



Kitsilano Secondary School

RENEWAL PLAN

Status Report

May 26, 2010
Prepared by CitySpaces Consulting Ltd.

1. Process and Status Update

Since October 2009, the Vancouver School Board (VSB) has been leading a planning process to develop a Concept Plan for the renewal and seismic upgrade of Kitsilano Secondary School. The Concept Plan and associated costing are required elements for obtaining a Capital Project Agreement with the Ministry of Education that would fund detailed design, planning and construction of the renewed school. Given the school's significant seismic safety issues, the VSB has identified the renewal of Kitsilano Secondary as a high priority. If a Capital Project Agreement is in place shortly, the next phase of the project could commence in the fall of 2010.

Focused consultation with students, teachers, parents, administrators, potential project partners and community organizations, and the City of Vancouver has been a central component of the planning process. An Open House was held in March 2010 to bring the Concept Plan work to the wider community and solicit additional input from the public.

Since March, the following major tasks have been undertaken:

- Review of all public comments and development of a consultation summary report
- Further development of Concept A2
- Modifications and refinements to Concept D2
- Detailed costing of Concepts A2, D2 and F by Advicas Quantity Surveyors
- Additional meetings with:
 - The City of Vancouver Planning Department
 - The Ministry of Education
 - Kitsilano School Planning Team (KSPT)

Meetings to review the current plans and costing are scheduled with the Parent Advisory Committee (PAC), teachers, students, and resident associations for late May/early June. The Concept Plan and costing information will also be posted on the project website prior to being presented to the VSB Planning Committee 2 on June 22nd.

2. Challenges and Objectives

Meeting the Planning Principles for the renewal of Kitsilano Secondary School involves balancing a series of challenges and key objectives:

Timeliness

The school has a high seismic risk. It is important to secure detailed planning funding to upgrade the school as quickly as possible.

Maintaining Safe School Operations During Construction

This is an imperative, but difficult. There is no alternative accommodation available on the west side of Vancouver. Keeping the school open safely and practically during the renewal process results in more complicated and extended construction phasing.

Retaining the 1927 Block (especially elevations, and including floor plates)

This has wide support in the community by heritage interests and the City. Heritage preservation impacts phasing and construction, and carries significant design and cost implications.

Creating a 21st Century Learning Environment

The VSB is committed to a school design that anticipates educational needs and allows flexibility for change over time. This results in some distinctive space configurations that are unfamiliar to many stakeholders.

Neighbourhood Learning Centre (NLC)

Community uses that best complement the Kitsilano Community Centre and the school have evolved through the concept planning process. Design and access issues are key considerations in the Concept Plan options.

Cost

Balancing Provincial requirements with heritage and other features. Provincial guidelines do not include funding for heritage retention and some other elements currently incorporated into the Concept Plan options. This will be a policy issue for the Province to address.

Outdoor Space

The school site is undersized for a secondary school and open space is at a premium in the community. There are different interests with regard to the use of outdoor space. The recreation department and several community and sports groups are in favour of an all-weather field. Others in the community would prefer to have the existing tennis courts replaced on-site.

Sustainable Design

The VSB is committed to meeting LEED® Gold certification, or an equivalent standard, for the project. A number of initiatives will be undertaken during the design and construction of the school, including recycled construction waste, natural lighting, energy efficient systems and fixtures, a high performance building envelope, and aero-thermal heating and cooling. Recovery and reuse of the waste heat from the ice arena will be examined, along with other innovative opportunities, in the detailed design phasing.

Securing City Concurrence

City approval will ultimately be required for the renewal project through development permitting.

3. Three Concepts

At the start of the planning process, a series of six alternatives for the site were explored to determine how best to meet the project's Planning Principles. While the Planning Team, with the advice of the Kitsilano School Planning Team (KSPT), developed D2 as a preferred concept, sufficient interest in Option A2 occurred at the Open House for this concept to also be developed and further evaluated. Concept F, which involves a completely new school, has also been costed, but not explored as extensively as options D2 and A2.

At this time, the Planning Team supports Concept D2 as the preferred concept, which has evolved since the original with a number of modifications following input at the Open House and from the City.

It must be stressed that the concept plans undertaken to date are conceptual. They illustrate the main ways the school may be accommodated on the site and show general distributions of the component uses, volumes, etc. Once a concept plan is selected and funding in place, detailed program and design work will begin. The plan will be developed in more detail within the general envelope established, but components of the detailed design may vary considerably from those currently under discussion. Input at that stage will be particularly sought from teachers and educational staff to ensure that educational and operation needs are met.

The concepts are outlined on the next page.

CONCEPT A2

MAIN FEATURES

- **Area**
The total building area is 17,552 m² – slightly smaller than Concept D2, but larger than Concept F.
- **21st Century Learning Environment**
The concept incorporates all the main features of a 21st Century Learning Environment, including new classroom configurations and a central “commons”.
- **Academic Classrooms**
More academic uses are incorporated into the existing 1927 building envelope. Physical education uses form a separate wing with a freestanding gym.
- **Heritage**
Heritage features, floor-to-floor heights, exterior glazing and elevations facing Trafalgar, West 10th and Larch are retained, similar to Concept D2.
- **Neighbourhood Learning Centre (NLC)**
NLC space is smaller and field potential is narrower than the other concepts, but six tennis courts, or other uses, could be possible.
- **Underground Parking**
Underground parking is proposed. Access would need to be from Trafalgar or Larch. 77 spaces are shown.
- **Main Entrance**
The current main entrance off of West 10th is retained.
- **Outdoor Space**
The plan offers opportunity for outdoor sports courts and a field.

DESIGN COMMENTS

- The commons is central to the school building, and the entrance is wider than that of Concept D2.
- The commons’ relationship to the south portion of the site and field is less attractive than Concept D2. There is a relatively narrow outdoor courtyard framed by the gym and shop areas.
- Corridors are reconfigured from the existing school layout. The public relationship with the northern heritage windows and corridor is lost.
- The library does not have windows or direct outdoor access.
- The gym is close to the Kitsilano Community Centre, but is visually very dominant – especially along Larch – and separates the field space from the school.
- Underground parking access would have to be from Larch or Trafalgar.

CONCEPT D2

MAIN FEATURES

- **Area**
Total Area 17,982 m² – largest of the three concepts.
- **21st Century Learning Environment**
The concept incorporates all the main features of a 21st Learning Environment, including new classroom configurations and a central “commons”.
- **Academic Classrooms**
With the gym is integrated into the 1927 block, there are less academic uses.
- **Heritage**
Heritage features, floor-to-floor heights, exterior glazing and elevations facing Trafalgar, West 10th and Larch are retained, similar to Concept A2.
- **Neighbourhood Learning Centre (NLC)**
Space is provided for educational and community use, including the triple gym, weight room, exercise studio and three multi-purpose rooms. This space is integrated into the school’s east wing and has a unique community entrance. The gym shares an adjacency with the “commons”, and is well integrated into the school’s core area.
- **Outdoor Space**
A small all-weather field is shown as the major open space feature. An alternative use of this space could be six tennis courts. A roof garden is accessed from the second floor of the new wing.
- **Main Entrance**
A ceremonial and event entrance is maintained off of West 10th. The primary school entrance is shown off of Trafalgar.
- **Underground Parking.**
Underground parking is proposed with access off Trafalgar or West 12th.

DESIGN COMMENTS

- The “commons” area has an immediate relationship with the outside, and is open and sunlit.
- The field is visually available to the school as a central space, and is well connected to the Kitsilano Community Centre and Larch.
- The gym space is internalized as a central part of school. Windows are proposed at all three levels. This configuration avoids the visual dominance and largely blank walls of a freestanding gym design.
- The north heritage corridor is retained as it is today – lit by the same windows and with the same views.
- The gym is adjacent to the “commons”, bringing additional activity to the central area.
- The library has windows and direct access to the courtyard.
- The corridor in the new wing is open with views from above and natural light penetration.

CONCEPT F

- **Area**
The total building area would be the smallest of all concepts at 15,738 m².
- **21st Century Learning Environment**
With fewer design constraints, an entirely new school could easily accommodate all the elements of a 21st Century Learning Environment, including a central “commons” that opens onto a sports field.
- **Heritage**
It is assumed that the 1927 Block would be demolished to accommodate outdoor activities such as a playing field.
- **Neighbourhood Learning Centre (NLC)**
NLC uses are integrated into the school.
- **Outdoor Space**
The concept has the largest outdoor field space.
- **Gym.**
The existing large gym would be retained and upgraded.
- **Main Entrance**
The main school entrance is off of West 12th.

This concept has not been developed to the same level of detail as Concepts A2 and D2.

4. Structural Analysis

Two studies were conducted on Kitsilano Secondary School prior to the concept planning process. C.Y. Loh Associates Ltd. assessed the seismic load resistance condition in 2004 as part of the Ministry of Education's provincial Seismic Risk Assessment Initiative. The study found the entire school, with the exception of the 1958 change rooms, to have a high seismic risk. A seismic analysis of the 1927 Block in 2008 (by Pomeroy Consulting Engineers, now Genivar) confirmed the earlier assessment that the building has a high seismic risk and requires an extensive structural upgrade. As part of this planning process two further studies were commissioned:

McGrath Engineering Ltd. – Materials Analysis

McGrath Engineering Ltd. undertook a materials analysis, which included coring and testing. This included determining steel reinforcing details, structural section geometry and concrete compressive strength. Although the general structure and components of the building were established in earlier studies, the actual materials that comprise the structure were not fully known until this planning stage.

The study found there is wide variation in the concrete strengths. The reinforcing steel does not meet modern standards for stress, and there is extensive use of hollow clay tile in the interior and exterior walls and floor slabs.

Genivar – Risk Assessment Analysis

Genivar's analysis confirms the 1927 Block is expected to perform very poorly in a major seismic event. The school lacks any significant seismic lateral force capacity due to a lack of sufficient shear wall and very low shear capacity in the ribbed floor slab. The foundations are inadequate to support expected seismic loads. Both the interior and exterior clay walls are inadequate and would be highly unstable under seismic loads. The wood roof structure is not adequately connected to the building as a whole.

The main stairwell abuts the extremely unstable auditorium block. This could lead to a loss of stairwell use, even in a relatively minor earthquake.

The structural analysis also provides advice on how the existing elevations slabs and structural elements can be retained and upgraded, or replaced while retaining the heritage elevations. However, the analysis stresses the need for further testing of structural elements to confirm the capacity for reuse. The testing will be highly invasive and include examination of elements such as footings. This can only occur after the school is no longer in use.

5. Responding to Heritage

Concepts A2 and D2 address heritage in very similar ways:

- The three-storey east, north and west façades of the building will be retained and restored.
- All existing wood-frame, multi-pane windows will be removed and restored.
- The existing floor levels and floor-to-ceiling heights will be maintained and integrated with the new school.
- The double panelled entrance doors and, where possible, original interior doors will be reused.
- Wooden handrails, steel banisters and newel posts from the original stairs will be retained, where possible.
- A Legacy Hall will be created to provide opportunities to showcase the school's history, as well as its connections with the Musqueam First Nation.
- Surface parking will be removed from its current position (adjacent to the east wing of the 1927 Block) to allow for new landscaping.

In Concept D2, the north heritage corridor will be retained on all three levels for its original uses.

6. Phasing

Continuing safe school operations during construction involves careful phasing and choreographing the movement of the school community between existing, renovated and new buildings. There are significant differences between the three concepts with regard to phasing. Phasing and details are shown on the concept drawings and on the evaluation chart.

Concept A2

Early in Phase 1, 34 portables will be installed on-site to provide classroom space. The 1927 Block is then vacated and the school operates out of the portables and reconfigured shops area. Hazardous materials are removed from the 1927 Block, and a blend of demolition, renovation and new construction occur. This lasts approximately 30 months. In Phase 2, the school moves from 26 of the portables into the renewed 1927 Block. Demolition of the shops area and construction of the new recreation spaces commences. Phase 3 involves the demolition of the old gym and construction of the final portion of the new one. Phase 4 includes the construction of the grounds. The completion of all buildings and grounds is estimated at 57 months (4.75 years).

Concept D2

Concept D2 does not require the use of portables. The school community remains within the existing school buildings without change during the first phase, while a new wing is constructed on the west side of the site and the shops area is renovated for temporary uses. In Phase 2, the school moves into the new school wing and the renovated shops. Hazardous materials are removed, and demolition, renovation, and new construction commence in the 1927 Block. Phase 3 sees the occupancy of the 1927 Block and the school operating in the new building. The shops are then demolished and the grounds completed. The completion of the buildings and grounds is estimated at 54 months (4.5 years).

Concept F

Concept F does not require the use of portables. Phase 1 would be similar to Concept D2 – a new wing is constructed on the west portion of the site while the school continues to use the existing buildings. The school community then moves into the new wing and continues to use the 1927 Block, existing gym and part of the shops area in Phase 2. The remaining shops area is demolished and the balance of the new school is constructed. In Phase 3, the existing gym is renovated and the 1927 Block demolished. Phase 4 involves the completion of the grounds. Concept F is estimated to take 49 months (4 years).

7. Costing

Using the format required by the Ministry of Education for its school projects, costs are summarized as follows:

	Concept A2	Concept D2	Concept F
Total	\$72.2M	\$65.6M	\$53.1M
Selected Highlights:			
• New construction	\$39.2M	\$39.6M	\$35.1M
• Heritage façade	\$3.1M	\$3.1M	~
• Renos interim	\$3.3M	\$3.0M	\$0.75M
• Portables	\$6.5M	~	~
• Underground Parking	\$2.2M	\$2.2M	\$2.2M
Total variances from Concept F	\$19.1M	\$12.5M	~
Area	17,522 m ²	17,982 m ²	15,738 m ²

Excludes reserve costs – possible additional hazmat escalation, etc.

- Concept F generally meets the Province’s cost guidelines for a new secondary school and is therefore viewed as the base case against which other concepts will be measured.
- Concept A2 is **\$19.1M** and Concept D2 is **\$12.5M** – more expensive than Concept F.
- Concept D2 provides a larger building (+ 460 m² than A2 and + 2,244 m² than F). The base construction cost is accordingly about \$400,000 higher than Concept A and \$4.5M higher than Concept F.
- **Provincial costing guidelines contain no allowance for heritage retention.** Specific costs for retaining the elevations of the 1927 Block are currently estimated at \$3.1M for both A2 and D2 (including renovations of all windows).
- Concepts A2 and D2 have an estimated \$3.0 M in temporary renovations as part of the phasing plan. The figure for Concept F is \$75,000.
- The main cost difference between concepts A2 and D2 is under “other”. Concept A is \$6.7M more because of the inclusion of 34 new portables and a covered walkway. The estimated cost of the portables includes the sitting and servicing costs.
- Base building costs drive other costs such as fees, contingencies and reserves because they are calculated as percentages.
- Estimates for the renewal of the existing 1927 Block under concepts A2 and D2 are currently based on an assumption of all new construction (floor slabs, columns etc). If demonstrated to be less expensive, and equal in terms of meeting the safety requirements of the BC Building Code, existing floors can be retained.

Project costs have recently been shared with the Province. At this time, the Ministry of Education’s guidelines limit maximum capital funding to the cost of constructing a new school. The VSB and the Province recognize that Kitsilano Secondary School highlights a major policy issue because of the cost of heritage retention. With the costing information now available, the Province will review the matter.

8. Preferred Concept

There is no perfect concept that meets all the desired objectives of all stakeholders. The Planning Team believes that, on balance, Concept D2 is the best concept for the VSB to recommend to both the Province and the City of Vancouver for approvals. The Planning Team's rationale for this recommendation is summarized below.

- The overall design configuration:
 - A 21st Century Learning Environment is achieved.
 - Strong relationship of the school to the open space.
 - Integration of daylight and outdoor space into the “commons” area.
 - The relationship of the library to the “commons” and its access to natural light.
 - The layout, accessibility, location and use potential of the community spaces, and their relationship to Kitsilano Community Centre. NLC spaces include a weight room, exercise studio and three multi-purpose rooms.
- The concept retains the 1927 Block's key heritage elevations, windows, floor levels, and the north heritage corridor, and relates these elements to the new school.
- There are no portables during construction. The plan maximizes use of the existing school during construction and phasing. Moves during construction are the least complex and quickest of the options, which retain the heritage elevations. This minimizes disruption during construction and enables students to move into new facilities from the 1927 Block while it is renewed.
- The concept has a defensible cost. It is less costly than Concept A2 and provides more total area for school and community programming.

9. Moving Forward

- The Planning Team intends to take the three concepts and cost summary to a series of meetings with teachers, the PAC and community association executives. During the balance of May and June the information will also be made available on the project website, at the school, and communicated to various parties who have expressed a specific interest in the project.
- Discussions will also continue to occur with the City of Vancouver. City staff has expressed a preference for Concept A2, but wish to see underground parking access off Larch and the construction of a lay-by. This aligns with City policy against new vehicle access across bicycle routes (Trafalgar). The City also has Crime Prevention Through Environmental Design (CPTED) concerns about the proposed courtyard from the commons, and has suggested movement of the gym westward to enclose this area. The Planning Team and KSPT do not support these proposed changes to the A2 concept.
- The current target is to report to the VSB Planning Committee on June 22nd. The full VSB Board will then consider this and submit a recommendation to the Province for funding through a Capital Project Agreement. Assuming Provincial approvals are received, a more detailed design process, including approvals through the City, would be undertaken. This will then lead to working drawings and tendering for an estimated construction start in 2012.