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ABBOTSFORD SENIOR SECONDARY SCHOOL
James D. MacConnell Submittal Package
EXECUTIVE SUMMARY

Abbotsford Collegiate is located in the inner city of Abbotsford and was built in 1952. Since then it has developed its own colorful history within the city. The School Board envisioned the school to become a community hub and “neighborhood of learning” site for the inner city students and families in the community. Craven Huston Powers Architects was selected to consider all the options the School District had for their school and the final decision to partially replace the school was the selected option. The fifty year old classroom blocks, shops, cafeteria and office were to be demolished while the newer gymnasium, Abbotsford Arts Theatre, Music Room and Multi Purpose Room were to be upgraded and renovated.
PROJECT DATA

LOCATION 33355 Bevan Avenue, Abbotsford, British Columbia Canada

CLIENT School District No. 34 (Abbotsford)

REFERENCE Mr Tom Louie, Mr Bob Mainman

BUDGET 52 Million

CAPACITY 1100 Students

AREA OF ADDITION 8000 square meters, 86,100 square feet

EXTENT OF RENOVATION Seismic upgrade to gymnasium and theatre. Renovation for new gym entry, public change rooms and corridor upgrades.

PHASE Completed 2012

OCCUPANCY September 4, 2012

CONTRACTOR Unitech Construction Management

ARCHITECT Craven Huston Powers Architects

STRUCTURAL Bush Bohlman & Partners

MECHANICAL JM Bean & Co.

ELECTRICAL Jarvis Engineering Ltd.

CIVIL Central Valley Engineering

LANDSCAPE Craven Huston Powers Architects
Abbotsford Senior High School was built in 1955. At the time Abbotsford was a small, rural town with a population of 16,500. It was known as the hub of the Fraser Valley and the only public secondary school in the area. The school, in its own right, was the hub of education and student life for Abbotsford.

Fourtyfive years later by year 2000, Abbotsford had grown to a large metropolitan community of 118,000. The infrastructure of both the town and the school hasdaged, the core in the throes of needed revitalization and the school needing a fresh injection of energy to keep it relevant to the community and its students.

The school’s location in the tumble down historical core, and its declining condition, were combining to reduce student enrollment population.
Older styled detached suburban buildings are being removed and multifamily developments of mixed quality have emerged adjacent to the downtown core and school.
EXISTING FACILITY & SITE

Existing physical deficiencies in the school included the need for an exterior envelope upgrade and extensive mechanical and electrical renovations. A recent seismic study had concluded major upgrades were required.

The existing school layout was not conducive to learning in the 21st Century. Corridors were crowded, informal gathering space was non-existent (narrow corridors were the only student congregation areas) and the rigid classroom “cell” configurations extended down a long and labyrinthian corridor path. Specialty facilities for shop-work, computers, art and home economics were badly outdated.

Ultimately a decision was made to retain the viable portions of the existing school (Abby Arts Theatre, 2 Gymnasia and Music Room), remove the obsolete portions of the original school and add a new facility to address the observed deficiencies, site access, recognize changed traffic patterns and facility visibility to the community.

When the original school was constructed, a single access drive pulled into a roundabout in front of the school. In the succeeding years traffic patterns and road layouts have altered vehicular flow substantially. The school access had become a crowded, congested backwater hidden from the new community traffic routes behind a series of portables and temporary facilities.
COMMUNITY ENGAGEMENT & PARTNERSHIPS

The Abbotsford School District assembled a design committee team to eventually produce this community facility. The design team was comprised of school administration, maintenance staff, School District energy personnel, librarians, a student group, facilities management, school department managers, teachers, architects and sub consultants as required for specific advice. Over the course of three plus years, this group undertook the following schedule:

- Toured several new secondary schools throughout the province of British Columbia and Washington State.
- Toured community libraries attached to public schools in the Vancouver area.
- Arranged ongoing consultations with all department heads for each area of the school and continued to meet through design, construction and pots occupancy.
- Met and received advice and guidance from student representatives through the design process.
- Expedited the approvals process by liaising with the City of Abbotsford’s special projects team in numerous working meetings.
- Developed design strategies with Fraser Valley Regional Library representatives.
- Members of the committee attended a week long conference at Harvard University on 21st century learning.
- The Sweeney Neighborhood Learning Centre created a subcommittee that established parameters for public groups to locate in the school facility.
- School District personnel developed evaluation criteria for the proposals.
- The committee reviewed submittal for spatial requirements, school fit and the right ‘mix’.
- The committees then met with all successful proponents and further developed space usage design.
COMMUNITY ENGAGEMENT & PARTNERSHIPS

CIVIC STAKEHOLDERS
- Principal
- Department Heads
- Teachers
- Maintenance
- Students

COMMUNITY LIBRARY STAKEHOLDERS
- Regional Library Representatives
- Local Librarians
- School Library Technicians
- Students

SCHOOL STAKEHOLDERS
- Principal
- Department Heads
- Teachers
- Students
- Maintenance

NEIGHBORHOOD LEARNING CENTRE STAKEHOLDERS
- Abbotsford Parks and Recreation
- United Way
- Abbotsford Community School
- Health Centre
- Trinity Western University Counseling
- Abbotsford Community Services

School opening
COMMUNITY ENGAGEMENT & PARTNERSHIPS

1 Sculpture fabrication
2 Student and community survey
3 Sculpture in place

COMMUNITY INPUT

Community engagement was requested for the naming of the school, the library, the learning centre and even the two play fields.

Another sub committee assisted the city of Abbotsford in the selection of a piece of art adjacent to the library. An artist was selected, three maquettes (mini sculptures) were prepared and the public was encouraged to vote at the area libraries. The school body also voted. Tabulated results subsequently provided the finished dynamic artwork.

This questionnaire will help us design the new Abbotsford Collegiate Library Public Art Project

On the list below
Please circle the 10 words that you think should describe this art project.

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<tbody>
<tr>
<td>1</td>
<td>Fun</td>
<td>Thoughtful</td>
</tr>
<tr>
<td>2</td>
<td>Technical</td>
<td>Educational</td>
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<tr>
<td>3</td>
<td>Interesting</td>
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<td>4</td>
<td>Peaceful</td>
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<tr>
<td>5</td>
<td>Unique</td>
<td>Familiar</td>
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<tr>
<td>6</td>
<td>Indoor</td>
<td>Outdoor</td>
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<tr>
<td>7</td>
<td>History</td>
<td>Present</td>
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<td>8</td>
<td>Words</td>
<td>Colour</td>
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<td>Libraries</td>
<td>Abbotsford</td>
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<tr>
<td>10</td>
<td>Story</td>
<td>Idea</td>
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My favourite book ever is:_________________________________________________

Arts are like sports, but for the mind.
After an in-depth selection process, the selected tenants space planning and interior design were undertaken. Shared common areas include the boardroom, kitchen, staff room, storage, washrooms and circulating space.
Interior design, signage and furniture selection all formed a part in relating the Neighbourhood Learning Centre to the school.

**Sweeney Neighbourhood Learning Centre**
COMMUNITY ENGAGEMENT & PARTNERSHIPS

ABBOTSFORD COMMUNITY LIBRARY

1 View from the library help desk
2 Crossover space into the school library
3 Community library location
4 Secondary school library location

With the advent of the community library and the Sweeney Neighborhood Learning Centre the public has been invited to utilize the new facility.
Unique and creative programs are offered at Abbotsford Collegiate that are geared to engage and educate the student body at every opportunity. Where the original school had very few unstructured gathering spaces, the new facility has inviting pullout and commons areas with comfortable seating interspersed throughout. Gone are the days where rows of students line up sitting on the floors with backs to lockers and feet extended into the corridor. In addition to standard classroom layouts, digital presentation centers and learning kiosks have been developed in many of the gathering locations. Many areas of the building itself have intentionally exposed structural systems which help to further inform and educate the inhabitants of the built environment surrounding them.
A variety of gathering pockets, pull-out spaces and corridor seating areas were fit throughout the building to provide casual social break-out areas for the students.
EDUCATIONAL ENVIRONMENT

1 Science lab equipment
2 Science rooms are interconnected with doorways to accommodate teacher and student collaboration between classes and team teaching.

General science labs are provided for typical lessons. The shared science super lab can be booked by teachers for more in-depth and specialized laboratory studies. Links between labs are provided to accommodate team teaching.

3 Science super lab
4 Lab locations on plan
5 Science super lab location on plan
6 Interconnectivity of labs
EDUCATIONAL ENVIRONMENT

There are two distinctly different computer room layouts included in the school. One layout allows for a more traditional focus onto the teacher at the front of the class while the other is set up as island office style cubicles to allow the instructor to move throughout and ‘guide from the side’.

1 Computer lab, cubicle layout. ‘guide from the side’.
2 Computer lab front instruction focus.
3 Computer lab locations
EDUCATIONAL ENVIRONMENT

1 Hairdressing studio
2 Metal shop
3 Shops location
4 Hairdressing studio location

Vocational facilities and shops are provided on the north portion of the main floor to allow service access at the back of the school. The wood shops coordinate with an exterior house building area. The hairdressing studio is stylized in similar fashion to what a student might encounter in real world application.
EDUCATIONAL ENVIRONMENT

1 Teaching kitchen
2 Teaching kitchen
3 Adjacent cafeteria, teaching and casual space with overhead rolling doors onto the exterior courtyard area.

4 Exterior courtyard
5 Teaching kitchen location
6 Cafe / multi-use location
7 Outdoor courtyard

The teaching kitchen has the ability to take regular school instruction at seating around kitchen work spaces and then convert to preparation and cooking in the same space.

The adjacent multipurpose space acts as a cooking teaching/ serving space, a cafeteria, a teaching space or for informal gathering. Two overhead doors are provided to open this area to the exterior and extend its use into the open air environment.
The Abbotsford Community Library and Abbotsford Senior Secondary School Library flow smoothly from one space to another. In depth discussion and design occurred to resolve collection ownership, book rental, community access during school hours, security, safety, staffing and restriction for internet access. Overlapping of shared spaces as designed assisted both libraries with their respective requirements.
The school is organized around a three-storey circular concrete atrium referred to as the rotunda. Corridors and communal spaces radiate out concentrically from the rotunda.
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<tr>
<td>1</td>
<td>School Library</td>
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<td>2</td>
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<td>3</td>
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<td>Public Library</td>
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<td>6</td>
<td>Art Room</td>
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<td>9</td>
<td>Gymnasia</td>
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<td>10</td>
<td>Metal Shop</td>
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<td>Hair design</td>
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<td>Wood Shops</td>
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<td>Classrooms</td>
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<td>14</td>
<td>Technology</td>
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<td>15</td>
<td>Neighbourhood Learning Centre</td>
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<td>16</td>
<td>Main Entry</td>
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**GROUND FLOOR**
 Abbotsford Senior Secondary School
James D. MacConnell Award Submission

THIRD FLOOR

PROJECT ORIENTATION
PLANS - SECTIONS - ELEVATIONS

1 Classrooms
2 Rotunda
3 Neighborhood Learning Centre
4 Science Super Lab
5 Computers

6 Foods
7 Science Classrooms
8 Open to Below
PROJECT ORIENTATION
PLANS - SECTIONS - ELEVATIONS

1 Main School Entry
2 Community Library
3 Sweeney Neighbourhood Centre
4 Rotunda
5 Existing Gymnasia

SOUTH ELEVATION
PHYSICAL ENVIRONMENT

The original school was partially constructed using wood frame, glue-laminated timber and wood decking and poured in place concrete.

During seismic upgrading of the original gym, staple up ceiling tiles were removed and twelve foot deep douglas fir trusses were exposed and refinished.

Sympathetic to the warm, tactile feeling of these materials and in keeping with the province of British Columbia’s Wood First Act, which promotes wood use as a primary building material, the use of wood for the new school portions was desired.

The rotunda roof is a substantial glue-lam and wood decking structure with a 6,800 kilogram steel compression ring at the center, three stories above the floor. Exposed concrete walls, columns and cantilevered coloured concrete ring slabs with glass railings create an interesting play on light and firmness to the space.

A concerted effort was made to open the new school to light views and air with oversized fenestration provided. School orientation enables close views of Ravine park behind the facility and long range views of Mount Baker across wide, green play field expanses.

Interesting colours, materials and textures were selected for creatively shaped teaching spaces, no longer just rectangular classrooms.

Acoustics were considered to enable conversation and thought to coexist in various spaces.

Ease of student flow and accessibility has been provided to all school areas with wide corridors.

Elevators and a garaventa lift, a special lift for changing and toileting, is included in the learning assistance area.

From the remains of the existing school springs a palette of materials that are intended to inspire future generations of 21st century learners.
GENERATING A HUB

The Rotunda is the center meeting space for the school and emerged as a choice organizing element to address the following parameters:

The existing school was to remain open during construction, which limited the available site area for expansion.

The Abbotsford Arts Centre and both existing gymnasium were to remain and form part of the final school plan.

A sense of entry was required.

A gathering space for students was desired.

Administration and overview of the school was to be simplified.

The use of the rotunda as a ‘knuckle’ enabled the addition to radiate onto the preferred location on site.

The knuckle allowed the school to be visually opened towards Bevan Avenue.

The symbolic use of a Hub reflects the history of the area.
A central rotunda adjacent to the existing gymnasium allows for a main entry and focal gathering point. The rotunda is designed to be a converging point for the school and its main corridors, joining the new structure to the renovated gymnasium wing. The rotunda is also designed to allow for the adjoining teaching spaces to open into the space in order to animate the entire school.

The Rotunda’s multiple uses include:

- Concerts
- Presentations
- Performances
- Assemblies
- Eating
- Administering
- Display
- Waiting
- Texting
- Computer Work
- Socializing
- Organizing
- Traffic Patterns
- Connecting
The rotunda’s wood structure pays tribute to British Columbia’s local lumber economy and the provincial government’s Wood First Act.
The Rotunda was envisioned as an inspirational gathering and reflective space.
UPLIFTING TRANSITIONAL SPACES

Transitional spaces are those ‘in-between’ areas that connect the main purpose built rooms. In reality, these spaces end up being used as break-out, hang-out and people-watching places and are as vital in creating a sense of place and inspiration tone that carries throughout the building.
The concentric rings emanating from the rotunda have links that emerge from the building and these have become entry points to the school. Natural materials echo original construction and provide clues about the building’s construction.
Large trusses, existing gluelams and poured in place concrete utilized in areas of the original structure to be retained served as a palette of materials for the new school construction. The rotunda form connected the new to the old seamlessly.
ENVIRONMENTAL SUSTAINABILITY

A decision was taken early on in the design process by the Abbotsford School District to develop this state of the art facility in the most sustainable way possible. LEED Gold registration was set as a minimum benchmark and defined the replacement school project from the outset.

A ground source geothermal heating and cooling system services the new school as well as the existing Abbotsford Middle School which sits adjacent on the same site.

A singularly unique example of providing a learning environment for students targeting sustainable practices includes a stand-alone classroom built completely within and around the geothermal/mechanical plant.

A full description of these and other sustainable features employed at ACS can be found in a very short but insightful presentation by following the link http://prezi.com/6roetcbs8lwf/wip-shared-learning-presentation/?kw=view-6roetcbs8lwf&rc=ref-3471000

Additional LEED Gold features include:

- Parking area infiltration bio-swales to reduce water drainage into the city system
- Green roofs
- High albedo roof surfaces
- Solar thermal panels on the domestic hot water system
- Extensive daylighting, natural ventilation and stack effect ventilation techniques
- High efficiency mechanical units
- Natural material selection including polished concrete floors, exposed wood and steelwork; low-VOC containing paint materials; recycled material content in floor coverings and furnishings
- Water reduction through low-flow volume fixtures.
- Glulam timbers from the demolished portion of the old school were re-furbished and used as seating in the rotunda area, providing students with a material connection to the past.

Signage created throughout the facility highlights energy saving features and LEED design.
Demonstration green roof over library is planted with sedums, rescue grass and potentilla planted in colourful waves of seasonal blooms.
ENVIRONMENTAL SUSTAINABILITY

1. Hot water solar tubes offset energy demands for hot water in the building.
2. Electric charging stations provide the needed infrastructure for staff and visitors to recharge vehicles while at the school.
3. Reclaimed timbers used for benches in rotunda.

The LEED Gold process developed many new standards for the Abbotsford School system. Aware students can observe these features and begin to understand their use and worth.
ENVIRONMENTAL SUSTAINABILITY

1. Geothermal educational viewing area and classroom
2. Exposed geothermal exchange system to be viewed by students and the public
3,4,5 Green initiative educational signage is incorporated throughout the site for education of students and visitors.

The geothermal water building contains water pumps for the geothermal system as well as demonstrates many other of the energy saving equipment in the facility.
RESULTS OF PROCESS & PROJECT

One of the main objectives of the School District with this project was to somehow rejuvenate an aging ‘inner city’ school suffering from declining enrollment, and provide a valued resource that would instill a sense of pride in the community. The words ‘singular’, ‘inspirational’ and ‘community’ were terms that were initially used to describe the desired end result and from the accounts of the stakeholders these objectives have been met. Through Ministry of Education initiatives, an additional 15% of the total floor area was added to the footprint specifically for neighborhood special interest groups (NLC) including non-profit organizations and service groups. Integrating these ‘learning partners’ into the Collegiate atmosphere of the school has had a direct and beneficial impact on the students as they prepare and transition to a life after graduation. Similarly, an additional 10,000 square feet of public library space was added to the school library, through additional partnering and funding by the City of Abbotsford further integrating student and community life paths. This was implemented through a last minute redesign by the consultant team and fast tracked by the construction manager to take advantage of a unique partnering opportunity not seen previously in the district. It is through identified goals and measurable results such as these that project objectives were met and surpassed. Many hours of dialogue with virtually all of the stakeholders (including student advisory teams) at the outset of the project has insured that the end result provides for individual as well as corporate needs. In the months since opening day it has become apparent that the desired effect of re-vitalizing this area of the city has been achieved, as the students and their partners-in-learning take great pride together in the care and use of their new facility.
RESULTS OF PROCESS & PROJECT

School opening