

NATIONAL ARTS CENTRE, OTTAWA, ONTARIO

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DESIGNATION

The National Arts Centre (NAC) was designated a national historic site of Canada in 2005. The reasons for its designation are the following. It is an outstanding example of a performing arts centre in Canada for its overall design, its highly successful integration into its urban setting, its succession of interior spaces to create dramatic effect, its unique combination of performing spaces and the progressive designs of each one, and its integration of contemporary works of art as part of its design. It is an outstanding example of a building illustrating the positive consequences of Canadian federal policy on the performing arts during the second half of the twentieth century, considered, in the words of Prime Minister Lester B. Pearson, as a "national institution." It is an example of state-of-the-art performing spaces and technology at the time of construction, in particular for the aesthetic and technical design of Southam Hall, which is an exceptional example of a medium-sized multipurpose auditorium representing an inspired collaboration between architect and acoustician.

INTRODUCTION

The National Arts Centre (NAC) is located on the east side of Confederation Square in the centre of downtown Ottawa (figs. 1-3). It occupies an irregular site on a steep slope descending from Elgin Street, a major artery on the west, to the Rideau Canal on the east. The Mackenzie King Bridge, also a major artery, runs along the south. Just to the north of the building is



FIG. 1. NATIONAL ARTS CENTRE, OTTAWA, ONTARIO; BUILT IN 1964-1969, AFFLECK, DESBARATS, DIMAKOPOULOS, LEBENSOLD, SISE, ARCHITECT; FROM THE EAST SIDE OF THE RIDEAU CANAL; 2001. | MARC FOWLER, COURTESY OF THE NATIONAL ARTS CENTRE.



FIG. 2. CURRENT SITE PLAN SHOWING THE LOCATION OF THE NAC IN RELATION TO THE SURROUNDING STREETS AND THE RIDEAU CANAL. | NAC, N.D.



FIG. 3. AERIAL VIEW OF THE NAC. TO THE NORTHWEST ARE CONFEDERATION SQUARE AND THE PARLIAMENT BUILDINGS. THE CHÂTEAU LAURIER IS ON THE UPPER RIGHT, ON RIDEAU STREET. DIRECTLY OPPOSITE AND BESIDE THE RIDEAU CANAL IS FORMER UNION STATION, NOW THE CONFERENCE CENTRE. | NAC, 1970.

a small park with a manicured lawn, trees, and paths as well as recent additions of sculptures and balustrades (fig. 4).

The NAC is a complex structure of irregular plan whose design is based on the triangle and hexagon, from the overall composition and layout down to decorative details (figs. 5-10). The building houses three main performing spaces: a multipurpose auditorium with two thousand three hundred and thirty-four seats, formerly called the Opera Hall and renamed Southam Hall in 2000 (figs. 5 and 11), the Theatre with eight hundred seats (figs. 5 and 12), and the Studio with three



FIG. 4. BOUNDARIES OF THE SITE. | CITY OF OTTAWA, 2002; AND JUDITH DUFRESNE, HISTORICAL SERVICES BRANCH, PARKS CANADA, 2005.

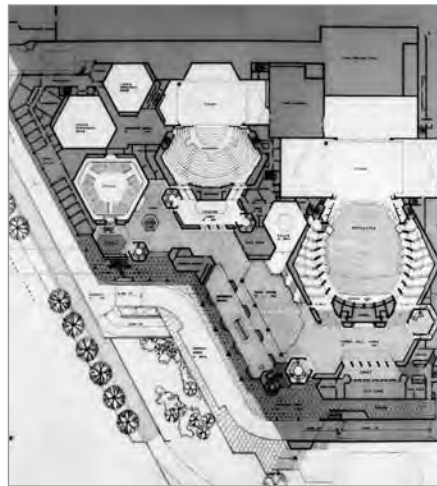


FIG. 5. FLOOR PLAN FOR THE MAIN LEVEL OF THE NAC. THIS IS THE LEVEL OF THE MAIN ENTRANCE, BOX OFFICE, MAIN FOYER, AND MAIN LOBBIES TO ALL PERFORMING SPACES. ON THE RIGHT IS SOUTHAM HALL; IN THE CENTRE IS THE THEATRE, AND ON THE LEFT IS THE STUDIO. TO THE IMMEDIATE LEFT OF SOUTHAM HALL IS THE MUCH SMALLER SALON. | WILKINSON STUDIOS, COURTESY OF THE NAC, 1965.

hundred (figs. 5 and 13), as well as the Salon, a fourth space for small concerts and receptions (fig. 5). In addition, the centre houses two rehearsal halls, dressing rooms, a workshop and prop room, offices for administration, restaurants, the Panorama and Fountain rooms for public rental, and a nine hundred-space subterranean parking garage. Designed in the Brutalist style, the NAC is constructed of poured reinforced concrete and covered with precast panels of exposed Laurentian-granite aggregate concrete with a variety of textures. The visually dominant components of its irregular design are the three main performing



FIG. 6. NAC FROM THE NORTH SHOWING A HEXAGONAL STAIR TOWER ON THE LEFT, AND WINDOWS OF THE SOUTHAM HALL LOBBY ON THE RIGHT. | WAYNE DUFORD, PARKS CANADA, CANADIAN INVENTORY OF HISTORIC BUILDINGS, 1989.



FIG. 7. NAC FROM THE WEST SIDE OF ELGIN STREET. THE ENTRANCE FROM THIS STREET IS LOCATED BEHIND THE CAR IN THE CENTRE. | WAYNE DUFORD, 1989.



FIG. 8. VIEW OF THE NAC FROM THE SOUTHWEST ALONG ELGIN STREET. | RHONA GOODSPEED, PARKS CANADA, 2005.

spaces that rise above a series of terraces, in the form of huge irregular hexagons with flat roofs (fig. 3). The main elevation faces the canal, where the principal, ceremonial entrance is located at the second level, accessible by car from a ramp descending from Elgin Street and then paralleling the entrance before descending again to the level of the canal (figs. 10 and 14). A segment of the ramp forms a section of the building structure as the roof of Le Café, a restaurant for fine dining at the canal level, where in summer an outdoor terrace extends out towards the canal (fig. 10). On the opposite side of the building, along Elgin Street, below



FIG. 9. DISPLAY WINDOWS ON ELGIN STREET, FORMERLY LOOKING INTO FRENCH AND ENGLISH BOOKSTORES, AN AREA NOW HOUSING THE FOURTH STAGE. | RHONA GOODSPEED, 2005.



FIG. 10. THE NAC FROM THE MACKENZIE KING BRIDGE, SHOWING THE WINDOWS OF THE ADMINISTRATIVE SPACES AND THE RAMP DESCENDING FROM THE MAIN, CEREMONIAL ENTRANCE ON THE FAR RIGHT. LE CAFÉ IS LOCATED BENEATH THE RAMP. | RHONA GOODSPEED, 2005.



FIG. 11. SOUTHAM HALL SHOWING THE DECORATIVE STAGE CURTAIN, DESIGNED BY MICHELINE BEAUCHEMIN, AND THE CEILING, DESIGNED BY JULIEN HÉBERT, 1985. | ANDRÉ DUBREUIL, COURTESY OF NAC.



FIG. 12. THE THEATRE IN 1999. SINCE THEN, THE ROWS HAVE BEEN WIDENED, THE SEAT COVERS CHANGED TO A BLUER SHADE, AND HANDRAILS HAVE BEEN ADDED. | MARC FOWLER AND STEPHEN FENN, COURTESY OF NAC.

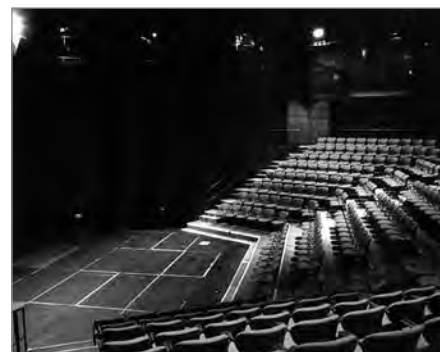


FIG. 13. THE STUDIO IN 2000. | MARC FOWLER, COURTESY OF NAC.



FIG. 14. ABOVE IS THE ENTRANCE TO THE STUDIO LOBBY, WHILE THE PARKING SPACES ARE LOCATED DIRECTLY OPPOSITE THE MAIN ENTRANCE, SEEN BELOW. ON THE CEILING OF THE OVERHANG ARE THE HEXAGONAL LIGHT FIXTURES, ALSO SEEN THROUGHOUT THE PUBLIC SPACES IN THE INTERIOR. | RHONA GOODSPEED, 2005

the terraces, are display windows originally designed for commercial space, space that is now used for the community performances of the Fourth Stage, a small multipurpose performance hall (figs. 7-9). Two public pedestrian entrances to the centre are also located on Elgin Street (figs. 7 and 15).

Most of the interior walls of the public spaces are covered with precast concrete panels of the same materials as the exterior. A number of contemporary works of art have been introduced into the centre, many of which are integrated with the architecture, following

the tenets of modern architecture; these works include sculptures, paintings, and tapestries. Among them are: a nine-ton abstract bronze sculpture by Montréal sculptor and painter Charles Daudelin, located on the south terrace (fig. 16); the stage curtain designed by Québec painter-weaver Micheline Beauchemin and woven in Kyoto, Japan, for the Southam Hall (fig. 11); a second stage curtain for the hall by Canadian artist Mariette Rousseau-Vermette; the ceiling of Southam Hall by Canadian industrial designer Julien Hébert (fig. 11); two huge cast-aluminium doors with abstract relief sculpture by Montréal sculptor Jordi

Bonet, opening into the Salon (fig. 17); a large chandelier donated by the Swedish government and a tapestry by Parisian artist Alfred Manessier, woven in France, both in the Salon; European artist Ossip Zadkine's *Trois Grâces*, a bronze formerly in the National Gallery of Canada (fig. 18); a sixty-foot-high relief sculpture of brushed aluminium, by Montréal artist Gino Lorcini, on the wall of the Theatre lobby (fig. 19); a glass and metal sculpture for a fountain, designed by Julien Hébert, in the Studio lobby (fig. 20); an abstract mural called *Homage to Robert F. Kennedy*, by Canadian painter William Ronald, in front of the Studio and



FIG. 15. ENTRANCE ON ELGIN STREET, OPENING TO A PASSAGE LEADING TO THE BOX OFFICE AND TO SOUTHAM HALL. JUST TO THE LEFT MAY BE GLIMPSED THE TERRACE. A SECOND ENTRANCE, TO THE FOURTH STAGE, IS LOCATED, FURTHER SOUTH ON ELGIN. | RHONA GOODSPEED, 2005.



FIG. 16. BRONZE SCULPTURE, 25 FEET LONG, 10.5 FEET HIGH, BY CHARLES DAUDELIN, ON THE SOUTHERN TERRACE. | RHONA GOODSPEED, 2005.



FIG. 17. THE PAIR OF CAST ALUMINIUM DOORS BY JORDI BONET, OPENING INTO THE SALON. | *THE CANADIAN ARCHITECT*, JULY 1969, VOL. 14, NO. 7, P. 59.



FIG. 18. THREE GRACES, BY OSSIP ZADKINE, IN ONE OF THE STAIRWELLS ON THE LEVEL OF THE MAIN LOBBY OF SOUTHAM HALL. | COURTESY OF NAC, N.D.



FIG. 19. SCULPTURE BY MONTRÉAL ARTIST GINO LORCINI, ON THE WALL OF THE THEATRE LOBBY. | RHONA GOODSPEED, 2005.



FIG. 20. STUDIO LOBBY WITH SCULPTURE IN HEXAGONAL WATER FOUNTAIN. IN THE BACKGROUND IS A PAINTING BY BRITISH COLUMBIA ARTIST JACK SHADBOLT, AND ON THE LEFT IS A GLIMPSE OF THE WORK BY WILLIAM RONALD. | RHONA GOODSPEED, 2005.



FIG. 21. DETAIL OF *HOMAGE TO ROBERT F. KENNEDY*, BY WILLIAM RONALD. | RHONA GOODSPEED, 2005.



FIG. 22. CHANDELIER IN STAIRWELL, BY WILLIAM MARTIN. | RHONA GOODSPEED, 2005.



FIG. 23. ONE OF FOUR TAPESTRIES DESIGNED FOR THE WALLS BEHIND EACH OF THE BARS IN THE LOBBIES OF SOUTHAM HALL. | RHONA GOODSPEED, 2005.

extending into three levels (figs. 20-21); and five chandeliers of metal and glass spirals suspended within five wells for staircases, by William Martin from Milton, Massachusetts (fig. 22). Tapestries were also installed in each of the four lobbies of Southam Hall, and in the lobby of the Studio (fig. 23).

In addition, the NAC's nine hundred-space underground parking garage, on three levels, is fully integrated with the structure of the building and the surrounding site, and partially located beneath the Mackenzie King Bridge. The parking lot is accessed and exited at four points,¹ and in turn provides access to the public spaces by means of escalators, the top one rising into the foyer of the box office, and by means of elevators, just to the north of that foyer.

HISTORIC VALUE OF THE PLACE

This section discusses the NAC with respect to the guidelines for built heritage of the modern era.² It begins with a discussion of the social and political conditions that brought about the federal government's construction of the NAC. The Massey Report is then considered, and the building is shown to be an exceptional illustration of Canadian cultural policy concerning the performing arts during the second half of the twentieth century, in particular federal government subsidization of culture and related activities. The NAC is also considered briefly in its role as a national ceremonial meeting place for heads of state and visiting dignitaries, which was a significant improvement to Canada's capital. This is followed by a discussion of its performing spaces from a functional and technical point of view, and how this programme determined, to a large extent, the architectural design and use of materials, with an emphasis on the Opera Hall. Following is an analysis

of the architecture of the whole as a new expression of form both stylistically and functionally. Here it is demonstrated that the building is an outstanding example of a performing arts centre for its design in the modern, Brutalist style, for its successful integration with its site and setting, and for the design of its interior spaces, including the integration of contemporary art with the architecture, an expression of the tenets of modern architecture.

Changing Social, Political and /or Economic Conditions

The NAC is an outstanding example of a building illustrating the evolution of Canadian federal policy on culture during the second half of the twentieth century and, as one of a number of performing arts centres built across the country, the flowering of the performing arts nationally during the 1960s. Its construction was a significant contribution to the improvement of Canada's capital, including its role as a place to entertain visiting dignitaries.

One of the most important early steps taken by the federal government in the development of the Canadian cultural policy on the arts was without doubt the Royal Commission on National Development in the Arts, Letters and Sciences (1949-1951).³ Chaired by Vincent Massey, then chancellor of the University of Toronto; the commission was unprecedented in Canada in nature and in scope. Its role was to examine federal institutions concerned with Canadian history and traditions that enriched Canadian life, for example the CBC, the National Film Board, the National Gallery, and the Public Archives. One of the commission's particular areas of investigation was the system of aid offered by the federal government. The Massey Report became a landmark of the "utmost importance in

the cultural history of Canada," as it advocated "the principle of federal patronage of a wide range of cultural activities" and proposed the establishment of a Canada Council to provide federal subsidies for, among other things, the arts across Canada.⁴ The Canada Council was eventually established in 1957, along the lines suggested in the report. State support of the arts had long been taken for granted in most European countries and, in fact, had already been "flourishing modestly" in the province of Québec; however, the idea was unpopular in Canada and North America, where advocacy of public spending for the arts was considered detrimental to a political career.

The Massey Report addressed the performing arts in three separate chapters, on the theatre, ballet, and music. For all three areas, it reported that there were ample Canadian talent, audiences, and annual festivals, and a significant growth in the appreciation of these arts in recent years.⁵ However, in all three areas, it was reported that there was inadequate financial support. In addition, it described a nationwide lack of adequate performance facilities. For theatre, the report stated: "Every great drama [...] has been shaped by its playhouse," while "facilities for the advanced training in the arts of the theatre are non-existent in Canada," and even amateur companies are "grievously handicapped, through lack of suitable or of any playhouses."⁶ Consequently, only a few theatre companies existed. Further, there were inadequate rehearsal facilities.⁷ The report called for federal subsidies to build suitable playhouses throughout Canada, and mentioned the possibility of building a National Theatre in Ottawa, from which travelling companies could go on tour across Canada.⁸ For music and ballet, too, there was a lack of suitable quarters for rehearsal and performance, impeding growth of these

arts.⁹ The commission reported that the country was singularly deficient in concert halls. “Without exception, in all [...] centres [...] visited [...] the musical life of the community is gravely handicapped through lack of appropriate quarters for concerts and recitals.”¹⁰

The idea of a performing arts centre in Ottawa was taken up in 1952, when Vincent Massey, then Governor General, commissioned a study on the feasibility of the creation of an annual performing arts festival in the capital, modelled after the highly successful Edinburgh Festival. The main obstacle was identified as the near complete lack of adequate facilities for the performing arts in the national capital.¹¹ At that time the Capitol Theatre, a movie palace (demolished), was Ottawa’s premier stage; while it had a good number of seats, its stage was shallow, and there were few dressing rooms, little wing space, and insufficient storage space for scenery. Venues for theatre, choral, and orchestral ensembles were generally schools; for example the Canadian Repertory Theatre, Ottawa’s acclaimed professional theatre company, made use of the La Salle Academy, a high school, and the amateur Ottawa Drama League (now the Ottawa Little Theatre) at first performed in the museum on McLeod Street, and later in a converted church on King Edward Avenue.¹²

By 1963, over fifty arts groups in the National Capital Region had come together to collectively embrace the idea of the creation of a performing arts centre in Ottawa. The National Capital Arts Alliance (NCAA) argued that the capital of “an ever more culturally confident and mature country deserved better theatrical facilities.”¹³ With funding from the Canada Council and volunteer organizations, it commissioned professional consultants to prepare a well-researched

and detailed report on requirements for a National Centre for the Performing Arts and the establishment within it of an annual festival, as envisioned by Massey’s 1952 study.¹⁴ Identifying its project within a national and international context, rather than local, this group was united in its determination to improve the cultural life of Canada and its capital. Its president was G. Hamilton Southam, who held that the NCAA were “spiritual successors” to Massey and his commission. Inherent in the NCAA’s proposal for a centre was a “humanist belief that culture must form an integral part of Canadian society, and become the cornerstone of a distinct Canadian identity.”¹⁵ The report reiterated the absence of a concert hall and playhouse facilities in Ottawa. Why, it asked, support the arts, if there was no centre for them in which to perform?¹⁶

The NCAA called on Prime Minister Lester B. Pearson to build the centre and establish an annual festival of the arts. The Prime Minister took up the project; like the NCAA, he set it within an international context, pointing out that the United States and Australia were already building similar centres. Within the national context, he saw the centre as having potential for reducing the strain between English and French Canadians, bringing about a unifying effect. He felt that “[a] National Centre to which the best in the development of both cultures could be brought for performances and from which the development of both could be encouraged, could become a helpful force in the future of the country.”¹⁷ Prime Minister Pearson stated that the Canada Council was an “imaginative first step,” while “the establishment of a cultural centre with a gradually developing programme of activities would be a logical and positive second step” in this regard.¹⁸ It would also be a central facility for national organizations serving the arts, and

would develop repertory theatre companies in both languages, possibly a resident orchestra, and a national festival, which would be dependent on the centre. It was, of course, to be a bilingual institution.

With Cabinet approval in 1963, the proposed centre became the only major centenary project under federal government study for Ottawa.¹⁹ The six and a half-acre site, finally chosen amid great controversy in 1964, was donated by the city.²⁰ G. Hamilton Southam was chosen as the project’s full-time coordinator and four subcommittees made up of representatives of the performing arts community were created to advise on building requirements. The Montréal firm of Affleck, Desbarats, Dimakopoulos, Lebensold, Sise was selected to prepare the plans, with Fred Lebensold (1918-1985) as lead architect, reporting to James Langford, chief architect of Public Works, under whose direction the building was constructed. As architect of Place des Arts in Montréal, the Queen Elizabeth Theatre in Vancouver, and the Centennial Centre in Charlottetown, the firm already had considerable experience in the field. The NAC was one of a number of performing arts centres built across the country during that time, a part of the “gathering movement across the country,” in the words of the Honourable Judy Lamarsh, “to provide housing that will be worthy of the high standard of excellence of our leading artistic companies.”²¹ In fact, some forty to fifty projects for performing arts centres were under consideration across the country in 1964.²²

Construction of the NAC began in 1965. Built at a cost of forty-six million four hundred thousand dollars, the edifice was entirely paid for by the federal government. Not completed in time for the Centennial as planned, the centre officially opened two years later, on June 2,

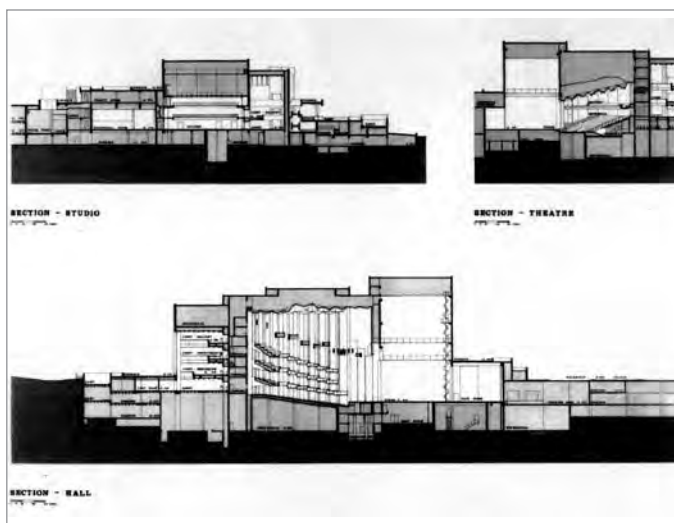


FIG. 24. CROSS SECTIONS OF DESIGNS FOR THE PERFORMING SPACES, SHOWING THE STUDIO ON THE UPPER LEFT, THE THEATRE ON THE UPPER RIGHT, AND THE OPERA, BELOW; 1965. | WILKINSON STUDIOS, COURTESY OF THE NAC.



FIG. 25. THE NATIONAL ARTS CENTRE ORCHESTRA ON THE STAGE OF SOUTHAM HALL IN 1990. IN THE BACKGROUND ARE THE BOXES ON EITHER SIDE AND ALONG THE REAR THE FOUR LEVELS OF ORCHESTRA, MEZZANINE, AMPHITHEATRE AND BALCONY. | FRED CATTROLL, COURTESY OF THE NAC.

1969, still a part of the euphoric spirit of the Centennial and attracting international attention, both for its inaugural stage presentations and for its fine architecture.²³ The Opera opened with the National Ballet of Canada's production of a new ballet, *Kraanerg*, with choreography by Roland Petit and music by Iannis Xenakis, conducted by Lukas Foss; the Theatre opened with Michel Tremblay's adaptation of Aristophanes's *Lysistrata*, produced by the Théâtre du Nouveau Monde, directed by André Brassard; and the Studio opened with a new play called *Party Day*, written and directed by Jack Winter. Former Prime Minister Lester B. Pearson, on opening day, described the NAC as more than a building: "This is not an arts centre—it is a national institution."²⁴ The realization of the National Arts Centre in Ottawa was both a major architectural and cultural achievement for the federal government.²⁵

The NAC was operated by a crown corporation established by an Act of Parliament that had received Royal Assent in 1966. G. Hamilton Southam was chosen

as its head, and held the position of director general of the NAC from 1967 to 1977. The National Arts Centre Corporation was "to operate and maintain the Centre, to promote the development and production of the performing arts in the National Capital Region, and to assist the Canada Council in the development of the performing arts elsewhere in Canada."²⁶ While the corporation was to be governed by an independent board of trustees, funding was to come from an annual appropriation from federal funds, as well as from its own earned revenues. Subsidies for the performing arts were part of the idea from the beginning.

The NAC, though, needed to have resident companies, that is "a heart that beats," in the words of Jean Gascon, chairman of the Advisory Committee on Theatre.²⁷ In 1967-1969, the National Arts Centre Orchestra (NACO) was created under music director Jean-Marie Beudet and founding conductor Maestro Mario Bernardi. A firm foundation for theatre was established in 1971, when touring companies for youth audiences, known as The Hexagon

in English and l'Hexagone in French, were established, and seasons in English and French for visiting and in-house productions were created for the NAC's stages in the Theatre and the Studio.²⁸ That same year, Festival Canada came into being; though modest, it heralded the establishment of a festival centred on opera and chamber music, which would eventually garner international recognition for Canada. In 1973, undoubtedly due to the success of the NAC, federal government subsidies increased, with the government announcing that it would allocate twenty percent more to the centre in the coming year. G. Hamilton Southam announced that he would speak out for even more money in the years ahead: the "centre has proven itself a success and attitudes have changed [...] [it is] obvious not only in Ottawa but in the centre's contribution to the performing arts across Canada." The NAC has staged performances from grand opera, to hard rock shows, to outdoor sing-alongs.²⁹

Canada's capital now had elegant spaces for visiting dignitaries and for Canadian



FIG. 26. WIDELY SPACED FINS ON EXTERIOR OF SOUTHAM HALL LOBBY, ANGLED IN THE DIRECTION OF THE PARLIAMENT BUILDINGS. | RHONA GOODSPEED, 2005.



FIG. 27. VIEW FROM THE TERRACE SHOWING THE NATIONAL WAR MEMORIAL AND, BEHIND IT, THE EAST BLOCK AND THE PEACE TOWER OF THE PARLIAMENT BUILDINGS. | RHONA GOODSPEED, 2005.

and international performances. Ottawa was transformed culturally by the construction of the NAC, with its variety of performing spaces under one roof and its central location on Confederation Square, the city's second most important ceremonial space, and in proximity to the most important, the Parliamentary grounds. The NAC was also intended as a national ceremonial meeting place, where national events would be held and national and international heads of state and dignitaries would visit as guests of Canada. Over the years an impressive list of kings, queens, heads of state, and internationally famous persons, including, of course, great artists, have passed through the doors of the centre. Command and state performances are an integral part of the Centre's mandate. There is a long list of command performances as well as state occasions that have been held at the NAC. The government of Canada has used the NAC as an instrument of Canadian cultural prestige, and as a point of access to Canadians for culture from other countries.³⁰ With the opening of the NAC in 1969, a range and variety of types of

performances, in both official languages, were offered on a regular basis in appropriate and highly attractive spaces, in a central location.

Technological Advances

In the design of the performing spaces, the architect had two main objectives: first to provide a different spatial experience in each one; and second to make each of them as versatile as possible for differing types of performances.³¹ The Opera was to be an auditorium to accommodate a wide range of performances with large audiences; the Theatre to be for smaller productions, of plays, and the Studio for a range of performances as well, but especially for experimental works (fig. 24). All three had specific technical requirements, especially with respect to acoustics and lighting. The American firm Bolt, Beranek & Newman, Inc. (BBN) provided advice on, and supervision of, the design of the acoustics for all three spaces.

The largest of the performing spaces, the Opera, was to be a multipurpose

hall, which at the time was a relatively new concept but was coming into more frequent use.³² It was to accommodate orchestra, opera, and ballet, as well as popular musicians and other functions. The enormous stage area, which was slightly larger than the auditorium itself, was the second largest in North America at the time.³³ It included an orchestra pit that could be raised or lowered. The acoustical design had a major impact on the space's architecture. Acoustics and architecture were very closely related in auditorium design, with dimensions, materials, shaping, and surface orientations playing direct and often key roles in establishing the quality of sound.³⁴ World-renowned acoustician Russell Johnson of BBN was project supervisor as well as acoustic designer for the Opera Hall.³⁵ For such a multipurpose hall, it was necessary to be able to vary the acoustic environment. In the design process of a performing space, the acoustician advises the architect, who then decides how the architecture of the space shall be. For the Opera, most of the requirements laid out by Russell to create good

sound effects were incorporated or at least taken into account by the architect. Among these was the seating capacity: the larger the hall, the more difficult it is to achieve satisfactory hearing conditions for a variety of types of performances.³⁶ The relatively small capacity of the hall, that is under about two thousand four hundred, was a good choice and represented the current trend of the previous five years towards smaller seating capacities. A compact audience chamber also had a positive effect for most types of performances; for the Opera the dimensions chosen were about as long, or deep, from the front to the rear of the audience, as they were wide. In addition, the tiering of seats along the side walls and across the rear, using three levels, as opposed to the one or two used in most auditoriums from about 1920-1963, was also a positive choice, as were the fascias of the boxes and balconies, which provided for shorter time delays, for many seats, for reflected sound (fig. 25). The fairly steep, rather than shallow, rake of the Opera also added to the quality of the acoustics (fig. 24). The use of thick materials throughout was preferable, as thin materials tended to vibrate more easily, deadening the sound. In addition to the concrete pillars supporting the hall, there were inverted plaster pyramids as part of a suspended ceiling;³⁷ the carpets and fully upholstered seats also helped. For rehearsal purposes, the seats, when empty and folded, were designed to reproduce absorption qualities of human beings: the metal underneath the seat itself was perforated, so rather than reflecting sound, it allowed it to pass into the upholstery. The thin glass walls of the hall were thickened on the inside with vertically attached aluminium diffusers, each of varying thickness, to break up some of the sound. To alter the hall for symphony concerts, the stage could be enclosed with a solid reflective bandshell

made of plywood, whose front surfaces were articulated by the addition of aluminium diffusers.³⁸ Motor-operated cloth curtains were installed just below the upper ceiling, above the boxes and along the rear wall: by retracting the curtains, reverberance was increased; by extending them, the articulation of sound was increased.³⁹ This was a relatively new system that had been little tried elsewhere.⁴⁰ Helmholtz chambers were also added outside the hall, above the collector aisles; these could be opened for symphonies, increasing reverberation within the hall. The orchestra pit, when lowered, functioned as an acoustic shell.

Just below the ceiling of the hall, a catwalk was installed, camouflaged by means of the aesthetic design of the ceiling (fig. 11). The catwalk was not included in the initial designs, but it was very soon realized that one would be needed, both for sound requirements and, in particular, for lighting, for example, the spotlight. Technical facilities included a lighting system whereby a required sequence of changes in light levels could be recorded in rehearsal and played back in the correct order during performance.⁴¹ Also along the catwalk was an array of sound loudspeakers; others were installed in the box and balcony soffits. The console for this system was located in the control room behind and above the top balcony.⁴² Just above this catwalk network was an array of remote-controlled sound-reflecting panels, which were vertically placed for concerts and horizontally placed for musical comedy and lectures. This was also a new technology.

Acoustician Russell Johnson strongly praised the collaboration between the architect and acoustician in the Opera. In his words, "Bolt, Beranek and Newman have worked on many auditorium projects, but in only some of these has the

architect availed himself of more than a fraction of advice proffered. One example of true collaboration in this regard is the 2300-seat Opera Hall in Ottawa."⁴³ The acoustics of the NAC were highly praised in reviews at the time of the building's opening: "Canada's National Arts Centre opened in Ottawa with three theatres and some of the world's most advanced technical facilities for the performing arts;"⁴⁴ and the NAC "*constitue une réussite incontestable sur le plan de la qualité architecturale et de l'équipement technique.*"⁴⁵ Performers, for example of opera and ballet, were also very happy with the hall, while musicians had some reservations—though music of the orchestra was well articulated, it tended to be dry, as was the case with multipurpose halls in general. In spite of the dryness of the sound perceived by musicians and music lovers, in the words of one critic at the time, "there are no acoustical mistakes; sound at all frequencies is well distributed."⁴⁶

Since the hall was built, many of its features continue to promote high quality sound, especially the basic design of the hall. The hydraulically-controlled curtains are still used; although technical testing has shown that they have little effect, in practice, listeners can hear a positive difference when they are used.⁴⁷ However, the sound reflecting panels on the ceiling were removed because they were not effective. Recently there was a major improvement for the orchestra: the addition of an electronic sound system, to improve the acoustics and add warmth to the sound. For this, speakers were added onto the side and back walls and the ceiling, as well as above the orchestra. The system adds reverberation and time delay, and the NACO is extremely happy with it. While the possibility of significantly upgrading the acoustics has been considered in recent years, it would not

be possible without substantially altering the architecture of the hall as well as closing it for a year or two. Therefore this was not seriously considered.⁴⁸

The eight hundred-seat Theatre was arranged in an amphitheatre plan, with the seats in a semi-circle; it had a single balcony and a steep rake (figs. 12 and 24). The stage was adjustable: it had a thrust stage and a vomitory to allow the actors to enter through the audience, or it could accommodate traditional proscenium productions, in which case the apron portion of the stage could either provide additional seating or be lowered to create an orchestra pit.⁴⁹ At the time of construction, a theatre combining adjustable stage facilities of this type with an amphitheatre plan was unique and remains so in the professional world in Canada. It presented a "tremendous architectural challenge" and since its construction has been "a very successful space."⁵⁰

The Studio was designed to be an experimental space and was therefore highly flexible with extensive capabilities (figs. 24 and 33).⁵¹ Here, there was no fixed position for the stage or for seating arrangements. There was a shallow balcony all around the space; any part of the floor or balcony could be used for performers or spectators and curtains were available if desired. Both the main and balcony levels had public and backstage entrances and the two were connected by a variety of demountable stairs. The Studio's three hundred seats could be arranged in innumerable ways: they could be either small seat wagons or chairs; the chairs could be placed on demountable stairs, if desired. Risers could be installed or removed. The ceiling was a steel hexagonal grid which allowed great flexibility for lighting effects. Above the grid, which could be removed, was equipment for flying scenery, a function rarely seen in ex-

perimental spaces. The only mechanized equipment was a hexagonal lift near the centre, which could be lowered to form a pit or raised for use as a platform.⁵² As an experimental space was usually a "black box," either adapted from an already existing space or inexpensively built, the Studio was unique in Canada at the time of construction and probably remains so today. The Studio retains its original flexibility, though the original seating has since been adapted to conform to the fire code, which required some seats to be attached to others. According to Macy Dubois in *The Canadian Architect*, "The Studio is a remarkable achievement both as a great performing space and very fine architecture."⁵³

When the NAC was built there was no precedent on which to model this combination of facilities.⁵⁴ Further, each one of them was unique and represented the state of the art in its technical facilities. Louis Applebaum, musical advisor for the NAC, praised the technical facilities and spaces for performers of the NAC in 1971:

Wing space, side stages, backstages, workshops, dressing room areas, film projection equipment and radio and television facilities have all been considered carefully. Whether it be the computerized lighting console, or the latest-designed rigging system, everything is provided to satisfy the artistic ambitions of the most demanding producers. For them, life at the Centre should be a joy!⁵⁵

New Expressions of Form and/or Responses to Functional Demands

The NAC is an outstanding example of a performing arts centre for its design in the Brutalist style, for its integration into its urban setting, and for the effective integration of art into the architectural

design. The building is also of interest for its very carefully designed interior which unites several different types of performing space in one building, and creates public spaces which are carefully designed to provide delight and enjoyment for spectators by means of spatial design, art, aesthetics, and lighting effects. No cost was spared on this fine building, from its overall design down to the finest details.⁵⁶ According to architectural historian Janet Wright, the building epitomizes the architectural aesthetic of the 1960s in Canada.⁵⁷

The architects were given freedom in developing the design,⁵⁸ and they took inspiration from the general shape of the building's site (fig. 3). In Fred Lebensold's words, the shape of the whole centre was dictated, "as much by the site on which the buildings are located as by the purpose for which they are intended [...]. The hexagonal pattern reflects the shape of the site."⁵⁹ The sixty-degree angle at the northeast corner of the intersection of the Rideau Canal and Rideau Street provided inspiration for the sixty-degree angles of the hexagon, while the site as a whole was generally triangular. The hexagon and the triangle were the basic modular units used throughout the building (except for the parking lot), reappearing in plans for the performing spaces, for stairs, for decorative details of the ceiling and floor, as well as for the layout of the dressing rooms and rehearsal halls for the use of the performers.

The building was designed to house a number of functions; in addition to the primary functions of performing spaces and related facilities, it included commercial spaces, restaurants, and a huge underground parking lot. The style chosen was Brutalism, a term derived from the French term *béton brut*, meaning raw concrete, and coined in 1954 to describe

architecture influenced by Le Corbusier's *unité d'habitation* in Marseilles, with its surfaces of exposed concrete.⁶⁰ During the 1950s, the International style of the Bauhaus, with its plain smooth surfaces, large expanses of glass, and floor plans based on a square or rectangular module, was the dominant approach to building design. These values were challenged in 1956 by Peter and Alison Smithson from England and architect Aldo van Eyck from the Netherlands, who called themselves "Team Ten," at the tenth meeting of Le Congrès international d'architecture moderne (CIAM). They took inspiration from other sources such as utilitarian buildings, for example warehouses, and from expressionistic architecture. When the group later divided up, two separate movements developed, one of which became known as Brutalism.

Brutalism appeared in North America in the late 1950s. Paul Rudolph's Art and Architecture Building at Yale, New Haven, constructed in 1958-1962, was described as a revolt against the Miesian "universal space" glass box.⁶¹ An asymmetrical, seven-storey composition with vertical towers and concrete walls with rugged texture and vertical striations, the building contained thirty-seven levels of interpenetrating and overlapping platforms. The then-current interest at Yale in the relationship of buildings to the urban landscape was reflected in Rudolph's Art and Architecture Building. His design built on slightly earlier works by Louis Kahn (such as Richard Laboratories in Philadelphia, 1957-1962) and by Frank Lloyd Wright. More or less contemporary to it was Kahn's famous Salk Institute, of concrete and wood, with a plaza framing the Pacific Ocean. Kahn went on to design buildings in the Brutalist style in Asia, while Kenzo Tange (1913-2005), the most influential architect in post-war Japan, worked in the style there, design-

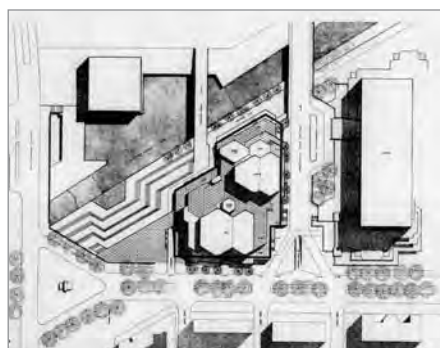


FIG. 28. ARCHITECT'S PLOT PLAN, SHOWING A PLAN OF THE NAC WITHIN THE CONTEXT OF NEVER-EXECUTED COMPONENTS OF THE PROPOSED PARKIN PLAN, INCLUDING A CONFERENCE CENTRE AND A WIDENING OF THE CANAL (ABOVE LEFT), A PEDESTRIAN WALKWAY ACROSS THE CANAL (TOP CENTRE) AND AN ART GALLERY (RIGHT); 1965. | COURTESY OF THE NAC.



FIG. 29. INTERIOR OF MAIN LOBBY SHOWING THE LATER ADDITION OF THE DISPLAY CASES AND A GLIMPSE OF THE BOX OFFICE FOYER THROUGH THE DOORS. THE BLACK CURTAIN ABOVE THE PILLARS WAS HUNG TEMPORARILY FOR AN EVENT. | RHONA GOODSPEED, 2005.

ing megastructures such as the huge Yamashi press and broadcasting centre, with seven towers, built in 1964-1967. Internationally the style remained popular for buildings through the 1970s.

Brutalism became popular for buildings in Canada during the 1960s, when Canadian architects, like their counterparts elsewhere before them, were seeking, in the words of Janet Wright,

to redefine and rethink modern architecture in terms of humanistic rather than mechanistic values. In formal terms, the pristine cubic volumes and the slick,



FIG. 30. MAIN LOBBY AT NIGHT, WITH THE GRAND STAIRCASE ON THE RIGHT AND THE UPPER LEVEL, ORIGINALLY A RESTAURANT AND NOW THE PANORAMA ROOM, ON THE LEFT. ON THE FAR WALL IS PROJECTED AN IMAGE OF THE CORPORATE SYMBOL OF THE NAC, THREE INTERTWINED HEXAGONS; 1998. | COURTESY OF THE NAC.



FIG. 31. VIEW OF THE BALCONY LOBBY OF SOUTHAM HALL. IN THE BACKGROUND IS A GLIMPSE OF ONE OF THE HEXAGONAL STAIRCASES. | RHONA GOODSPEED, 2005.

translucent surfaces associated with the International style were being supplanted by an architecture of textured surfaces and complex compositions composed of varied and irregular masses.⁶²

Brutalism generally made use of exposed concrete, expressing the ruggedness and weight of masonry. Designs often incorporated block-like geometric shapes and were frequently irregular. Texture played a significant role in the style's aesthetic; surfaces, of which there were large expanses, could be of rough, unadorned poured concrete, or textured to create different effects, sometimes alluding to



FIG. 32. MAIN LOBBY BEFORE THE ADDITION OF THE DAIS AND PARTITIONS FOR THE DONORS' CIRCLE, AND BEFORE THE BLOCKING IN OF THE SKYLIGHTS; 1980. | COURTESY OF NAC.



FIG. 33. THE STUDIO WITH THE ORIGINAL CHAIRS. | *THE CANADIAN ARCHITECT*, JULY 1969, VOL. 14, NO. 7, P. 49.

a building's interior functions. Brutalist buildings are often criticized for being unfriendly and uncommunicative instead of integrative and protective, as was originally intended; for example, the location of the entrance is rarely obvious to the visitor. Many Brutalist structures, however, came to be appreciated in time for their uniqueness or eye-catching appearance. One well-known Canadian example of Brutalism is Place Bonaventure in Montréal, also designed by Affleck, Desbarats, Dimakopoulos, Lebensold, Sise, and constructed in 1964-1968, at a time when most North American buildings were designed for a single purpose.⁶³ Located on a six-acre site, this multipurpose building houses a two-level retail arcade, an exhibition area, five levels of merchandising mart, an international trade centre and a four hundred-bedroom

hotel, as well as attractively landscaped courtyards. The exterior walls are cast-in-place concrete panels exhibiting a variety of sandblasted finishes on a reinforced concrete frame with few windows. Its weighty and massive appearance and textured and monolithic surfaces are characteristic of the Brutalist style.

Brutalism was a style admirably suited to the function of a theatre, with the requirement for interior spaces insulated from outdoors sights and sounds. The style's flexibility also made it an appropriate choice to enclose a range of functions and to adapt to an irregular site. The NAC's irregular, monolithic-like massing reflected its interior functions and was dominated by the three main performing spaces and associated lobbies and stairs rising out of the series of low-lying terraces forming the roof of much of the rest of the building (figs. 4 and 8). A lower, more regular block-like mass housed the administrative section on the southeast at the level of the bridge (figs. 1 and 10). The precast concrete panels sheathing the walls were treated in a variety of textures, corresponding in some areas to interior functions, with widely spaced fins on the lobbies, smaller-scaled ribs on theatre sections, and flat surfaces on service spaces (fig. 26). According to Janet Wright, "the architects treated the surface in a variety of contrasting textures to give the building the sense of fortress-like solidity and rugged massing that defined the Brutalist aesthetic of the 1960s in Canada."⁶⁴ On the canal side, the ceremonial entrance was at the second level, while above, on the next level, a covered walkway provided access from the terrace to the restaurant for fine dining for patrons above (figs. 1 and 14). At the lowest level, to the south, beneath the descending ramp, was a more informal restaurant called Le Café (fig. 10). With its compositional complexity, created in part by the repeated use of

the hexagon and triangle in various sizes and forms, the building assumed an organic quality of constantly shifting views, as the visitor moved around the building and along the terraces.⁶⁵

The terraces were designed as an integral part of the building, comprising a range of spaces that were shaped aesthetically partly by the landscaping which included a number of planters, all faced with the same precast concrete panels, and often of hexagonal shape. These were to contain a variety of plantings, including trees, shrubs and, in summer, flowers (figs. 3 and 16). The terraces were also carefully designed to create views of some of the city's most significant structures: of the Centre and East blocks of the Parliament Buildings, of the National War Memorial on Confederation Square and of the Château Laurier, emphasizing the NAC's role as a place to entertain heads of state and dignitaries (fig. 27). The constantly shifting quality of spaces as one moved through them reflected the Brutalist aesthetic; they included spaces that are open and exposed, intimate and secluded, sunny and shady. Accessible from the lobbies of the Opera and Theatre, the terraces allowed members of the audience to stroll outside during intermissions. Also accessible from the street, these spaces were additionally intended to provide a setting for outdoor concerts in summer.

Further interest was added to the terraces by means of art. For example, on the south terrace is a large nine-ton bronze contemporary abstract sculpture by Québec sculptor and painter Charles Daudelin (1920-2001), creator of a number of public monuments during his career (fig. 16).⁶⁶ The Massey Report, which had criticized the International style for its "poverty of emotional appeal," called for "painting and colour, however, modest in scale," and "collaboration of architect, painter, and

sculptor [...] With the modern appreciation of light, both artificial and daylight, with broad surfaces of unbroken wall and a free and open plan in public areas, there is every opportunity to make the utmost of the art of painting and sculptor.”⁶⁷ The report went on to encourage the use of art in the design of buildings. Beginning in the late 1950s, through the 1960s up to the present, art has been included within the designs of modern buildings. Modern sculpture began to “grace the otherwise windswept plazas of modern ensembles.”⁶⁸ The incorporation of the Daudelin on the exterior, as well as of other pieces of art in the interior, was an expression of the then-current trend in modern design to introduce and integrate art within buildings, to enhance the architectural design. During these years, art appeared not only within the lobby space of buildings, but also as a part of the basic design concept of a number of public and commercial buildings, including theatres of the 1960s. For the NAC, in order to create a building embodying the latest and most up-to-date modern design, a visual arts advisory committee was set up to select artists and/or works of art to be included in the centre, all decisions made in full agreement with the architect. Included on the committee were K.M. Fenwick, curator of prints and drawings at the National Gallery of Canada, and British Columbia painter Bertram Charles Binning. The Daudelin was the only work on the exterior, but there were glimpses of some of the spiral chandeliers from the terraces, through the tall narrow windows.

While the terraces were a highly attractive feature of the architecture, they were also central to the integration of the building with its immediate surroundings and setting, both visually and functionally. While the orientation of the NAC has been criticized for turning its back

on Confederation Square,⁶⁹ the architects took great care to integrate the building with its surrounding urban space, aesthetically by means of the terraces and functionally by means of both the terraces and the control of pedestrian and traffic flows around the building. The terraces were intended to be a part of the cityscape. Fred Lebensold, commenting on the impact of the centre, explained that because it was located in a public square, where it would have been “unthinkable to impede the normal flow of pedestrian traffic, the site was developed as a series of pedestrian terraces.”⁷⁰ These were made accessible from various points along the street, for example by means of stairs leading up from Elgin Street and the bridge, or directly from the sidewalk. The major east-west artery of Queen Street was lined up with the opening from the sidewalk on Elgin Street onto the terrace, providing a functional link for pedestrians over to the Mackenzie King Bridge, as well as leading down to the main entrance and box office foyer (figs. 2-3). Pedestrians heading towards the centre could also access the main entrance via the park on the north (fig. 3), or through the modest entrance directly on Elgin Street (fig. 15). Like some other Brutalist buildings, neither the main nor the subsidiary entrances to the NAC were easily identifiable to the uninitiated (figs. 7 and 15).⁷¹ The building was further linked to its urban environment by facing commercial spaces onto Elgin Street (fig. 9), used as bookstores for many years and accessed by doors to the north and south. In addition, Le Café, a restaurant on the opposite side of the building, was accessible from outside at the level of the canal. Traffic flow around the building, and vehicular access to it, were other key, if purely functional considerations (fig. 2). Located at “the hub of the city’s traffic plan,”⁷² the NAC would draw thousands of visitors on a regular basis. The vehicular access to and exit

from the underground parking lot at four points were designed to disperse traffic and eliminate traffic jams.⁷³

To fully understand the design of the building in relation to its setting, it should be considered within its original design context, that of the Parkin Plan, which was commissioned by the National Capital Commission and drawn up in 1962, to develop Confederation Square and renew the urban core of Ottawa.⁷⁴ Fred Lebensold had stated that “The National Arts Centre is, of course, only part of the plan for the redevelopment of Confederation Square. When the plan is completed the Centre will be one of the main focal points of the heart of Ottawa—the physical link between the city’s eastern and western parts.”⁷⁵ Early models and plans of the NAC show the building within the context of this plan, including major changes proposed but never carried out, such as the widening of the canal, the replacement of Union Station with a new conference centre, the construction of a new art gallery to the south, and, in some plans, the construction of a pedestrian walkway from the NAC terraces to the opposite side of the canal (fig. 28). The canal had been identified within the plan as the most important landscape component in the area; hence it made sense for the architect to face the building towards it, as opposed to towards Confederation Square.

When the NAC opened, the terraces and the integration of the building with its site were highly praised.

The outstanding feature of the National Arts Centre is the way the site has been returned to the city as an intensively developed park. The terraces that cover all but the tallest portions of the complex are open to the public for strolling and enjoying the views—both outward towards the city’s landmarks and inward towards lobbies and cafes.⁷⁶

According to *Architectural Record*, it was “masterfully arranged on a difficult triangular site [...] and ingeniously developed within a triangular module.”⁷⁷ And, “this complex fits right into its environment. With half of its mass buried in the canal bank and the rest cropping out in an irregular series of towers and parapets, the center follows Ottawa’s Victorian tradition of romantic landscape and picturesque building masses.”⁷⁸ The relation of the building to the site remains unchanged.

In its austerity, its plain and closed surfaces and its consistently dark, sombre colouring, the Brutalist exterior was an excellent foil for the interior, which depended on dramatic spatial sequences, contrasting lighting effects, and varied and sometimes colourful pieces of art for its design. In the words of one critic, the NAC was, “*un ensemble austère mais non sans force, écran de béton entre l’abri atomique et le blockhaus du mur de l’Atlantique, le précieux, le rare, l’exquis étant à l’intérieur.*”⁷⁹ “Delight should be the watchword of anyone designing buildings for the performing arts,” declared Hazen Sise, of Affleck, Desbarats, Dimakopoulos, Lebensold, Sise, in a seminar on architectural requirements for the performing arts in Canada, sponsored by the Centennial Commission in June 1964.⁸⁰

Going to the theatre or to a concert ought to be a pleasurable occasion, looked forward to with anticipation. On entering the front door one should start a process of transition from the cares of the real world into the world of art; one’s surroundings should prepare one’s mood for enjoyment, one should walk through a crescendo of architectural excitement with the hall itself as culmination. The lights dim and the curtain goes up.⁸¹

The architect has effectively developed this principle in the design of the interior

spaces, “gradually detaching [the spectator] from everyday life” and creating “a succession of psychological barriers that cut people off from the street and turn them into an attentive audience.”⁸² The progression began at the main entrance, with its austere exterior (or with the escalator from the parking lot) opening into the box-office foyer, a contained one-storey space suitable for meeting up with fellow theatregoers (figs. 14 and 29). Here, as in all the public spaces of the building, the walls were sheathed with panels similar to those on the exterior, creating a certain continuity between interior and exterior, and the ceiling was covered with fibreglass light fixtures, fibreglass hexagons divided into triangles, which provided a low light.

Reflecting the Brutalist aesthetic of the exterior, the interior spaces presented constantly shifting views to the visitor. From the box office one glimpsed the main lobby, through the windows and the doors. Once entered, this space opened up, expanding outwards to the left and right and upwards to two levels in height, with the upper level open on three sides, which during the day allowed natural light to filter in (fig. 30). Directly across from the box office was the ceremonial grand staircase to the second level of the Opera, while to its left were the striking, two-storey-high cast aluminium doors to the Salon, beautifully integrated into the architecture (fig. 17). Here the architect had borne in mind that these were spaces for mingling, for seeing others, such as heads of state and dignitaries, and for being seen (fig. 30). The doors exhibited an abstract design in relief, executed by Jordi Bonet, characteristic of other works he designed for public spaces. They opened into the Salon, a hexagonal room panelled in oak, forty-five feet across and two stories high, intended for small chamber recitals (for up to one hundred people)

and receptions, for example for visiting dignitaries. From here a door opened to the stairs to the royal box of the Opera, and access was provided to the Green Room for the performers, who were also often received in the Salon.

Approaches to the main performing spaces were signalled by the lowering of the ceiling (figs. 20 and 32). The low ceilings and low lights of the lobbies were deliberately designed to bring spectators together. In Fred Lebensold’s words, “I think there is something most unhappy about going out into a lobby and being alone. One of the wonderful things about the theatre is being with other people. Lobby space should be gauged so that while movement is easy, isolation is impossible.”⁸³ In total there were four levels of lobbies for the Opera, all of which could be accessed by means of tall, contained hexagonal staircases on either side (fig. 5). Each one was decorated by a piece of art by William Martin: a chandelier of metal and glass suspended from a skylight at the top, down the centre of the stairwell; the sculpture lit the stairs by means of reflected light—natural light during the day and floodlights installed beneath the skylight at night (fig. 22). The tall centrally lit space helped dramatize the more open, more diffusely lit space of the lobbies. From the second to the fourth level on the north, there were views of Confederation Square and the Parliament Buildings from the lobbies (the concrete fins on the exterior were angled in their direction; fig. 26), and the lobbies were opened up vertically by a well down to the lowest level (fig. 31). On the opposite side, to the south, on all levels, were oak bars; behind them tapestries decorated the walls (fig. 23).

Leading from either side of each lobby were sparsely decorated collector aisles, which narrowed as they led downwards to



FIG. 34. CONFEDERATION CENTRE OF THE ARTS, CHARLOTTETOWN, PRINCE EDWARD ISLAND; BUILT IN 1964; AFFLECK, DESBARATS, DIMAKOPOULOS, LEBENSOLD, SISE, ARCHITECT. MAIN ELEVATION ABOVE, TERRACE ON LOWER RIGHT, AND INTERIOR VIEWS FROM MEMORIAL ON LOWER LEFT. | REPRODUCED FROM GENEVIÈVE CHARROIS, "LE CENTRE DES ARTS DE LA CONFÉDÉRATION," HSMBC, SUBMISSION REPORT 2002-45.



FIG. 35. PLACE DES ARTS, MONTRÉAL, QUÉBEC, SALLE WILFRID-PELLETIER; BUILT IN 1963, AFFLECK, DESBARATS, DIMAKOPOULOS, LEBENSOLD, MICHAUD, SISE, ARCHITECT. | *JOURNAL OF THE ROYAL ARCHITECTURAL INSTITUTE OF CANADA (JRAIC)*, NOVEMBER 1964, P. 123.

single-storey tinted-glass doors, indicated by single vertical rows of lights. The spectator was unconsciously prepared by these plain and confined spaces for the theatrical climax of the architectural composition, the Opera (fig. 11). The Opera was the most highly praised of the performing spaces, with its plush red carpets and rows of seats arranged in "continental" style, that is with no aisles in the centre. Helping to draw the eye upwards, lights were placed in vertical lines and spaced increasingly further apart as they neared the ceiling, in order to increase the sense of height. These strips of lights also helped balance the horizontal lines of the hall, created by the balustrades of the mezzanine, amphitheatre and balcony, and of the boxes (fig. 25). The dramatic ceiling composition, a circular pattern of black and white panels and strips with suspended lights effectively camouflaged the catwalk above. The side walls were of tinted glass, with the vertical metal diffusers adding a subtle aesthetic appeal, though designed for acoustical purposes. The outstanding single feature was the luxurious stage curtain designed by Micheline Beauchemin,

with its large billowing panels of solid vibrant colours, made of cotton, nylon, and plastic fibres (fig. 11).

The Theatre lobby, to the south, was also accessible from the main foyer and opened up through three levels (though the Theatre itself possessed only two levels). Just inside the entrance to the lobby, applied to the precast concrete wall also rising through three levels, was a brushed aluminium relief sculpture by Montréal sculptor Gino Lorcini (fig. 19). The two levels of the Theatre itself were accessed by hexagonal staircases similar to those of the Opera, with similar glass sculptures in the centre. To the south of the Theatre was the lobby space for the Studio; here again were tapestries decorating the walls above the bar. In the centre of this space was a sculpture designed by Montréal industrial designer Julien Hébert. Set within a hexagonal water fountain, it rose through two levels, to a skylight (fig. 20). Just to the east was the entrance to the Studio (fig. 5) and, in front of it, a balustrade overlooking the floor below and providing a view on the opposite wall of

a large abstract mural on three levels, in strong bright colours, by Canadian painter William Ronald (figs. 20-21).

Care was also taken in the design for the layout of the non-public areas for performers. Backstage, the three performing spaces were connected by a series of service spaces at the same level, linking them to the trucking lane at the stage door (fig. 2). The dressing rooms were arranged hexagonally around the Theatre and near to the Opera, a design very convenient for performers. A large scenery shop between the stages of the Theatre and Opera was linked to both by proscenium-high metal doors. (The shop was also designed to serve a mobile theatre berthed in the truck dock.) It is reported that performers are generally happy with the design of these spaces.⁸⁴

Both the exterior and the interior of the building have remained unchanged except for very minor details. The interior of the NAC is stunning for its public areas, for its successions of spaces, for the variety of attractive views, for its finely



FIG. 36. MANITOBA THEATRE CENTRE, WINNIPEG, MANITOBA; BUILT IN 1969-1970, NUMBER TEN ARCHITECTURAL GROUP, ARCHITECT. | [\[HTTP://CANADA.ARCHISEEK.COM/MANITOBA/WINNIPEG/DOWNTOWN/MARKET_AVENUE/MANITOBA_THEATRE_CENTRE_LGE.HTML\]](http://canada.archiseek.com/manitoba/winnipeg/downtown/market_avenue/manitoba_theatre_centre_lge.html), ACCESSED APRIL 2005.



FIG. 37. GRAND THÉÂTRE DE QUÉBEC, QUÉBEC; VICTOR PRUS, ARCHITECT, BUILT IN 1964-1971. MAIN ELEVATION AND ENTRANCE. | NICHOLAS GOODSPEED, 2005

finished details, for the effective use of contemporary art to enhance the interior spaces, and for the performing spaces themselves, especially the Opera. The motifs of the hexagon and triangle are used effectively and imaginatively to create an interior that brings people together and an exterior well suited to its irregular site. These motifs, due to their unusual geometry, had also posed an unusual challenge in construction, with the execution of the various components in concrete, plaster, and wood. All details were carefully planned and executed, and contributed to the creation of unity throughout the building. No expense was spared by the federal government in the design or execution of the NAC, from the larger planning concepts, the complex but effective floor plans, down to the fine details.

The critics were full of praise for the interior spaces. According to an English critic,

The key to the whole drama is that an opera house auditorium must be theatrical to succeed whereas a theatre auditorium must not. At Ottawa everything is cunningly

composed, even the restaurant, so that the right dramatic lead is established for entry to the grand salle de l'opera. At this moment for the first time height isn't only allowed to take over, but [...] is encouraged to do so.⁸⁵

Verticals in the Opera continue up and lose themselves beyond the ceiling.⁸⁶ Praise for the contemporary art was not universal, but one writer described it as "a striking display of modern art incorporated into the design of the whole."⁸⁷

Many comments were written praising the building as a whole. According to architect Jules Gauvreau in *Vie des Arts*, the NAC, "présente l'incontestable avantage d'une homogénéité inexistante dans la plupart des autres centres comparables, récemment construits," and the building is "une incontestable réussite architecturale."⁸⁸ Macy DuBois in *The Canadian Architect* wrote: "The Federal Government has produced a good piece of work. It is the best building in Ottawa; it is better than anything of its size and function I have seen in Canada; and it is better than most such buildings anywhere in the world."⁸⁹

In the opinion of Janet Wright, "the National Arts Centre introduced the idea that important federal buildings could serve as a showcase for the best in Canadian architecture."⁹⁰ And in the words of Prime Minister Pierre Trudeau,

It is the culmination of years of work by many different organizations and individuals [...] In its design and construction, the Centre has drawn on skills and experience acquired during an active decade of work on similar buildings in all parts of Canada. Clearly, it has surpassed its predecessors in versatility and comprehensiveness. It will stand comparison with the world's best.⁹¹

CONCLUSION

To summarize, the NAC illustrates or represents all three cultural phenomena described in the guideline for evaluating built heritage of the modern era. First, the NAC is an outstanding illustration of the changing social and political conditions with respect to the performing arts in Canada as the only performing arts centre in the country which was fully subsidized by

the federal government. From a political point of view, it is a significant addition to Canada's capital as a national ceremonial meeting place for heads of state and visiting dignitaries. Second, in terms of technological advances, it represented state-of-the-art technology for lighting and acoustics, especially in the Opera Hall, and in terms of adaptability, it introduced either unprecedented or state-of-the-art flexibility for all three performing spaces. Third, the building was an outstanding new expression of form for its design in the Brutalist style, epitomizing the architectural aesthetic of the 1960s in Canada; for its successful integration into its important site on Confederation Square in downtown Ottawa; for the outstanding design of its interior spaces; for the successful integration of a number of contemporary works of art with the architecture; and for the Opera, or Southam Hall, of particular note for its aesthetics.

Integrity

The structure and appearance of the NAC are virtually the same as when built, both on the exterior and in the interior. An unsympathetic addition to the terrace at street level is the large pillar at the northwest corner: while it is covered in the same concrete aggregate as the building, it is not well integrated with the site and it blocks the view of some of the Confederation Square buildings from a part of the terrace. Inside the building, changes are minor and reversible, such as the addition of display cases (fig. 29) and the blocking over of several skylights in the main foyer, the installation of partitions for the donors' circle at the rear of the Southam Hall lobby, the addition of a bar and other moveable counters in the main foyer, all finished in materials resembling those original to these spaces. The carpeted (wood) stairs up to the main staircase have been extended and a dais

and universal ramp have been added. The corridor leading from the Elgin Street entrance to the box office has been slightly altered and completely enclosed, whereas it had been partially open originally.⁹² The performing spaces are unaltered in appearance except for the Theatre. Here the changes are relatively minor, comprising mainly the installation of new seats of a slightly different colour and in a slightly new arrangement with wider rows and handrails, to accommodate an aging population. This has resulted in a slight reduction of seat numbers in the centre of the Theatre when the proscenium is used. In addition, the vomitory has been somewhat enlarged, to allow for greater access by the performers. As already mentioned, the Studio has had new (moveable) seats installed, but its character and flexibility as an experimental performing space are unchanged. For all performing spaces, apart from the stages, where technological advances have been embraced, much of the equipment is original to the building's construction. However, the acoustics of Southam Hall have been augmented electronically to meet today's needs.⁹³

All the performing spaces, including the Salon, continue to house their original functions. Changes to functions elsewhere include the replacement of the original bookstores on Elgin Street by the Fourth Stage. The space which housed Le Restaurant, the original formal restaurant, is now divided into the Fountain and Panorama rooms, which are used for rental functions, such as dinners and receptions. Le Café, originally used for casual dining, now provides fine dining for patrons. In the summer, Le Café opens onto a terrace parallel to the canal, which was not the case originally. The interior space just to the west of Le Café is now the location of a small restaurant called the Oasis, which is a new use.

COMPARATIVE CONTEXT

The NAC is one of a number of performing arts centres built across Canada from 1959 to 1970, of which sixteen are listed in the appendix. The Board recommended the Confederation Centre of the Arts in Charlottetown for national designation because

as one of a number of cultural complexes built in the 1960s and 1970s in Canada, and as a memorial to the Fathers of Confederation, it is an outstanding example of a national institution dedicated to the performing arts; when it was built in 1964, it was highly innovative in its stage design and acoustics, and featured state-of-the-art lighting and construction techniques; and it is a distinguished example of Brutalist architecture in Canada, which, for its era, is well-integrated with the city.⁹⁴ (fig. 34)

The NAC was one of two arts centres built in Canada at the time that made use of federal funds, and it is the only one built entirely with federal funding.⁹⁵ In terms of design and function, the NAC is the only performing arts centre of the period designed and built from the start to house three major performing spaces. The other examples were originally designed either to house a single performing space, to house a performing space plus an additional function, or to house two performing spaces.

Among the examples listed in the appendix, five were built with a single auditorium (including the required associated spaces).⁹⁶ The remainder included additional performing spaces and/or functions as well. The Hummingbird Centre in Toronto, built in 1960, combined the largest auditorium of the period, for an audience of three thousand two hundred, with several spaces for exhibiting art. The Queen Elizabeth Theatre in Vancouver, built in 1959,

housed a large hall with two thousand nine hundred and thirty-one seats and an art gallery. Place des Arts in Montréal included five performing spaces linked to each other underground; however, each one was built successively, beginning with a large performing hall for an audience of two thousand nine hundred and eighty-two (formerly the Grande Salle, now the Salle Wilfrid-Pelletier), constructed in 1963; all the others were later additions (fig. 35). These three centres all have halls that are significantly larger than the Opera, or Southam Hall at the NAC. In contrast to Place des Arts, the NAC was designed and constructed as a whole.

The two centres with auditoriums closest in size to Southam Hall in Ottawa are those in Saskatoon and Regina, each with one medium-sized performance hall combined with a congress centre. The Saskatoon Centennial Auditorium, built in 1964-1968, holds an audience of two thousand and three, while the Saskatchewan Centre of the Arts in Regina, built in 1970, has a hall with a seating capacity of two thousand and twenty-nine. The Cleary International Centre in Windsor, which opened in 1960, housed a smaller auditorium of one thousand two hundred and eleven seats as well as a convention centre and exhibition space. When it was reopened in 1991 after renovations, the auditorium was slightly enlarged but not substantially altered. The St. John's Arts and Culture Centre in St. John's, Newfoundland, built in 1967, includes a main performing space for one thousand seats and a small theatre for an audience of seventy-five. In addition, the building housed a library and an art gallery. None of these buildings was designed to accommodate the variety of performances as was the NAC, with its multipurpose medium-sized auditorium, as well as a theatre and an experimental studio, not to mention the smaller Salon, designed for small concerts as well as receptions.

Stylistically, three arts centres in Canada have been identified which are comparable to the NAC for their designs in the Brutalist style. The Manitoba Theatre Centre (MTC), built in 1969-1970, is a relatively modest theatre that is significantly smaller in size than the NAC, housing only one performing space, designed for theatre (fig. 36).⁹⁷ Apart from the fly tower, the building is two storeys high, while the NAC is built on a number of levels. Characteristic of Brutalist buildings, the Manitoba centre is asymmetrical with four different elevations and the main entrance at one side, and is constructed of exposed concrete. Largely rectangular in plan and occupying a rectangular site, the building possesses an overall massing that is much simpler and more block-like than that of the NAC. The MTC's raw concrete surfaces are carefully—even delicately—expressive of the wooden formwork that was used to create the walls. Various internal functions are expressed on the exterior through advancing and receding volumes, and in particular by expanses of glass fronting the public lobby areas. At the NAC, the pre-cast concrete exterior panel finishes vary on the exterior to correspond with the functions of the interior spaces. The MTC was deliberately scaled to be compatible with its neighbour down the block, the 1912 Pantages Theatre, though not necessarily with the multi-storey warehouses in the immediate vicinity. The NAC is a much more complex example of Brutalist architecture, carefully adapted to its irregular site, and exhibits a much greater integration with its setting.

A second example of a theatre in the Brutalist style is the Grand Théâtre de Québec in Québec City, built in 1964-1971 to designs by Victor Prus. This building houses two performing spaces—a formal multipurpose auditorium for ballet, opera, and theatre for a medium-size audience of one thousand eight hundred, as well as a

studio, which is adaptable as a performing space and could seat five hundred (fig. 37). The building also has an area for outdoor performances in the rear. Again, this is a smaller building than the NAC, with fewer performing spaces, both of which are smaller than their equivalents at the NAC. Generally the plan of the Grand Théâtre is rectangular, with truncated corners on the front elevation where windows occupy the full height of the building; these are the locations of the main entrances. The main elevation is more or less symmetrical except for the fly tower and performing space seen rising above it. All four elevations exhibit tall panels of smoothly finished concrete, projecting outwards near the top and divided into bays of equal width by columns. Windows, of which there are few, are at ground level, except those at the corners.

Like the NAC, the building incorporates art into the design: a large mural by Jordi Bonet, over twelve thousand square feet in area, was sculpted into the cement in the lobby of the auditorium.⁹⁸ Its exterior exposed concrete surfaces and even its use of concrete for the mural inside is an expression of the Brutalist style; as a whole it is not, however, nearly as complex or ambitious in its design as the NAC, with its complete asymmetry, shifting views and overall complexity. Further the NAC includes a larger number and greater variety of works than the Québec theatre. The Grand Théâtre may be described as a conservative interpretation of Brutalism, as it recalls the modern International style in its reliance on a certain regularity in plan, its rhythmic bays, visible supports, truncated corners and continuous window design rising the full height of the building at the corners. No particular effort appears to have been made to integrate the Grand Théâtre with its surroundings, though it is generally harmonious in scale with its neighbours.

The NAC, in contrast, has a terrace which effectively carried this integration out in terms of pedestrian access and attractive, highly symbolic views.

The Confederation Centre for the Arts, built in 1964 in the Brutalist style to designs by Affleck, Desbarats, Dimakopoulos, Lebensold, Sise, was designated a National Historic Site of Canada in 2003 (fig. 34). Of all the arts centres built in Canada, it is the most comparable to the NAC in terms of its fine design in the Brutalist style and its generally large scale.⁹⁹ The Charlottetown building is usually described as a complex, in that it houses several functions: a memorial space to the Fathers of Confederation, a theatre for a fairly small audience of one thousand, a library and an art gallery. The building, like the NAC, takes inspiration both from Brutalist principles and from its urban, downtown setting, next to Province House—though the focal point in the design was the memorial, rather than the performing space, a contrast to the NAC. The finely designed Confederation Centre for the Arts is composed of four visually distinct but similarly scaled pavilions which rise above, and are connected below a single-level terrace, not far from street level. The scale of the centre is conditioned by that of Province House, including the centre's pavilions which are the same height as Province House. The floor plan is arranged in a horseshoe around the memorial, with the different functions housed in each pavilion. Windows are few, designed vertically and located at the corners of each pavilion except for the memorial, where the roof is entirely of glass and a second large window effectively frames the side elevation of Province House.

Typical for Brutalist buildings of the era, the Charlottetown centre is constructed of concrete, but in this case it is sheathed

in smoothly finished sandstone, the same sandstone used in the construction of the legislative building. A few examples of modern sculpture are located on the terrace. The inside of the building also makes use of sandstone for portions of the walls, though marble is used in the memorial. Originally there were several murals inside, but they did not all survive. The works of art inside appear to be associated with the art gallery rather than with a design to integrate them with the architecture. The interior of the Charlottetown complex is a great contrast to the interior of the NAC. The smooth straight lines of the interior, the generally rectilinear floor plans, the clarity of the design and the use of materials create a purity in the design and a still, contemplative atmosphere, appropriate to the memorial as well as to the gallery and the library.

The NAC, with its overall irregular design and its changing spaces and shifting views, was designed to create specific effects appropriate for a performing centre, such as psychologically preparing the audience for a performance. The impetus behind the design of the NAC was the creation of spaces for the performing arts, and the building is characterized by varied, dynamic, and theatrical spaces which express their differing needs. The design of the NAC is more complex than the Charlottetown centre, as it relies on the more unusual motifs of the hexagon and triangle, on contrasting massing and shapes, on the use of differing textures, and the incorporation of a variety of works of art within the overall design of the architecture. The Opera Hall of the NAC represents an unusually satisfactory collaboration between architect and acoustician when compared to other arts centres in the country. Further, the Opera at the NAC appears to have been a fairly rare example for its time of a multipurpose hall, representing the trend towards a medium-sized hall.

Current Status

a) *Threat(s)*

Funding constraints allow the NAC to deal only with immediate building needs. Funding for capital repairs is allocated first to repairs involving health and safety, major building code issues, and operational sustainability. In the medium term, however, precast and structural component failures present an increased operational risk of shutdown.¹⁰⁰ In addition, much of the equipment original to the building's construction is nearing the end of its lifespan.¹⁰¹

b) *Other Designations*

When the building opened, two bronze plaques, one in French and one in English, were placed in the central lobby of the building. The texts were written by two well-known Canadian authors. Robertson Davies wrote the English version and Robert Choquette the French version. The text in English reads:

Part of the land on which the National Arts Centre is built was given to Ottawa for a marketplace by Nicholas Sparks in 1848. The city's generous gift of land to the people of Canada is historically apt, for a town hall was raised here which served also as a theatre and a concert room from 1849 until 1865; and on a nearby site, from 1897 until 1928, stood the Russell Theatre, in which the most eminent plays and players of English, French and American theatre were seen. Thus the stage of our inherited tradition in theatre, music and dance becomes the stage where the native growth in these arts is cherished, and honour done to those living, dead or yet to be born who serve us honourably, as musicians and artists of the theatre. This superscription was unveiled by her majesty Queen Elizabeth II, on the fifth day of July, in 1967, the centennial year of Canada's Confederation, before it was placed here.

In 1970, the NAC was the recipient of a Massey Medal for architecture.¹⁰²

c) Community Value

“The marvellous building on Confederation Square brings for the first time to our doorsteps the performing arts at their best,” wrote the editor of the *Ottawa Citizen* on the day of the opening.¹⁰³ The construction of the NAC, with its variety of performing spaces and wide range of performances, from the time it was built until the present, has made possible the appreciation and enjoyment of the performing arts for the citizens of the national capital area. Known by everyone in the community who is interested in the arts and beyond, it is attended regularly by thousands. The NAC is without doubt one of the most important buildings in the city to a large number of the city’s inhabitants, all of whom would agree that Ottawa would not be the same without it. The NAC also provides spaces for additional functions, such as art exhibits, graduations, and social events. It is currently busy six days and evenings a week.

NOTES

1. These points are: from the ramp on the east side of the building, near the main entrance; just north of the bridge at the level of the canal, at the east corner; just south of the south ramp to the Mackenzie King Bridge, from the east side of Elgin Street; from Albert Street, through the Albert Street tunnel, just west of Elgin Street (figs. 2-3).
2. According to this guideline, “A building, ensemble or site that was created during the modern era may be considered of significance if it is in a condition that respects the integrity of its original design, materials, workmanship, function, and/or setting, insofar as each of these was an important part of its overall intentions and its present character; and it is an outstanding illustration of at least one of the three following cultural phenomena and at least a representative if less than outstanding illustration of the

APPENDIX¹⁰³

| CITY | NAME | DATE | ARCHITECT(S) |
|-----------------------|---|-----------|---|
| Vancouver B.C. | Queen Elizabeth Theatre | 1959 | Affleck, Desbarats, Dimakopoulos, Michaud, Lebensold, Sise |
| Edmonton, Alta. | Jubilee Auditorium | 1954-1957 | Public Works |
| Calgary, Alta. | Jubilee Auditorium | 1954-1957 | Public Works |
| Saskatoon, Sask. | Saskatoon Centennial Auditorium | 1964-1968 | Kerr Cullingworth Riches Associates Architects; Affleck, Desbarats, Dimakopoulos, Lebensold, Sise |
| Regina, Sask. | Saskatchewan Centre of the Arts | 1970 | Izumi, Arnott and Sugiyama |
| Winnipeg, Man. | Centennial Concert Hall | 1967 | Smith Carter, Moody, Moore, G.B.R. Architects |
| Winnipeg, Man. | Manitoba Theatre Centre | 1969-1970 | Number Ten Architectural Group |
| Stratford, Ont. | Festival Theatre | 1957 | Rounthwaite & Fairfield |
| Toronto, Ont. | Hummingbird Centre for the Performing Arts (O’Keefe Centre) | 1960 | Earle C. Morgan and Page and Steel |
| Windsor, Ont. | Cleary International Centre | 1960 | Douglas C. Johnson and Cunningham McWhinnie |
| Ottawa, Ont. | National Arts Centre | 1964-1969 | Affleck, Desbarats, Dimakopoulos, Lebensold, Sise |
| Montréal, Qué. | Place des arts | 1963 | (Salle Wilfrid-Pelletier) Affleck, Desbarats, Dimakopoulos, Lebensold, Michaud, Sise |
| Québec, Qué. | Grand Théâtre de Québec | 1964-1971 | Victor Prus |
| Fredericton, N.B. | The Playhouse | 1964 | [information unavailable] |
| Charlottetown, P.E.I. | Confederation Centre for the Arts | 1964 | Affleck, Desbarats, Dimakopoulos, Lebensold, Sise |
| St. John’s, Nfld. | St. John’s Arts and Culture Centre | 1967 | Affleck, Desbarats, Dimakopoulos, Lebensold, Sise |

- other two cultural phenomena of its time: a) changing social, political, and/or economic conditions; b) rapid technological advances; c) new expressions of form, and/or responses to functional demands.”
3. Unless otherwise indicated, this section on the Massey Commission is based mainly on: Kallmann, Helmut, “Massey Commission,” *The Canadian Encyclopedia*, [http://www.thecanadianencyclopedia.com], accessed January 21, 2005; Litt, Paul, 1992, *The Muses, the Masses, and the Massey Commission*, Toronto, University of Toronto Press; and Royal Commission on National Development in the Arts, Letters and Sciences (1949-1951), [http://www.collectionscanada.ca/massey/h5-400-e.html#content], accessed March 11, 2005.
 4. Kallmann, *op. cit.*
 5. See Royal Commission on National Development in the Arts, Letters and Sciences, *op. cit.*
 6. “The Theatre,” Royal Commission on National Development in the Arts, Letters and Sciences, p. 3.
 7. *Id.* p. 6.
 8. *Id.* p. 10.
 9. “Ballet,” [http://www.collectionscanada.ca/massey/h5-400-e.html#content], p. 3 accessed March 11, 2005.
 10. “Music,” *ibid.*
 11. Grace, Gerry, 2001, “The National Arts Centre: A Brief History,” unpublished manuscript on file, NAC Archives, December, p. 2; and Dé Cary, Robert, 1986, “The National Arts Centre: A History of the Events Leading to its Creation,” Final Draft, on file at the Parliamentary Library, Ottawa, p. 1-3.
 12. Other high schools used for performances included Glebe Collegiate and Ottawa Technical High School (See, for example, Grace, p. 1).
 13. Grace, p. 1.
 14. Dominion Consultants Limited, 1963, “A National Centre for the Performing Arts: A Study Prepared for the National Capital Arts Alliance,” October. This study is often referred to as the Brown Book.
 15. Grace, p. 2.
 16. The report made detailed recommendations for the requirements of such a centre, which they stated needed an opera hall, a theatre, a studio, and a small reception/performing area. The sizes of the performing spaces as built appear to have been influenced by the findings of the Brown Book (Dominion Consultants Limited, *op. cit.*).
 17. Dé Cary, p. 13.
 18. *Ibid.*
 19. *Id.*, p. 17.
 20. The NCAA considered sixteen sites in their report using ten criteria, and recommended that the centre be built at Sussex and St. Patrick streets. The site chosen was not among those that they considered (Dominion Consultants Limited, p. 54-65).
 21. Dé Cary, p. 50.
 22. Architectural Requirements for the Performing Arts in Canada, 1964, A Seminar Sponsored by the Centennial Commission, Ottawa, The Parliament Buildings, June 1-2, 1964, Ottawa, Roger Duhamel, p. 3.
 23. Submission from the National Arts Centre Corporation, to the Executive Secretary, Historic Sites and Monuments Board of Canada (HSMBC), n.d., p. 3.
 24. Frazer, Robbin, 1971, “The Stradivarius of Arts Centres,” *Performing Arts in Canada*, March.
 25. Wright, Janet, 1997, *Crown Assets: The Architecture of the Department of Public Works, 1867-1967*, Toronto, University of Toronto Press, p. 265.
 26. Dé Cary, p. 45.
 27. *Id.*, p. 19.
 28. The original plan for the Stratford Festival Theatre to be winter resident at the Stratford National Theatre, and the Théâtre du Capricorne, a new ensemble established for a resident French theatre, did not work out.
 29. *Globe & Mail*, April 4, 1973; and *La Presse*, April 11, 1973.
 30. Gerry Grace, Curator, NAC; e-mail to author, April 11, 2005.
 31. *CBC Times*, May 31-June 6, 1969, vol. 21, no. 49, p. 3.
 32. Bob Allen, head sound engineer, NAC; conversation with the author, March 15, 2005.
 33. *The Canadian Architect*, July 1969, vol. 14, no. 7, p. 32.
 34. Johnson, Russell, 1969, “Acoustic Problems,” *The Canadian Architect*, vol. 14, no. 7, p. 62.
 35. Johnson had founded and become principal consultant of BBN’s Theatre Planning and Consulting Division and technical coordinator for concert hall and opera house design. In 1970, the year after the NAC opened, Johnson founded ARTEC, of world renown in the field of all technical aspects of performing arts spaces design.
 36. The volume of sound is directly proportional to the size of an auditorium; for example, a large auditorium allows for less available sound than a smaller one.
 37. *Canadian Building News*, 1969, no. 3, p. 4.
 38. This was put together with pieces suspended from either side of the ceiling and walls, or towers, on wheels, that could be moved inwards. Twenty-eight feet tall and ten feet wide, these towers were rolled onstage and locked in position for performances.
 39. The curtains were to be retracted for organ recitals and symphony concerts and extended for musical comedy and lectures.
 40. Bob Allen, conversation with the author, March 15, 2005.
 41. *The Canadian Architect*, July 1969, vol. 14, no. 7, p. 63.
 42. This sound-reverberation system was used for the performance of electronic music, for special effects with film exhibition, for theatrical effects, for opera and musical comedy, and for certain popular music attractions.
 43. Johnson, p. 62.
 44. *Id.*, p. 32.
 45. *La Technique des travaux*, January-February 1971, no. 327, p. 3.
 46. “The resulting sound has that dry, ‘hi-fi stereo quality’ which music critics cannot agree on.” (Dixon, John Morris, 1969, “Cultural Centre Canadian Style,” *Forum*, October, p. 51.) Bob Allen, currently head sound engineer, worked at the NAC from the time shortly after it opened. He stated that the acoustics were “great” and could not name a centre in Canada with a multipurpose hall which he thought had better acoustics at the time.
 47. Bob Allen, conversation with the author, March 15, 2005.
 48. Gerry Grace, Archivist, NAC, site visit, March 15, 2005.
 49. *The Canadian Architect*, July 1969, vol. 14, no. 7, p. 32.
 50. Paul Hennig, director of Production Operations, NAC; conversation with the author, April 20, 2005.

51. This section on the Studio is based on Hennig, *id.*; and *CBC Times*, May 31-June 6, 1969, vol. 21, no. 49, p. 3.
52. Dixon, p. 51.
53. DuBois, Macy, 1969, "Critique," *The Canadian Architect*, vol. 14, no. 7, p. 46.
54. Hennig, April 20, 2005.
55. Frazer, *op. cit.*
56. For example, see Terry J. Waller, 1968, "The National Arts Centre," *Plywood World*, vol. 8, no. 3, p. 1; and 1971, *La Technique des Travaux*, January-February, no. 327, p. 3.
57. Wright, p. 265.
58. *Ibid.*
59. Waller, p. 4.
60. Banham, Reyner, 1966, *The New Brutalism*, London, England, The Architectural Press London, p. 16 and 21-22.
61. For Brutalism, see Tzonis, Alexander, Liane Lefaivre, and Richard Diamond, 1995, *Architecture in North America Since 1960*, Boston / New York / Toronto / London, A Bullfinch Press Book, Little, Brown and Company, esp. p. 22-24 and 82-84; Khan, Hasan-Uddin, 2001, *Le Style International : Le Modernisme dans l'architecture de 1925 à 1965*, Cologne, Taschen; and Maitland, Leslie, Jacqueline Hucker, and Shannon Ricketts, 2004 [2nd ed.], *A Guide to Canadian Architectural Styles*, Peterborough, Ontario, Broadview Press, p. 203-209.
62. Wright, p. 265.
63. For Place Bonaventure, see Kalman, Hal, 1994, *A History of Canadian Architecture*, vol. 2, Toronto, Oxford University Press, p. 832; and Tzonis *et al.*, p. 120-123.
64. Wright, p. 265.
65. *Ibid.*
66. Charles Daudelin, [http://en.wikipedia.org/wiki/Charles_Daudelin], accessed March 17, 2005.
67. Quoted in Bronson, Susan, 1997, *Built Heritage and the Modern Era: Overview, Framework for Analysis, and Criteria for Evaluation*, Historic Sites and Monuments Board of Canada, Appendix 6, p. 10, [<http://www.collectionscanada.ca/massey/index-e.html>].
68. *Ibid.* See also Wright, *op. cit.*
69. For example, Janet Wright and Dana Johnson, "Confederation Square, Ottawa, Ontario," Agenda Paper, HSMBC, 1984-17.
70. *CBC Times*, May 31-June 6, 1969, vol. 21, no. 49, p. 3. The idea for terraces with views of the Parliament Buildings and having space for concerts appears to have originated with the Brown Book (see p. 68).
71. This is a feature of the NAC often criticized. But one may also consider the following comment: "One has only to compare the National Arts Centre with Toronto's O'Keefe Centre, however, to recognize the virtues of avoiding a bombastic entrance, unused during most working days, but standing like an unbeaten drum waiting for its brief use." (DuBois, p. 44)
72. Wright and Johnson, p. 226.
73. Dixon, p. 46.
74. The inclusion of the NAC within the Parkin plan was mentioned by Pearson in 1963 (Décary, p. 14). For the plan, see John B. Parkin Associates, 1962, *Confederation Square Development: A Proposal to the National Capital Commission*, vol. 1, December; and John B. Parkin and Associates, 1967, "Confederation Square Development: A Proposal to the National Capital Commission," March 1, Ottawa Public Library.
75. *CBC Times*, May 31-June 6, 1969, vol. 21, no. 49, p. 3.
76. Dixon, p. 52.
77. "A Performing Arts Center for an Urban Redevelopment," *Architectural Record*, December 1964, p. 20.
78. Dixon, p. 48.
79. "Le Centre national des arts ouvre ses portes ce soir," *Le Devoir*, May 31, 1969.
80. Architectural Requirements for the Performing Arts in Canada, p. 14.
81. *Ibid.*
82. As described in the Brown Book, where it says, in full, that the "theatre-temple [...] must be given an interior which [...] reflecting the expectations of the theatre-goer, will gradually detach him from everyday life to lead him to the auditorium in a psychological state favourable to the performance he is going to see. The architecture of the various corridors, cloakrooms, foyers and lobbies becomes [...] a succession of psychological barriers that cut people off from the street and turn them into an attentive audience. The sequence provided by the entrance halls, cloakrooms, staircases and lobbies leading towards the auditorium, and inversely, from the auditorium to the foyers during the interval, should have a scheme of development which would help to establish first an atmosphere of concentration and an 'inner gravity' and then the encouragement of conversation during the interval." (Dominion Consultant Associates Limited, p. 67-68.)
83. "Building /A Discussion," *RAIC (Royal Architecture Institute of Canada) Journal*, 1963, vol. 40, no. 11, p. 54.
84. Site visit, March 2005.
85. Bentham, Frederick, 1970, "National Arts Centre, Ottawa," *TABS*, no. 1, p. 20.
86. *Ibid.*
87. *CBC Times*, May 31-June 6, 1969, vol. 21, no. 49, p. 3.
88. Gauvreau, Jules, 1969, "Au seuil d'une Époque Nouvelle... l'Architecture," *Vie des Arts*, vol. 56, p. 15.
89. DuBois, p. 48.
90. Wright, p. 265.
91. "Hexagon," unpublished manuscript, on file at NAC, p. 18.
92. Gerry Grace, site visit, March 15, 2005.
93. *Ibid.*
94. HSMBC, "Minutes," December 2002.
95. Charrois, Geneviève, "Centre des arts de la Confédération, Submission Report, HSMBC, 2002-45, p. 7; and Gordon Fulton, director, Historical Services Branch, Parks Canada, conversation, March 4, 2005.
96. Description of comparatives is largely based on Charrois, *op. cit.*
97. See Maitland *et al.*, p. 206.
98. "Site officiel de Jordi Bonet," [<http://www.jordibonet.com>], accessed March 17, 2005.
99. This analysis is based on Charrois, *op. cit.*; and Charrois, conversation with the author, April 2005.
100. "Submission from the National Arts Centre Corporation," January 2004.
101. *Ibid.*
102. "Massey Medals for Architecture," *Architecture Canada*, 1970.
103. Young, Christopher, 1969, "A City Grows Up," *Saturday Citizen*, May 31, 1969.
104. This chart was drawn up by Charrois, p. 15.