primary sensations, have been balanced with those that are personal and subjective, such as choice and secondary sensations. Having thus established a distance from both camps, he has synthesized the social premise of the former with the emotional richness of the latter, making his architecture the expression of a critical and ethical practice. While it shares an affinity with what Frampton called 'Critical Regionalism', Hanganu's architecture shows a greater concern for what is local and international. He has resisted the hermetic approach of some Regionalists who are obsessed with local morphology and vernacular to the point of excluding the spatial richness and technical refinement of contemporary construction. Bearing many of the characteristics which we identify with modern buildings worldwide - taut, planar surfaces, hovering volumes and large surfaces of glass and steel - Hanganu's work is also an expression of the native stone and vertical punched windows that are identified with the architectural heritage of the city in which it is built. To achieve this synthesis, he used a complex metaphorical language enriched by local forms and relationships - flat roofs, metal balconies and rails, exterior stairs - and allusive transformations of historical fragments - Neoclassical porticos, monumental stairways, skylight lanterns - and adapted them to a contemporary context.

Fig. 75
Piazza d'Italia, New Orleans,
1975-79.
Charles Moore (above)
Portland Building, Portland,
1980-83.
Michael Graves (below)

Hautes Études Commerciales presents itself as a democratic symbol representing the new image of an institution trying to distance itself from its Catholic past, while acknowledging its debt to those traditions. In an economy that values individual achievement and novelty, it is important for an institution – especially one that produces future economists and financiers – to present a unique and contemporary image. Yet, to be credible it must also demonstrate its attachment to a respected and durable institution – in this instance, the Catholic college that matured as the University of Montreal. In its free plan and façade and its asymmetrical disposition of rooms and volumes, the building represents the liberal values of an evolving Québec society, its anti-authoritarian message given voice by its contrast with the heavy-handed monumentality of the adjacent buildings. Although its placement perpendicular to the neighbouring Mother House and Collège Jean-de-Brébeuf is an assertion of its independence, the material palette, window proportions and Classical inspiration of HEC attest to its parentage.

Hanganu has evolved a vocabulary attuned to his era and informed by local traditions, but which is not an imitation of local forms. Juxtaposing an abstract portico inspired by Greek antiquity with smooth stone walls and punched openings derived from local vernacular, he has transformed historical references into a new poetic structure, mixing low and high tradition in a promenade through time. Measuring out powerful emotional experiences with his use of light, view and space, the architect leads us on an ascending walk of discovery that culminates in an open-air ‘Garden of Paradise’ on the roof-top plateau. Subtly reasserting HEC’s connections with the

institution and the topography, the southern 'Hanging Garden' which is the only one to have a skyline view, opens to a background dominated by Mount Royal and Ernest Cormier's Université de Montréal.

The volumetric richness of HEC derives from the interplay of the natural setting with the floating horizontal superstructure, hovering over a solid base firmly grounded in the wooded slope. This prominent hierarchy with its latent Classical order suggests a communal machine of enlightenment whose occupants are daily nourished through their contact with nature. The sharply-cut mass with its strong silhouette and the dramatic action of shadow and light on materials used logically and sparingly, act as counterpoints to the powerful historical presence of the structure. HEC is an expression of what Jose Luis Sert called 'a meridional architecture' [38], in which contemporary materials and construction methods in universal use have been adapted to particular natural and climatic conditions without resorting to romantic imagery or vernacular expression, and in which local contrivances and traditional features - masonry walls, porches and punched openings - are transformed into a modern aesthetic. Making reference to the scale, proportion and traditional symbolism of the School of Architecture and Jean-de-Brébeuf, Hanganu's building recalls the historical memories of the place. Thus, he has combined topographical and cultural symbolism with abstraction, fusing together material, memory and myth.

Hanganu's philosophical position is clear and succinct. "As architects, we display our understanding of history, but are nonetheless in the present, connected with a society which has its faults, its qualities, and which has above all the characteristics

of today. It is that which is important: to be contemporary” (Translation by author) [39]. This might explain his affinity for creating in HEC, a dialogue between metal for lightness and masonry for ‘gravitas’. Metal can be worked; it is tensile and projects us towards the future. Masonry has inertia; it represents what is known and unchangeable and binds us to the past.

This dialogue was central to the architectural theories of Viollet-le-Duc, who also played the qualities of metal against those of masonry more than a century ago. He believed that the new architecture must arise from a complementary synthesis of traditional and innovative elements. He believed that iron - the basic construction material of the 19th century - benefited from the solidity of masonry, and that the new architecture should express its fundamental interaction with nature by revealing how it resists gravity. The lower elevations of HEC are sober, cubic volumes clad in a local manufactured stone and punctuated with clean-cut openings of various sizes. This gives the impression of a solid mass in contact with the ground, capable of resisting the extremes of a Nordic climate. The upper floors, by contrast, are distinguished by hovering tectonic plates of stone, glass and steel, sliding over the base on a seam of silver and anchored to the ground with vertical columns of glass and steel. The interior, in turn, is characterized by a flowing, limpid space suffused with a cool, diffuse light that express the transparency and spatial dynamism of modernism.

Due to the expressive power of the masonry in his building façades and his ability to capture the spirit of their historical and geographical context, Hanganu has avoided many of the traps of the avant-garde whose work is beyond the grasp of public

sympathy and understanding. In the 1960's, the consumer societies of Europe, America and Japan had begun to absorb the avant-garde into the modes of consumption, finding its utopian message for a new world order was particularly suited to the production of new artifacts for the market. The social message of the avant-garde was diluted in the process, and came to be associated with the short-term, for-profit goals of the corporations. Although architects were supposedly endowed with the ability to interpret the aspirations of the community, the public was attached to traditional images and familiar associations, and was critical of what they perceived as the 'factory' appearance and lack of psychological warmth in modern buildings. Le Corbusier was aware of the problem when he advocated in 'Vers une architecture' the return to the primal signposts of a classical past to resolve the problems of a modern present, and the rethinking of the lessons of history in the context of contemporary life [40]. The compact volumes of his villas at Garches [1927], Carthage [1929] and Poissy [1929-31] and his Dom-ino studies reconciled the freedom in plan and elevation made possible by the ferro-concrete technology of his era, with the geometric order of the buildings of Classical times.

Like Le Corbusier, Hanganu has injected new meaning and formal vitality into the principles and typologies that have been inherited from architectural traditions. This can be seen in the north façade of HEC where the Neoclassical devices of plinth, supporting columns and entablature are largely symbolic and rely on a liberal interpretation of proportion and symmetry, load and support. Although no beams or pediments are visible and the vertical supports are not real columns, the grandeur of a

Classical order is metaphorically present in the overhanging slab of the upper floors, the regularly spaced vertical trusses and the stepped base. In this way, HEC demonstrates an affinity for tradition without being a parody of it. The public can connect with the building because it demonstrates a necessary sensitivity to the continuity of local culture and to the demands of tradition.

Hanganu's work derives some of its power from an intimate and symbiotic relationship with the site. His perimeter block developments at Pointe-à-Callière, Chaussegros-de-Léry and UQAM have reinstated parts of the urban structure that were previously missing, and are given meaning and context by their similarity in scale and material with their neighbours. The low-slung volume of HEC engages the site rather than towering above it, allowing the forest to engulf the southern half of the building. In Hanganu's decidedly non-monumental approach, neither building nor site dominates. Unlike monumental architecture that is intended to be viewed from afar, HEC is best appreciated from close by, where its masonry and glass walls come in contact with the ground surface. Here, the rock strata are reflected in the layered masonry coursing and in the way the glass inflects for the forest, so that the primordial forces that shaped the landscape appear to flow into the new structure and invest the space with the elemental and timeless quality which we find in Laugier's primitive hut. The interior volume is illuminated with filtered natural light that enters the high east and west windows, resembling the diffuse light in the forest. The tree trunks merge with the window frames and appear to support the glass walls and darkened ceiling like Laugier's tree-columns. The building appears to restrain, pacify and shape the

landscape without interrupting its natural flow and continuity. The forest penetrates the western wall and passes through the atrium, then out the eastern curtain wall. The polished stone floor of the Winter Garden is a metaphor for the natural rock strata of the adjacent hillside.

Contrary to the effects of universal civilization that flattens the site to make way for new construction, Hanganu has taken the approach of an indigenous culture by working with the land. He has 'built the site' in his own manner which recalls Frank Lloyd Wright's 'organic' architecture. This strategy runs counter to the avant-garde, who, like the builders of antiquity preferred to create a level base on which to place their structures. Le Corbusier would have lifted the building up to let the land flow beneath it, as he did at La Tourette [Fig. 76]. However, despite the similarities in the play of volumes and the placement of the hovering horizontal slabs on sloping, wooded sites, Hanganu's approach to the topography differs from Le Corbusier's in the way HEC engages the ground, displacing it like a great ship into wave-like contours [Fig. 77].

Hanganu may have been inspired by Le Corbusier's 'Five Points of a New Architecture' when he became fascinated by the use of roof gardens in his buildings [41]. By incorporating the natural landscape into the 'Hanging Garden' on the roof of HEC, he inverted the traditional association of vegetation with the ground plane and could now reintroduce some of the planting which had to be removed to make room for the building. Most importantly, the presence of ample vegetation in the roof-top courtyards creates the impression of an elevated grade with an adjusted horizon that

Fig. 76
La Tourette, at Eveux, near Lyons,
1956-59. Le Corbusier
Overall view from Southwest

Fig. 77
École des Hautes Études Commerciales
Overall view from Northwest

transform the inward-looking perimeter blocks into an urban oasis [Fig. 53]. The vertical displacement of the horizon through six floors equates with a reduction in the perceived height of the adjacent buildings and landscape. The scale, proportions and sense of containment of the roof gardens have more in common with the Moorish courtyards in Cordoba and Granada, than with landscaped roofs in a modern urban centre. In the fullness of time these rooms in the sky will be softened as the plant material matures, and the presence of the vegetation will be felt in the interior spaces that enclose them.

The gardens have the characteristics of the clearly bounded place form which Hanna Arendt believed was necessary for a 'space of human appearances', like the opening in the forest or the metaphorical clearing in the city – the square – where events will naturally occur. They represent a double mediation of 'culture' in that they are 'cultivated', and they contain a space, in the way that a clearing in the forest creates a place for human habitation. The Winter Garden has the place-conscious aesthetic of a clearing in the interior landscape whose character is derived in large part from the interaction of the university culture with the natural setting. When we acknowledge that the specific culture of the region embodied in its geology, history and methods of cultivation has been inscribed in the form and realization of HEC, the building can then be interpreted as a statement of resistance to the forces of universal civilization and as an example of an 'architecture of resistance'. Hautes Études Commerciales has a certain specificity that flows directly from the site, setting it apart from the anonymity of most modern buildings. One senses that the building should be

nowhere else but there, it's meaning derived from it's setting in the rock of the hillside, at the boundary between university and community where the traditions of the Catholic institution confronts the realities of the modern city.

11. Syntactic Construction

Frampton used the term 'Critical Regionalism' to describe a form of architecture expressive of a specific society or place and which resists the influence of universal civilization [42]. By 'universal civilization', he meant the unifying force of international development that leads to the global proliferation of anonymous architecture - one that applies equally to Europe, America and Japan, as the avant-garde set out to achieve - at the expense of national or regional forms. Regional architecture is achieved by applying design strategies that are characteristic of the way of building in a particular place, which in Quebec includes the dominance of grey stone on building fronts, sheet metal cladding on roofs and secondary elevations, flat roofs, light-weight iron balconies and rails, and a craft tradition that exposes the components of construction to view. Hanganu has used the same strategies in most of his work, and his preference to exhibit the components of his assemblies, that we shall call 'syntactic construction' has become a trademark, to be examined in this chapter.

Hautes Études Commerciales, the School of Design and Saint-Benoît-du-Lac are examples of his use of architectural syntax as generators of the building forms and details. This is evident in the earliest sketches for HEC, in which he laid a regular structural grid five bays wide and twenty deep over the site, and all modulations of the exterior walls and internal subdivisions were controlled by the matrix. The same modules, when extruded vertically into seven levels, control the building in section and elevation [Fig. 49]. The architect has even extended the grid beyond the exterior walls,

so that it generates the location of site features including the terrace on the east and the amphitheatre. More than a simple planning tool to ensure the compositional regularity of plan and elevations, the grid has persisted throughout the evolution of the design and appears on the final presentation drawings as well as inscribed in the façades and flooring materials of the completed building.

In a strategy which recalls the syntax of Le Corbusier's Dom-ino house and villas at Savoie and Garches, Hanganu has ensured that each of the columns in the matrix is expressed as an independent support for an apparent or implied load, and is either a free-standing cylinder of concrete encased in lustrous metal, or else painted a primary colour when it is engaged with a wall surface [Fig. 47, 50]. Thus the tectonic expression of load and support that is the genesis of plan and section, has been granted honorific status among the largely understated materials of the building – wafer board wall membranes, galvanized steel columns, exposed concrete beams and painted steel stairs and railings. In order to express the function of the reinforcing steel that is concealed within the concrete for protection against fire, the architect has left the corrugated steel formwork in place on the surface of the columns. When Mies Van der Rohe was faced with the problem of having to cover his steel columns with concrete for fire protection, he responded in a similar way by placing steel channels and 'I' shaped wind braces on the surface of his columns to imply the buried steel supports. Hanganu's solution was more economical and ethical in that it was a direct response to the process of construction. His approach meant that he could leave the steel formwork exposed as a finished surface instead of having to remove it and repair the concrete

surface beneath. The steel flutes are both a finish and a memory of the construction process. Through his consistent use of the steel cylinder for the vertical components of the structure, the mechanical function of 'support' has been reduced to a single recurring element that is a condensation of the entire structure. The cylinder occurs in the columns, light wells, mechanical ducts and roof garden light fixtures. It expresses rigidity, verticality and strength due to the stiffness of its closed form enhanced by the spiral, ribbed profile of the metal, and metaphorically by its association with the fluted columns of antiquity. Hanganu's fundamental construction strategy has been revealed in a formal syntax that shows how the building resists gravity.

The flat metal sheets used throughout the building for the railings posed a different problem for the architect, having little stiffness to resist a lateral force. Using a technique often found in the construction of walls and railings on ships, Hanganu attached a grid of shallow ribs perpendicular to the steel sheets at one metre intervals, which transform the surface into a pattern of squares. The result is rigid but flexible and capable of being shaped into the sinuous curves that are usually associated with plastic materials. The similarity between this device and a curtain wall system is readily apparent when one compares the ground floor landing with the glass wall adjacent to the Grand Staircase [Fig. 45]. The steel railing aided by the external stiffeners resists the forces applied by the occupants in the same way the curtain wall resists the wind. Having established a dialogue between the steel and the glass curtain walls, the architect repeated these components along the architectural promenade and concentrated them at the major activity nodes. The ceiling above the ship's stair

leading to the library foyer is also subdivided into squares with an inverted T-bar system that continues the syntax first observed on the vertical surfaces, but now on the horizontal plane. The hierarchy of loads and supports expressed on the panel system demonstrates in a tactile way how the structural principle works at the scale of the building, and restates the grid which is the genesis of the plans and sections.

One of the most compelling examples of Hanganu's exploration of construction syntax can be observed in the design of the supports for the portico. Here the architect makes reference to a traditional system of load and support, consisting of a horizontal pediment resting on vertical columns, but has reinterpreted it in a purely modern way. The entablature makes reference to the attics of antiquity, but at the same time displays the contemporary predisposition for optimizing space by containing two floors of office space. The ornamental frieze and pediments that adorn classical structures are gone, and in their place are two rows of square punched openings that allude to the functions within. The masonry wall is textured with narrow stone bands at every fifth course, and vertical reveals at every column grid that conspire to render the material as a light membrane. Apart from the four hollow openings and the vertical groove at the middle, there is no ornament or unnecessary detail. These voids frame a shallow recess that opens to the sky in which the architect had intended to place a tree, as a preview of the 'Hanging Garden' [Fig. 60, 61]. The architect wanted a living element to occupy the most prominent part of the façade in order to acknowledge the central role that nature has played in his design.

Having made the attic appear light, the architect now expressed the supports as

the lightest and most slender members imaginable. A row of silver painted steel 'H' sections soars eighteen metres in height, in line with the internal column grid and the expansion joints. Excepting the middle bay which is entirely devoid of columns and braces, each bay is split in the middle by a second, matching section and braced horizontally at three metre intervals with similar, but thinner, sections to provide lateral stiffness [Fig. 59]. To ensure rigidity perpendicular to the colonnade, a truss-like brace is provided on the rear face of each vertical section, sloping in to meet the member at an acute angle near its base and top. The truss-columns carry the weight of the roof and wind loads economically, and reinterpret with contemporary means the robust columns of the ancients that have been copied as decorative elements for institutional buildings. Yet, Hanganu's columns play a cognitive role as well, showing how forces are channeled through a system of diminutive members with exposed joints in a manner that recalls Gothic rib vaulting. The heavy traditional columns have been replaced by a delicate filigree of slender channels that situate the building in the 20th century while, at the same time, the colonnade hints at the institution's adherence to the democratic ideals symbolized by the Classical portico.

The syntax extends to the exposed bolt and plate connections that occur at the intersections of the members. These fastenings have been placed in neat, symmetrical groups serving both as pragmatic decorative elements, and to make the construction intelligible. The structural logic can now be inferred at the scale of the massing, through the interaction of the supports, to the connections of the components. Hanganu used a cognitive strategy to demonstrate both the construction and the planning

principle when he placed the cylindrical air intakes around the western grouping of columns. He offset the array of tubes one-half bay westward, so that the first frame to the west of the entrance would be left uncovered. The empty central bay alludes to the spatial hierarchy inside the building, extending the central aisle to the façade and directing the visitor to the entrance [Fig. 46, 56]. Thus, the portico is a pragmatic solution to support the loads from the superstructure, as well as a representation of the institution's Classical pedigree and modern outlook. Where the Post-Modernists might have parodied the Classical colonnade, Hanganu expressed his supports as a kind of permanent scaffolding, thus creating a metaphor for the evolutionary changes facing the modern institution. By expressing the symbolic purpose and structural logic of the portico in this manner, he would seem to agree with Botticher, who believed the symbolic cladding of a building should never obscure its fundamental constructional form, and the beauty of architecture lies precisely in the explanation of mechanical concepts [43].

Perhaps, nowhere is the construction syntax more clearly expressed than on the side elevations of HEC. We have observed how the horizontal recesses in the east and west elevations not only illustrate the hierarchy of functions within the building, but also reveal the cylindrical columns that lie behind the wall surface. We have also noted how the structural grid is represented on the façade by the vertical metal inserts that split the masonry face from the ground level to the roof. Having thus expressed the supporting structure on the façade, Hanganu proceeded to manipulate the revetment as though it were a kind of textile. First, he divided the stone surface into two horizontal

slabs which are separated by the library level recess, the metal spandrel above it and the continuous horizontal strip window of the third floor computer rooms, each change in material and plane corresponding with a floor level. Next, he detailed the upper masonry wall which faces the administrative floors with 50 millimeter high belts at every fourth course, and a control joint at the floor slabs [Fig. 53, 69]. All the recesses, including the punched window openings, are covered with metal meeting the masonry at an edge. As a result, the wall resembles a woven tapestry with negligible thickness and minimal strength, like the fabric infill to which Semper referred. Its appearance is flexible, light and modern, and its recesses and projecting volumes suggest evolution and change, as though they are unfinished. The broken roofline is random and asymmetrical, and like the portico suggests a work in progress, or a dream unrealized. Lacking the finality and inviolability of a Classical roofline, it may be a metaphor for Québec's unresolved status as a nation.

The lower wall of the classroom floors has a different tectonic expression that suggests thickness, weight and strength. Here, the masonry returns into the openings, and there are no belt courses and control joints to express the floor levels, or recesses to break the continuity of the cladding. This stone appears rigid, heavy and solid - the way masonry was made to look in the past. It presses against the ground, seemingly displacing it as a ship displaces water. The interplay between the broken roofline surmounted by the penthouse drums and the smooth base, separated into two distinct parts by the horizontal recess, suggest the superstructure and hull of an ocean liner with its characteristic impermanence [Fig. 88]. This may be a metaphor for HEC's

independence from its Catholic parentage, for Québec's aspirations for political sovereignty, or as a simple acknowledgement of the province's maritime traditions.

As counterpoints to the thickness of the masonry base, the architect has placed emphatically thin curtains of glass at intervals along the façades. The projecting western bay of the first floor corridor appears to hang from five spars that protrude from the bottom of the library level recess [Fig.65]. From the beams are suspended a grid of deep vertical and shallow horizontal mullions, into which flat steel spandrels and clear glass are fitted. Load and support are expressed with components acting in tension and which extend beyond the sides and bottom of the projecting volume to dramatize the thinness of the materials. Although the fasteners are hidden, the structural logic of the bay is easily comprehended. In a similar way, the exit stair from the auditorium roof plays the tensile strength of the thin steel channels holding a curtain of plate glass, against the compressive strength of the stone faced buttress [Fig. 69]. Inclined metal channels contain metal checker plate stair treads, left open to emphasize the lightness of the construction. The metal tube railing is divided into parallel bands by steel cables that are held in tension by an array of exposed bolts, expressing how significant strength can be obtained from minimal materials. Wrapping around the masonry pier as it descends, this exquisite stair demonstrates yet another structural principle - equilibrium. By disposing the landings on opposite sides of the masonry pier, the architect has used the cantilever to reduce the steel frames to the slenderest possible sections in the same way that Gothic builders reduced the bulk and weight of their structures by employing the logic of the rib vault. Like the landings and

rails on the interior stairs, the bolts that attach these components together are exposed to view and touch.

The concept of the glass curtain wall finds a simple and elegant expression in HEC and in several of Hanganu's recent works. In the lounge area on west side of the rez-de-jardin, a two-storey glass wall looks out towards the Collège Jean-de-Brébeuf, adjacent to the undulating wall of the auditorium. Nearly square in proportion, the upper two-thirds of the glass curtain is divided by mullions into one metre square grids, while the bottom third changes to two metre square modules [Fig. 78]. A similar device was used at Pointe-à-Callière and in the belvedere windows of Saint-Benoît-du-Lac, with the effect of dematerializing the curtain and implying that it is hanging from above. This impression has been perfected in the east wall of the Winter Garden, where the mullions at the bottom of the curtain wall are eliminated altogether and structural sealant used in their place, in a manner that recalls the glass lobbies of Mies Van der Rohe and I. M. Pei [Fig. 71].

The visual experience of HEC is complemented with tactile stimuli that arouse the impulse to touch, balancing the depth of the space with the representational divisions of the surfaces. The tactile familiarity with the building components acts as a counterpoint to the western preference to experience the environment in perspective, and reveals at an elemental scale the essence of Semper's framework and enclosing membrane. The tactility of the components also distances Hanganu's work from that of Mies Van der Rohe and his followers, whose details were borne of a hermetic machine technology that few people would attempt to touch or comprehend. By starting with

Fig. 78
École des Hautes Études
Commerciales Lounge. École
Jean-de-Brébeuf in background

Fig. 79
École des Hautes Études
Commerciales, 1970. Roland Dumais
Detail of West Elevation,
rue Decelles

the techniques of construction, Hanganu has made his art form intelligible to its users and attests to his belief that buildings must be experienced by touch as well as sight. "I like to touch metal, mortar, wood. I am more drawn to the object, towards the very small object. I like to pass from a gesture on a large scale, the concept of the Museum as an entirety, for example, to an intensively worked detail. The building must have a presence, an identifiable image that its personality displays. From there, what interests me are the details, to the smallest screw [...]"(Translation by author) [44]. His expression of the method of fabrication may have been an attempt at demonstrating a form of social realism, but it is contained within a composition that maintains the level of formality associated with an institutional establishment. The architect has translated the underlying meaning of a social program – the provision of a flexible environment for learning that can adjust to the varied needs of a multiethnic student population - into aesthetic form by use of an industrial craft imagery that is held in balance by the regulating lines of the frames and membranes that subdivide the structure. He has crafted a timeless balance between component and principle. The curtain walls belong to the 20th century, but the structure of beams and columns has been in use since antiquity, and the surfaces recall the vernacular traditions of the region.

This is the paradox of Dan Hanganu's architecture and what distinguishes his work from that of his contemporaries. His architecture is unmistakably modern, yet it is inflected with references for the way things traditionally were constructed. He has inscribed it with the specific culture, geography and history of the region in which it is built. This may explain the appeal of his architecture to the Québécois.

Chapter V

Conclusions: From Remembrance to Renewal

1. Interpretations

In his book entitled 'The Limits of Interpretation', Umberto Eco claims that: "A text, once separated from its utterer (and his intention) and from the concrete circumstances of its utterance (and hence its referent), floats in a vacuum of an infinite range of interpretations" [45]. The same may be said about architecture, where its meaning for each person who comes in contact with it will vary according to the purpose of his or her visit, knowledge of and appreciation for architecture, cultural affinities, and even the time of day or period in history. Eco goes on to say that "[...] when a text is produced for a community of readers, the author knows he/she will be interpreted not according to his intentions, but according to a complex strategy of interactions which also involves the readers, along with their competence in language as a social treasury" [46]. The literary treasury includes grammatical rules, cultural conventions and a history of previous interpretations of many texts, not unlike the rules of proportion, building typologies and historical precedents which influence our appreciation of architecture. Eco's statement, when applied to architecture, can explain not only how a building can have different meanings for different people, but also how it can evoke reactions which are common to many people who share similar cultural conventions or past experiences of this and other works. To be considered successful, a building must

not only satisfy the requirements of program, but must also compare favourably with an architectural treasury that is made up of all that we know and have experienced about architecture. We measure a work according to an extensive set of criteria that have been disputed by generations of critics and scholars and accepted as good design. These criteria are neither scientific nor absolute, and their relative importance may vary as a result of personal taste or cultural conventions, yet they remain the rules by which the architectural debate is played. Charles Jencks defines good architecture in somewhat different terms particularly fitting to Hanganu's work. For Jencks, architecture should be 'multivalent', which means it should have "[...] absorbed and modified many sources so that they bring a wealth of overtones, a halo of memories, without denoting any particular set. This imaginative transformation has the great power to suggest much more than what can be named" [47]. By stressing that architecture should not evoke a particular set of memories or associations, Jencks endorses the abstract references to tradition and context that are found in Hanganu's work, while he discourages the literal references found in the work of other architects.

If architecture is judged according to cultural conventions, it follows that any group of buildings in a homogeneous cultural setting would tend to reflect the rules and expectations - the way of building - of the community at a given time. This explains the persistence in architecture of regional trends, in which certain overarching principles of siting, design and construction evolve which are identifiable with the place. The architectural profession evaluates a building on the basis of a common knowledge of centuries of history, while the public measures it by more immediate

criteria - its fit within the site, the neighbourhood and the city, and its impact on their lives. On occasion, the public and the profession agree about what is good design, as was shown by a survey conducted in 1991 by the newspaper 'La Presse' during the International Convention on Architecture in Montreal. The Château Dufresne, completed in 1918 to the design of Mario Dufresne with Jules Renard, was the building preferred by both groups. Inspired by Jacques-Angé Gabriel's Petit Trianon in Versailles, the popularity of this exquisite work suggests that the appreciation of architecture is not exclusive to the profession, but derives from the intuitive knowledge in the community at large of certain principles. These include the proper scale and proportion of the elements that comprise the façades, appropriate use of materials, good craftsmanship and, most importantly for the public, the associations evoked by the building.

As demonstrated by the impressive list of awards and citations, Dan Hanganu's work has enjoyed the approval of the public and the profession. His success is arguably due to the fact that his buildings are not so modern that they are incomprehensible to the former, nor so historicist that they are dismissed by the latter. (His work contains a wealth of abstract references that evoke a variety of responses from those who experience his buildings, allowing room for the personal interpretation of every visitor. Once completed, the building ceases to be the property of the architect, and is appropriated by the public who interpret it according to their own treasury of experience). While there can be no doubt that Hanganu's work expresses the principles of modernism with its emphasis on contemporary techniques, it

simultaneously displays a resistant, regional identity without retreating into historicism or vernacular revival. His designs demonstrate what Frampton sees as the fundamental strategy of 'Critical Regionalism' by mediating the products of global civilization with elements that are derived indirectly from the 'way of building' of a particular place [48]. Hanganu achieves this reconciliation of the universal with the local, primarily through the interplay of the two themes which we have observed in *Hautes Études Commerciales* and most of his other works: the expression of a modern syntax, interacting with the building's historical lineage and the geographic context of the place of construction. He seems to have understood what it is that makes Québec unique, and has found new and evocative ways to incorporate that specificity into his architecture. Hanganu has a fascination for fusion, adapting new influences to old beliefs. It seems paradoxical that this architect who has won many prestigious public contracts, whose work has received numerous provincial awards and has commanded the attention of Québec's architectural community and public during the last decade, is so little known in the rest of Canada or abroad. What is it about Hanganu's work that has relevance for, or appeals especially to the people of Québec? Are there clues within the history and culture of the province that might explain this appeal?

The three themes in Dumont's writings, central to the identity and continuity of Québec's founding society: 1) the pervasive influence of its heritage of history, laws, language, religion, genealogy and customs; 2) the profound attachment of its citizens to the land; and 3) their need for a modern project to ensure the survival of the Québécois in the future; bear a compelling resemblance to the dominant themes in Dan

Hanganu's architecture. His buildings demonstrate their historical relationships with their predecessors, their neighbours and the city. They make symbolic and pragmatic references to the particular geography of their sites. They are executed with materials and techniques that are predominantly modern, yet reconcile 20th century industrial technology with pre-industrial construction methods. He builds modern projects that mediate the character of the topography and are layered with historical associations. As we have shown, these themes have evolved during the three decades Hanganu has practiced in Québec, and are consistent in his work to such an extent that they have become the signature elements of his architecture. We will conclude by summarizing how Dan Hanganu's architecture can be interpreted as a metaphor for Quebec's history, its geography, and a project for Quebec's identity.

2. Architecture as Metaphor for History

It is my contention that Dan Hanganu's architecture appeals to the Québec public because they see in it an embodiment of their varied cultural identities. Provoking a multitude of references, his work can be seen as an expression of the collective reality of Québec's social order. It contains a panoply of abstract references to Québec's built culture that cause the public to experience a part of their cultural treasury when they visit his buildings. This multivalence is arguably the most provocative characteristic of his architecture and one that can be found at the scale of the master plan, through the conception of the buildings, to the execution of the details. The 'layers of meaning' that permit such varied associations among the users of Hanganu's buildings are the result of the architect's personal agenda, formed by his education, his travels and his experiences as a builder and a designer. Hanganu's architectural language lends itself to interpretation as a metaphor for Québec's history, its geography and its quest for identity, that have a particular resonance for the Québécois as they enter the 21st century. We will begin by examining how the architect's personal approach may be seen as an interpretation of the province's history.

Hanganu has created buildings that have a powerful presence and that give value to the site's 'memory' of past human interventions. Hence, his work is seen as a celebration of architecture and of its revealed history. He has delighted in discovering a historical referent and giving it meaning in his work, as in his Archeological Museum where he unearthed successive layers of Montreal's occupation from its financial institutions down to its original Christian cemetery. The large openings in the

walls and floors of Pointe-à-Callière make visible the ruins beneath the site and attest to the building's allegiance to history. He composed the building in three distinct parts to express the morphological footprint of the site, but broke from the symmetry of the Royal Insurance Building. He felt it was necessary to recompose the sea wall to symbolically withstand the force of the river. As in his other work, Hanganu has here created a permanent dialogue between history and architecture by using stone masonry – the dominant material in the surrounding buildings, and a symbol of the continuity of local building traditions.

Hanganu has taken a critical position concerning the role of his buildings in their surroundings, choosing to give them a strong presence without making them monumental. The tower at the apex of the Éperon is both a buttress to the sea wall and a closure to the Place Royale, and makes the historical town square monumental by its presence in the assembly of buildings. His building serves the city by completing the shapes of adjacent structures and spaces, in the same way that the spaces in the Museum are at the service of the objects displayed within. He brought together the cultural material of the program – city architecture and archeological site – in the form of the building and the spaces it defines. Balancing the desire to be modern with the need for a past, Pointe-à-Callière frames and validates the vestiges of successive occupations of its site, while it expresses our contemporary way of conceiving space. The Museum is a metaphor for a people who want to reaffirm their roots and, perhaps, of an architect who wishes to confirm his attachment to his adopted country.

2.1 Continuity and Change

Dan Hanganu's principal gesture in his designs for Pointe-à-Callière, Hautes Études Commerciales, UQAM and Saint-Benoît-du-Lac is to express continuity, accepting symbolically that the buildings had a past which defined their present form, and that their occupation will extend into the future. He accepted the possibility that others might one day build over the ruins of the Museum and expressed this metaphorically in the incomplete tower with its exposed metal core and its protruding steel armatures [Fig. 20]. To stress the conflict between continuity and change, he opposed the solidity and permanence of masonry to the malleability and transience of steel. Hanganu associates masonry with humanism and metal with science, seeing the tension between the materials as a metaphor for the conflict between nature and technology. He makes a similar comparison between history and the present, opposing the durability of the ruins with the ephemeral quality of the modern building that contains them. To balance the opposing forces and to prevent the new building from 'stealing the show' from the ruins, the architect employed modest materials which share the tonality of the originals.

The Archeological Museum acknowledges the buildings that preceded it in other ways. Its southern wall, faced with a smooth grey stone resembling the coursed ashlar used in neighbouring buildings, reaffirms and continues the sea wall of 17th and 18th. century façades to the apex of the site. The tower interprets that of the Home Insurance Building that previously occupied the property, and its cylindrical form makes reference to the grain elevators that line the nearby dockyards. The two masses

comprising the remainder of the building echo the shapes of the Berthélet and Papineau structures that occupied the property two centuries earlier. The taut, flat surfaces and wedge-shaped prow pay homage to the merchant ships that ply the St. Lawrence, the lifeline of the province's economy for nearly four centuries. Evoking the historical presence of the site, these associations prepare the visitors for a powerful experience when they encounter the stone foundations and burial sites of the original settlement beneath the hovering mass of the building's undercroft. Here, the slender pipe casings that support the new structure deftly thread their way between the massive stone foundations of the old city and establish a dialogue that spans centuries of building. The symbolic gestures by which the new building evokes its regional architectural traditions are given value by their association with these authentic vestiges of the original settlement of Montreal, and the distinction between reality and fiction is blurred. Avoiding the common tendency to replicate or mimic the past, Dan Hanganu is more interested in the effect of these historical fragments and citations on the architectural conscience and memory of his contemporaries, and has allowed the traditions of the region to guide his imagination.

2.2 Identity and Context

Hanganu sees the past in two ways: the distant past of architectural traditions, and the immediate context of the building ensemble. He responds differently to each, treating the distant past metaphorically and the immediate context more explicitly, because it is

more closely connected to the present. He uses his buildings to establish a dialogue with the past, and as critiques of the existing structures that occupy or surround the site. The Abbey Church at Saint-Benoît-du-Lac was inscribed into an existing building ensemble that dates from the 1930's, and built over the foundations of the refectory. By placing the sanctuary against the south wall of Dom Bellot's exotic bell tower, and against the north wall of the five-storey residential pavilion, Hanganu accepted the inevitability of comparisons between his building and its predecessors. He could either choose to blend with the polychromatic and varied geometries of the adjoining buildings that included square, hexagonal and octagonal towers, or differentiate the form and colour of his building. In choosing the latter approach, he made a veiled commentary on the architecture of Dom Bellot and Dom Côté.

The new church distinguishes itself by its scale, its complexity and its colour. Its small, compact volume stands before Dom Bellot's tower like David before Goliath, yet is not overpowered by it. The simplicity of its volume and the force of the repeating 45 degree slopes of the roof, towers and dormers give Hanganu's smaller building an aura of strength and repose that resists the potential of the larger structures to dominate it. It fits neatly into the greater context of the monastery, yet it exudes a fresh and distinct identity. The architect matched the grey-white granite of the original buildings, but chose not to repeat the contrasting coursing of red and green granite used in the originals, and the monochromatic palette gives the new building a sculptural presence. His major achievement was to draw together several disparate elements with one exquisite block of masonry that completes the composition like the

Fig. 80
Eglise abbatiale St.-Benoit-du-Lac.
1989-94. Dan S. Hanganu
Overall view from Southwest (above)
Section and Plan (below)

Fig. 81
Eglise abbatiale St.-Benoit-du-Lac.
Detail of Roof Windows (right)

keystone of an arch [Fig. 80, 90].

Hanganu chose to work with the existing structures and to limit the extent of his intervention. The structure of the new church is a vertical extrusion of the original nave, aisles and cloister, completing and valorizing the work of Dom Côté half a century earlier. The buff brick of the interior walls and piers merges seamlessly with the original structure, at times keyed into the exposed coursing of Dom Côté's block work. Parallel to the brick piers, skeletal steel frames rise to meet the angled steel rafters which support the steeply pitched roof, creating a dialogue between the slender ferrous components that imply modernity and the massive masonry that evokes tradition. The brick joints are left intentionally flush, to give the material the monolithic appearance of medieval masonry construction. In keeping with the philosophy of the monastic community, the forms, colours and finishes are restrained and Spartan, and produce a mood of timelessness and contemplation. Even the natural light is subdued, filtered through invisible indented dormer windows notched into the roof at the eaves [Fig. 81].

The white stone that covers the exterior was brought from the same quarry that supplied the original buildings and replicates the scale and texture of the older surface. A horizontal reveal marks the datum where the old and new meet, but here the projecting façade of the superstructure extends in piers to the ground and binds the structures together [Fig. 82, 83]. The architect has respected the dominant angles, volumes and the emphatic verticals of the adjacent buildings to ensure the harmony of the assembly, and the new building is consciously understated so that it doesn't

Fig. 82
Eglise abbatiale St.-Benoit-du-Lac
Tower above Sacristy. View from North.
Refectory by Dom Cote visible below

Fig. 83
Eglise abbatiale St.-Benoit-du-Lac
Overall view from North with steeple by
Dom Bellot, Refectory by Dom Cote and
Sanctuary by Dan S. Hanganu

compete for attention. Hanganu has consistently taken a stand against monumentality, believing that a contextual design is a more ethical approach to architecture. The façade of the new church was pulled flush with the flamboyant steeple designed by Dom Bellot, with the smaller, modern bell tower placed on the opposite side to balance the composition. An open-air walkway contained in an arcade that recalls a Roman aqueduct, projects over the peak of the sanctuary roof and links the two steeples. Used frequently in medieval churches, this elevated arcade unifies the three principal elements of the facade - original steeple, nave and bell tower - into a balanced and exquisitely proportioned composition. The juxtaposition of the modern Abbey Church with the ecclesiastical structures built half a century earlier attests to the continuity and the ambition for renewal of the Catholic Church in Québec's cultural landscape. In providing a place of worship for the monks, Hanganu has created a modern structure which complements and validates the earlier works of the religious community at the same time that it stands as an elegant, modern container for the timeless, contemplative experience within.

One of the keystones in the formation of the francophone Québec society is its three centuries of Catholic education. L' École des Hautes Études Commerciales acknowledges the previous incarnations of the institution in numerous ways. The portico is a contemporary interpretation of the façade of the original school on rue Viger, and makes a symbolic reference to the classical heritage of both buildings. The lower floors mirror the scale, proportions, colours and details of the schools built by the Catholic Church during the 20th century, and consequently validate the role the

religious institution has played in fostering education. The horizontal reveal in the middle of the east and west elevations is a subtle reference to the previous HEC. In the older building, a similar slot occurs about mid-way up the fluted concrete walls of the north wing and near the top of the south wing, casting a deep shadow on the flat surfaces and revealing the structure behind [Fig. 79].

The associations between HEC and historical antecedents in Québec architecture extend to the construction of the exterior walls. The lower walls appear thick and massive, like the stacked log or stone walls in traditional Québec buildings which thicken when they meet the ground. In contrast, the upper walls are expressed as a thin fabric of masonry or steel that recalls the weather boarding and metal roofs that are common in Québec domestic architecture. Masonry speaks of resistance to gravity, permanence and time-honoured ways of building, brick and stone having been used to build walls since the beginning of recorded history. Throughout the province's history, stone has been the material of choice for noble buildings, hence its use in HEC seems familiar and appropriate. Hanganu admits to a fascination for the interplay of masonry and steel, and for their association with permanence and change. His construction syntax is most clearly revealed in the connections of the steel structure where bolts and washers are exposed with obsessive regularity. This is not the product of a whim, but is born of a deeper need to explain the essence of materials and the ways we build with them, that compensates for the additional demands on the designer to detail the assembly in a logical and efficient manner. In a society that was largely composed of artisans - farmers, mill-workers, ship builders, carpenters and masons - this appeals to

one's sense of how things are made. Materials are chosen and assembled rationally and simply, displaying their qualities and limitations as they have been expressed in Québec's buildings for centuries. In opposition to the preference of most contemporary architects to conceal structural components and baser materials beneath a finished skin (no doubt because it is usually easier to do so), Hanganu has displayed his fascination for current materials and construction in his choice of interior finishes where common wafer board panels, steel studs, suspended ceiling grids and metal ducts are exposed to view in their natural states. The predominance of common steel profiles and connectors in neutral colours visible in the construction of the stairs and handrails, the bracing of the eastern curtain wall of the Winter Garden and the frames of the exterior porches, make reference to the manufacturing and ship-building traditions which have prospered in the region since the 19th century.

2.3 Contact and Separation

The exterior mass of HEC can also be interpreted as an expression of the social stratification that has prevailed in Québec since the Conquest. Clearly separated into two horizontal layers by the deep reveals on the east and west façades, the terraces on the south and the portico on the north, it represents the two parallel societies that have contributed to the formation of the province's identity. The anglophone Protestants who controlled commerce and industry are represented in the factory-aesthetic upper portion, while the francophone Catholic founders who cleared the forests and built the

first institutions are identified with the durable stone base. Like a mirror of Québec's social and political duality, a tenuous balance exists between these distinct and separate elements whose place of contact is a void [Fig. 65]. The upper floors are displaced in plan relative to the lower ones, and appear to be sliding over the base and the abstract colonnade whose cylinders stop short of the superstructure. The void is a metaphor for the rupture caused by the Conquest, in which a dominant British society with separate customs, language and institutions was superimposed over the founding French nation. In an essay which appeared in 'Le Canadien' in 1908, Philippe Ried described how a perpetual struggle between the two dominant societies was sustained by the constitution: "[...] the interests and the rights of the different branches of which the society is composed are so mixed, so cleverly opposed and all linked together, one to another, that they are mutually expressed and sustained by the struggle which results from the simultaneous exercise of the powers which are conferred on them" (Translation by author) [49]. Representing at once the place of contact and the space which separates the two entities, the reveal can also be interpreted as a sign that the two equal layers should remain separate and distinct, permanently in contact but never to merge.

3. Architecture as Metaphor for Geography

Because buildings are designed in response to the climate, soils, available materials and quality of light of a certain area, there is a natural tendency for regional architectural styles to develop. An abundance of limestone and sandstone in the vicinity of Montreal and Québec made the 'pierre grise' the material of choice for building until it was supplanted by less-costly brick at the beginning of the 20th century. Masonry was traditionally used in massive walls with small punched openings as a means to resist the chill of a hostile climate, and these contiguous stone and brick surfaces have become characteristic of the architecture in Québec. When improvements in building technology permitted the expansive glazing and skeletal structures of the avant-garde, modern architecture encountered resistance in the region because the large windows and exposed metal frames seemed inappropriate in the harsh climate. A small group of Montreal architects including Atelier Big City, Dan Hanganu and Gilles Saucier developed their own versions of an architecture more suited to the Québec climate, which Saucier calls 'Nordic Modern' [50]. Their work is characterized by solid-looking masonry walls with small punched openings, set against clearly differentiated glass voids which appear to enclose exterior space.

Rather than elaborating the window system as an architectural feature, Hanganu used curtain wall glazing as a means to mediate between the desire for views and light and the need to control the temperature. His glass surfaces are understated to such an extent that one might expect the architect to remove them altogether if the

climate permitted it. In contrast to the immateriality of the glass, his walls have the appearance of solid, contiguous surfaces built with local stone. The mass and material are illusory; the masonry is merely a thin veneer bonded to a concealed structure, as the architect has demonstrated in the detailing of the walls in the HEC roof gardens. The masonry that he used on the façades of Pointe-à-Callière, Chaussegros-de-Léry and the Pavillon de Design UQAM is a man-made product, manufactured from cement and stone aggregates in the colour, size and texture of natural limestone. Buff-coloured manufactured stone was chosen for the façades of HEC to match Cormier's Pavillon Central and other buildings on the Université de Montréal campus, as well as the beige tones in the exposed rock faces of Mount Royal. The contextual nature of the material palette is an example of a key concern of the architect: to establish a polite relationship with the immediate neighbours and harmonize with the city at large.

3.1 The Sky and the Rock

Hanganu was fascinated by the relationship between building and sky, and the contrast between the solidity of the former and the transparency of the latter. Each of his buildings frames the sky in its own way, setting its distinct profile against the landscape. Instead of stopping them abruptly against the sky, the architect has carved them with openings that allow the sky to penetrate. This sculptural gesture softens the buildings and establishes a relationship between sky and land. The tension that emanates from his façades is the result of a dilemma that the architect routinely

encountered. He wanted to emphasize the weight of his buildings as they sit on the site, and at the same time stretch the elevations up towards the sky. The conflict between these objectives has produced the broken roofline that characterizes Hanganu's work.

Hautes Études Commerciales appears from a distance as a long, low slab of rock, perforated by small apertures and divided at mid height by a deep horizontal crevice. The layering of the elevations in beige, grey and black strata split by vertical fissures and voids corresponds to the geological formation of the adjacent hill, thus forging a symbolic connection between the building and the site [Fig. 84, 86]. The connection becomes physical where the west façade is inflected half-way into the plan to follow the rock outcrop, allowing the natural landscape to penetrate the building. This gesture occurs at the Winter Garden whose ambience as the centre of activity is subordinated to the experience of the rock face [Fig. 85]. Viewed from within, this soaring volume appears to be carved out of the surrounding forest, the rock layers reflected in the hovering floor slabs, and the columns and window mullions merging with the trees. The walls and railings are grey or beige to correspond to the colours of the rock. The principal entrance faces the outcrop so that all who enter HEC through the east door must first encounter this geological feature and appreciate the importance of the landscape. The undulating glass surface of the west wall hugs the edge of the rock strata as though collapsing beneath its weight. The pressure of the landscape is also sensed where the second floor corridor penetrates the curtain wall like an exposed vertebra, and where the west elevators appear to buttress the fragile glass wall.

Fig. 84
École des Hautes Études Commerciales. East
Elevation with reflection of Pavillon Central

Fig. 85
École des Hautes Études Commerciales
Winter Garden. View from Interior

Fig. 86
École des Hautes Études Commerciales
Winter Garden. View from Exterior

3.2 The River

Hanganu searched for the hidden theme or concept embedded in a place, an object or an image, then began a process of valorizing his findings. His initial response was a grand gesture around which he organized the program, and which became the theme of the building. He evolved a vocabulary in HEC that is attuned to the geology of his site and the geography of the region, by exploring associations with two natural features which dominate the Québec landscape - the forest and the Laurentian shield. His architectural promenade is a metaphor for another element that commands the landscape - the great river. The 'Fleuve', as the St. Lawrence is called, is the most important feature of Québec's waterways because it collects the water from the lakes and tributaries and carries it to the sea. The numerous 'rivers' of circulation connecting the activities in the school, ultimately flow into the wide central aisle of the Rez-de-Jardin, then discharge through the portico into Côte Ste. Catherine. Eroding a path through the middle of the building, the metaphorical 'river' wears away the angles of the columns and walls it encounters, leaving cylindrical piers and bowed and undulating surfaces in its wake [Fig. 46]. Where the human current finally passes through the north lobby to the exterior, the black granite floor of the Rez-de-Chaussée is polished smooth like the stones in the estuary.

Hanganu has exploited the metaphor of the waterway in all aspects of his design for HEC, from the composition of the exterior form, through the internal planning, to the detailed construction of the finishes. From a distance, the building

resembles an ocean liner with two white funnels protruding from its upper deck [Fig. 87, 88]. At 29 metres in height and 185 metres in length, the building is the same height and two-thirds the length of the Normandie and three-quarters the length of the Titanic [Fig. 87]. The four steel cylinders that channel light into the heart of HEC, reinterpret the funnels of the doomed liner. The structure is placed perpendicular to the street, recalling the orientation of the freighters and passenger liners to the esplanade in the Montreal port. Pressing against the flat surface of the western wall, the free-form appendage containing the auditorium recalls a tug or lifeboat. As we have shown earlier, the recessed strip windows, flat metal spandrels and the small openings punched in the smooth wall surfaces evoke the vocabulary of forms that are commonly found in ships. The parallel between buildings and boats which one finds in Hanganu's work, has an etymological basis: the word 'batiment' was used in old French to mean both 'building' and 'boat', and the word 'cave' for the basement of the former resembles 'cale' for the below-deck portion of the latter.

The marine reference is most explicit in the HEC interior, and dominates the finishes of the formal lobby [Fig. 45]. The flat metal stair guards and curved steel balconies were designed and built in the manner of ships, and the white and ivory colours reinforce this association. Once established in the ceremonial and student entrances, the nautical theme continues through the public corridors and stairways and becomes a predominant ordering device of the plan and section. The cylinders, described earlier, animate the promenade with space and light, and allude to the funnels of the ocean vessels [Fig. 44, 88]. They set in motion a recurrent theme that is

Fig. 87
Ocean Liner 'Titanic'
Side View, Partial Section (above)

Fig. 88
École des Hautes Études Commerciales
Partial West Elevation. View from École Jean-de-Brébeuf (below)

rediscovered in the portico air ducts, in the round reflective 'pools' beneath the triangular stairs, in the helical stairs at the entrance and linking the top floors, in the post lights on the roof terraces and in the mechanical penthouses on the roof.

The nautical themes and geometric forms are not limited to HEC. The cylindrical form finds expression in the lighthouse, the helical 'Captain's Stair' and the half-cylinder north stair at Pointe-à-Callière. Hanganu made symbolic references to Montreal's maritime industry in his composition of the Museum's exterior. The wedge-shaped volume suggests a ship whose prow is the rounded tower. The flattened surface of the south façade has the taught smoothness of the hull of an ocean liner, or the solidity of the sea wall that comprises the fronts of the commercial buildings facing rue de la Commune. The tower suggests a lighthouse surmounted by a cube-shaped lantern. The architect intended the observation deck to conjure memories of the 'widow's walks' that cling to the roofs of maritime houses, on which the wives of the mariners pass countless lonely hours waiting for the ships that never return.

3.3 Genius Loci

Hanganu planned the architectural promenade through Pointe-à-Callière to link what he felt were the most important elements of the site: the ruins and the river. As the visitor descends the 'Captain's Stair' that leads to the crypt, his attention is drawn to shifting views of the port through a large expanse of curtain wall glazing. The stair rails and suspended walkways that traverse the crypt are detailed with stainless steel

cables and turnbuckles that recall the rigging of sailboats. Utilitarian stairs made with punched and expanded metal treads resemble the open stairways that characterize Montreal's row houses and the metal stairs of the dockyard warehouses. The architect's unexecuted 'grand gesture' would have connected the Museum to the port by means of a subterranean walkway that followed the course of the St. Pierre River that once flowed through what is now Place d'Youville [Fig. 28]. Hanganu had hoped to symbolically restore the defunct river and give value to what had once been an important feature of Montreal. When forced to abandon the project due to technical constraints, the architect redesigned the site plan so that it would contain a symbolic reference to the underground river. Polished slabs of black granite set into the sidewalk along the north side of the Museum will delineate the original location of the waterway and a grid of stone pavers, placed orthogonally to the St. Pierre River, will map the historical street pattern of the settlement. The roof of the northern portion of the crypt was raised two metres to form a level plaza that maps the original town square. Set against the backdrop of the Customs House, the new square has become an urban stage, and is often used for public gatherings and performances. This evocative gesture of topographic mediation expresses what Christian Norberg-Schulz would call the 'genius loci', or sense of place that is contained in the site. Hanganu has unearthed some of the elements that contribute to the spirit of the place and has gone beyond the program to celebrate the 'memory' of the site by creating an abstract map of the site morphology.

Hanganu's buildings attain a level of urbanity that usually exceeds one's

expectations. He has integrated his structures into their settings so that they complete relationships that may have been lost or were never achieved, and give something back to their sites, the neighbourhood and the city. While the Archeological Museum is not monumental, its role in defining and containing the urban space has given a monumental quality to the Place Royale. In all of his work, Hanganu has searched for the hidden essence, or 'genius loci' that lay within the program and the site, and celebrated that finding in a powerful architectural gesture. It is arguably this peripheral act, this unexpected gesture, that surprises and delights the public and hastens the acceptance of his architecture into Quebec's built culture.

4. Architecture as Metaphor for a Project for Identity

In these recent works, Dan Hanganu has elaborated the three essential elements of Québec's geography - the forest, the rock and the river - which Fernand Dumont has identified in his '*Genèse de la société québécoise*', and has thus used his architecture to interpret the way Québec's society is attachment to its landscape. We have shown how the urbanity of his buildings, his use of materials and methods of construction rooted in regional traditions, and the stratification of his compositions might be metaphors for the province's history and genealogy. We will now investigate the means by which HEC and other recent works by Hanganu may be interpreted as metaphors for Québec's project for a vital and modern cultural identity.

One of the factors which makes Québec society unique is the parallel status which resulted when the founding majority fell under the rule of a conquering minority. Unlike other colonial experiments, the British perceived an advantage in maintaining a French-speaking society with its own laws, religion, customs and genealogy that would serve as a buffer to the threat of invasion from the United States, and legitimized these institutions in the Act of Québec. The elected Assembly was dominated by francophones to facilitate the survival of the French Canadians, and an anglophone-dominated Legislature was put in place to limit their influence.

Agriculture and land tenure remained primarily in the hands of the francophones, but commerce was now under the control of the British Empire. Although their cultural heritage was protected by law, the French Canadians were given only two options for

survival: to be assimilated by the economically dominant British, or to retreat into an isolated cultural reserve in which their traditions would be nurtured. Faced with the prospect of a rapid demise by absorption or a slow death from stagnation, they chose to pursue a course of modernization while sustaining their unique traditions, and thus evolved a 'culture of resistance' that balances their need for renewal with their desire to preserve.

4.1 Modernity and Tradition

The interplay between these two poles of Québec society is evident in the province's political dialogue, language and economic policies, music, literature and architecture. Hanganu has made the dialogue between modernity and tradition central to his architectural vocabulary, and to this interplay his buildings owe their rhetorical power and popular appeal. Like the leaders of the 'Quiet Revolution', he has chosen a contemporary means of expression balanced with his personal interpretation of Québec's heritage. He expressed the cultural polarity of his adopted province in the HEC elevations, where a modern superstructure struggles to break free from a traditional base, and where steel asserts its novelty and resilience against the rusticity and permanence of stone. The Pavillon de Design UQAM and Chaussegros-de-Léry are resolutely modern buildings which were conceived to reinstate the traditional perimeter-block development strategy of neighbouring properties that had been lacking in the subject sites. The Archeological Museum at Pointe-à-Callière and the Abbey

Church are modern insertions in historical sites, built over the foundations of earlier settlements and asserting at once the continuity of tradition and the need for renewal. The horizontal stratification in the Museum's manufactured stone face recall the layers of history captured beneath the surface, and the vertical breaks in the wedge of building express the historical land divisions and the footprints of buildings which once occupied the site. The seamless merging of the new stone walls of the Abbey Church with the half-century old refectory foundations attests to the durability of the Catholic tradition and the power of renewal. This 'spirit' of regeneration emanates from the architect's confident use of traditional methods and vernacular forms in a fresh and new way which is in tune with a contemporary social and technological reality. Although the Abbey Church is a purely modern artifact, its form has its roots in the eastern Canadian masonry vernacular and its style is distinctly Hanganu's [Fig. 89, 90]. Hanganu's design strategy is founded on the need for continuity. Each of his buildings is linked to a precedent, to the architectural culture of the neighbourhood and the collective memory of the place. He produces what I would call 'rooted architecture' that is firmly inscribed in the architectural traditions of the place.

The contrast of old and new construction that Hanganu has elaborated at Saint-Benoît-du-Lac, Pointe-à-Callière and the Montreal Archives, gives tension and vitality to his buildings. He has achieved a similar vitality in buildings of uniquely new construction by combining modern construction methods with traditional proportions, materials and massing. The success of his work is due in part to the balance he has achieved between tradition and modernity. His work is true to the principles of

Fig. 89
Eglise abbatiale St.-Benoit-
du-Lac. Round Window
with Tree of Life. View
from Sanctuary

Fig. 90
Eglise abbatiale St.-Benoit-
du-Lac. Lantern over
Sanctuary. View from South

modernism, yet pays homage to its predecessors and to centuries of tradition.

Hanganu has eloquently demonstrated in these buildings his belief that an architectural intervention should express itself in the language of its creator and of his époque, without being a parody or lacking respect for tradition.

4.2 Freedom and Control

Dan Hanganu's architecture speaks to the deeper concerns of the Québécois who seek the freedom to evolve as a distinct and vital society. Implicit in the process of evolution is the need to be contemporary. Québec must be a modern nation in order to survive in the global economy, and it must attain its place in the international community by democratic means. Having descended from the French Republic, the Québécois are historically predisposed to seek a democratic future. In order to preserve their uniqueness they must maintain the continuity of their cultural heritage, one aspect of which is their built culture.

Hanganu's primary design strategy has been to exploit the potential for flowing space and unimpeded volume inherent in the 'free plan' in order to permit nearly unrestricted movement within his buildings. He saw freedom as a strategy of choice and offered the visitor a variety of choices when experiencing his buildings. The visitor is led, but never directed through the architectural promenade, and has the freedom to discover the messages and meanings contained in the work, and to learn as a result. At the same time, he is subjected to subtle controls or indicators, to ensure that

his passage is through the appropriate parts of the composition and restricted areas are avoided. To this end, the architect has used the device of light and dark, ensuring that one's movement through the building is directed towards natural or artificial light. Hanganu's secondary strategy has been to use the experience of the building as a vehicle to teach about Québec's architectural culture. Referring to his work as a 'visual dictionary', he conceived his buildings as instruments of instruction by making them open and visible, allowing the visitor to learn about the structures and systems that have produced our built culture.

The architect's sense of rhetoric is revealed in the structural rationalism and clarity of his buildings. He intended that the logic of his composition, its structure and its mechanical processes be revealed in stages so that they could be understood and appreciated. Although he has made his structure visible, he has drawn one's attention to it only when it has an important symbolic role. Structure is a subservient part of his architectural vocabulary, and is meant to serve space. Associating structure with technique, Hanganu claims it is not a part of his conceptual process which is dominated by mass, volume and perspective. The technical processes have been made simple in order to enrich and educate the visitor. His buildings teach people to look, and influence how they perceive their surroundings.

His buildings have a didactic dimension as well. Delighting in the variety of readings that his work makes possible, Hanganu wanted his architecture to allow different readings of an urban reality. He has used his buildings as a means for himself and the public to explore the difference between what is permanent and what is

immediate, unique and transitory. Stressing the importance of our architectural history, he wanted the public to develop a critical awareness of architecture that has enduring value, as opposed to that which offers only a temporary interest. " In architecture, it is the difference between what has survived the test of time and the very ephemeral 'menu of the day', given to the world's caprices. It is from this angle that I analyse our actual conduct, our thirst for critical knowledge, for understanding our history and origins " (Translation by author) [51].

4.3 Luxury and Restraint

Hanganu has taken a critical position in his choice of materials, using an exemplary economy of means in his conception of remarkable buildings. Applying the same philosophy to all his buildings, he has attempted to obtain the best quality from the spaces he creates while working within restrictive budgets. He has appropriated certain construction materials by inventing new uses; employing materials normally destined to be covered for finished elements. Galvanized steel pipe, checker-plate, metal studs and waferboard have been elevated to noble status by Hanganu's hands. Spray-painted waferboard and nickel-plated steel are modest materials that have acquired an appearance of luxury. He has refused to modify an industrial product, preferring to use it in its standard size and shape, but in unexpected ways. Like Scarpa, Hanganu experimented with the contrast between raw and finished materials. Glass blocks are set in geometric patterns in the polished concrete floors of the Museum and the School

of Design. At Sainte-Benoît-du-Lac, the architect inserted narrow granite bands into the smooth interior brick walls, spaced at intervals of sacred numbers in Catholic liturgy. For emphasis, he removed a brick header at the corner of the piers above and below each band, employing the reductive philosophy that is evident in his building volumes. The achievement of a decorative effect by removal seems particularly fitting in the spirit of a monastic community.

The themes encountered in Hanganu's work – freedom and control, economy and restraint, and modernity and tradition – may be interpreted as metaphors for the Québécois' project for securing their identity. To achieve a solution, Québec must find answers to similar conflicts involving complex cultural issues, and must try to find a sustainable position between the contradictory goals of the debate. If there is a solution, it will lie somewhere in the middle ground between the poles of the themes mentioned above. Hanganu has taken a sustainable position in the realm of his built culture, and has found a middle ground in his architecture. The degree of acceptance of his work by the critics, the populace and the profession would lead one to think that his architecture speaks for the people of Québec.

4.4 The Utopian Paradox

One recurring feature in the architect's work has perplexed many observers. In contrast with their emphatically solid bases, the profiles of the roofs have been carved away, leaving unexpected voids, contemporary 'ruins' and remnants of incomplete

construction. One of these modern vestiges is the unfinished pergola made of steel pipes and open-web joists which frames the open volume of the Pavillon de Design UQAM roof garden [Fig. 30]. Planes of masonry veneer have been omitted from the top of HEC, exposing indented surfaces of lustrous steel and cubic voids like an unfinished Lego toy. The muscular cylinder of the Archeological Museum appears to dissolve against the sky into a confection of ferro-vitreous cubes, masonry shells and an array of steel armatures. The entablature on the north façade of the École des Hautes Études Commerciales seems to rest precariously on temporary scaffolding until a more permanent means can be found to sustain its weight. The tension between permanence and change can be observed in the architect's choice of materials, his tendency to juxtapose solids and voids, and in his expression of the construction of parts of his buildings.

Admitting that his designs are never finished and that there will always be elements to reconsider and refine, Hanganu might have designed these vestiges as testimonies to his own evolving ideas or to the process of evolution within our collective culture. Indeed, his buildings are metaphors for a society unfolding, as he has illustrated most eloquently at Pointe-à-Callière. "The principal gesture I wished to make at Pointe-à-Callière is one of continuity: in erecting the project on the 1643 cemetery, on the Papineau buildings and the Berthelet building and finally on the Royal Insurance, I accepted, in a symbolic way, that others could one day build over what we have constructed. This explains the configuration of the tower with its metallic structure evoking the process of construction of a concrete column: we first

place the reinforcing, then the form work, and then we pour the concrete with the metal bars extending out in anticipation of the next pour” (Translation by author) [52]. But there is another reading of his broken skylines, temporary braces and exposed connectors that has a deeper meaning for the Québécois. Their struggle to assert an identity as a vital and distinct society is a work in progress, and feeds on the uncertainty of change. As in all utopian visions, the quest is ultimately a process that will never be complete. Once attained, all utopian projects will begin to disintegrate because the dream cannot be sustained. Thus, the utopian vision is destined to perpetually oscillate between stability and rupture, past and future, memory and dreams.

5. Reflections: MoMo, PoMo and the Three Bears

I have been searching for some time for a form of architectural expression to define my work; one that brings together the evocative richness of historical reference, and the spatial excitement and technical rationalism of modernism. Situated in the space between modern and Post-Modern, my own work often fails to reconcile the conflicts between tradition and novelty, and falls short of expressing a coherent view of our time. Thus, I look to the modern movements, and to the work of Dan Hanganu, for the words and phrases that could be assembled into an architectural vocabulary that works for me. I see the research for my thesis as an opportunity to read dozens of books on modern and Post-Modern architecture that provide a wealth of impressions and insights and become familiar with the variety of approaches to design during this period. I am faced with the dilemma that Charles Moore described in an essay in Moore, Rubel Yudell: Like Goldilocks in the home of the three bears, I want my porridge to be neither too hot nor too cold, but 'just right'.

The Post-Modern, or 'PoMo' approach has used the evocation of historical memory, vernacular expression and contextualism, and has produced buildings with a shallow sentimentality and a feeble attachment to our era. On the other hand, the Modern Movement, or 'MoMo' has produced works of great spatial richness and technical sophistication, but which lack connection to history, context and popular meaning. Neither approach answers the complex, and often contradictory needs of the individual and society that want to experience the richness of choice of our era, yet feel they belong to a cultural heritage. These movements are attracted to separate poles that

are not easy to reconcile: the former is the product of sentiment and the latter, of reason. Dan Hanganu's architecture has brought these poles nearer together, mixing historical reference and contextualism with spatial richness and technical precision, in a personal recipe that, in my estimation, is 'just right'.

Hanganu's work provides answers to another of my dilemmas, which is how to present a personal and place-specific architecture in an era increasingly ruled by global capitalism. Kenneth Frampton's essay on 'Architecture of Resistance' was the starting point of the investigation that led to this thesis, and my ensuing research has given me an understanding of how an individual and 'bounded' architecture can be achieved. Hanganu's work has shown me how architecture can assert the personality of its creator and manifest the identity of a population. It at once resists the anonymity of the global community and celebrates the uniqueness of a nation. It expresses a cultural lineage without mockery or pastiche because of its integrity: its cultural references are not applied to the surface, but run through the work at all levels, providing a multitude of readings and a wealth of meaning. His buildings are proof that a contemporary, individual and Québec-bounded architecture is tenable.

I emerge from this period of study with the conviction that good architecture can be at once modern and traditional, and can express a personal vision as well as a collective consciousness. Like a good book, architecture can appeal to a society when it contains multiple layers of meaning, permitting a variety of interpretations that provoke remembrances of a collective past. It can only remain fresh and vital and relevant to our time when it is an expression of the methods and preferences our era.

Architecture that is meaningful and new must contain a double code that conveys the impulse to remember and the message of renewal.

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