Precedent and Initiative in Architectural Design:

Competitions Elective Essay Component
UWSA: Student Union Building

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20100136
4 May 2005

The 2005 ACSA/AISC Student Design Competition put forth the unique opportunity to choose any existing University Campus and design a Student Union Building for its students. Working alongside Allan Wilson on a submission, we chose our University of Waterloo: School of Architecture in hopes that it would provide us with the opportunity to expand our understanding of the Cambridge community and find ways to link this community to the school- all while simultaneously expanding upon our understanding of structural steel design.

With a desire to create a successful Student Union Building that could not only provide the students with access to the desired student-related amenities but could expand upon the conventions of steel use in architectural design, we were confronted with the task of finding what exactly the design required and deciphering how these requirements could be accomplished.

Through my architectural exposure to date I have realized that the criteria of designing in the present day (where few formal characteristics of buildings are constantly bound to sacred properties that have been implicitly agreed upon) is quite different from that of designing in the past. In contrast to historical eras, such as classicism, when architecture functioned according to comprehensible and communal principles, the forms of buildings designed by present-day architects are rarely able to be attributed to parameters prescribed by the unified values of a wider society. That said, regardless of the design era or degree of fragmentation in consensus of what merits "good design," precedence in architecture is and always has been present- it is the invariable outcome of an architect being human and living in a built environment.

Originality in design is accomplished not only through the successful play between the specifics of site response, program response and conditioning of user experience through a coherent design, but also by pushing these ideas to unprecedented levels. In order to attain this, one must first begin the extensive task of building a foundation of knowledge and references that can guide their understanding of the sociological and physical contexts for buildings. However, these do not freely merge into interrelated, mutually dependent formal causes. A synthesis of the social morals, broad typological building organizations, ideal contentment and expediency, and constructional practices, pooled with the economy, arrangement of urban & suburban infrastructure and land development requires the will of the architect who instills geometry, scale, proportion, tectonic articulation, materiality, and ordering in an effort to compile the components. Today's architect is looked upon to devise formal techniques that are increasingly difficult to generalize.

My method of designing incorporates an approach which involves attempting to derive organizational and constructional cues from the lifestyle and requirements of those connected in some way to the structure. This could be specific, (such as addressing the needs of an outlined inhabitant in the present day) more general (such as the potential desires of an inhabitant of the future), or broad (such as the experience perceived by a member of the society in which the building exists whom may only ever visually experience the structure from the exterior). In order to accomplish this aspect of the design process it is necessary to research into these areas of connectivity; attempting to envision the structure through the experience of those in-and-around it. This can be accomplished by a conscious effort to understand these relationships on the first account, as well as by understanding existing works of architecture that were successful at addressing the same concerns. However, in addition to (and even in disregard to) this willful quest for precedence, a subconscious level of influence exists. When trying to design the experiences of a building, the architect cannot help but have their own notions as to what would best amalgamate the various aspects of the design.

Looking at the design of The Academic Resource Centre: U of T at Scarborough College Campus by Brian MacKay-Lyons with Rounthwaite Dick and Hadley we were able to search for ways in which an Ontario University building accomplishes some of the types of relationships mentioned in the above approach. Through an understanding of this building we were able to see how architectural design can both meet the requirements of the evolving student body while still satisfying and connecting to the pre-existing university facilities of site context,[1] which is precisely what the introduction of the UWSA Student Union Building would have to accomplish. However, creating unity between buildings that serve the same users is only one aspect of relating to site context. A relationship to the surrounding natural environment is also necessary. In this regard The Scarborough College ARC additionally served as precedence to our design on a tangential level. Although not physically situated on a body of water, the centre's metaphorical design relation to boats also served as interest to us, providing insight into the ways in which a student-oriented programmed building can have connectivity to nautical and water influences[2]; in our scenario the Grand River facing the Student Union Building in Cambridge directly to the East. It was initially this that sparked the idea of having a curving steel roof that symbolically flowed off of the building and into the river like a wave, representing the fluid boundary between the school and community.

On the Scarborough College ARC's interior, the abstract nautical aspects of the program such as "docked elements" connected by circulation alleys and suspended walkways,(P1) designed by MacKay Lyons, arose intrigue and the possibility of evoking similar experiences in the Student Union Building in Cambridge.[3] Moreover, for me personally, the idea of circulation catwalks conjured up memories from my high school experiences of exploring the auditorium catwalks during my participation in extra-curricular activities for school productions- an experience I always considered to be adventurous and unlike any

P1: ARC suspended walkway

attained from other environments I experienced on a quotidian basis.[4] From the triggering aspects of the Scarborough College ARC to my memory of a high school experience of a space representing student creativity and involvement outside of the classroom we were able to deduce sources of precedence that would be working in conjunction to our other insights to create the UWSA Student Union Building.

Working alongside the notion of boats and catwalks previously mentioned and wanting to captivate a user experience not conventionally associated with a university building, we also researched into the design of cable bridges and the use of steel tension members both for support and for the creation of a divider or barrier. [5] Looking at the design of numerous projects, with specific emphasis on the Bloor Street Viaduct's Suicide Barrier; "Luminous Veil" by Derek Revington [6] (P2), an understanding of the unique experience of an unblocked visual connection to a space below while still benefiting from the tangible security of the rods as a barrier in front was influential to us.[7] (P3) Playing off the ways that steel cables support the bridge deck while simultaneously creating a barrier between those on the bridge and whatever may lie below, the steel rods in the UWSA Student Union Building both support the catwalks and stairs by being hung from the ceiling members, as well as divide and protect inhabitants of the catwalks and art gallery area from the adjacent lower areas.
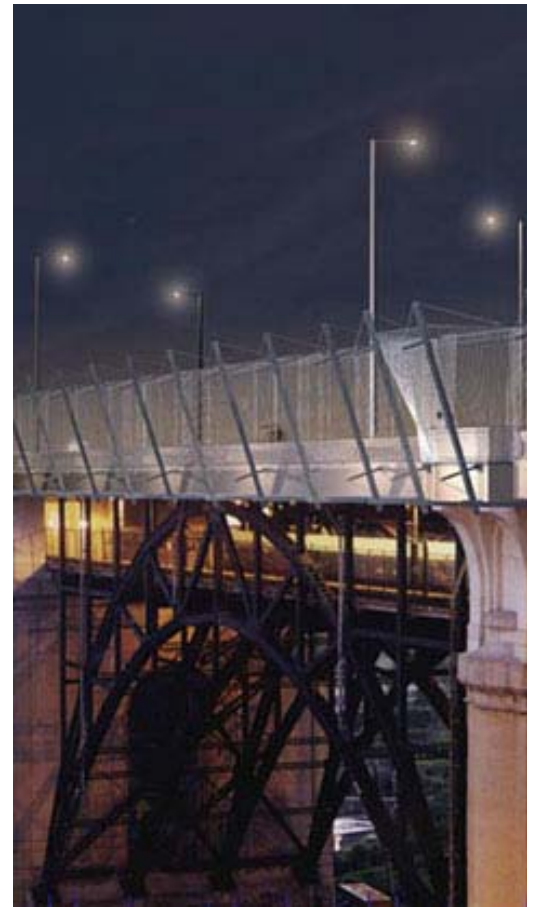
P2: "Luminous Veil"

P3: Veil's Rods

As mentioned, during the design process, the quest was to gain insight into the relationship between the community of Cambridge and the University of Waterloo's School of Architecture. This was particularly important for the design of the student union building since the Architecture plan contains fewer students than the larger prescribed program size accommodates. Seeking a foundation of knowledge and an understanding of the connections between an Ontario university building and its inhabiting city, we found precedence in The University of Toronto Student Graduate Building by Morphesis.[8] This building is located on the perimeter of the U of T campus in downtown Toronto, at a threshold between the urban public and university population.[9] The design not only addresses the boundaries between outside and inside, public and private, exterior and interior but also that between community and university.[10] As with our Student Union Building in Cambridge, the structure is located on a block corner, with two prominent façades.[11] (P4) The use of an extruded perforated screen façade on the buildings South side (5) inspired the creation of our extruded steel slats that act as solar shading on the south side and as a privacy screen for the residential on the north.[12] Their incorporation into the design conveys our attempt to reconcile the typological program with innovative steel elements that provide a new and dynamic aesthetic to the downtown of Galt.

P4: Grad House South-West Corner

P5: Grad House: Screen Façade

With a sufficient foundation for our design approach (given the time constraints), it was possible to not only facilitate but also deepen, challenge and

estrange frameworks of the preconditions of student union buildings. Our resulting proposal can be seen as a filtered representation of contemporary student culture and the conditions of our particular project and site. The balance of these elements is representational of our attempt to render some aspect of the quotidian student routine into something new and distinctive.

Overall, we aimed to clarify our influential precedence and to establish their interdependence and variability while situating them in our site specific social and physical contexts. As we tackled the dilemma of identity implied by the immediate programmatic requirements, physical conditions, and social context of the Student Union Building, we were simultaneously preoccupied with the broader disciplinary predicament of architectural identity. Acknowledging the designers responsibility and privilege as identity-maker in one aspect, and their role as orchestrator and coordinator of distinct forces in another, the attempt of our design was both to provide solutions for the circumstances of the project, as well as use the project as a vehicle through which to elaborate and articulate steel design conventions through formal invention.

Regardless of the sources of precedence that we chose to explore and derive from, there was an influx of influences on our design that cannot be pinpointed or consciously acknowledged- not only by others that experience the design- but by us, the designers ourselves. It is these ambiguous influences, attained from a lifetime of exposure and education that spark the desire to consciously research other sources and amalgamate everything into one; the realized project design.

[1] **Canadian Architect**, by Ian Chodikoff, featuring Academic Resource Centre, University of Toronto, Scarborough, ON, February, 2004

Thring, Mary Alice. 5 Nov 2003, "UTSC Academic Resource Centre opens new frontiers of research, teaching", http://www.news.utoronto.ca/bin5/031105a.asp

[2] **Brian MacKay-Lyons Architect Ltd. Web Page**
http://www.bmlaud.ca/building/institutional/arc.htm
Canadian Architect, July 2002, News item on University of Toronto ARC project, Toronto, ON.

[3] **Architectural Record**, New York, by Terry Whitehead, featuring, Academic Resource Center, University of Toronto at Scarborough, August 2004

[4] Referring to Mayfield Secondary School of the Arts in Brampton Ontario

[5] High Steel: Building the Bridges Across San Francisco Bay
by Richard H. Dillon

Structural Applications of Steel Cables for Buildings
by American Society Of Civil Engineers

A Nation of Steel: The Making of Modern America, 1865-1925 (Johns Hopkins Studies in the History of Technology)
by Thomas, J. Misa

[6] **Contemporary**, London, UK, Carr-Harris, Ian & Yvonne Lammerich Special Summer Issue, Dereck Revington,s Luminous Veil June - August, 2002

Engineering News Record, McGraw Hill Construction Online, by Dan O'Reilly,
3 March 2003, "Toronto Adds Suicide Barrier to an 84-Year-Old Viaduct"
http://www.construction.com/NewsCenter/Headlines/ENR/20030303h.asp

[7] **Eye**, by Ireland, Ann. 1 May 2003, "A suicide-magnet with a view is covered by a Luminous Veil"
, http://www.eye.net/eye/issue/issue_05.01.03/city/viaduct.html

[8] University of Toronto Graduate Student Housing
http://209.15.106.164/pritzker2005/univtoronto.htm

University of Toronto: morphosis- around campus I
http://www.archinect.com/schoolblog/entry.php?id=14867_0_39_0_C152

[9] University of Toronto Graduate Student Housing
http://209.15.106.164/pritzker2005/univtoronto.htm

[10] Morphosis by Thom Mayne

Morphosis Web Page: http://www.morphosis.net/morph.html

University of Toronto Graduate Student Housing
http://209.15.106.164/pritzker2005/univtoronto.htm

News@UofT, by Janet Wong, 8 Nov 2000, "Graduate House opens its doors"
http://www.news.utoronto.ca/bin1/001108a.asp

[11] University of Toronto: morphosis- around campus I
http://www.archinect.com/schoolblog/entry.php?id=14867_0_39_0_C152

[12] **Canadian architect**, by Kapelos, G. K., Nov. 2001, "Learning Experience"

Pictures:
P1: http://www.greatspaces.utoronto.ca/projects/arc.htm
P2: http://www.architecture.uwaterloo.ca/frameset/staff-revington.html
P3:http://www.nickelinstitute.org/multimedia/nickel_and_its_uses/nickel_magazine/archives/2003/October/Viaduct_5_450.jpg
P4: http://209.15.106.164/pritzker2005/univtoronto.htm
P5: http://www.archinect.com/schoolblog/entry.php?id=14867_0_39_0_C152
in trying to design a successful environment we resort to our memory of personal experiences and spaces that have conjured the desired atmosphere, comfort level and ease of spatial use. (whether directly identifiable or not)