

## **The Four Churches Competition: The atrium as building type.**

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*Architecture is by definition anachronistic, it pertains to its own time and to moments that project beyond it, both forwards and backwards. It is this dichotomous position that constitutes both its weakness and its strength: weak partly because of its marginality in relation to the dominance of maximizing technology, and strong because at its best it not only testifies to its time against the commodified never-ending newness of fashion, but also because it is the built guarantor of the public realm as a symbolic and political arena. Architecture can only survive as a form of critical culture, as a resistant “otherness”; all of which returns us to the etymology of the word tradition and to the fact that this term is closely allied to other terms having an equally ambivalent significance, such as trade, treason, translation and betrayal. This possibly goes some way towards explaining the paradoxical aphorism of the Catalan philosopher Eugenio d’Ors, who according to Luis Benuel was in the habit of saying something to the effect that “all that is not tradition is plagiarism.”*

- Kenneth Frampton, *Labour, Work and Architecture*

The Four Churches Project was held in 2003, by four congregations in downtown Kitchener: St. Andrew’s Presbyterian, St. Peter’s Lutheran, Trinity United and Zion United . The church committees decided to involve University of Waterloo Architecture students in an architecture competition. The goal was to help accumulate ideas for increasing the churches’ revenue through the development their combined properties, and suggest ways of attracting members to the downtown for their congregations. This was the first phase would be followed immediately by consultation with developers. Since the flight of families further and further from the downtown cores of cities due to suburbanization, what architecture critic Kenneth Frampton describes as the “dissolution of the American [and Canadian] provincial city,” the churches were suffering from lower attendance. Also, the aging members of the congregation were finding it increasingly difficult to make the trip from their care facilities around the city into

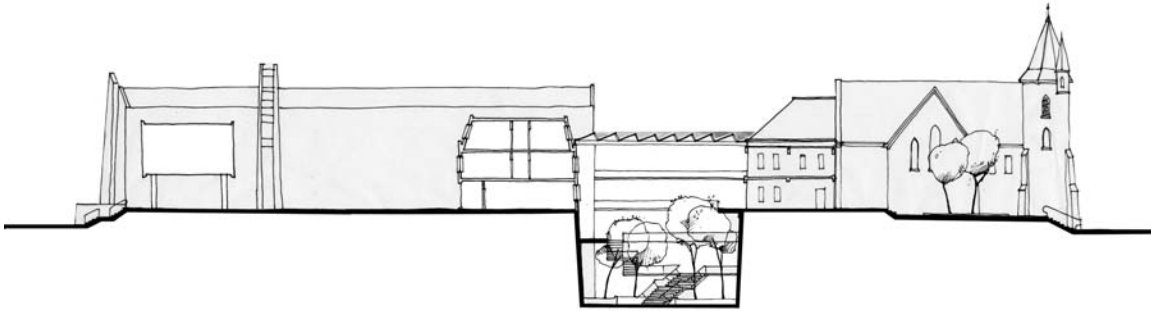
the downtown, exacerbated by the problems of finding parking close the churches. Students were asked to solve this problem of housing and to find ways of generating revenue for the churches.

Students were given a choice of building on two sites. The first is occupied by St. Andrew's and Zion United church, and the site straddles the space between the two churches. Existing buildings and parking lots between the two churches makes up some of the usable area. This site has a more residential context. Weber Street is lined with commercial and institutional buildings, but the block itself and Roy St. to the north are characterized by two-storey detached homes. The second site is occupied by St. Peter's Lutheran church and Trinity United church, and has much great urban density. In fact, it is one of the most densely lined blocks in the downtown. Another consideration for the design was the adjacency of the Trinity church to the YWCA women's shelter. The YWCA had agreed that for this ideas competition, students could include that property in the scheme as long as the facilities were improved upon, and the requirements for privacy and security of the occupants (battered women, women recovering from drug addiction, etc.) were considered. Another stipulation was that while a certain amount of demolition work could be suggested, the main sanctuaries of the four churches could not be disturbed. In all four church properties, a series of later, inexpensive additions surrounded the original church sanctuaries. These contained meeting rooms, gymnasias, and classrooms for the various Sunday schools. These spaces could be demolished, as long as some scheme for their replacement was accounted for in the competition.

For the competition, the St. Peter's and Trinity United site was chosen. Kenneth Frampton, in the introduction to his compendium of essays, entitled *Love, Work and Architecture*, refers to the dystopia (or "motopia") that North American cities have become. "What were still essentially nineteenth century cities in the early fifties have since become surrounded and partially penetrated by megalopolitan development, that is to say, by the techno-commercial infrastructure of the autoroute, the strip and the shopping mall, together with the

random distribution of high-rise structures, set amid a seemingly endless proliferation of free-standing urban dwellings.”(10) The conditions faced by the Four Churches are a result of that suburbanization. They represents a situation, described by Frampton, that the competition team felt was typical in similar sized provincial cites in Ontario that were facing the same problems as Kitchener and the Four Churches. This is a condition that is prevalent in cities across Southwestern Ontario and indeed North America. The site represents a typical urban city block, with a periphery of shops and a centre left mainly vacant and unusable, because of the block size and the different shapes of buildings on their lots. On the north of the site, along Weber Street, the most recent building is a large, new apartment building that, despite its plain appearance, represents a rare but positive step towards densification in that it brings people to live closer to the downtown. On the south side of the site, facing the core of the Kitchener downtown across Duke Street was a shallow strip of shops with empty apartments above. The competition was an opportunity to address a fairly typical scenario in such a way that could ensure the success of a downtown development: create a successful mix of residential and commercial occupancy that will result in a space that is a desirable destination for visitors to the downtown and residents alike.

The first aspect of the strategy was to negotiate the existing buildings on the site, and decide which were useful and which should be replaced. The strategy involves a combination of refurbishment, demolition, and new construction.



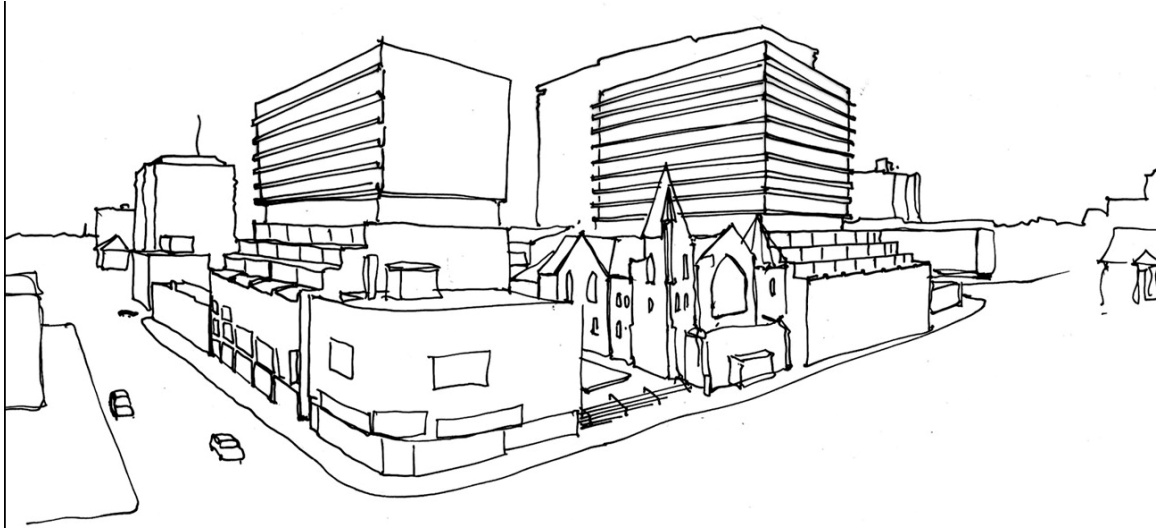
Site section showing atrium and sunken garden between St. Peter's United (left) and Trinity United.

St. Peter's Lutheran was constructed in the 1960s, and consists of the chapel and a three-storey building surrounding an open courtyard with a bell-tower. The sanctuary, as stipulated in the competition outline, would be left alone, the wing surrounding the courtyard, which contains offices and Sunday school rooms that were being used less and less as the congregation dwindled in size, would be converted into a long-term care facility for senior citizens. This service could be provided by the churches, or by a private health-care provided, but the adjacency of the church would be an appealing amenity for older people, especially ones who were originally members of the four congregations. This would be one way for the churches to raise or diversify their source of income.

To the south of St. Peter's there is an existing strip of shops, which would be refurbished. The older façade and storefronts contribute to the traditional "Main Street" character of the downtown area that would hopefully attract visitors from the suburbs for a more traditional urban shopping experience. Apartments above would be renovated to create studios for younger residents.

To the east, the small chapel of Trinity United Church, as well as the later addition to the rear of the original church building, would be demolished to make way for the first of two residential towers featuring one and two bedroom apartments. Tenants would enter the building from the small courtyard along Frederick Street next to the church, while a restaurant and retail shops at the base of the building would continue and reinforce the commercial front of Duke St. West. The space lost by Trinity United Church would be reintroduced in the base of the new tower. To the north of the Trinity sanctuary, the YWCA would

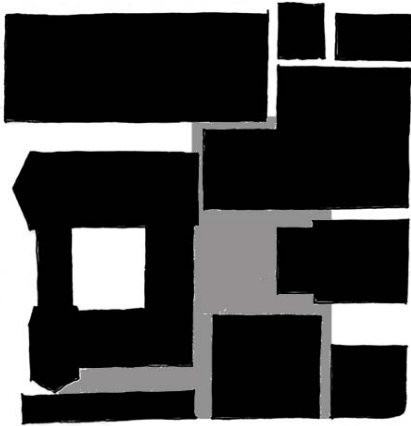
also be demolished, and its facilities relocated in the base of a second residential tower. Fitness rooms, social services and office space would be located behind three storey townhouses that would face Frederick Street. The tower above would provide some lower income apartments and would be managed by the YWCA.



Site perspective showing two residential towers and low-rise retail along Duke Street.

The construction of two large residential towers with retail, office, and service facilities below creates the kind of urban density that is essential to the success of the congregations, as well as to the downtown as a whole. An opportunity for revenue is also realized through underground parking facilities that would serve residents, church-goers, and visitors to the downtown. Furthermore, and perhaps most interesting to the project, is the utilization of the spaces in the interior of block between existing and new buildings. The vacant area in the centre of the block will become an atrium, providing a link between the four buildings that contain it and a year round gathering place for members of the congregations and residents of the two towers. This space would also be open to the public, and would contain a bookstore and a café that encourage a variety of visitors. The bottom of the atrium would provide access to the underground parking in each of the two towers and would be generously planted with trees to provide shade from the sun as well as to filter air in the atrium. A variety of walkways at different levels and openings in each of the buildings will

add varied circulation and a heightened sense of physical interaction to the new facility.



(left) Block diagram showing interior circulation areas between buildings.  
(right) Hertzberger's Central Beheer Complex winding Moroccan neighbourhoods.

This atrium is a response to an urban condition in several cities in Ontario, such as London and Kitchener, where the large dimensions of the city blocks results in the space behind buildings going unused. One reference for the infilling of those areas is the work of Hermann Hertzberger, especially his Centraal Beheer office complex built in the Netherlands in 1972 . “His square planned work platforms (small standardized units) are arranged irregularly with in a rectilinear structural grid, creating a labyrinthine interior landscape complete with level changes and tortuous alleyways. The exterior massing that seems incrementally grown reflects the interior organization, and the useable rooftop terraces create a “continuous roof” over the building complex.” (Ferguson 212) Although it is a free-standing building, the network of interior spaces served as an inspiration for the project. Hertzberger reiterates the continuity of the Moroccan casbah in the interiors of the complex, and describes similar complex spaces in his Apollo Montessori school in Amsterdam, where the central staircase is the focal point of the school, and invites children to engage in all kinds of spontaneous activities.



Interior meeting space in Herman Hertzberger's Apollo Montessori School.

“Hang up a few curtains and you create a theatre, hand up and net with butterflies and the environment changes again.” (PC Blogspot) In the enclosed interior spaces of city blocks there is a potential for this kind of spontaneous activity that is lacking in the gridded streets outside.

The site section describes the street-like atmosphere of the indoor atrium. Dipping several stories below grade, it can be accessed from the parking garages, and this depth in the section allows for an indoor garden, with a water feature or fountain, along with large trees, to be contained underneath the glass canopy above. The interior of the block for the competition would act as a link between the various congregations, residences and facilities and create an exciting interior space with a diversity of activities and users.

This project imagines an extension of this idea across the fabric of the city, where a network of articulated interior spaces overlaps the more mundane orthogonal exterior. Networks of this character would add a sense of discovery to downtown Kitchener and other cities perhaps, and would draw back some of

the population that has been seduced by the climate control and convenience of shopping malls, which, incidentally, seem to emulate medieval European streets in their meandering network of storefronts and indoor plazas. The huge appeal of shopping malls, especially for senior citizens, is noteworthy. At Masonville Mall, in London, Ontario, several old age homes are located around the mall, and a trip to the shopping centre to walk around its heated and air-conditioned “streets” is the main form of exercise and socializing for many residents.

An urban example of an interior shopping street, though in a more densified context than Kitchener, is the Toronto Eaton Centre, by the Zeidler Partnership. The success of the Centre can be seen in the contrast in the thriving popularity of the interior with the barren exterior along Yonge Street, where pedestrians are diverted into the comfort of the interior, and avoid the desolation of the ignored outer façade. The competition proposal calls for a balance of interior and exterior spaces. Also, the PATH system in downtown Toronto links office towers their commuters through a series of underground shopping streets, and serves as an example an interior space that adds another layer, or alternative experience, of a city. The BCE Place, engineered by Santiago Calatrava, is another example of a successful interior streetscape.



Toronto Eaton Centre by Zeidler Roberts Partnership.



Another major source of inspiration for the project is the Baruch College building in New York City, designed by Kohn Pedersen Fox Architects and completed in 2002. It was conceived as a “vertical campus”, and maximizes the 750 000 square feet of the building by containing all the social spaces within the building’s interior and pushing the buildings facades to the edge of their allowance. The curved facades are derived from the constraints of the New York City setback regulations. (Baruch)



Exterior of Baruch College by Kohn Pedersen Fox.

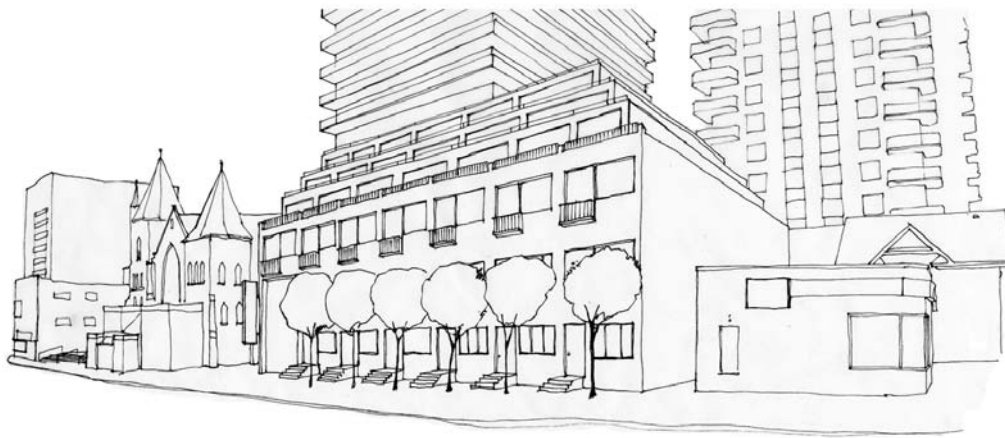
The facades reference the qualities of the surrounding area. A brick and stone base corresponds to the level and character of the surrounding buildings, the same way in which the bases of the two towers proposed for the competition site emulate the commercial and residential character of Duke Street and Frederick Street, respectively. The building is multi-use and contains a variety of functions, from a lecture hall to athletic facilities. These are linked to classrooms through a network of vertical atria which, combined, rise eleven stories and link

the three departments contained in the building. “Each school has classrooms, faculty offices, and computer labs organized its own atrium, a central gather place where students and faculty can spontaneously meet, promoting interdisciplinary interaction, enhancing the sense of campus community.” (Baruch) Though the competition cannot aspire to the same density as Manhattan, it does share the sense of optimism for the interaction in the interior space between the variety of occupants of the different buildings and facilities. Though the circulation about the proposed in atrium is horizontal, the conversion of former exterior facades from exterior to interior ones, sheltered under the glass roof, would encourage similar opportunities for interaction.



One of Baruch College's the communal atrias with meeting areas.

The glass roof would be functional and would aid in ventilation of the space as well as flooding the interior with daylight. At Baruch College, a similar quality was achieved with four storey high windows, which allowed for rooms facing the atria to benefit from borrowed daylight. In the competition entry, daylight allows restaurants and shops to open both the exterior and interior, so that in colder months, activity can continue within the complex.

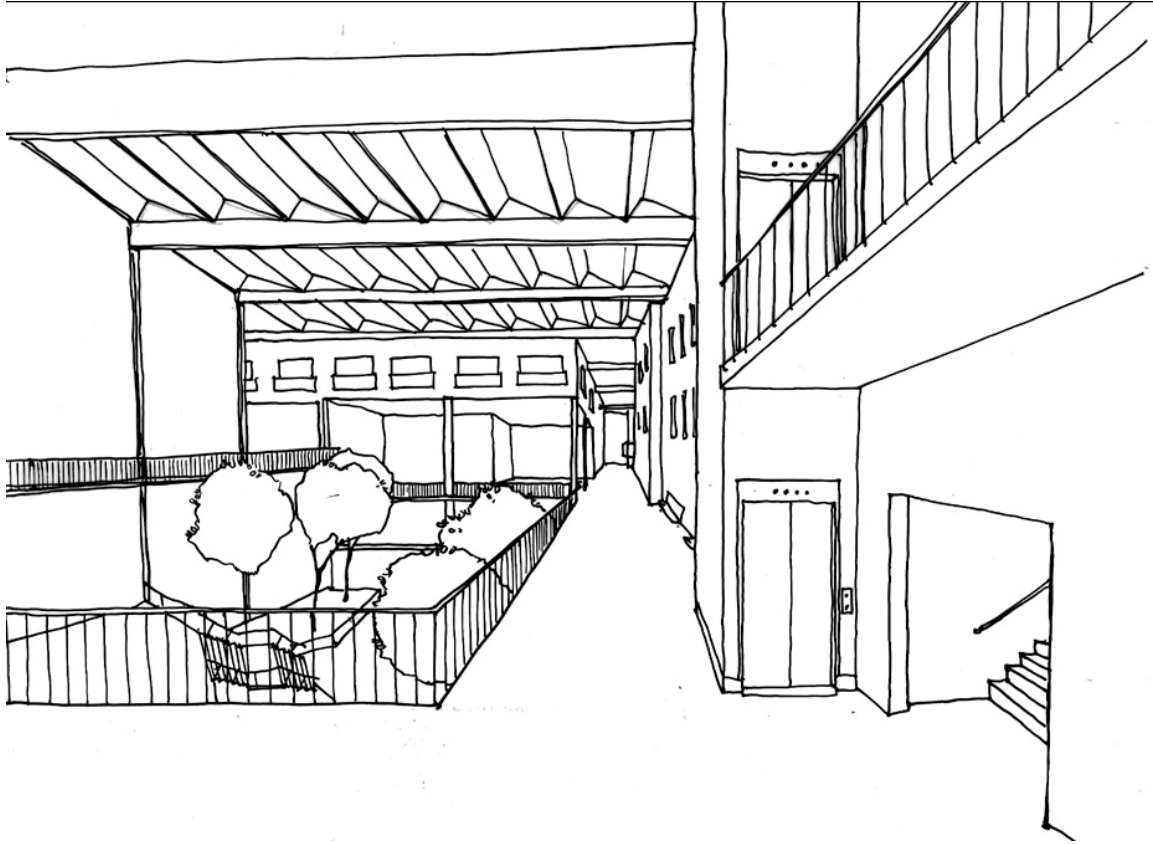


Townhouses along the more residential Frederick Street.

Despite the small nature of the Four Churches competition, and its motive to generate ideas for development and revenue strategies on the two sites, the project does aspire to be environmentally responsible, and create an ecologically healthy environment. Though it could not address all the various aspects of the LEED program, which, in a professional context, evaluates buildings environmental efficiency based on their accommodation of “sustainable sites, water efficiency, energy and atmosphere materials and resources, and indoor environmental quality,” (Boake) the project suggests, through the renovation and conversion of existing buildings, and their integration within an atrium, that the Four Churches development, and in particular its public interior spaces, should engage green building technology. The glass atrium roof has the potential to be crucial aspect of the performance of the facilities, featuring what Frampton describes as appropriate technology.

“Appropriate technique presupposes a hybrid approach to environmental culture, wherein buildings are not only harmoniously integrated into the landscape but also rendered climatically responsive by virtue of the way they are oriented, insulated, heated, ventilated and constructed. Favourable orientation to wind, sun and topography; the use of double glazing and the partial recycling of warm air in winter; the induction of air movement through low-speed fans; the application of servo-mechanisms for the control of louvers and vents; the

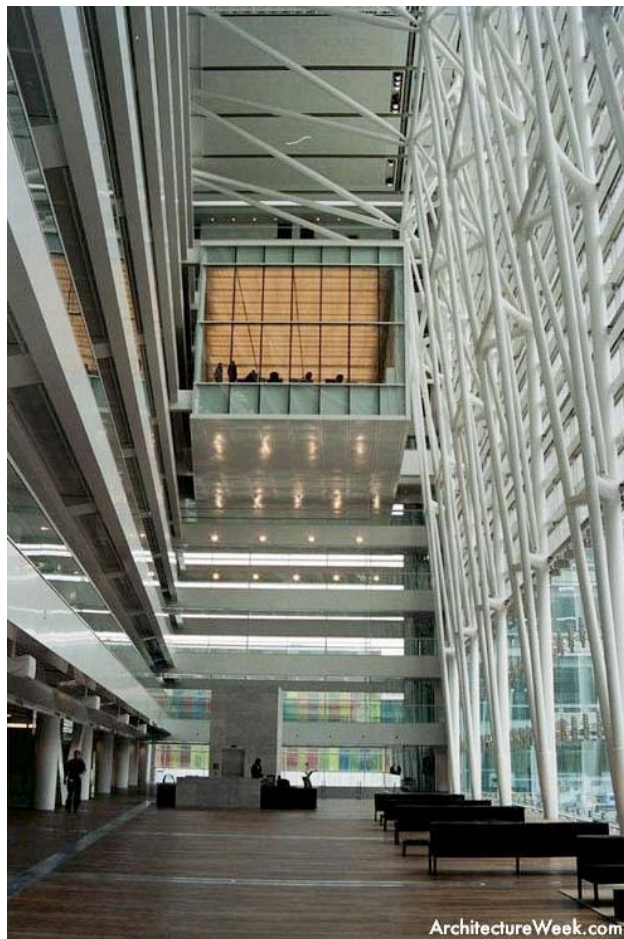
provision of manually operated windows and screens; and finally, the use of solar walls and photovoltaic cells, are nothing but so many devices for the modification of a structure's internal climate in response to climate changes in environmental conditions." (Frampton 14)



Specifically, the atrium would allow for natural daylighting and passive solar heating, providing and even enhancing natural air circulation, and, through the use of greenery, (in the competition entry trees were shown, but another possibility is a green wall) suggests that it could act as the heart and lungs of the new complex.

Two Canadian projects suggest the potential for the atrium space. The first is the CDP Capital Centre, in Montreal. It is a massive building, designed by a consortium of architects, consisting of Gauthier, Daoust Lestage Inc., Faucher Aubertin Brodeur Gauthier, and Architectes Lemay et Associates. Completed in 2003, It straddles two city blocks and the width of the Ville-Marie Expressway, contains indoor streets and atria, and gained recognition for "its bio-climactic design, energy systems, lighting, and the use of open corridors in an atrium in a

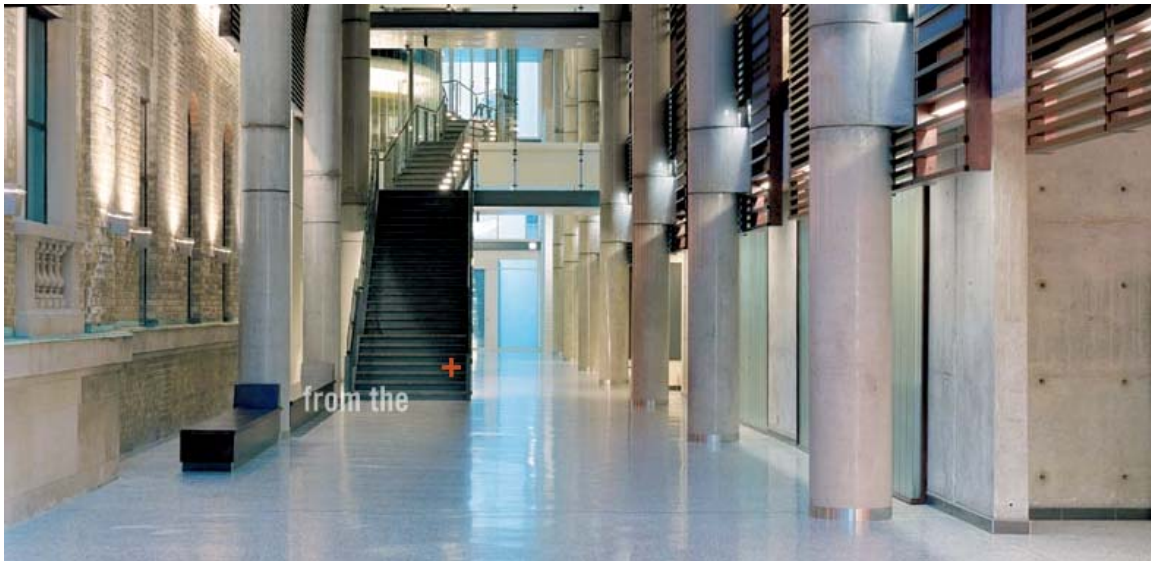
high-rise structure.” (Carrol) The building also won a Royal Architectural Institute of Canada Award of Excellence for its “smart skin” that is an elaborate double glass wall. Shades contained inside the windows are pulled up or down by a photometric sensor that detects the intensity of sunlight for each section of the elevation. Additionally, the user can override the system for his or her physical comfort. This system balances technology with user-friendliness, and makes it a focus of the project. The main atrium / corridor, nicknamed “The Parquet”, acts as a spine for the building, acting as an “immense gathering and an informal relaxation area close to key employee services such as restaurants and lounges. It opens up onto outdoor terraces and ensures optimal access to daylight” ([www.architectureweek.com](http://www.architectureweek.com)). Fritted glass in the atrium reduces solar gain and prevents the interior from overheating.



“The Parquet”, the interior street that runs through the CDP Capital Centre, enhances the building’s environmental performance, as well as the experience of the building’s occupants.

The fact that the Four Churches proposal calls for two residential towers limits the potential of the atrium to be integrated within a larger system. It was felt that the demand for a greater population downtown, who might visit the churches and the new stores, outweighed the demand for office space in the area. However, whereas an office building, such as the one described above, is characterized by large floor plates and continuous open spaces that can benefit from a large-scale natural heating and cooling strategy, the compartmentalized nature of the apartments, with residents controlling the temperature or lighting of individual units, has no requirement for an integrated strategy. Apartment facades would feature amenities such as low-E glazing and bris-soleil, to moderate temperatures and reduce energy demands.

A second relevant project is the Bahen Centre for Information Technology at the University of Toronto, designed by Diamond and Schmitt and completed in 2002. Though the Centre features a significant green agenda, it represents, according to Marco Polo, “a significant contribution to sustainable design” because “of its relationship to site and its attitude toward the city and the traditions of high density urbanism.” It is a useful touchstone for the Four Churches project for the way in which it synthesizes a large program on a “idiosyncratic site bounded by several existing buildings.” Its use of the atrium and the interconnection of the various building functions demonstrate the way in which green design can serve as an organizing principle for a complex program.



The Bahen Centre atrium.

The computer science facility's labs require a substantial amount of energy to power and to cool, and this partly inspired the green solutions. Computer labs were located at the north end of the building, behind a heavily insulated façade with minimal glazing. Alternatively, public spaces like lounges and offices face south and east and benefit from passive solar heating in the winter, and natural ventilation. A system of sun louvers prevents overheating of those areas in the summer months. The central atrium, which is eight stories tall, reduces the requirement for artificial lighting, and also acts as a thermal chimney. The building has already realized substantial cost savings. For example, although the external sun louvers cost around \$25 000, it is estimated that they reduce the air conditioning load by 100 tons. This represents a capital saving of \$800 000 at the outset, and an annual saving of nearly \$60 000.

Once again, the atrium serves not only as a source of passive solar heating or natural ventilation, but as a way to organizing and connecting the building's varied program. "It constitutes a microcosm of the building's complex multiple agendas, serving not only as a device for orientation and circulation, a civic space and a potential link between various components of the University, but also as an important contributor to the building's green ambitions." The suggestion that the atrium acts as a link to the outside and the rest of the

University, or as a public entrance, suggests a similar potential for the atrium proposed for the competition site. It would provide access the various aspects of the enhanced program, but would also serve to unite them all, and, as such, could act as the new public image of the development. Visitors and residents alike would enter into the atrium, either from the street, from underground parking, from the towers, the retail stores below, or either of the churches, and through that introspection would share in an enhanced sense of a surrounding community.

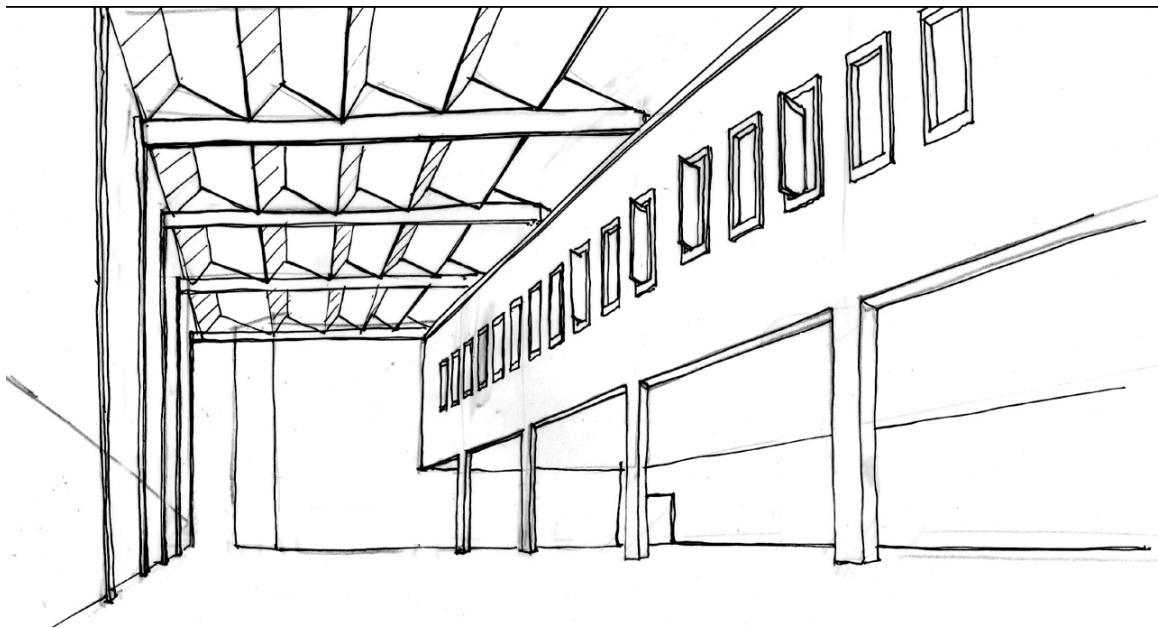
As well as the modern, technological character of the atrium, its systems and glass roof, the reuse and modification of existing buildings within the site represents a not insignificant environmental benefit, as well as a source of character and richness for the project. A consideration in new construction is the embodied energy of new materials, that is the energy that goes into their extraction and production processes. According to Peter Buchanan,

“The common building material with the least embodied energy is wood, with about 640 kilowatt hours per ton...Hence the greenest building material is wood from sustainably-managed forests. Brick is the material with the next lowest amount of embodied energy, four times that of wood, then concrete (five times), glass (six times), steel (fourteen times) and aluminum (one hundred and twenty-six times. A building with a high proportion of aluminum components can hardly be green when considered from the perspective of total life cycle costing, no matter how much energy it might save.” (Buchanan 9)

He then shows that historic buildings are “inherently more adaptable to re-use than modern structures, because they were made to more generous standards and made of more durable material.” They are described as “long-life, loose fit”, in the sense that they are more easily converted to new uses than more specifically designed modern building forms. (Frampton 15) As such, existing buildings on the site are reused where possible. In the case of the two storey



shops facing Duke St., these are preserved more for their historical character than their value, as they do not appear to be of very good quality construction. However, the L-shaped wing of St. Peter's Lutheran will be converted into a long-term care facility in its two upper levels, the lowest level will act as a cafeteria or lounge for members of the church congregation and the care facility alike, there could even be some sharing of facilities with the YWCA facility across the atrium. This integration of different communities is crucial to the competition strategy. The rooms above were previously used for Sunday school, consisting of large rooms on either side of a corridor. These could be converted into smaller bedrooms relatively easily, and residents would have views either of the exterior courtyard of St. Peter's, or the atrium, both would feature operable windows, and there is the further possibility of integrating the heating and cooling systems with that of the atrium space.



The existing wing of St. Peter's United will be renovated to open onto the new atrium.

Residents would be encouraged and would have the freedom to move about the atrium below. It seems as though the interests of the church in creating a sense of community, could be enhanced and emulated by the architecture itself. The architecture would facilitate the creation of a sense of community, and prevent

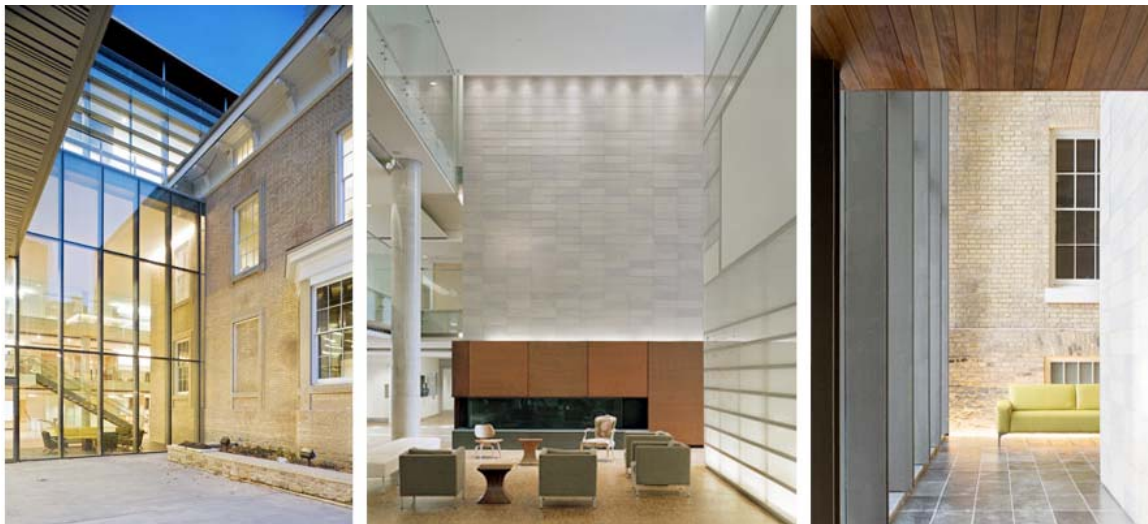
the isolation of groups that traditionally suffer from isolation, or face challenges of integration, such as the YWCA and particularly the senior citizens.

The final reference is the National Ballet School on Jarvis Street in Toronto, designed by Kuwabara Payne McKenna Blumberg and completed in 2005. The school and the condominium towers around it are similar in scale and character to the proposed Four Churches project. The condominium owners paid five million dollars for the entire site, but sold half of it to the school for only one dollar. In exchange the City of Toronto allowed greater density for the towers. The result is a “strong composition of low, mid-rise and high-rise buildings that are clearly invigorated by each other...[setting] a new precedent for ways architecture can charge a site no matter how big or small the footprint.” (Rochon) Like in the Four Churches scenario, two historic buildings have been preserved and integrated into the school; the former Havergal Ladies College and particularly, the exquisitely preserved Northfield House, with its intricate



The National Ballet School on Jarvis Street represents a rich combination of high to low-rise buildings on a complex site.

plaster work, which acts as the backdrop for the “town square”, the metaphoric centre of the institution. As the architects say, “as the space from which all the major support programs radiate and converge – the café, physio department, and Resource Centre – The Town Square embodies NBS’s philosophy to nurture the development of the whole person – body, mind and soul.” (KPMB) Rising three stories, it features a massive fireplace finished in COR-TEN rusting steel, a large digital projection screen, and lounge seating. In this instance, the atrium is not a by-product of a green building mandate, but the main idea of the scheme. The success of the space, and its appointment with furniture and the remarkable fireplace, illustrates the coming of age of the atrium typology. In the Four Churches competition, both churches would be used to frame the atrium space, their exterior facades giving texture and, in the case of Trinity United, a historical character to the interior, lending it even more semblance of a streetscape, rather than a mere interior.

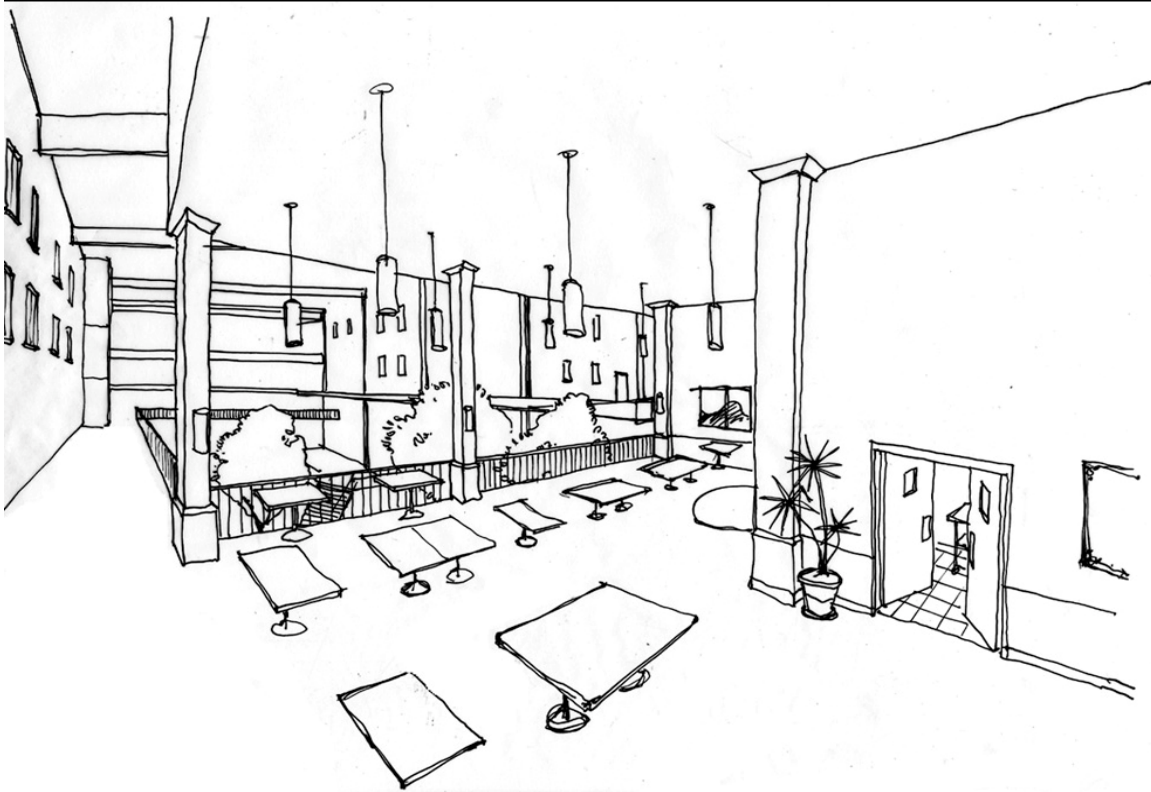


The “Town Square” atrium acts as the focal point of the school complex.

John Hancock wrote that “the continuity of ideas of type, such as they are, and the esteemed examples which have established their identity and assured their cultural resonance, constitute an established line of inquiry in which new work may be effectively grounded.” What are the esteemed examples of an atrium type, or do they exist? Through the award-winning buildings described above, it is possible to see the evolution and the growing prevalence of a type in

Canada that combines traditions of public space and community with the most advanced aspects of environmentally responsible design.

Until now, downtown areas in provincial cities such as Kitchener, as demonstrated by the concerns of the Four Churches congregations, have suffered as a result of suburbanization. Downtowns that were once the economic engine of cities, and destinations for food, entertainment, and shopping, having been emptied of residents and now suffer because they lack the amenities of shopping malls and the ability to cater to the convenience of the automobile, which requires acres of surface parking. There is an array of possible solutions, but as Frampton points out, “90 percent of that which will exist in 20 years time has already been built” (Frampton 16), suggesting that sensitive in-filling and modification, or enhancement of existing city blocks and structures is an effective way of encouraging a renaissance in urban centres. The shopping mall is often vilified as a symbol of all that we dislike about the suburban lifestyle, but in Canada, it is a logical response to living in a climate that is uncomfortably cold for five months out of the year. If the strengths of the shopping mall, in providing a comfortable environment for shopping and other types of entertainment, could be applied to downtown development, groups such as the Four Churches might start to encourage a return to the downtown and their congregations, and the recreation of the communities they were built to serve in the first place.



Rooms of the new long-term care facility overlook the atrium and restaurant.

The atrium is a new building type whose potential in Canada is being just being realized. It represents an opportunity to design dense public spaces that can be used year-round, as such they are perhaps more in the realm of an urban typology, as demonstrated by Hertzberger's referencing the Moroccan casbah in the Centraal Beheer Complex. The complex nature of building programs where in-filling is involved creates the possibility of exciting interior urban spaces. Furthermore, the scale of the atrium, its role as a mediator between the interior and exterior of the building envelope, and the technologies available to architects mean it can play a crucial role in the environmental performance of the building, as well as its social performance. While the charm of the Canadian main street cannot be denied, the injection of lively, focal spaces, rather than linear ones, into a city like Kitchener, combined with the integration of large residential towers, should help reinvigorate these areas. The architects of the National Ballet School wrote that the building "participates in the intensification and revitalization of its urban context and resonates the balance of tradition and

innovation in the art of the ballet by emphasizing an interplay between the heritage elements and the contemporary architecture.” (KPMB) The Four Churches project is a demonstration of the cooperation and shared vision that is necessary in order to help revitalize Kitchener’s downtown. The central atrium that unites the two church facilities with the new residential towers not only provides a desirable, year round interior space, it is also symbolic of the spirit of community that will arise from the Four Churches’ contribution to the city.

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