



Wembley Public School

Public Meeting #4

Presentation by John Hamalainen

June 16, 2008

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Wembley Public School FCI (Facility Condition Index) An Alternative Viewpoint Public Meeting #4, June 16, 2008

Introduction

First of all I would like to start off by thanking the ARC Committee for allowing me to make this presentation to you this evening.

My name is John Hamalainen and I am a licensed professional engineer. I have been involved with over 3.5 million square feet of building condition assessments, with the majority of that being in the educational sector. I am a former Wembley student and public school supporter. Also joining me this evening is Edward Chiesa, a structural engineer with extensive building restoration experience and also a former Wembley student.

I am here tonight to provide you with an alternate viewpoint on the condition of Wembley Public School. I am not here to discredit any of the work that the Board has done, I am only here to raise awareness that there is more than one way of looking at the Wembley data.

I get many requests for building condition assessments. Some clients come to me asking for the worst case scenario. Often they are applying for capital funds and have only one chance so they want to make it count. For example recently I had a client with a less than desirable building who wanted to build a case with upper management to replace the building. He wanted the audit to include everything possibly wrong with the building. Other clients with limited budgets want us to focus on solutions that will fall within their budget. My point is that building condition assessments can vary a lot depending on the circumstances.

I would also like to state that my review so far has been cursory in nature, and in many cases further investigation is warranted. In most cases, I have not visited the school to review the items in need of repair, and have based my comments on information published or provided by RDSB. One document I would have liked a copy of was the original building condition audit done in 2003. The Board allowed me to view this document at their offices, but wouldn't allow it to be copied.

Facility Condition Index (FCI)

First, I would like to refer you to the Wembley data found in Attachment #1 which was extracted from the Board's website. Before we get into the numbers, I want to review with you the definition of Facility Condition Index (FCI) that the Board is using.

FCI = Capital Projects and Repair Costs / Replacement Cost of School (Attachment #1 - Wembley's Data Page 1)

Using the numbers from the attached data, for 2007-2008, Wembley's FCI is .87 with \$3,958,007 of repair and capital costs.

Reworking the above formula, the replacement value the Board has used for Wembley is

$$\text{Replacement Cost} = \$3,958,007 / .87 = \$4,549,433$$

According to the Wembley data, the school is 35,941 square feet, so the cost per square foot to replace Wembley works out to be \$127 per square foot, which in my opinion falls well short of the replacement value for this building.

A figure that was recently quoted to me by RDSB for constructing new schools is \$210/square foot which is much more realistic. With this figure,

$$\text{Replacement cost for Wembley comes out to be } \$7,547,610.$$

Using this number and the \$3,959,007 of repair costs, the FCI for Wembley comes out at .52 which is considerably lower than .87. **In fact at .52, Wembley is no longer PTR (prohibitive to repair).**

A comment on the FCI calculation that the Board has used. The Board is using all of the items in need of repair including deferred maintenance items, capital improvements and grandfathered code issues, whereas the industry-standard FCI calculation generally includes the deferred maintenance items only. By doing the FCI calculation the way the Board has, inflates the FCI. This is not a big item if you know how to interpret the data, but I think it's worth mentioning.

As far as what Wembley's FCI should be, based on my experience, a building in a good-to-fair state of repair has an FCI of about .12. I would say this is a good number to aim for at Wembley. This would mean Wembley would always have a backlog of maintenance items equal to 12% of the replacement cost, which works out to be $.12 \times \$7,547,610 = \$905,713$ or about \$900,000. Subtracting this from the \$3,959,007, the number the Board has come up with to repair Wembley, we are left with about \$3 Million. **That's how much funding is required to bring the building back to a reasonable state of repair using the Board's repair cost numbers - \$3 Million.**

One final point on the FCI.

(Attachment #2 - typical priority ranking chart)

Typically repairs are ranked according to priority. I have attached a typical ranking that is commonly used. Items with a 1 or 2 priority are more urgent than 3, 4 and 5. For example painting and flooring replacement are normally cosmetic type repairs and can often be deferred until a later date. Similarly, doors that are grandfathered by the Ontario Building Code normally don't need to be changed, so again they would have a low priority. To get a better picture of Wembley's condition in terms of repairs of an urgent nature, the FCI should be recalculated for various priorities.

Please note the numbers the Board has used I'm told haven't been adjusted for inflation so that would have to be looked at as well. The point I'm making is that Wembley numbers should be looked at again and adjustments made based on a number of factors I have mentioned.

Wembley Repairs

Let's now look at repair numbers the Board has come up with which are included on the second page of Attachment #1. Before I get to that, one question I have is, how did Wembley ever get to the state it's in? Why was Wembley not allocated the necessary financial resources over the years to maintain the building in a reasonable state of repair? Why was another school (or other schools) given priority over Wembley? It goes without saying, if you don't spend any money fixing your building it's condition will get worse and worse and actually begins accelerating after you reach a certain point of disrepair. I realize facility renewal funds are limited and the Board has a many schools in need of repair, but there should be a plan for dealing with these repairs instead of allowing the building to get to the state it is presently in.

Now for the specific repairs.

(Attachment #1 - Wembley's Data 2ndPage)

I'm not sure why the Board, when they broke down the repair numbers, used the data for 2011-2012 that total about \$4.2 Million instead of the 2007-2008 numbers that total about \$3.9 Million. The following are the 2011-2012 numbers.

EXTERIOR ARCHITECTURE:

1. Exterior Wall - Brick spalling, moisture penetration, etc \$1,738,890

This repair at \$1.74 Million is the one that has driven the nail into Wembley's coffin. When trying to make sense of this number as it relates to the original audit numbers from 2003, I couldn't get things to add up. Furthermore, in 2004, approximately \$400,000 was spent on the third floor bricks which should be taken into consideration. Because this is such a large and important number in determining Wembley's fate, I believe it should be looked at again and other options explored for solving this problem. I know the Board is promoting "Green Schools" so perhaps the exterior of Wembley could be upgraded with insulation and a new exterior cladding that would reduce energy costs and greenhouse gases.

Breaking News! The exterior of the building was surveyed Saturday, June 14 by myself and structural engineer Edward Chiesa. Based on these observations, we are of a strong opinion that the brick spalling and moisture penetration can be fixed for far less than \$1.74 Million. Because this is such an important item, I would like to invite Ed to say a few words about this.

2. Roofing - Replace membrane over mechanical room \$ 22,473

I think we all agree that the roof should be repaired.

3. Windows - Deficient aluminum windows \$ 344,005

The next big one is windows at \$344,005. Again the windows should be looked at as an opportunity to improve energy efficiency and reduce green house gases. Based on a review of these windows this past Saturday, they could likely be repaired for far less than \$344,000.

4. Exterior Doors - metal door replacement \$ 65,286

The exterior doors, with good maintenance and some patching, could be deferred to a later date.

INTERIOR ARCHITECTURE:

5. Interior Stairs \$ 112,312

There are no details on the stairs indicated so I cannot comment on the urgency of this item.

6. Interior Doors - replace, no fire separation at doors \$ 119,018

The interior doors, while old, could likely be deferred. Furthermore the doors are probably grandfathered from a building code point of view.

7. Ceiling - Gypsum board ceiling needs repainting \$ 33,033

This is likely something that should be done but could be deferred.

8. Millwork - Repair/replace where necessary; repaint \$ 101,501

This was indicated as being in fair condition, so likely it could be deferred.

9. Flooring - Carpet replace with new carpet or VCT \$ 15,507

This is a small item.

10. Painting - chipped/faded; repaint classrooms, corridors, etc. \$ 237,838

This could likely be phased over several years.

ELECTRICAL:

11. Exterior lighting \$ 18,498

The present exterior lighting is energy efficient high pressure sodium which appears to be in reasonably good condition. Good maintenance could defer this.

12. Terminal units \$ 92,492

Could likely be deferred through good maintenance.

13. Emergency lighting \$ 7,785

Small item and life safety related, so it must be dealt with.

14. DX Split and packaged units \$ 6,672

Small item.

MECHANICAL:

15. Washroom accessories \$ 26,426

Further details required.

16. Plumbing fixtures \$ 92,493

By upgrading to low flush fixtures there would be significant water and sewer tax cost savings.

17. Plumbing piping systems \$ 46,249

Further details required.

18. Aboveground utilities \$ 19,820

Further details required.

19. Fittings and equipment \$ 165,185

Further details required.

LAND:

20. Parking lots - replace \$ 64,809

Could likely be patched and deferred for a few years.

21. Walkways \$ 17,479

Not a big item.

22. Sports fields and recreation spaces - site improvements \$ 66,586

Perhaps this could be scaled down or deferred.

23. Soft landscaping \$ 23,440

Something that could be deferred or possibly phased in.

HANDICAP ACCESSIBILITY:

24. Automatic door devices - barrier free - code related \$ 6,294

Should be done.

25. Interior ramps - code related \$ 10,000

Should be done.

26. Barrier free washroom - code related \$ 30,000

Wembley had barrier free washrooms installed in 1991 as part of the elevator project. These may comply with code requirements for the time being due to the fact the building has an elevator to access these washrooms.

27. Parking lot - code related \$ 10,000

Small item.

ENVIRO:

28. Environmental study and repairs \$ 290,000

Further details required, a big item.

29. Ventilation - major repair to rooftop unit (AHU) \$ 337,866

This would be a good opportunity to examine systems that save energy and provide a return on investment. The fact Wembley has operable windows reduces the immediate necessity for this item as operable windows comply with the Ontario Building Code. An simple indoor air quality study should also be conducted to determine the urgency of this item.

Energy Services Company (ESCO)

An energy services company, ESCO for short, is a company that will fund a capital improvement project that has a return on investment. For example, if the light bulbs in a building are changed to a more energy efficient type, there would be energy and operating cost savings. The ESCO pays for the lighting retrofit and gets paid from the energy savings over a period of time.

Presently I am told RDSB uses an ESCO for projects such as this, thereby eliminating the need for capital funds. A number of the projects on the Wembley list could likely be funded, or partially funded, using an ESCO so that factor should be considered in the numbers. Some obvious projects that might qualify are the ventilation system, windows, washroom plumbing fixtures and exterior lighting.

Conclusion

While the numbers for Wembley first appear to be off the scale, they may not be as bad as they look. If a well thought out and systematic approach is used, I'm confident Wembley can be repaired within the financial constraints the Board is faced with. This is a unique one of kind building with good student enrollment numbers so instead of doing what has been done to so many other heritage type buildings in Sudbury, let's fix this one.

I believe the real issue in all of this is whether or not there is serious commitment on the part of the Board to keep Wembley open or has the fate of Wembley already been predetermined.

I would like to leave you with one final thought.

The Adanac Ski Hill was originally looked at and declared prohibitive to repair. When the Friends of Adanac got involved and had a second look, they were able to come up with an affordable plan to repair the facility. As a result, Adanac is now one of Sudbury's "Jewels in the Crown" enjoyed by thousands of Sudburian's. I believe Wembley deserves a second look at as well.

Thank you,

A handwritten signature in black ink, appearing to read "John Hamalainen". The signature is fluid and cursive, with a prominent loop at the end.

John Hamalainen, P. Eng. BDS

ATTACHMENT #1

WEMBLEY'S DATA

FCI = $\frac{\text{Capital Projects and Repair Costs}}{\text{Replacement Cost of School}}$
 (Building Industry Standard to determine the building condition index)

GOOD Range :	FCI (0% to 5%)
FAIR Range :	FCI (5% to 10%)
POOR Range :	FCI (> 10% to 30%)
CRITICAL Range:	FCI (> 30%)
Prohibitive To Repair:	FCI (65% or >)

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RAINBOW DISTRICT SCHOOL BOARD
 Accommodation Review
 5-Mar-08

Utilization Rating		FCI (Facility Condition Index) Rating	
> 79%	Good	> 79%	Good FCI Rating = Less Than 5%
70% to 79%	Fair	70% to 79%	Fair FCI Rating: 5% to 10%
50 to 69%	Poor	50 to 69%	Poor FCI Rating: 10% to 30%
< 50%	Critical	< 50%	Critical FCI Rating: Greater Than 30%

Utilization						Facilities Criteria				
Year of Construction	Size of Facility (Sq. Ft.)	ADE Estimated (Average Daily Enrolment) 2007-2008	OTD (On The Ground Capacity) 2007-2008	% Utilization 2007-2008	ADE 5 year (Average Daily Enrolment) 2011 - 2012	% Utilization 2011 - 2012	FCI (Facility Condition Index) 2007 - 2008	5 year FCI (Facility Condition Index) 2011 - 2012	Cumulative Capital Projects 2007 - 2008	5 year Cumulative Capital Projects 2011 - 2012

Central Sudbury

Wembley	JK-8	1943	35,941	278.5	343	81%	232	68%		\$3,958,007	\$4,209,527
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TOWNSEND DISTRICT SCHOOL BOARD 5 YEAR CUMULATIVE CAPITAL PROJECTS 2011-2012 WENDLEY PUBLIC SCHOOL		
HEADINGS	DESCRIPTION	COSTS
EXTENSION ARCHITECTURAL	Exterior Walls - Brick laying, masonry protection, etc.	\$ 1,728,892
	Roofing - replace roof trusses and roof deck, eaves	\$ 22,473
	Windows - replace all windows with new windows	\$ 344,056
	Exterior Doors - metal door replacement	\$ 65,266
INTERIOR ARCHITECTURAL	Interior Walls -	\$ 112,312
	Interior Doors - replace, no trim separation at doors	\$ 118,516
	Ceiling - gypsum board ceiling needs replacing	\$ 33,029
	Flooring - replace tile where necessary, repair	\$ 101,601
	Painting - refurbishing repainting with new enamel or VCT Painting - new plastered walls, new plasterboard, corners, etc.	\$ 16,607
TOTAL		\$ 237,930
ELECTRICAL	Interior Lighting	\$ 2,877,833
	Emergency Lighting	\$ 19,198
	Formal Units	\$ 32,402
	DX Units & Packaged Units	\$ 7,788
TOTAL		\$ 2,937,221
MECHANICAL	Waterproofing Accessible	\$ 105,497
	Plumbing Fixtures	\$ 20,126
	Plumbing Piping Systems	\$ 32,402
	Aboveground Utilities	\$ 48,216
	Fittings & Equipment	\$ 19,870
TOTAL		\$ 105,108
LAND	Paving Lots - replace	\$ 389,193
	Walkways	\$ 64,800
	Sports Fields & Recreational Spaces - Site Improvements	\$ 17,478
	Soft Landscaping	\$ 66,580
TOTAL		\$ 538,051
HANDICAP ACCESSIBILITY	Automatic Door Devices - Barrier Free - Code Related	\$ 122,956
	Interior Ramps - Code Related	\$ 6,204
	Barrier Free Washroom - Code Related	\$ 10,000
	Parking Lot - Code Related	\$ 30,000
TOTAL		\$ 169,160
ENVIRONMENTAL	Environmental Study and Reporting	\$ 69,791
	Ventilation - Major Repairs to replace units (AHU)	\$ 295,000
	Summary - Improvement of delivery of fresh air ventilation in classrooms	\$ 337,808
TOTAL		\$ 692,599
TOTAL		\$ 6,306,527

ATTACHMENT #2

Typical

Priority Ranking Chart

Priorities

Each deficiency should be assigned a **priority** to indicate its severity and a time frame in which corrective action ideally occurs (the **Recommended Action Date**).

Priority One - Currently Critical or Immediate Concerns (within 1 year):

Should be addressed immediately (including violations of life safety building, and electrical codes)

The prime System is at or exceeding the service life.

Priority Two - Potentially Critical or Short Term Concerns (within 1-2 years):

Should be corrected in the near future to maintain the integrity of the building, including Systems that are functioning improperly or not at all.

Problems that will cause additional deterioration, if not addressed.

The prime System is at or exceeding its service life, but is well maintained to achieve an extended service life.

Priority Three - Necessary - Not Yet Critical or Long Term Concerns (within 3-5 years):

Should be corrected to maintain the integrity of the building, including Systems that have exceeded their expected useful life, but are still functioning.

The prime System is at or exceeding its service life, but is well maintained to achieve an extended service life.

Not Time Critical

A non-time based improvement, upgrade, or recommendation. The Prime System is functioning and does not compromise the integrity of the building within the next five years.

The condition does not comply to current codes, but is grandfathered and thus exempt. No action is required unless significant renovation is performed on the facility.

This option replaces the traditional Priority 4 and Priority 5.

Priority 4 - Recommended (Legacy Priority):

Items that represent a sensible improvement to the existing conditions. These items are not required for the most basic function of a facility; however, Priority 4 projects may improve overall usability and/or reduce long term maintenance.

Priority 5 - Does Not Meet Current Codes/Standards (Legacy Priority):

Items that do not conform to existing codes, but are grand-fathered in their existing condition. No immediate actions are required, although the Items will need to be addressed if any significant work is performed on the building. The amount of work that triggers code compliance is typically at least partially at the discretion of the local building official.