Nelson Schools
Facility Review

2010 REVISION

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

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TRAFALGAR MIDDLE / ELEMENTARY SCHOOL

Executive Summary

In order to complete the initiatives set in motion by the November 2006 "Greater Nelson Schools Facility Review", School district #8 (Kootenay Lake) has initiated a Project Identification Report for Trafalgar Middle School in Nelson, B.C. This report is an update of the report originally submitted in May of 2009.

Overall Facility Utilization in the Nelson area in the 2006/2007 school year was slightly over 80% overall and projected to fall to 74% by the 2014/2015 school year. The closure of A. I. Collinson Elementary and Gordon Sargent Primary prior to the 2007/2008 school year created efficiencies of nearly 85% in 2009/2010. The next phase of closing South Nelson and replacing Trafalgar will increase efficiency in 2013/2014 to over 90%.Not considered in these calculations are the existing Montessori Program at Hume elementary or any Strong Start Programs which would serve to increase these efficiencies in small schools substantially.

The closure of three schools included in this plan not only increases the utilization rates, but significantly improves the operating efficiencies of the District at large. This results from fewer administration and support staff, lower operating costs, and less maintenance. The inclusion of this phase of the work will also result in a far more efficient, sustainable LEED Gold school to house one third of the students in the greater Nelson area.

This Project Identification Report is prepared in response to the Ministry of Education Capital Plan Instructions for 2010/2011 and to the Board mandate outlined in the above noted study from 2006. The contents of this report will identify the School District Facilities Plan as it applies to the Greater Nelson region and includes a review of the suggested consolidation, closure, and grade reconfigurations as well as the options of renovation vs re-construction.

The total grade K to 12 population for Nelson is anticipated to decline by 6.0% over the six year projected enrollment window of 2007/2008 to 2013/2014. At the Kindergarten level however, the same time span yields a 25% growth. The elementary grades appear to be relatively stable already, and it is likely that the enrollment declines in the upper grades will moderate and ultimately plateau shortly after 2015.

The Options for the Trafalgar and for the South Nelson students include the retention of two small schools or the combination of those two schools into one larger, more efficient, and better equipped school. A combined school of this type has precedent in SD #8 as the District already operates two K to 12 schools successfully. In addition, the options look at the alternatives of renovation of two older oversized buildings as compared to the construction of a new facility.

The specific **"Options"** considered are as follows:

- Partial redevelopment of Existing Trafalgar Middle with partial mothballing
- Redevelopment of South Nelson with partial mothballing
- Redevelopment of Existing Trafalgar as Elementary / Middle
- Partial replacement, partial redevelopment of Trafalgar Middle
  Save Music
- Redevelopment of South Nelson with partial mothballing
- Partial replacement, partial redevelopment of Trafalgar as Elementary / Middle
  Save Music
- Replacement of Trafalgar Middle on existing site
- Redevelopment of South Nelson with partial mothballing
- Replacement as an Elementary / Middle on existing Trafalgar site

The following **"Planning Principles"** were applied to these potential options for both suggested grade configurations:

- Optimum relationships of building, parking, drop off areas, and playfields for school and community uses.
- Maximize community use, Neighborhoods of Learning, and additional programs.
- Maximize the ability to accommodate existing and projected enrollments within the stated educational program.
- Minimize construction phasing and impacts on existing school during construction activities.
- Minimize current and future costs for Capital.
- Minimize future costs for Operating.
- Minimize future costs for Maintenance.
- Maximize the adoption of sustainable development principles

Site Evaluation

The South Nelson Elementary site on its own is too small to accommodate the expected facilities for an elementary school of its size and no viable options for significant expansion are available.

Trafalgar Middle School is an undersized site, but is adequate to accommodate the existing three storey or a new two or three storey building, playfields, parking and other infrastructure. Trafalgar will provide adequately for either grade configuration. As a renovation this site is at least adequate on each of the principles. As a new school, it can meet all of the stated principles.

Risks
There are a number of risks included in this project including enrollment changes, geotechnical conditions, hazardous materials, municipal requirements, land consolidation, land purchase and sale valuations, and capital cost variations. These require further identification upon final acceptance of an approved option, but some allowances have been included in the project costs. Further study is required in the Project Definition Report.

Procurement
Procurement Delivery Options are outlined in the report but no one option is identified as the preferred option as the market conditions at the time of the work may dictate the best selection. Further study is required in the Project Definition Report.

Recommendations

The Schools in Nelson have been consolidated to improve utilization but further improvements in accordance with the 2006 "Greater Nelson Schools Facility Review", School district #8 (Kootenay Lake) should be implemented. There are indications that the population will stabilize however at a slightly lower level than present. The selected Option should include the consolidation of both existing schools into one facility designed to accommodate the present and future population.

There is not space at South Nelson to accommodate the combined populations of South Nelson and Trafalgar. Trafalgar Middle School can accommodate the total configuration for grade K to 8 school but significant renovations are required and the planning will be less than ideal. In the case of a new school, it can be accommodated on the present Trafalgar site. The school should be located at the present Trafalgar Middle School site.

A new K to 8 school for Nelson has higher Capital Cost than the renovation of one or both existing schools and is near the lowest on Life Cycle Cost. A new school will have far better safety and security, better energy performance and will be far less disruptive to the education of the students during construction. A new Trafalgar K to 8 should be constructed to accommodate the full population of the South Nelson Elementary and Trafalgar Middle School students.

Further consideration should be given to Partnership opportunities with the City and Community of Nelson as these opportunities and other "Neighborhoods of Learning" initiatives are more thoroughly investigated and developed.

PROJECT IDENTIFICATION REPORT (2010 Revision)

1.0 Zone Facilities Plan

The Greater Nelson Zone of SD #8 now comprises four Elementary Schools (grades K to 5), one Middle School (grades 6 to 8), and one Secondary School (grades 9 to 12). This is a reduction from the 2007/2008 school year of two elementary schools.

These are as follows:

School	location	Utilization 07/08	09/10	comment
• Gordon Sargent	(Central sector of the City)	53%		now closed
• A. I. Collinson	(north of the City)	80%		now closed
• Redfish Elementary	(north of the City)	66%	87.6%	Open
• Hume Elementary	(Northeast sector of the City)	76%	65.5%	Open
• South Nelson Elementary	(Central sector of the City)	65%	92.2%	Open
• Rosemont Elementary	(Southern sector of the City)	79%	54.8%	Open
• Trafalgar Middle School	(Central sector of the City)	58%	78.3%	Open
• L. V. Rogers Secondary	(Northeast sector of the City)	84%	107.3%	Open

NOTE: The above utilization rates do not take into account an existing Montessori program at Hume Elementary nor a planned Strong start program at Rosemont Elementary which would increase utilization

S.D. #8 undertook to do a Facility Review for the Greater Nelson Area of SD #8 in 2006. The School District had identified the high percentage of small schools, mostly with low utilization rates, in addition to some facilities being in very poor condition.
That study is attached as **Appendix A.**
That study initially identified 3 options, and after further review and discussion, rolled out a fourth and ultimately accepted option as follows:

Option 4

- Replace Trafalgar as a new grades K to 8 Elementary / Jr. Middle School,
- Move grade 9 students to L. V. Rogers Secondary,
- Close A. I. Collinson and consolidate into Hume Elementary School and,
- Close South Nelson and Gordon Sargent Elementary Schools and consolidate into the new Elementary / Jr. Middle School.

Three portions of that option that did not involve major capital works have been implemented by the Board of Trustees of SD #8.
Those are:

- Change to Trafalgar to become a grade 6, 7, & 8 'Junior' Middle School with the grade 9 students moving to L. V. Rogers Secondary;
- Closure of A. I. Collinson Elementary with the majority of the students going to Hume Elementary or to Redfish Elementary; and
- Closure of Gordon Sargent Elementary with the students going to South Nelson Elementary.

1.0 Zone Facilities Plan cont.)

The final element of this plan is the replacement of the Trafalgar Middle School with a new Middle / Elementary School for the combine populations of Trafalgar and South Nelson Elementary Schools in a new appropriately designed, efficient, up to date Community school. Upon completion of this element of the plan, only Rosemont elementary remains underutilized. Rosemont does have a fairly stable population and could be better utilized with the inclusion of a Strong Start Program, Pre Kindergarten Program, and / or Full day Kindergarten. Due to its well defined and separate neighborhood and reasonably good condition, there are no plans to further consolidate at this time.
Other points of consideration also reviewed in the 2006 study:

- No further changes to grade configuration are planned or required,
- Alternative sites are difficult to acquire for a middle or elementary school in central Nelson
- Enrollment forecasts support the changes identified in this report,
- Re-configuration has already occurred to support this project, and
- Site and School space requirements will be identified in other sections of this report.

As a part of the process for this project moving forward, SD #8 initiated a “Public Engagement Process” including an open information session on may 5, 2009 to ensure the broadest community support for the final phase of the plan and to elicit suggestions for community partnerships and participation. The background for that session and the outcomes are documented in **Appendix K.**
The most telling response from amongst the many comments is an overwhelming support for an all new school and for the inclusion in that school of a broad range of recreation programs for ALL ages (0 to 100) and for the inclusion of Child Care, Day Care, and Pre-school programs.

2.0 Project Rationale and Scale

2.1 Project Description (new space, renovation, replacement, other)

The Project involves to further consolidation of South Nelson Elementary and Trafalgar Middle School into a single facility in order to further enhance utilization rates and to provide upgraded, more efficient space for the education of students in Central Nelson. Both Trafalgar Middle and South Nelson Elementary scored very low on recent Facility Audits (**Schedule C**) and are in need of either major renovation, replacement, or some combination of the two. The concept of combining the schools into a single "school within a school" presents efficiencies in terms of facilities, use and availability of land, staffing costs, and operating costs.

2.2 Educational Program, long term validity

The present grade structure for Central Nelson, in particular the implementation of a grade 6, 7, & 8 Middle School, has been reviewed and adopted by the Board of Trustees of School district #8 as being the most appropriate model for the Greater Nelson area students in accordance with the attached "Educational Rationale", **Appendix B**. While being marginally different in terms of grade structure from a traditional elementary school, it offers the advantage of providing the team teaching and explorations work that define a middle school curriculum. In addition, a single larger school can offer more common areas for all students and for integration of Community programs.

2.3 Update enrollment forecasts and capacities

The enrollment forecast for the Nelson Area schools is attached as **Appendix C**. Assuming this project could be completed for the 2013/2014 school year, and that the projections going forward from that date stabilize as anticipated, a school designed for 40 FTE K, 400 200 gr 1 to 5, and 450 gr. 6 to 8 will operate at nearly 100% utilization. There will remain some lower utilization rates at Hume, Blewett, and Rosemont Elementaries, but in small schools these may be fully offset by the operation of Pre-schools, strong start, or other community initiatives.

2.4 Estimate required area of facility(ies) (DAS)

As stand alone schools, without consideration of Pre-school, or Strong Start, South Nelson Elementary at 40 FTE K + 200 grade 1-5, would require 2210 sq.m. Trafalgar Middle School at 300 El +150 Sec, would require 4650 sq.m. for a total area of 6600 sq.m. (See Design Aid Sheets **Appendix D**) Efficiencies in planning and use could reduce the required area in a combined school by 10% or more. In addition, all site facilities and building systems would be far more efficient.

2.5 Confirm Site area req's.

The site area requirement for a 200 student elementary school is for 2.0 ha.
The site area requirement for a 450 student middle school, is for 2.6 ha.
Both the existing South Nelson site and the Trafalgar site are significantly undersized at 0.714 ha. and 1.446 ha respectively. Through the use of combined playfields and parking with a two or three storey structure, it is feasible to build the combined K to 8 school on the Trafalgar site.
The South Nelson site is inadequate to meet the needs of the current school in a two storey configuration and is not feasible for the construction of either a new elementary or a new middle school.

3.0 Review of Development Options

3.1 Planning Principles

- Ensure optimum relationships of building, parking, drop off areas, and playfields for school and community uses.
- Minimize construction phasing and impacts on existing school during construction activities.
- Maximize the ability to accommodate existing and projected enrollments within the stated educational program
- Minimize current and future costs for Capital, Operating, and Maintenance.
- Maximize the adoption of sustainable development principles

3.2 Physical Analysis

See Condition assessment and renovation reports included in **Appendices E, F, G, H**

.01 Long List - Trafalgar

T-1 Redevelopment of Existing (1) options
Full renovation

T-2 Partial replacement, partial renovation of Existing (2) options
Save gym, Poor location on site
Save Music

T-3 Replacement on existing site (3) options
One storey (footprint too large)
Two storey
Three storey

T-4 Replacement on new site
No adequate sites available in this area

T-5 Additions to neighboring schools
No adequate space for additions at neighboring school

.02 Short List - Trafalgar

T-1 Redevelopment of Existing with partial mothballing

T-2 Partial replacement, partial renovation of Trafalgar (2) options
Save Music

T-3 Replacement on existing site as 2 or 3 storey

.03 Long List – South Nelson

SN-1 Redevelopment of Existing (1) options
Full renovation

SN-2 Partial replacement, partial renovation
No viable option

SN-3 Replacement on existing site
Inadequate site area

SN-4 Replacement on new site
Include with T-4

SN-5 Additions to neighboring schools
Include with T-1 (existing space available)

3.2 Physical Analysis (cont.)

.04 Short List – South Nelson

SN-1 Redevelopment of Existing with partial mothballing
Mothball two classrooms
SN-4 Replacement on new site
Include with T-4
SN-5 Additions to neighboring schools
Include with T-1 (existing space available)

.05 Combined Short List

1.0 Partial redevelopment of Existing Trafalgar Middle with partial mothballing
Redevelopment of South Nelson with partial mothballing

2.0 Replacement of Trafalgar Middle on existing site
Redevelopment of South Nelson with partial mothballing

3.0 Redevelopment of Existing Trafalgar as Elementary / Middle

4.0 Replacement as an Elementary / Middle on existing Trafalgar site

5.0 Partial replacement, partial redevelopment of Trafalgar Middle
Save Music
Redevelopment of South Nelson with partial mothballing

6.0 Partial replacement, partial redevelopment of Trafalgar as Elementary / Middle
Save Music

3.3 Financial Analysis

.01 Capital cost,

The Capital Cost of each option including "below the line identified Risks" as calculated by Spiegel Skillen and Associates including allowances for Building Permit, DCC's, Off Site costs, Site Development, Parking and Drop Off areas, Building Construction, Site Preparation, Demolition, Temporary Accommodation, Hazardous Materials removal, LEED Gold, Fees, Contingency, and Equipment is attached as **Appendix L.**
The Options rank, in order of cost from lowest to highest, as follows:

Option 1.0 –	Renovated Existing Trafalgar Jr. Middle, Existing So. Nelson Elem.	$25,081,499
Option 2.0 –	Replacement Trafalgar Middle, Existing So. Nelson El.	$29,514,689
Option 3.0 –	Renovated Existing Trafalgar El./Middle	$18,138,499
Option 4.0 –	Replacement Trafalgar El/Middle	$26,552,231
Option 5.0 –	Replacement Trafalgar Middle, retaining exist Music Rm. Renovated So. Nelson El	$28,884,934
Option 6.0 –	Replacement Trafalgar Elem / Middle, Retaining exist Music rm.	$25,503,824

3.3 Financial Analysis (cont.)

.02 Life Cycle Costs

The Life Cycle Cost of each Option as calculated by Spiegel Skillen and Associates is attached as **Appendix L.** These are based on past operating costs for the school and on the expected efficiencies in those operating costs going forward for renovated or new schools. The Life Cycle costs have been calculated at years 5, 10, 20, 30, and 40 and brought back to 'net present value'. ("Below the line" factors are excluded from this analysis)

The Options at forty years, rank in order of NPV cost from lowest to highest, as follows:

Option 6.0 -	$31,848,269
Option 3.0 -	$32,108,692
Option 4.0 -	$33,642,121
Option 5.0 -	$42,844,526
Option 2.0 -	$47,157,574
Option 1.0 -	$48,333,851

3.4 Evaluation of Options

The evaluation of the various options is in part based on objective criteria; ability to accommodate enrollments, capital cost, and life cycle cost and subjective criteria: Planning principles, community involvement, and sustainability. Applying a numerical value itself would be a subjective exercise and to have any validity would need broad based School District and Community input. The "Summary" values shown below should only be used as an indicator of the relative values of each Option. Other criteria that are not included in this evaluation may have priority in some cases.

Comparative Ranking of Options	Accommodation of Playfield access, Parking, Drop Off	Maximize Community Use, Neighborhoods of Learning, & additional programs	Accommodation of existing and projected enrollments	Minimize Phasing	Minimize Capital Costs	Minimize Operating Costs	Minimize future AFG Costs	Maximize Sustainable Building Principles	Summary
Option 1.0 Partial redevelopment of Ex.Trafalgar Middle and of South Nelson Elem with partial mothballing	M/L	M	H	L	M	L	L	M/L	M/L
Option 2.0 Replacement of Trafalgar Middle on existing site and redevelopment of South Nelson	M	M/H	H	M	M/L	M/H	M/H	M/H	M/H
Option 3.0 Redevelopment of Existing Trafalgar as Elementary / Middle	M/L	M/L	M/H	L	H	M/L	M/L	M/L	M
Option 4.0 Replacement of Trafalgar as Elementary / Middle	H	M/H	H	H	M	H	H	H	H
Option 5.0 Partial replacement, redevelopment of Trafalgar music room, redevelopment of South Nelson	M/L	M	H	L	M/L	L	L	M/L	M/L
Option C-6 Partial replacement, redevelopment of Trafalgar music room, as an Elementary / Middle on existing Trafalgar site	M/H	M/H	H	M/L	M	M/H	M/H	M/H	M/H

3.4 Evaluation of Options (cont.)

- **optimum relationships of building, parking, drop off areas, and playfields for school and community uses.**
  Only the new Elementary / Middle Option really meet these needs adequately. The existing Trafalgar School is fair and could be improved but So. Nelson is poor and very difficult to improve.

- **Maximize community use, Neighborhoods of Learning, and additional programs.**
  The renovation Options for both schools result in minimal surplus space available for community use and programs, but the space is inconvenient and will require renovation. A new school can be designed to optimize the full day use of the school by the community. If community capital funds are available, the best use of a combined school can be achieved.

- **Maximize the ability to accommodate existing and projected enrollments within the stated educational program.**
  All options have the ability to meet the current and projected enrollments. The renovations to two individual schools results in significant surplus space that still consumes energy and operating resources. This space could accommodate future growth should it materialize.

- **Minimize construction phasing and impacts on existing school during construction activities.**
  Both renovation projects will involve significant a degree of phasing or temporary accommodation as all students cannot be placed in alternate schools. Due to the slightly greater extent of renovation, Option 3.0 is slightly worse than Option 1.0. For Options 5.0 and 6.0 will also impact the existing school with some phasing and restricted use of the site. The playfields will not be available during construction under Options 2.0 and 4.0 and the students will need alternate accommodation for physical education.

- **Minimize current and future costs for Capital.**
  See 3.3 above.

- **Minimize future costs for Operating.**
  See 3.3 above. In addition, Options 3.0, 4.0, and 6.0 reduce the number of schools in the Nelson area with attendant reduction in administration, busing, supervisors, and custodial.

- **Minimize future costs for Maintenance.**
  Ongoing maintenance costs (AFG funding) for replacement and repairs will be lowest over the first ten to fifteen years of operation in a new facility.

- **Maximize the adoption of sustainable development principles.**
  While some sustainability principles are harder to incorporate into existing buildings, there is the inherent efficiency of retention of the existing structure and components that have not outlived their useful life.

4.0 Seismic

Due to the low seismic zone in Nelson, this project is not deemed to be a high priority project for a Seismic upgrade. In the event of major renovations to the existing school, some seismic work will likely be required including structure and the restraint of other systems within the school.
For a new school, seismic design in accordance with the current edition of the British Columbia Building Code will be fully included.
See also the structural report in **Appendix F**.

5.0 Partnerships

5.1 City of Nelson

The City of Nelson has indicated their willingness to assist in the consolidation of the lots, streets, and lanes underlying Trafalgar Middle School into a single property under the ownership of SD #8. Existing services may also be relocated or protected by easements as a part of this work.

The City is also interested in participation in a “Neighborhoods of Learning” initiative. The exact nature and terms of such a partnership are not defined at this point, but a certainly the subject of on-going discussions.

5.2 Other

It is hoped that as a result of the recent Public Engagement Process, other community agencies will come forward to participate in the project that evolves from this planning process.

6.0 Procurement

All conventional modes of procurement have validity in differing circumstances and for different types of projects.
In terms of 'Value for Money' all of the procurement models have validity in time and place dependent on the needs and priorities of the owner, and the state of the economy and construction industry in the region.
Risk is inherent in any business relationship. Risk invariably has a cost associated with it and the party taking the risk will expect to be compensated in the event of a loss. To that end, risk transfer implies that an owner transferring risk to a builder will ultimately pay for that transfer in terms of up front cost, reduced scope of work, or reduced quality.
Analysis of the levels of risk associated with project Procurement should be evaluated immediately prior to the decision to proceed with the project.
Given that the timelines between the preparation of this report and the procurement process for this project are unknown, it would be unwise to attempt to predict the economic climate, value of the various processes, or the degree of risk inherent in the cost or outcomes at this time. The procurement method for this project should be determined closer to the actual date of construction.

6.1 Design, Bid, Build, (DBB)

Description

Conventional procurement with design team engaged by the owner. This system involves significant user input and reaction to design solutions which are fully developed and technically documented by an experienced design team familiar with the type of construction and the availability of specialized trades in the region. The designs are fully documented prior to the Bidding Phase and subsequent Construction Phase.

Value for money

When the building is a common type of construction, there is an adequate supply of qualified general and trade contractors with the capability of constructing the building in question, the cost of construction is stable and predictable, and there are no other extenuating circumstances; DBB likely gives the most competitive pricing and efficient method of construction. There is no incentive to extend the project timeline and standardized contracts allow appropriate scrutiny and flexibility for changes and adaptations.

Risk

There is a risk factor for the owner in DBB in the first instance that the project may not be designed within the budget. Cost, scope, and quality control during the design stage is critical to ensure that all three elements are given due consideration throughout the design phase. Re-design after the bidding phase is time consuming and usually does not result in the most economic results. In construction it is incumbent on the owner and design team to ensure that all design criteria and specifications are met.

6.0 Procurement (cont.)

6.2 Construction Management (CM-pure)

Description

CM-pure involves the engagement of a Construction Manager, usually concurrent with the design team to advise on the technical and constructability issues concurrent with the development of the design in a similar manner to the design, bid, build, system. The construction manager is then responsible for engaging each trade contractor separately on behalf of the owner, and for coordinating and ensuring that all parts of the work come together.

Value for money

Pure CM is most beneficial when the construction is unusual, the supply of general and sub-trade contractors suspect, the scope of work or budget is not fully identified, or where there are other extenuating circumstances. Due to the progressive manner in which CM is usually carried out, the scope or budget may require adjustment during the construction process.

Risk

The risks in CM are significant in that the final costs may remain unknown till the end of the project, and in order to maintain a budget, the scope of work may require alteration. On the other hand, where the scope and or budget may be ill defined, there is significant opportunity for adjustment to meet the goals.

6.3 Construction Management 'at risk' (CM-at risk)

Description

This is identical in the first instance to CM-pure except that at some point in the process, after design, the CM agrees to a fixed lump sum price agreeable to both parties for the total completion of the project.

Value for money

In truth, this is an adaptation of DBB and pure CM. Generally, once the design is nearly complete, the CM can begin pricing, adjustments can be implemented, trade costs fixed, and the CM can enter into a fixed price contract for completion. This allows for the teamwork of designer and contractor working in union as in pure CM with the security of price as in DBB.

Risk

While this method reduces the risk associated with contractor bids that are over budget, the construction period risks still remain and vigilance is necessary. There is still a risk that the budget may be inadequate for the scope of work in unusual circumstances.

6.0 Procurement (cont.)

6.4 Design Build (DB)

Description

A common procurement model for many simple buildings in the private sector, for the Canadian Armed Forces, and more recently for some major school facilities. In this model, a detailed procurement package is prepared by a multidisciplinary team on behalf of the owner with the legal, educational program, space requirements, and minimum building system requirements all spelled out for the proponents. The proponent is responsible for preparing the design, the space plans, the technical requirements, and all design and construction costs as part of a two stage Request for Proposals.

Value for money

In a DB contract it is incumbent on the owner to prepare a complete program of specific requirements, but the more open that program is, the more opportunity for innovation on the part of the DB proponents. A highly detailed proposal request reduces the opportunity for innovation on the part of the proponents and requires far more detailed responses to the request.

Risk

Inadequate detail in the request document may mean that the end product does not meet the owner's needs. On the other hand, a highly detailed request document may begin to look very similar to a DBB set of documents. To take full advantage of this system, the owner should be prepared to sacrifice choice and selection for cost savings and innovation as changes after acceptance will likely carry high premiums.

6.5 Public Private Partnerships (3-P)

Description

3-P projects vary, but take Design Build one step further in that the proponent also often agrees to operate part or all of the facility on behalf of the owner for a given period of time.

Value for money

Often the capital cost of construction is far overshadowed by the annual operating costs of a facility. It is incumbent on a 3-P proponent to consider all of the facility costs, well beyond simply the cost to build. This can be very beneficial to an owner wanting to provide a facility and to minimize the on going cost of operation and / or to keep the facility 'off the books' until a later date. It is still critical for the owner to fully describe not only the capital program requirements, but also the operating requirements over the life of the agreement.

Risk

The transfer of capital and operating costs from owner to proponent in a 3-P project carries some of the risks and rewards of a DB project but significantly increases the risks to the ultimate user, dependant on the contract for services. There may be unwanted limitations on facility use and programming for projects of this type.

7.0 Financial Plan (Business Case)

7.1 Estimate of total project costs

(Appendix L)

7.2 Capital Cost avoidances

.01 Annual capital

- There are numerous systems, equipment, and finishes in both schools that are near the end of their useful life. Available AFG funding will be insufficient to meet all of these needs. Renovation or replacement will avert these expenditures
- Much of the door hardware is in need of replacement to reduce ongoing maintenance.
- New flooring will reduce custodial costs.
- Temporary accommodation

  There is no temporary accommodation for existing populations required at either of these schools within the planning time frame

.02 Estimated long term operating cost implications including LCC's **(Appendix L)**

.03 Identify Local funding contributions (sale of surplus properties or other revenue streams)

- Potential sale of South Nelson Elementary,
- Possible sale of A. I. Collinson elementary,
- Potential sale of Wynndell Elementary
- Potential sale of old Crawford bay K-12 site

  Note: These properties do not have current appraisals

.04 Detailed budgets from Development Options **(Appendix L)**

.05 Analysis that project fits within MOE unit rates and other supplementary cost allowances **(Appendix L)**

.06 Analysis that site development fits within MOE rates and other supplementary cost allowances (**Appendix L)**

.07 Identification of the scope of renovations and upgrades to prepare realistic cost estimates **(Appendices E, F, G, & H)**

8.0 Risk Management

8.1 Identified Risks to Scope, Cost, or Schedule

.01 Enrollment
The scope of this project has been identified in terms of the expected requirements for education in Nelson based on enrollments and on the basis of the one or two schools. Enrollment projections are subject to future change, but in all options there is the potential to accommodate future growth. Further declines in enrollment are possible, but Provincial and District projections indicate a leveling or slight increase in population from about 2013 forward.

.02 School configuration
School District no. 8 has established the grade 6-7-8 Middle school configuration as the basis for the future education of students in greater Nelson.

.03 Partnerships
The community of Nelson owns much of the property underlying Trafalgar Middle School. The City has indicated a willingness to sell this land for $1 to SD #8, but this could be subject to changes in local priorities. .

.04 Construction costs have changed rapidly over the last 7 to 8 years. Rapid inflation in costs followed a long period of relative stability over the 90's and into the early years of this decade followed by a period that saw construction costs more than double. Costs have retracted significantly in the last year and further reductions are possible. Volatility is likely to remain a hallmark of construction in the next 5 to 10 years. As this project moves forward, budgets will require continued review. No escalation contingency is included in this report.

.05 Further structural assessment of the existing structures is required in the Project Development Report to fully determine the extent of upgrades to these buildings. Some upgrades are included in the budgets, but due to the possible variation from expected conditions, the work may be more extensive. Invasive investigations would be required. A financial contingency is included for this work.

.06 Further Geotechnical work is required in the Project Development Report to determine the full extent of requirements for foundations. The geotechnical risks are deemed to be low to moderate and no contingency is included for this work.

.07 Detailed review of the Off Site and site servicing requirements of the City of Nelson is required as part of the Project Development Report. Due to known and unknown servicing issues and the difficulty associated with off–site improvements to the steeply sloping site, a financial contingency has been included for this work.

.08 A Demolition Report to fully identify the extent and cost of Hazardous Materials Abatement is required as part of the Project Development Report. Due to known and unknown asbestos and other hazardous materials, a financial contingency has been included for this work.

9.0 Summary and Recommendations

The Trafalgar Middle School and South Nelson Elementary School are both significantly underutilized and there is little evidence to suggest that this will improve significantly. There are indications that the population will stabilize at the elementary level, and ultimately at the middle and secondary levels. The selected Option should include an improvement in utilization for Nelson combined with a reduction in ongoing operating and maintenance. The consolidation of both existing schools into one facility designed to accommodate the present population will provide the maximum in efficiencies.

There is not space within the existing So. Nelson School or on its site to accommodate the added grades 6 to 8. Trafalgar Middle School and site can accommodate the total configuration for grade K to 8 school and is a feasible option as a renovated or new school. In the case of a new school, it can be accommodated on the present site. No other sites are available in the greater Nelson area for a school of this size.

With the exception of the renovation of Trafalgar to an Elementary/Middle school, the capital costs of all of the options fall into a fairly tight range. The Life Cycle costs have two tight groupings at the high and low end. A new K to 8 school for Nelson has the third highest Capital Cost, and the third highest Life Cycle Cost of the Options studied. This option rates highest on a number of other criteria however and allows for the best reduction in number of sites and best utilization of facilities.

A new Trafalgar K to 8 should be constructed to accommodate the population of So. Nelson Elementary students and the population of the Trafalgar Middle School students.

Further consideration should be given to Partnership opportunities with the City and Community of Nelson.

SCHEDULE A

Financial Summary form

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

FINANCIAL SUMMARY FORM - OPTION 4.1

School Name:	Trafalgar Elementary/Middle School	
Ministry Project #:		
Project Description:	Renovation and Partial Replacement	
Allowable Building Area (m^2)		
Total Allowable Area	6,942	640 capacity elementary middle school
Less: Previously Existing Space	6,227	
Add: Area to be Demolished	6,227	
Area of New Space	6,942	
Allowable Area of Renovations	0	
Unit Rate for Construction as per Ministry Guidelines($/$m^2$)		
New, using 2nd Quarter 2009 Location Factor	$2,770.58	
Maximum Allowable Budget (Including 1.6% GST)		
Site Acquisition	$0	
Building Permit and DCC	$186,701	
Offsite Costs	$0	
Site Development	$650,867	
Supplementary Site	$350,000	
Construction - New	$19,233,384	
LEED Gold (3%)	$577,002	
Renovation	$0	
Supplementary Building	$529,295	
Fees	$2,080,703	
Contingency - Construction	$640,216	
Equipment	$342,394	
Other - Portable Relocation	$0	
Total Project Cost	**$24,590,562**	
RESERVE ITEMS		
Escalation Reserve to effective date of construction	Excluded	
Municipal Requirements	$500,000	
Removal and Disposal of Hazardous Materials	$500,000	
Geotechnical Requirements	$577,002	
LEED Gold (2%)	$384,668	
Total Reserve Items	**$1,961,669**	
Total Project Cost including Reserves	**$26,552,231**	

FUNDING SOURCE		
Capital Plan - Above the line	$24,590,562	
Capital Plan - Below the line	$1,961,669	
Capital Reserve	$0	
Restricted Capital Reserve	$0	
Local Capital Reserve	$0	
Annual Facilities Grant	$0	
TOTAL FUNDING ENVELOPE INCLUDING RESERVES	**$26,552,231**	

	Description	Cost Breakdown			
1	Site Acquisition	1	l/s	Excluded	$0
2	DCC's				$0
3	Building Permit	1	l/s	186,701.27	$186,701
4	Offsite Cost Allowances Comprising:				$0
5	Site Development Comprising:				
	New Building on Existing Site	1	l/s	650,867.00	$650,867
6	Supplementary Site Allowances Comprising:				
	New playfield where existing playfield is displaced	1	l/s	300,000.00	$300,000
	New paved area where existing paved area is displaced	1	l/s	50,000.00	$50,000
7	New Construction Comprising:				
	Replacement ($1,050 x 1.05 x 2.513)	6,942	m2	2,770.58	$19,233,384
	LEED Gold (3%)	1	l/s	577,001.51	$577,002
8	Renovation Comprising:				$0
9	Supplementary Building Allowances Comprising:				
	Demolition and disposal of existing building	6,227	m2	85.00	$529,295
10	Equipment				
	Replacement	1	l/s	342,393.76	$342,394
11	Fees Comprising:				
	Replacement - 9.75%	1	l/s	2,080,703.35	$2,080,703
12	Construction Contingency Comprising:				
	Replacement - 3%	1	l/s	640,216.42	$640,216
13	Other Comprising:				$0
	Total Estimated Budget - Option 4.1				**$24,590,562**
	Total Area = 6,085m2				

SCHEDULE B

DESIGN AID SHEET FOR SELECTED OPTION

New Trafalgar Middle / Elementary School
K-40 + 425-El + 150-Sec

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

New Trafalgar Elementary / Jr. Middle School — Option 4.1

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #1

Grades: K to 8

SCHOOL NAME: Trafalgar Elementary / Middle — Facility Code: _____ — Date: 2-Jun-10

DISTRICT: SD #8

School Capacity							
	*Nominal -	E	500	S	150	K 40	Total Elective Modules: 1
	*Operating -	E	440	S	150	K 38	

This sheet is for use in the design proceedures in PART 2 of the building manual.

Agreed Nominal / Operating Capacity:

Ministry of Education — Date

PART 1 - ACADEMIC/VOCATIONAL

Space Function	1A - EXISTING Description	Area	Mods.	1B - MODULES Core	Deficit	Surplus	1C - NEW CORE Description	Area	Mods.	1D - NEW ELECTIVE Description	Area	Mods.
			0.00								0	
Business Education			0.00	1.0	1.00	0.00	Computers	100	1.00		0	
			0.00								0	
			0.00								0	
	Art		0.00								0	
Fine Arts	Coral Music		0.00	1.0	1.00	0.00	music	160	1.00	Drama & Theatre	120	1.00
	Music		0.00								0	
	Drama & Theatre		0.00								0	
	Clothing		0.00								0	
Home Economics	Foods		0.00	1.0	1.00	0.00	clothing/foods	140	1.00		0	
	Clothing/Foods		0.00								0	
											0	
	General Shop		0.00								0	
	Drafting		0.00								0	
Industrial Education				1.0	1.00	0.00	General Shop	155	1.00		0	
											0	
	Technology		0.00								0	
											0	
	General Science		0.00								0	
Science	Physics		0.00	1.0	1.00	0.00	Science	100	1.00		0	
	Chemistry		0.00								0	
	Biology		0.00								0	
Other*												
General Instruction	rooms 75-95 s.m.	0	0.00	E: 20			Area = no. of			Area = no. of		
	other rooms		0.00	S: 1.0	21.00	0.00	modules x 80 s.m.	1680	21.00	modules x 80 s.m.	0	
Sub-Totals		0 Ai				0.00 Bi		2335 Ci			120 Di	Dii

*Note - May not be used except for spaces agreed in writing by the Ministry.

Total of New Elective Modules: 1.00

New Trafalgar Elementary / Jr. Middle School — Option 4.1

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #2 Jun 02, 10

(See sheet #1 for base information)

PART 2 - SERVICE ACTIVITY

Space Function	E-Exist.	F-Allowable	G-Deficit	H-New
Administration / Health		190	190	190
Counselling		50	50	50
Gen. Storage		90	90	90
Gym Activity		600	600	600
Gym Ancilliary		150	150	150
Media / Tech Centre		320	320	320
Multi-purpose		160	160	160
Spec. Education		320	320	320
Mechanical		170	170	170
Design Space		1225	1225	1225
* Other		1212	1212	1212
SUB-TOTAL	Ei 0	Fi 4487		Hi 4487
			Fi-Ei=	4487

Other' is:
2 X Kindergarten @ 90 sm + 20 sm (design space)
Strong start @90 s.m. + 20 sm (design space)
Neighborhood Learning Centre at 15% of 5880 s.m. = 882 s.m.

ENROLLMENT: 2014 / 2015
Full Day K at 36 FTE
Elementary (1 to 7) at 437
Secondary (gr 8) at 155

PART 3 - TOTAL AREAS

		N-EXISTING		P-NEW
Existing Acad./Voc.	Ai	0		
Core Acad./Voc. Additions			Ci	2335
Elective Acad./Voc. Additions			Di	120
Service Activity	Ei	0	Hi	4487
SUB-TOTAL		0	Pi	6942
			Ni	0
Total Gross Allowable Area		**5775**		6942
extra gross area for 25 Elem. students		117.5		
plus Other		1212		
		7104.5		

SITE REQUIREMENTS	PROVIDED	REQUIRED
HECTARES		
ACRES	0.00	0.00

Area New	6942

SCHEDULE C

FACILITY AUDITS
TRAFALGAR MIDDLE SCHOOL & SOUTH NELSON ELEMENTARY

Weighted Summary
&
Un-weighted reports

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

Facility Audit Summary

08 TRAFALGAR ELEM-JUNIOR SEC 807005

A. Substructure	Foundations	Standard Foundations	5
		Slab on Grade	5
B. Shell	Superstructure	Floor Construction	5
		Roof Construction	5
	Exterior Closure	Exterior Walls	4
		Exterior Windows	4
		Exterior Doors	4
	Roofing	Roof Coverings	3
		Roof Opening	N/A
		Projections	N/A
C. Interiors	Interior Construction	Fixed and Moveable Partitions	5
		Interior Doors	5
		Specialties	4
	Staircases	Stair Construction	6
		Stair Finishes	2
	Interior Finishes	Wall Finishes	4
		Floor Finishes	2
		Ceiling Finishes	4
D. Services	Plumbing	Plumbing Fixtures	2
		Domestic Water Distribution	1
		Sanitary Waste	2
		Rain Water Drainage	3
		Special Plumbing Systems	2
	HVAC	Energy Supply	4
		Heat Generating Systems	1
		Cooling Generating Systems	N/A
		Distribution Systems	3
		Terminal and Package Units	2
		Controls and Instrumentation	1
		Special HVAC Systems & Equipment	1
	Fire Protection	Fire Protection Sprinkler Systems	N/A
		Stand-Pipe and Hose Systems	N/A
		Fire Protection Specialties	N/A
		Special Fire Protection Systems	N/A
	Electrical	Electrical Service and Distribution	5
		Lighting and Branch Wiring	3
		Communication and Security Systems	2
		Special Electrical Systems	N/A
E. Equipment & Furnishings	Furnishings	Fixed Furnishings	4
		Moveable Furnishings	5
F. Special Construction	Special Construction	Integrated Construction & Special Construction Systems	0
		Special Controls and Instrumentation	0
G. Building Siteworks	Site Improvements	Roadways	2
		Parking Lots	2
		Pedestrian Paving	3
		Rain Water Drainage	4
		Site Development	4
		Landscaping	4
	Site Civil / Mechanical / Electrical Utilities	Water Supply & Distribution Systems	4
		Sanitary Sewer Systems	3
		Storm Sewer Systems	3
		Fuel Supply	0
		Electrical Supply	5
Total Score			**142**
Percentage			**32%**

Detailed Checklists:

08 TRAFALGAR ELEM-JUNIOR SEC 807005

Substructure: Foundations

Element	Evaluation Criteria Physical condition, crawl space basement, insulation levels	Score (1 - 10)
Standard Foundation	Wall and column foundations, footings and bases, perimeter insulation, perimeter drainage, waterproofing	5
Slab on Grade	Standard, structural, drainage, insulation	5
Substructure: Foundation Score (0 - 20)		**10**

Comments

Age issues due to lack of insulation and footing drains.
Some settlement due to side hill location.

Shell: Superstructure

Element	Evaluation Criteria Structural condition	Score (1 - 10)
Floor Construction	Floor structural frame, interior structural walls, floor slabs and decks, balcony construction	5
Roof Construction	Roof structural frame, structural interior walls supporting roof, roof decks, slabs and sheathing, canopies	5
Shell: Superstructure Score (0 - 20)		**10**

Comments

Structure solid

Detailed Checklists:

08 TRAFALGAR ELEM-JUNIOR SEC 807005

Shell: Exterior Closure

Element	Evaluation Criteria Condition, waterproofing operation, caulking appearance; insulation appearance, security, maintainability, heat loss/gain, infiltration	Score (1 - 10)
Exterior Walls	Exterior wall construction with facing materials, exterior applied finishes, framing, drywall, parapets, insulation and vapour barrier, exterior load-bearing wall construction, exterior louvres and screens, exterior sun control devices, balcony walls and railings, exterior soffits	4
Exterior Windows	Fly screens, storm windows, exterior louvres, frame, trim, sills, caulking, flashing	4
Exterior Doors	Frame, trim, hardware, caulking	4
Substructure: Exterior Closure Score (0 - 30)		**12**

Comments

Exterior elements are largely in fair condition due to age. Flashings require repairs or replacement.
Brick requires re-pointing and repair.
Windows are mostly wood sash and single pane in poor condition.
Doors and hardware in poor condition.
Insulation values very poor.

Shell: Roofing

Element	Evaluation Criteria Condition, heat gain/loss, infiltration, seepage, leaks	Score (1 - 10)
Roof Coverings	Roofing membranes, insulation within and on roofing, gutters, downspouts and splash pads, scuppers, eaves and eave soffits, flashings, expansion joints, vapour barriers	3
Roof Opening	Skylights, roof hatches, glazing, flashing, smoke vents	N/A
Projections	Sun control devices, balcony walls/railings, parapets, canopies, spires, flagpoles	N/A
Shell: Roofing Score (0 - 30)		**3**

Roof Covering	○ Built-up Roofing	○ Metal	○ Asphalt Shingles	◉ Combination	○ Other

Comments

Roofing is nearing the end of useful life, some areas require immediate repar or replacement.

Detailed Checklists:

08 TRAFALGAR ELEM-JUNIOR SEC 807005

Interiors: Interior Construction

Element	**Evaluation Criteria** Strength and stability, appearance, physical condition, acoustical quality, adaptability, operation, security, maintainability	Score (1 - 10)
Fixed and Moveable Partitions	Framing, finish material, including drywall, balustrades and railings, all miscellaneous metals, rough carpentry, sealing, caulking, shielding and protection	5
Interior Doors	Door leaf door frames, hardware, access doors, glazing, keying, door opening elements, painting and staining	5
Specialties	Chalk and tack boards, lockers, storage shelving, miscellaneous metal work, built-in counters and vanities, closets, kitchen cabinets	4
Interiors: Interior Construction Score (0 - 30)		**14**

Comments

All interior elements very old and in poor to fair condition

Interiors: Staircases

Element	**Evaluation Criteria** Structural condition	Score (1 - 10)
Stair Construction	Stair structure	6
Stair Finishes	Finishes to treads, risers, landings and soffits, handrails and balustrades	2
Interiors: Staircases Score (1 - 20)		**8**

Comments

Stairs solid but finishes are very poor.

Detailed Checklists:

08 TRAFALGAR ELEM-JUNIOR SEC 807005

Interiors: Interior Finishes

Element	**Evaluation Criteria** Appearance, painting and staining, suitability, maintainability, adhesion	Score (1 - 10)
Wall Finishes	Applied wall finishes, exposed concrete wall finishes, special wall finishes, acoustic tiles	4
Floor Finishes	Applied floor finishes and markings, special flooring, Non-structural toppings, Hardeners, sealers, and other surface treatment, Curbs and machine bases, Mats, Stair treads, risers and landings	2
Ceiling Finishes	Applied ceiling finishes, suspended ceilings and finishes, exposed concrete finishes, bulkheads and cornices	4
Interiors: Interior Finishes Score (0 - 30)		**10**

Comments

All finishes old., Particularly flooring

Services: Plumbing

Element	**Evaluation Criteria** Physical condition, maintenance, water supply quantities, water supply quality, piping condition, drain & waste function sanitation hazards and/or cross-connection, fixture quantities, fixture types & conditions, wheelchair fixtures, roof drainage, floor drainage, maintenance, energy consumption, suitability maintainability	Score (1 - 10)
Plumbing Fixtures	Water closets, urinals, lavatories, sinks, showers, bathtubs, drinking fountains	2
Domestic Water Distribution	Pipes and fittings, valves, hydrants and hose bibs, hot water heaters, domestic water supply equipment, insulation	1
Sanitary Waste	Waste pipe and fittings, vent pipe and fittings, floor drains, sanitary waste equipment, insulation	2
Rain Water Drainage	Pipe and fittings, roof drains, roof drainage equipment, insulation	3
Special Plumbing Systems	Special piping systems, gas distribution, acid waste systems, interceptors, fountain piping systems and devices	2
Services: Plumbing Score (0 - 50)		**10**

Comments

Enamel Plumbing fixtures are chipped and toilets are stained.
Piping is galvanized steel and non code compliant.
Urinals are water wasteful, custodian sinks are non- WSBC compliant.
Storm and sanitary are combined systems and non compliant.
Acid neutralizer is inaccessible.

Detailed Checklists:

08 TRAFALGAR ELEM-JUNIOR SEC 807005

Services: HVAC

Element	Evaluation Criteria Physical condition, maintenance, noise level, heating capacity, energy consumption, air circulation & ventilation, air balance, air quality, temperature, cooling capacity, humidity control, reliability, fume hood, exhaust fans, dust collection, filtration suitability, maintainability, maintenance manual	Score (1 - 10)
Energy Distribution	Oil and gas distribution, steam, hot and chilled water distribution	4
Heat Generating Systems	Boilers, piping and fittings adjacent to boilers, primary pumps, auxiliary equipment, equipment and piping insulation	1
Cooling Generating Systems	Chillers, cooling towers, condensing units, piping and fittings, primary pumps, direct expansion systems, piping and equipment insulation	N/A
Distribution Systems	Supply & return air systems, ventilation & exhaust systems, steam, hot water & chilled water distribution, terminal devices, heat recovery equipment, auxiliary equipment such as secondary pumps, and heat exchangers, piping, duct & equipment insulation	3
Terminal and Package Units	Electric baseboard, unit heaters, unit ventilators, radiant heaters, rooftop units, ductwork and accessories including flue stacks, factory integrated controls	2
Controls and Instrumentation	For: heating generating systems, cooling generating systems, heating/cooling air handling units, exhaust and ventilation systems, terminal devices, energy monitoring and control, building automation systems	1
Special HVAC Systems & Equipment	Dust and fume collectors, paint spray booth ventilation systems	1
Services: HVAC Score (0 - 70)		**12**

Heating Energy Source (%)*	Oil: 0%	Natural Gas: 100%	Propane: 0%	Electricity: 0%

Comments

Sawdust collector explosion venting configuration is non WSBC compliant.
Fume Hoods not CSA approved.
One boiler has failed, 3 others are on the verge of failure. Super hot boilers a non-condensing and at the end of their useful life.
Terminal ventilation systems do not provide adequate temperature control on ventilation systems.
Control system is basically a pneumatic system, antiquated, and not servicable by local technicians.

*must total to 100%

Detailed Checklists:

08 TRAFALGAR ELEM-JUNIOR SEC 807005

Equipment and Furnishings: Furnishings

Element	Evaluation Criteria Physical condition, function finish, appearance, suitability, maintainability	Score (1 - 10)
Fixed Furnishings	Fixed artwork, fixed casework, window treatment, fixed floor grilles and mats, fixed multiple seating	4
Movable Furnishings	Furniture and accessories, movable rugs and mats, movable multiple seating	5
Equipment and Furnishings: Furnishings Score (0 - 20)		**9**

Comments

Generally permanent equipment and furnishings are old and in need of replacement.

Special Construction: Special Construction

Element	Evaluation Criteria Physical condition, function, finish appearance, suitability, maintainability	Score (1 - 10)
Integrated Construction & Special Construction Systems	Special purpose rooms, integrated assemblies, paint shop, sound isolation room, dark room, sound, vibration and seismic construction, special security systems, security gates, incinerator, automotive hoists, welding booth, dust collector, food services freezer	0
Special Controls and Instrumentation	Recording instrumentation, building automation systems, fire suppression and supervisory systems	0
Special Construction: Special Construction Score (0 - 20)		**0**

Comments

Detailed Checklists:

08 TRAFALGAR ELEM-JUNIOR SEC 807005

Building Sitework: Site Improvements

Element	Evaluation Criteria Adequacy, physical condition, maintenance, safety, maintainability	Score (1 - 10)
Roadways	Paving and surfacing, curbs and gutters, rails and barriers, painted lines, markings and signage	2
Parking Lots	Paving and surfacing, curbs rails and barriers, markings and signage	2
Pedestrian Paving	Paving and surfacing, exterior steps	3
Rain Water Drainage	Piping, manholes, catch basins, ditches and culverts	4
Site Development	Fences and gates, retaining walls, terrace and perimeter walls, signs, site furnishings, playing fields, miscellaneous structures	4
Landscaping	Top soil and planting beds, seeding and sodding, planting, planters, special landscape features, irrigation systems	4
Building Sitework: Site Improvements Score (0 - 60)		**19**

Comments

Sloping site requires extensive retaining and drainage control which are all in fair condition.
Pavinf and sidewalks are original and in poor condition.
Limited on site parking and loading and access for maintenance.

Building Sitework: Site Civil/Mechanical/Electrical Utilities

Element	Evaluation Criteria Adequacy, physical condition, maintenance, safety, maintainability	Score (1 - 10)
Water Supply	Potable and non-potable water systems, well systems, fire protection systems, water storage	4
Sanitary Sewer Systems	Piping, manholes, septic tanks, lift stations, package waste water treatment systems	3
Storm Sewer Systems	Piping, manholes, catch basins, ditches and culverts	3
Fuel Supply	Piping, equipment, storage tanks	0
Electrical Supply	Fixtures and transformers, poles, wiring conduits and ductbanks, controls, grounding	5
Building Sitework: Site Civil/Mechanical/Electrical Utilities Score (0 - 50)		**15**

Comments

Municipal storm main runs under the building with no easement.
Sanitary and storm for the school are combined and not acceptable to the municipality.

Commentary:

08 TRAFALGAR ELEM-JUNIOR SEC 807005

Please comment on this building's main deficiencies:

One

HVAC is totally inadeqyuate, very old, and poor condition.

Two

Fire protection sprinklers should be installed in a building of this size.

Three

Building envelope, requires upgrades and replacement of systems, surfaces, and insulation

Four

Flooring is worn and in need of replacement.

Five

Plumbing systems, piping and fixtures, require replacement.

Six

Ceilings and lighting require repairs and replacement.

Seven

Doors and hardware require replacement.

Facility Audit Summary

SCHOOL DISTRICT 8 (KOOTENAY LAKE)		*TRAFALGAR MIDDLE SCHOOL*	*Middle School Weighting* →	↓ Weight	*Weighted Score*	*Maximum Score*
A. Substructure	Foundations	Standard Foundations	5	4.20%	*2.15*	*4.30*
		Slab on Grade	5	2.20%	*1.13*	*2.25*
B. Shell	Superstructure	Floor Construction	5	5.50%	*2.81*	*5.63*
		Roof Construction	5	8.80%	*4.50*	*9.01*
	Exterior Closure	Exterior Walls	4	8.90%	*3.64*	*9.11*
		Exterior Windows	4	2.10%	*0.86*	*2.15*
		Exterior Doors	4	1.20%	*0.49*	*1.23*
	Roofing	Roof Coverings	3	5.20%	*1.60*	*5.32*
		Roof Opening		0.30%	*0.00*	*0.00*
		Projections	4	1.20%	*0.49*	*1.23*
C. Interiors	Interior Construction	Fixed and Moveable Partitions	5	7.20%	*3.68*	*7.37*
		Interior Doors	5	2.20%	*1.13*	*2.25*
		Specialties	4	1.20%	*0.49*	*1.23*
	Staircases	Stair Construction	6	0.40%	*0.25*	*0.41*
		Stair Finishes	2	0.40%	*0.08*	*0.41*
	Interior Finishes	Wall Finishes	4	2.00%	*0.82*	*2.05*
		Floor Finishes	2	5.10%	*1.04*	*5.22*
		Ceiling Finishes	4	2.80%	*1.15*	*2.87*
D. Services	Plumbing	Plumbing Fixtures	2	2.91%	*0.60*	*2.98*
		Domestic Water Distribution	1	0.97%	*0.10*	*0.99*
		Sanitary Waste	2	0.72%	*0.15*	*0.74*
		Rain Water Drainage	3	0.75%	*0.23*	*0.77*
		Special Plumbing Systems	2	0.30%	*0.06*	*0.31*
	HVAC	Energy Supply	4	0.35%	*0.14*	*0.36*
		Heat Generating Systems	1	2.62%	*0.27*	*2.68*
		Cooling Generating Systems	0	2.06%	*0.00*	*2.11*
		Distribution Systems	3	4.02%	*1.23*	*4.11*
		Terminal and Package Units	2	1.60%	*0.33*	*1.64*
		Controls and Instrumentation	1	1.80%	*0.18*	*1.84*
		Special HVAC Systems & Equipment	1	0.00%	*0.00*	*0.00*
	Fire Protection	Fire Protection Sprinkler Systems		2.00%	*0.00*	*0.00*
		Stand-Pipe and Hose Systems		0.00%	*0.00*	*0.00*
	Electrical	Electrical Service and Distribution	5	1.80%	*0.92*	*1.84*
		Lighting and Branch Wiring	3	6.30%	*1.93*	*6.45*
		Communication and Security Systems	2	4.30%	*0.88*	*4.40*
		Special Electrical Systems		0.00%	*0.00*	*0.00*
E. Equipment & Furnishings	Furnishings	Fixed Furnishings	4	6.60%	*2.70*	*6.76*
		Moveable Furnishings	5	0.00%	*0.00*	*0.00*
F. Building Siteworks	Site Improvements	Roadways	2	0.00%	*0.00*	*0.00*
		Parking Lots	2	0.00%	*0.00*	*0.00*
		Pedestrian Paving	3	0.00%	*0.00*	*0.00*
		Rain Water Drainage	4	0.00%	*0.00*	*0.00*
		Site Development	4	0.00%	*0.00*	*0.00*
		Landscaping	4	0.00%	*0.00*	*0.00*
	Site Civil / Mechanical / Electrical Utilities	Water Supply & Distribution Systems	4	0.00%	*0.00*	*0.00*
		Sanitary Sewer Systems	3	0.00%	*0.00*	*0.00*
		Storm Sewer Systems	3	0.00%	*0.00*	*0.00*
		Electrical Supply	5	0.00%	*0.00*	*0.00*
Total Score			**146**			
Audit Score			33.2%		**36.0%**	100.0%

Facility Audit Summary

08 SOUTH NELSON ELEMENTARY 807014

A. Substructure	Foundations	Standard Foundations	5
		Slab on Grade	5
B. Shell	Superstructure	Floor Construction	5
		Roof Construction	5
	Exterior Closure	Exterior Walls	5
		Exterior Windows	2
		Exterior Doors	4
	Roofing	Roof Coverings	5
		Roof Opening	5
		Projections	6
C. Interiors	Interior Construction	Fixed and Moveable Partitions	5
		Interior Doors	5
		Specialties	4
	Staircases	Stair Construction	8
		Stair Finishes	5
	Interior Finishes	Wall Finishes	5
		Floor Finishes	3
		Ceiling Finishes	4
D. Services	Plumbing	Plumbing Fixtures	4
		Domestic Water Distribution	3
		Sanitary Waste	4
		Rain Water Drainage	4
		Special Plumbing Systems	N/A
	HVAC	Energy Supply	4
		Heat Generating Systems	4
		Cooling Generating Systems	N/A
		Distribution Systems	4
		Terminal and Package Units	4
		Controls and Instrumentation	4
		Special HVAC Systems & Equipment	N/A
	Fire Protection	Fire Protection Sprinkler Systems	0
		Stand-Pipe and Hose Systems	2
		Fire Protection Specialties	N/A
		Special Fire Protection Systems	N/A
	Electrical	Electrical Service and Distribution	3
		Lighting and Branch Wiring	3
		Communication and Security Systems	2
		Special Electrical Systems	N/A
E. Equipment & Furnishings	Furnishings	Fixed Furnishings	4
		Moveable Furnishings	5
F. Special Construction	Special Construction	Integrated Construction & Special Construction Systems	0
		Special Controls and Instrumentation	0
G. Building Siteworks	Site Improvements	Roadways	4
		Parking Lots	4
		Pedestrian Paving	4
		Rain Water Drainage	5
		Site Development	3
		Landscaping	2
	Site Civil / Mechanical / Electrical Utilities	Water Supply & Distribution Systems	4
		Sanitary Sewer Systems	5
		Storm Sewer Systems	5
		Fuel Supply	N/A
		Electrical Supply	5
Total Score			**181**
Percentage			**39%**

Detailed Checklists:

08 SOUTH NELSON ELEMENTARY 807014

Substructure: Foundations

Element	Evaluation Criteria Physical condition, crawl space basement, insulation levels	Score (1 - 10)
Standard Foundation	Wall and column foundations, footings and bases, perimeter insulation, perimeter drainage, waterproofing	5
Slab on Grade	Standard, structural, drainage, insulation	5
Substructure: Foundation Score (0 - 20)		**10**

Comments

Some of the origional stone wall construction, poor foundation drainage and no insulation. Seepage water problems.

Shell: Superstructure

Element	Evaluation Criteria Structural condition	Score (1 - 10)
Floor Construction	Floor structural frame, interior structural walls, floor slabs and decks, balcony construction	5
Roof Construction	Roof structural frame, structural interior walls supporting roof, roof decks, slabs and sheathing, canopies	5
Shell: Superstructure Score (0 - 20)		**10**

Comments

- Some IRMA roofing, a lot of ponding on the SBS roofing.
- Structure is mainly precast concrete 'T' sections solid.

Detailed Checklists:

08 SOUTH NELSON ELEMENTARY 807014

Shell: Exterior Closure

Element	Evaluation Criteria Condition, waterproofing operation, caulking appearance; insulation appearance, security, maintainability, heat loss/gain, infiltration	Score (1 - 10)
Exterior Walls	Exterior wall construction with facing materials, exterior applied finishes, framing, drywall, parapets, insulation and vapour barrier, exterior load-bearing wall construction, exterior louvres and screens, exterior sun control devices, balcony walls and railings, exterior soffits	5
Exterior Windows	Fly screens, storm windows, exterior louvres, frame, trim, sills, caulking, flashing	2
Exterior Doors	Frame, trim, hardware, caulking	4
Substructure: Exterior Closure Score (0 - 30)		**11**

Comments

Single panel and 1/2" duble panes in light aluminum frames. Some very old wood frame windows - poor energy conservation.

Shell: Roofing

Element	Evaluation Criteria Condition, heat gain/loss, infiltration, seepage, leaks	Score (1 - 10)
Roof Coverings	Roofing membranes, insulation within and on roofing, gutters, downspouts and splash pads, scuppers, eaves and eave soffits, flashings, expansion joints, vapour barriers	5
Roof Opening	Skylights, roof hatches, glazing, flashing, smoke vents	5
Projections	Sun control devices, balcony walls/railings, parapets, canopies, spires, flagpoles	6
Shell: Roofing Score (0 - 30)		**16**

Roof Covering	○ Built-up Roofing	○ Metal	○ Asphalt Shingles	○ Combination	◉ Other

Comments

A lot of ponding on SBS roofing. Structural canopies limited in effectiveness - large solar gain.

Detailed Checklists:

08 SOUTH NELSON ELEMENTARY 807014

Interiors: Interior Construction

Element	Evaluation Criteria Strength and stability, appearance, physical condition, acoustical quality, adaptability, operation, security, maintainability	Score (1 - 10)
Fixed and Moveable Partitions	Framing, finish material, including drywall, balustrades and railings, all miscellaneous metals, rough carpentry, sealing, caulking, shielding and protection	5
Interior Doors	Door leaf door frames, hardware, access doors, glazing, keying, door opening elements, painting and staining	5
Specialties	Chalk and tack boards, lockers, storage shelving, miscellaneous metal work, built-in counters and vanities, closets, kitchen cabinets	4
Interiors: Interior Construction Score (0 - 30)		**14**

Comments

A lot of old built in furniture noticeably the plywood.
Coat closet islands in main corridors.

Interiors: Staircases

Element	Evaluation Criteria Structural condition	Score (1 - 10)
Stair Construction	Stair structure	8
Stair Finishes	Finishes to treads, risers, landings and soffits, handrails and balustrades	5
Interiors: Staircases Score (1 - 20)		**13**

Comments

Stair solid but finishes worn.

Detailed Checklists:

08 SOUTH NELSON ELEMENTARY 807014

Interiors: Interior Finishes

Element	Evaluation Criteria Appearance, painting and staining, suitability, maintainability, adhesion	Score (1 - 10)
Wall Finishes	Applied wall finishes, exposed concrete wall finishes, special wall finishes, acoustic tiles	5
Floor Finishes	Applied floor finishes and markings, special flooring, Non-structural toppings, Hardeners, sealers, and other surface treatment, Curbs and machine bases, Mats, Stair treads, risers and landings	3
Ceiling Finishes	Applied ceiling finishes, suspended ceilings and finishes, exposed concrete finishes, bulkheads and cornices	4
Interiors: Interior Finishes Score (0 - 30)		**12**

Comments

A lot of old flooring, AC tile and worn out carpet, complaints of smells.
A lot of old ceiling finishes.

Services: Plumbing

Element	Evaluation Criteria Physical condition, maintenance, water supply quantities, water supply quality, piping condition, drain & waste function sanitation hazards and/or cross-connection, fixture quantities, fixture types & conditions, wheelchair fixtures, roof drainage, floor drainage, maintenance, energy consumption, suitability maintainability	Score (1 - 10)
Plumbing Fixtures	Water closets, urinals, lavatories, sinks, showers, bathtubs, drinking fountains	4
Domestic Water Distribution	Pipes and fittings, valves, hydrants and hose bibs, hot water heaters, domestic water supply equipment, insulation	3
Sanitary Waste	Waste pipe and fittings, vent pipe and fittings, floor drains, sanitary waste equipment, insulation	4
Rain Water Drainage	Pipe and fittings, roof drains, roof drainage equipment, insulation	4
Special Plumbing Systems	Special piping systems, gas distribution, acid waste systems, interceptors, fountain piping systems and devices	N/A
Services: Plumbing Score (0 - 50)		**15**

Comments

Plumbing is generally old fixtures and old piping, not water conserving controls.

Detailed Checklists:

08 SOUTH NELSON ELEMENTARY 807014

Services: HVAC

Element	Evaluation Criteria Physical condition, maintenance, noise level, heating capacity, energy consumption, air circulation & ventilation, air balance, air quality, temperature, cooling capacity, humidity control, reliability, fume hood, exhaust fans, dust collection, filtration suitability, maintainability, maintenance manual	Score (1 - 10)
Energy Distribution	Oil and gas distribution, steam, hot and chilled water distribution	4
Heat Generating Systems	Boilers, piping and fittings adjacent to boilers, primary pumps, auxiliary equipment, equipment and piping insulation	4
Cooling Generating Systems	Chillers, cooling towers, condensing units, piping and fittings, primary pumps, direct expansion systems, piping and equipment insulation	N/A
Distribution Systems	Supply & return air systems, ventilation & exhaust systems, steam, hot water & chilled water distribution, terminal devices, heat recovery equipment, auxiliary equipment such as secondary pumps, and heat exchangers, piping, duct & equipment insulation	4
Terminal and Package Units	Electric baseboard, unit heaters, unit ventilators, radiant heaters, rooftop units, ductwork and accessories including flue stacks, factory integrated controls	4
Controls and Instrumentation	For: heating generating systems, cooling generating systems, heating/cooling air handling units, exhaust and ventilation systems, terminal devices, energy monitoring and control, building automation systems	4
Special HVAC Systems & Equipment	Dust and fume collectors, paint spray booth ventilation systems	N/A
Services: HVAC Score (0 - 70)		**20**

Heating Energy Source (%)*	Oil: 0%	Natural Gas: 100%	Propane: 0%	Electricity: 0%

Comments

- 15 year old low efficiency boilers, end of useful life.
- Minimal energy management, controls mixture of old DDC and electronic controls.
- No cooling, heating and ventilation cannot keep room temperatures even and comfortable.

*must total to 100%

Detailed Checklists:

08 SOUTH NELSON ELEMENTARY 807014

Services: Fire Protection

Element	**Evaluation Criteria** Fire rating exits, extinguishing systems, structural, fire alarm system, lighting system	Score (1 - 10)
Fire Protection Sprinkler Systems	Water supply equipment, piping valves and fittings, sprinkler heads and release devices	0
Stand-Pipe and Hose Systems	Water supply equipment, piping valves and fitting, cabinets and hoses	2
Fire Protection Specialties	Fire extinguishers, fire extinguisher cabinets	N/A
Special Fire Protection Systems	Carbon dioxide systems, chemical systems, exhaust hood systems	N/A
Services: Fire Protection Score (0 - 40)		**2**
Automatic Sprinkler Protection	○ Yes ◉ No ○ Partial	

Comments

3-storey building should be sprinklered according to Code.

Services: Electrical

Element	**Evaluation Criteria** Service capacity panel, capacity feeder, capacity switchgear, capacity convenience, outlets, safety conditions, light levels, fixtures, emergency power, exit lighting, suitability, telecommunications, energy consumption, maintainability	Score (1 - 10)
Electrical Service and Distribution	Primary transformers, secondary transformers, main switchboard, interior distribution transformers, branch circuit panels, enclosed circuit breakers, motor control centres, conduit and wiring to circuit panels	3
Lighting and Branch Wiring	Branch wiring and devices for lighting fixtures, lighting fixtures, branch wiring for devices and equipment connections, devices, exterior lighting	3
Communication and Security Systems	Fire alarm systems, telephone systems, local area networks, public address systems, intercommunication systems and paging, clock and program systems, security systems	2
Special Electrical Systems	Emergency generators, ups, emergency lighting systems, lightning and grounding protection systems, raceway systems	N/A
Services: Electrical Score (0 - 40)		**8**

Comments

Old lighting, wiring, communication, security and fire alarm systems throughout.

Detailed Checklists:

08 SOUTH NELSON ELEMENTARY 807014

Equipment and Furnishings: Furnishings

Element	**Evaluation Criteria** Physical condition, function finish, appearance, suitability, maintainability	Score (1 - 10)
Fixed Furnishings	Fixed artwork, fixed casework, window treatment, fixed floor grilles and mats, fixed multiple seating	4
Movable Furnishings	Furniture and accessories, movable rugs and mats, movable multiple seating	5
Equipment and Furnishings: Furnishings Score (0 - 20)		**9**

Comments

Needs upgrade and modernization.

Special Construction: Special Construction

Element	**Evaluation Criteria** Physical condition, function, finish appearance, suitability, maintainability	Score (1 - 10)
Integrated Construction & Special Construction Systems	Special purpose rooms, integrated assemblies, paint shop, sound isolation room, dark room, sound, vibration and seismic construction, special security systems, security gates, incinerator, automotive hoists, welding booth, dust collector, food services freezer	0
Special Controls and Instrumentation	Recording instrumentation, building automation systems, fire suppression and supervisory systems	0
Special Construction: Special Construction Score (0 - 20)		**0**

Comments

Detailed Checklists:

08 SOUTH NELSON ELEMENTARY 807014

Building Sitework: Site Improvements

Element	Evaluation Criteria Adequacy, physical condition, maintenance, safety, maintainability	Score (1 - 10)
Roadways	Paving and surfacing, curbs and gutters, rails and barriers, painted lines, markings and signage	4
Parking Lots	Paving and surfacing, curbs rails and barriers, markings and signage	4
Pedestrian Paving	Paving and surfacing, exterior steps	4
Rain Water Drainage	Piping, manholes, catch basins, ditches and culverts	5
Site Development	Fences and gates, retaining walls, terrace and perimeter walls, signs, site furnishings, playing fields, miscellaneous structures	3
Landscaping	Top soil and planting beds, seeding and sodding, planting, planters, special landscape features, irrigation systems	2
Building Sitework: Site Improvements Score (0 - 60)		**22**

Comments

Door site acces sand separation of pedestrians from vheicles.
Drop off & pickup on street.

Building Sitework: Site Civil/Mechanical/Electrical Utilities

Element	Evaluation Criteria Adequacy, physical condition, maintenance, safety, maintainability	Score (1 - 10)
Water Supply	Potable and non-potable water systems, well systems, fire protection systems, water storage	4
Sanitary Sewer Systems	Piping, manholes, septic tanks, lift stations, package waste water treatment systems	5
Storm Sewer Systems	Piping, manholes, catch basins, ditches and culverts	5
Fuel Supply	Piping, equipment, storage tanks	N/A
Electrical Supply	Fixtures and transformers, poles, wiring conduits and ductbanks, controls, grounding	5
Building Sitework: Site Civil/Mechanical/Electrical Utilities Score (0 - 50)		**19**

Comments

Water supply wouldn't be adequate for sprinkler system.

Detailed Checklists:

08 SOUTH NELSON ELEMENTARY 807014

Safety Standards: Disabled Requirements (where required)

Outside Access	(a) Building accessible from outside	◉ Yes	○ No	○ N/A
	(b) Accessible entrance: Main entrance	○ Yes	◉ No	○ N/A
	(c) If other, main entrance signed to indicate direction	○ Yes	◉ No	○ N/A
	(d) Disabled parking stalls	○ Yes	◉ No	○ N/A
	(e) Accessible entrance is accessible from disabled parking stalls	○ Yes	◉ No	○ N/A
	(f) Automatic door opener at accessible entrance	○ Yes	◉ No	○ N/A
Inside Access	**(a) From accessible entrance the following areas are accessible:**			
	All educational & recreational facilities	◉ Yes	○ No	○ N/A
	Each type of refreshment facility	◉ Yes	○ No	○ N/A
	Offices	◉ Yes	○ No	○ N/A
	Lockers	○ Yes	○ No	◉ N/A
	Areas where work functions can reasonably be expected to be performed by disabled persons	◉ Yes	○ No	○ N/A
	Showers (if provided)	○ Yes	○ No	◉ N/A
	Viewing positions (theatre, lecture halls)	○ Yes	○ No	◉ N/A
	Staff rooms	◉ Yes	○ No	○ N/A
	(b) Vertical access provided by:			
	Elevator	◉ Yes	○ No	○ N/A
	Elevator complete with accessible controls	◉ Yes	○ No	○ N/A
	Other	○ Yes	○ No	◉ N/A
Washrooms	(a) Accessible washroom provided	◉ Yes	○ No	○ N/A
	(b) Accessible toilet room provided	◉ Yes	○ No	○ N/A
Refuge Areas	(a) Refuge areas provide	◉ Yes	○ No	○ N/A
	(b) Each floor area served by refuge areas	◉ Yes	○ No	○ N/A
	(c) Refuge areas consist of one or a combination of the following:			
	Part of exit stair enclosure	○ Yes	◉ No	○ N/A
	Space accessible by a horizontal exit	○ Yes	◉ No	○ N/A
	Open space accessible from an exterior door	○ Yes	◉ No	○ N/A

Comments

Hardware and plumbing fixtures not accessible type.

Commentary:

08 SOUTH NELSON ELEMENTARY 807014

Please comment on this building's main deficiencies:

One

Boilers are not energy efficient type and considered to be at half their serviceable life.

Two

Ventilation systems are inadequate and cannot respond to temperature stratification in rooms. Controls are not adequate.

Three

The vast areas of poor thermally designed windows and walls causes hot and cold stratification within the rooms. Some windows are origional wood sash.

Four

Poor site access, safe student dropoff - no parking areas.

Five

Lighting, power distribution, communication, security and fire alarm systems need upgrading.

Six

There are a lot of old smelly carpet and other finishes needing upgrade.

Seven

Water seepage out of sidehill has caused flooding of school.
There is a lot of ponding on SBS roofing.

Facility Audit Summary

Kootenay Lake		*South Nelson Elementary School*				
8			*Elementary School Weighting* →	↓ Weight	*Weighted Score*	*Maximum Score*
A. Substructure	Foundations	Standard Foundations	5	6.00%	*3.04*	*6.08*
		Slab on Grade	5	4.10%	*2.08*	*4.15*
B. Shell	Superstructure	Floor Construction	5	0.00%	*0.00*	*0.00*
		Roof Construction	5	10.10%	*5.11*	*10.23*
	Exterior Closure	Exterior Walls	5	10.20%	*5.16*	*10.33*
		Exterior Windows	2	2.20%	*0.45*	*2.23*
		Exterior Doors	4	0.90%	*0.36*	*0.91*
	Roofing	Roof Coverings	5	5.20%	*2.63*	*5.27*
		Roof Opening	5	0.30%	*0.15*	*0.30*
		Projections	6	1.40%	*0.85*	*1.42*
C. Interiors	Interior Construction	Fixed and Moveable Partitions	5	7.10%	*3.59*	*7.19*
		Interior Doors	5	2.70%	*1.37*	*2.73*
		Specialties	4	0.40%	*0.16*	*0.41*
	Staircases	Stair Construction	8	0.00%	*0.00*	*0.00*
		Stair Finishes	5	0.00%	*0.00*	*0.00*
	Interior Finishes	Wall Finishes	5	2.20%	*1.11*	*2.23*
		Floor Finishes	3	3.80%	*1.15*	*3.85*
		Ceiling Finishes	4	2.70%	*1.09*	*2.73*
D. Services	Plumbing	Plumbing Fixtures	4	2.40%	*0.97*	*2.43*
		Domestic Water Distribution	3	0.95%	*0.29*	*0.96*
		Sanitary Waste	4	0.70%	*0.28*	*0.71*
		Rain Water Drainage	4	0.44%	*0.18*	*0.45*
		Special Plumbing Systems		0.00%	*0.00*	*0.00*
	HVAC	Energy Supply	4	0.31%	*0.13*	*0.31*
		Heat Generating Systems	4	3.01%	*1.22*	*3.05*
		Cooling Generating Systems		1.25%	*0.00*	*0.00*
		Distribution Systems	4	4.94%	*2.00*	*5.00*
		Terminal and Package Units	4	1.70%	*0.69*	*1.72*
		Controls and Instrumentation	4	3.30%	*1.34*	*3.34*
		Special HVAC Systems & Equipment		0.00%	*0.00*	*0.00*
	Fire Protection	Fire Protection Sprinkler Systems	0	1.70%	*0.00*	*1.72*
		Stand-Pipe and Hose Systems	2	0.00%	*0.00*	*0.00*
	Electrical	Electrical Service and Distribution	3	1.90%	*0.58*	*1.92*
		Lighting and Branch Wiring	3	6.80%	*2.07*	*6.89*
		Communication and Security Systems	2	4.50%	*0.91*	*4.56*
		Special Electrical Systems		0.00%	*0.00*	*0.00*
E. Equipment & Furnishings	Furnishings	Fixed Furnishings	4	6.80%	*2.75*	*6.89*
		Moveable Furnishings	5	0.00%	*0.00*	*0.00*
F. Building Siteworks	Site Improvements	Roadways	4	0.00%	*0.00*	*0.00*
		Parking Lots	4	0.00%	*0.00*	*0.00*
		Pedestrian Paving	4	0.00%	*0.00*	*0.00*
		Rain Water Drainage	5	0.00%	*0.00*	*0.00*
		Site Development	3	0.00%	*0.00*	*0.00*
		Landscaping	2	0.00%	*0.00*	*0.00*
	Site Civil / Mechanical / Electrical Utilities	Water Supply & Distribution Systems	4	0.00%	*0.00*	*0.00*
		Sanitary Sewer Systems	5	0.00%	*0.00*	*0.00*
		Storm Sewer Systems	5	0.00%	*0.00*	*0.00*
		Electrical Supply	5	0.00%	*0.00*	*0.00*
Total Score			**181**			
Audit Score			41.1%		**41.7%**	100.0%

SCHEDULE D

Life Cycle Cost Analysis

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

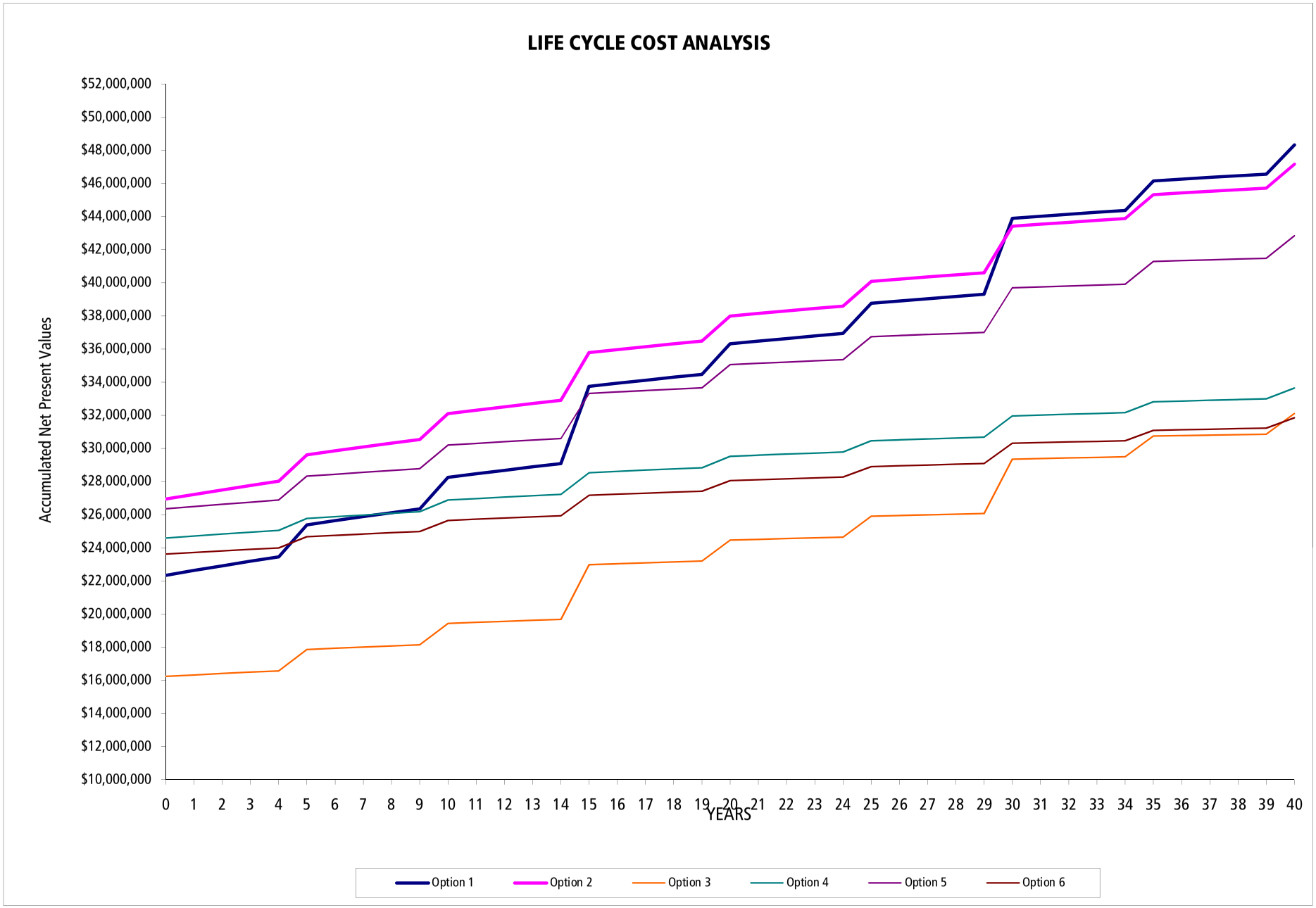
GENERAL VARIABLE PARAMETERS	
Start Year	2010
Discount Rate	6.00%

	GFA	**GFA Difference**	**GFA Difference**	**Operating Cost Difference**
Option 1	9,509	3,282	47.32%	$164,100
Option 2	9,334	3,107	44.80%	$155,350
Option 3	6,227	0	0.00%	$0
Option 4	6,942	715	10.31%	$35,750
Option 5	9,231	3,004	43.31%	$150,200
Option 6	6,936	709	10.22%	$35,450

Annual Operating Budget ($/m^2)	$50.00
Annual Electrical Consumption ($/m^2) EXISTING	$5.80
Annual Gas Consumption ($/m^2) EXISTING	$8.35

AREAS	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
New	0	5,285	0	6,942	4,985	6,739
Reno	9,509	4,049	6,227	0	4,246	197
Total GFA	9,509	9,334	6,227	6,942	9,231	6,936

NPV AT THE FOLLOWING OPERATING YEARS						
	Option 1	**Option 2**	**Option 3**	**Option 4**	**Option 5**	**Option 6**
GROSS FLOOR AREA	**9,509**	**9,334**	**6,227**	**6,942**	**9,231**	**6,936**
YEAR						
0	$22,341,629	$26,945,955	$16,239,419	$24,590,562	$26,355,781	$23,623,622
5	$25,388,410	$29,612,871	$17,861,911	$25,773,996	$28,321,929	$24,668,288
10	$28,251,836	$32,103,324	$19,430,308	$26,881,386	$30,201,378	$25,652,234
20	$36,316,122	$37,993,370	$24,462,710	$29,522,112	$35,062,787	$28,059,949
30	$43,901,160	$43,422,183	$29,353,718	$31,964,077	$39,697,581	$30,308,954
40	$48,333,851	$47,157,574	$32,108,692	$33,642,121	$42,844,526	$31,848,269


LIFE CYCLE COST ANALYSIS
Accumulated Net Present Values
$52,000,000
$50,000,000
$48,000,000
$46,000,000
$44,000,000
$42,000,000
$40,000,000
$38,000,000
$36,000,000
$34,000,000
$32,000,000
$30,000,000
$28,000,000
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$14,000,000
$12,000,000
$10,000,000
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
YEARS
Option 1
Option 2
Option 3
Option 4
Option 5
Option 6

APPENDIX A

GREATER NELSON SCHOOLS
FACILITY REVIEW

Educational Rationale
Trafalgar Middle School
Grades (6-8)

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

GREATER NELSON SCHOOLS
FACILITY REVIEW

NELSON B.C.

November 2006

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

TABLE of CONTENTS

APPENDICIES

1.0

PROJECT rationale

INTRODUCTION

This study was commissioned by Mr. Bruce Buchannon, Secretary Treasurer, School District #8 (Kootenay Lake) on June 29, 2006 with the approval of the Board of Trustees. The intent of this report is to provide documented evidence to the Trustees to allow decisions to be made for the near term expenditure of Capital and Operating funds, as well as to assist in the formulation of a Capital Plan for submission to the Ministry of Education. Some consolidations are seen as being fundamental to the preparation of a Capital Plan in order to receive funding support from the Ministry.

The terms of this project are to investigate the relative merits of several options for increasing the efficiency of the schools in the City of Nelson. This study will look at the relative renovation, replacement, and physical plant operating costs for each school under consideration, and the comparisons to a number of consolidation options including new and renovation for one or more grade configurations.

For purposes of this study, the enrollment projection of the School District for the Capital Plan year 2006-2007 are deemed to be the baseline. For planning purposes, the capacity adjustments will be based on a three year planning window to the 2009-2010 school year. The enrollment changes over the following five year period are rising slightly at the elementary level and falling slightly at the secondary level.

In analyzing the schools and options, I have excluded Kindergarten as it generates abnormal swings in efficiency in small schools in particular. Kindergarten utilization in small schools will always be an issue due to the half day nature of the program. Kindergarten only approaches a high level of efficiency when the cohort group reaches at least 30 students.

L. V. Rogers Secondary is currently a grade 10 to 12 Secondary School in relatively good condition with a capacity of 725 students and a current enrollment of 657 students (Sept 30, 2005). Some of the options under consideration herein involve enrollments above the capacity at this school. There are not deemed to be any renovation requirements for L. V. Rogers, but some added capacity may be necessary. This would be accommodated in an addition or with portable classrooms. Identification of this work is beyond the scope of this study, other than to identify the potential enrollment changes.

INTRODUCTION (cont.)

In summary, the Options identified at the outset are as follows:

Option 1
- Renovate and re-configure Trafalgar as a Junior Middle School,
- Move grade 9 students to L. V. Rogers Secondary,
- Consolidate Gordon Sargent Primary into renovated South Nelson Elementary, and
- Possible consolidation of A. I. Collinson into Hume Elementary.

Option 2
- Replace Trafalgar as a new grades K to 7 Elementary School,
- Move grade 8 and 9 students to L. V. Rogers Secondary, and
- Consolidate South Nelson, Gordon Sargent, and Rosemont Elementary Schools into the new Elementary School.

Option 3
- Renovate (and add if necessary) South Nelson Elementary School as a grades K to 7,
- Move grade 8 and 9 students to L. V. Rogers Secondary, and
- Close Gordon Sargent Elementary and Trafalgar Middle School.

A supplementary Option was later identified for review as follows:

Option 4
- Replace Trafalgar as a new grades K to 8 Elementary / Jr. Middle School,
- Move grade 9 students to L. V. Rogers Secondary,
- Close A. I. Collinson and consolidate into Hume Elementary School and,
- Close South Nelson and Gordon Sargent Elementary Schools and consolidate into the new Elementary / Jr. Middle School.

Other possibilities may become evident in the development of this plan which may not have implications in terms of renovations, additions, or replacements. These may be annotated but will not be considered in depth in this report. All data will be developed in such a manner as to consider alternative options if they become relevant.

2.0

PROJECT scope

GENERAL DESCRIPTION

All of the schools studied in this report are in need of renovations and upgrades and two of the four have had recent Facility audits completed by the Ministry appointed Audit team in the summer of 2005. Those schools, Trafalgar and South Nelson, had scores of 43.2% and 41.7% respectively. These two scores are low by Provincial standards and should qualify either or both for a major renovation/replacement study.

Trafalgar Middle School is a very large school with a capacity of 575 students and 7650 sq. m. total area on four floors. The site slopes from east to west, is bounded by city streets on all four sides, and the building occupies the majority of the northern boundary. The site is adequate, but not well developed. There is adequate playfield space, but parking and drop off areas are minimal. It is unlikely that a major renovation would noticeably increase the capacity of the school. At a capacity of 575 senior middle school students, this would result in a new school of 5,380 sq.m. There are numerous functional and building code deficiencies that require consideration over and above the system deficiencies identified in the Facility Audits.

South Nelson Elementary is a small elementary school with a capacity of 40K plus 200 elementary students and 4049 sq.m. total area on three floors. The site slopes steeply from east to west, is bounded by city streets on three sides, and the building occupies the majority of the southeast corner. Playfields, parking, and access are all limited and inadequate. It is unlikely that a major renovation would noticeably increase the capacity of the school. At a capacity of 40K + 200E, this would result in a new school of 2,100 sq.m. There are numerous functional and building code deficiencies that require consideration over and above the system deficiencies identified in the Facility Audits.

Gordon Sargent Primary is a small school with a capacity of 40K plus 75 grade 1 to 3 elementary students and 608 sq.m. on one floor. The site is nominally level but very small and bounded on the east by a park which serves as its playground. There is no on site parking and minimal playground facilities. This school is in fair condition but the school does not have adequate space for Gym, Administration, or Special Ed. At a capacity of 40K + 75 E, this would result in a new school of 895 sq.m. In a school of this size, there are only minor issues to do with function or code deficiencies, and the site amenities, condition of the HVAC system, and finishes would be the major considerations.

GENERAL DESCRIPTION (cont.)

Rosemont Elementary is a small elementary school with a capacity of 40K plus 150 elementary students and 1608 sq. m. total area on one floor. The site slopes east to west and is long and narrow on a north/south axis with street access only on the south side. Other pedestrian access from the east and north is available. There is minimal on site parking and no drop off area. The Playfield is small but adequate. The plan of the school creates many pockets for random vandalism but this is not a major problem at this time. This school is in fair condition and the school has adequate space, but only a small Gym. At a capacity of 40K + 150 E, this would result in a new school of 1625 sq. m.

The only school site which is truly adequate and able to support the basic 'on site' functions, and possibly support an addition appears to be Trafalgar Middle School.

Gordon Sargent and Rosemont are of such a condition, that although they have deficiencies, they would not qualify for a renovation/replacement study.

Trafalgar Middle School is about the norm for capacity in a senior middle school. As a junior middle school it may be classed as slightly large. As a middle school it contains a good variety of specialty spaces, but many of these may not be appropriate to the needs of a junior middle school. A junior middle school usually has a greater need for more standard classrooms as most of the grade 6 and 7 students still spend a good deal of time in a classroom setting.

All of the elementary schools would be classed as small schools in most communities. The opportunities for optimizing class size and composition are very difficult below 150 students for a grade 1 to 6 school. At about 300 students, elementary schools become more efficient both in terms of optimal class size and composition, as well as operating efficiencies for building and grounds.

DEMOGRAPHICS / UTILIZATION

A review of the available enrollment statistics and growth projections seems to show that these Nelson area schools have experienced declines over the past several years, but the elementary enrollments appear to have leveled and may even be increasing slightly. At the middle school and secondary levels, the declines appear to continue although moderating towards the projection limits at 2014/2015.

A conversion of Trafalgar Middle School to a junior middle school would slightly reduce the population in the first year of operation and would further reduce the populations of both South Nelson and Rosemont Elementary Schools. L. V. Rogers has the capacity to absorb one cohort of students within its current capacity if Trafalgar changes to a junior middle school.

Conversely, the elimination of the middle school would bring Rosemont nearly to capacity and South Nelson closer to its capacity. L.V. Rogers would be operating at about 108% of capacity in the 2014/2015 school year without an addition or portables. This is not at a level where the Ministry of Education would consider funding a small addition unless projections beyond that horizon were increasing.

DEMOGRAPHICS / UTILIZATION (cont.)

Trafalgar Middle School is operating a current efficiency of 88.5% but is projected to drop steadily over the next nine years to 73.6%. This is well below Ministry efficiency levels at 95% and a renovation or replacement project would look to reduce the size of this school.

South Nelson Elementary is operating at 64.0% but rises slightly over the nine year time line to 68.0%. Under the terms of a Feasibility Study, this school would need to be brought up to at least the 95% utilization level before a renovation or replacement would be considered.

Gordon Sargent Primary operates well below capacity at 42.7% but appears to be full in part due to the lack of core spaces. Projections are for a rise to 58.7% in nine years. This is a very popular small school program and projections may vary significantly. A re-assessment of the capacity of this school to re-assign classroom space to support space would make these figures better, but this is still a very small school to operate.

Rosemont Elementary is operating at 78.7% and rises over the projection period to 80.0%. Although this is well below the 95% operating horizon, it is basically a growth of one class of students for this school. The issues here will be related more to class size efficiency and the small size of the school generally.

Although outside the specific terms of reference, Hume Elementary (250 +40K cap'y), A. I. Collinson Elementary (100 + 40K cap'y), and Redfish Elementary (125 + 40K cap'y) are feeder schools to Trafalgar. All of these schools are under capacity and operating at 81%, 80%, and 56% respectively. The utilization would improve under a K to 7 plan and become less efficient under a K to 5 plan. Blewett Elementary (100 + 40K cap'y), is over capacity now at 106%. In a K to 7 plan, additional space would be required, and in a K to 5 plan this school would drop to 88%.

The change in utilization at each of these schools, for a single class increase or decrease, is as follows; Hume 13%, Collinson 15%, Redfish 10%, and Blewett 18%. The final selection of Options for the Nelson area schools should consider the impacts on these schools. Boundary changes and other consolidations may need to be considered.

It should also be noted that Redfish Elementary is at some distance from the Nelson area schools.

ENROLLMENT PROJECTIONS - NELSON AREA SCHOOLS

SCHOOL	CAPACITY	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15
Gordon Sargent Primary	75	38	42	32	36	40	42	42	43	43	44	43	44
Hume Elementary	250	260	228	202	185	190	190	189	188	188	187	186	185
Redfish Elementary	125	71	76	70	78	83	86	90	92	95	100	101	103
Rosemont Elementary	150	113	125	118	117	118	117	117	118	120	121	120	120
South Nelson Elementary	200	158	144	128	125	129	130	130	132	134	135	136	136
Trafalgar Sr. Middle	200 Elem	168	173	159	154	152	150	144	146	147	144	144	143
	375 Sec	390	374	350	342	336	325	311	308	299	298	289	280
L. V. Rogers Secondary		721	705	657	632	607	590	571	552	541	528	518	505

FACILITY CONDITION

The Facility Audit team arranged by the Ministry of Education in the summer of 2005 completed audits of Trafalgar Middle School and South Nelson Elementary. No recent audits have been completed on Gordon Sargent Primary or Rosemont Elementary.

Trafalgar Middle School had an Audit score of 43.2 which is very low and within the range of projects being approved for Feasibility Studies. At this level of disrepair, combined with the significantly oversized floor area, it is rare for a renovation to be supportable in comparison to a replacement facility. This score is indicative of virtually all systems being in poor condition and near the end of the reasonable life cycle.

South Nelson Elementary School had an Audit score of 41.7 which is very low and within the range of projects being approved for Feasibility Studies. At this level of disrepair, combined with the significantly oversized floor area, it is rare for a renovation to be supportable in comparison to a replacement facility. This score is indicative of virtually all systems being in poor condition and near the end of the reasonable life cycle.

Both Gordon Sargent Primary and Rosemont Elementary Schools have been visited and nominally reviewed and are deemed to be in reasonable condition though in need of some upgrades, including mechanical, electrical, and finishes. The Facility Audits of these schools would be well above the scores of Trafalgar and South Nelson, and would be unlikely to rank amongst the poorest in the Province. I would anticipate scores for both between 55% and 65%.

Similarly, Hume Elementary and Redfish Elementary were also visited as both are feeder schools to Trafalgar Middle School. Both schools also have deficiencies, but will rank at least 55% and possibly much higher.

A.I. Collinson and Blewett Elementary Schools were not reviewed or visited and are assumed to be in adequate condition. Both are also feeder schools to Trafalgar Middle School and are impacted by the Options reviewed.

Only South Nelson and Trafalgar are in the range of schools eligible for renovation or replacement projects. A Feasibility Study for either or both would require a review of the surrounding schools to identify other possible options similar to the content of this study. Consideration of improved utilization of other schools and reduction of long term operating cost are critical to the Feasibility Study.

3.0 OPTIONS

OPTION 1

TRAFALGAR JUNIOR MIDDLE SCHOOL (Grades 6 to 8)
SOUTH NELSON ELEMENTARY (Grades K to 5)
GORDON SARGENT PRIMARY (Closed)
A. I. COLLISON ELEMENTARY (Possible closure)

GENERAL

Beyond the immediate impacts on these three schools, there are other impacts to consider. This change will add one cohort group (grade 9) to L. V. Rogers Secondary, and reduce the cohort groupings (grade 6) at six elementary schools, while adding the full Gordon Sargent population (grades K to 3) to South Nelson. Not included are the possible impacts of changes due to St. Joseph's and Waldorf students.

This results in efficient utilization of L. V. Rogers, but leaves Trafalgar Middle School and all of the elementary schools operating below the target efficiency of 95%. This reduces the number of facilities operated by one school.

L. V. ROGERS SECONDARY

L. V. Rogers should not need an addition or portables in this scenario.

TRAFALGAR MIDDLE

Trafalgar Middle School was formerly a junior secondary and designed much like a full secondary school. Middle schools, particularly at the grades 6, 7, & 8 level, tend to treat the elective spaces more as 'exploration centres' and less as full specialty rooms. In addition, there is a higher need for more traditional classroom space. This will require a downsizing of the number and fit up of the specialty rooms and a corresponding increase in the number of standard classrooms. This will tend to increase renovation costs due to the re-fitting of spaces and the number of walls demolished and new walls constructed. As the school is oversized, the entire school should not be renovated, and portions may be demolished or mothballed. The latter may be the best choice as there are no logical wings or sections to demolish. This will result in continued higher operating costs.

The Trafalgar site is large and adequate. Although it is in need of some upgrading, only the parking and access needs to be re-organized.

The Scope of work for Trafalgar Middle School will include the following:

- Phasing and temporary accommodation
- Demolish or mothball extra space (+/- 20%)
- Upgrade playfields, access, and parking
- Re-organization to increase the number of standard Classrooms
- Upgrades to meet B. C. Building Code
- HVAC and plumbing upgrade
- Electrical and electronic systems upgrade
- Upgrade floor, ceiling, and wall finishes as required
- New millwork and fixtures as required
- Exterior building envelope upgrade

Total Project Costs Estimated at $16,365,000
(new construction estimated at $14,645,000)
(costs at 2nd quarter 2006 basis)

OPTION 1 (cont.)

SOUTH NELSON ELEMENTARY

The planning of South Nelson Elementary is adequate and the number and size of rooms works for an elementary school of this capacity. Supervision of this multi-storey school is poor but there is no apparent and reasonable solution to this. There should be little in the way of re-organization of this school, only upgrading and re-fitting. The School is slightly oversized, but full renovation is recommended.

The South Nelson site is very small and inadequate. Re-development of the site to provide better parking and access, better playground space, and improved supervision is required.

Phasing the work on this site will be difficult and temporary accommodation for up to one full school year should be considered or construction costs will be excessive.

The Scope of work for South Nelson Elementary School will include the following:

- Phasing and temporary accommodation
- Re-construct playfields, parking, and access
- Upgrades to meet B. C. Building Code
- HVAC and plumbing upgrade
- Electrical and electronic systems upgrade
- Upgrade floor, ceiling, and wall finishes as required
- New millwork and fixtures as required
- Exterior building envelope upgrade

Total Project Costs Estimated at $7,518,000
(new construction estimated at $7,600,000)
(costs at 2nd quarter 2006 basis)

GORDON SARGENT PRIMARY

No work would be undertaken on Gordon Sargent Elementary School which is to be closed and disposed of, intact with existing building in place.

A. I. COLLINSON ELEMENTARY

Enrollment declines may require consideration of consolidation with Hume elementary.

TOTAL PROJECTED CAPITAL COSTS FOR OPTION 1

Renovation of Trafalgar Middle	$16,365,000
Renovation of South Nelson Elementary	$7,518,000
Total	$23,873,000
Replacement of Trafalgar Middle	$14,645,000
Replacement of South nelson Elementary	$7,600,000
Total	$23,245,000

(Demolition, hazardous materials removal, and site rehabilitation included)

OPTION 2

NEW TRAFALGAR ELEMENTARY SCHOOL (Grades K to 7)
SOUTH NELSON ELEMENTARY (Closed)
GORDON SARGENT PRIMARY (Closed)
ROSEMONT ELEMENTARY (Closed)

Beyond the immediate impacts on these three schools, there are other impacts to consider. This change will add two cohort groups (grades 8 & 9) to L. V. Rogers Secondary, and increase the cohort groupings (grade 7) at four elementary schools. L. V. Rogers will likely require an addition or portable classrooms to accommodate all of the students. Blewett Elementary will also require at least one portable classroom.

Not included are the possible impacts of changes due to St. Joseph's and Waldorf students.

This results in over-utilization of L. V. Rogers and Blewett, brings A. I. Collinson, Hume, and Redfish Elementary schools close to the target efficiency of 95%. This reduces the number of facilities operated by three schools.

L. V. ROGERS SECONDARY

L. V. Rogers cannot accommodate this full population of students. As per a separate report by **Fairbank Architect Ltd,** an addition of 1070 s.m. is recommended. The use of Portable classrooms is not acceptable as there is already a shortage of specialty space in the school and little site area is available.

TRAFALGAR ELEMENTARY

There is adequate space on the Trafalgar playgrounds to construct a new 350 + 80K elementary school in a two storey configuration. Although this will impact Trafalgar's playground space during construction, the only cost impacts may be for some additional bussing and user fees at alternate facilities.

The new school will be constructed in accordance with the Ministry of Education space standards and within the prescribed cost allowances in place at the time of construction.

Subsequent to the construction of the new school, the existing school would be demolished including any hazardous materials removal, and the balance of the site re-developed for playgrounds, parking, and access. There should be some excess site area available for other district functions.

The Scope of work for the new Trafalgar Elementary School will include the following:

- Construction of the new school on the existing playfields
- Demolition of the existing school
- New services, playfields, access, and parking

Total Project Costs Estimated at $9,716,000
(costs at 2nd quarter 2006 basis)

BLEWETT ELEMENTARY

Blewett cannot accommodate this full population of students. An addition or a portable classroom will be required. This work is not specifically included in this study.

OPTION 2 (cont.)

SOUTH NELSON ELEMENTARY,
GORDON SARGENT ELEMENTARY,
ROSEMONT ELEMENTARY
No work would be undertaken on South Nelson Elementary School, Gordon Sargent Elementary School, or Rosemont Elementary School which are to be closed and disposed of, intact with existing buildings in place.

TOTAL PROJECTED CAPITAL COSTS FOR OPTION 2

Addition to L. V. Rogers Secondary	$3,425,000
Construction of new Trafalgar Elementary	$9,716,000
Portable Classroom at Blewett Elementary	$110,000
Total	$13,251,000

(Demolition, hazardous materials removal, and site rehabilitation included)

OPTION 3

SOUTH NELSON ELEMENTARY (Grades K to 7)
TRAFALGAR MIDDLE SCHOOL (Closed)
GORDON SARGENT PRIMARY (Closed)

Beyond the immediate impacts on these three schools, there are other impacts to consider. This change will add two cohort groups (grades 8 & 9) to L. V. Rogers Secondary, and increase the cohort groupings (grade 7) at six elementary schools. In addition, South Nelson Elementary School will also need to accommodate all of the students from Gordon Sargent Primary (grades K to 3). L. V. Rogers will likely require an addition or portable classrooms to accommodate all of the students and Blewett Elementary will also require at least one portable classroom. Not included are the possible impacts of changes due to St. Joseph's and Waldorf students.

This results in over-utilization of L. V. Rogers and Blewett, brings A. I. Collinson, Hume, and Redfish Elementary schools close to the target efficiency of 95%. Rosemont Elementary will still be under utilized, but only by about one classroom. South Nelson Elementary will be close to 100% utilization. This reduces the number of facilities operated by two schools.

L. V. ROGERS SECONDARY
L. V. Rogers cannot accommodate this full population of students. As per a separate report by **Fairbank Architect Ltd,** an addition of 1070 s.m. is recommended. The use of Portable classrooms is not acceptable as there is already a shortage of specialty space in the school and little site area is available

OPTION 3 (cont.)

SOUTH NELSON ELEMENTARY,
The planning of South Nelson Elementary is adequate and the number and size of rooms works for an elementary school of this capacity. Supervision of this multi-storey school is poor but there is no apparent and reasonable solution to this. There should be little in the way of re-organization of this school, only upgrading and re-fitting. The South Nelson site is very small and inadequate. Re-development of the site to provide better parking and access, better playground space, and improved supervision is required.

Phasing the work on this site will be difficult and temporary accommodation for up to one full school year should be considered or construction costs will be excessive.

The Scope of work for South Nelson Elementary School will include the following:

- Phasing and temporary accommodation
- Re-construct playfields, parking, and access
- Upgrades to meet B. C. Building Code
- HVAC and plumbing upgrade
- Electrical and electronic systems upgrade
- Upgrade floor, ceiling, and wall finishes as required
- New millwork and fixtures as required
- Exterior building envelope upgrade

Total Project Costs Estimated at $7,518,000
(new construction estimated at $7,600,000)
(costs at 2nd quarter 2006 basis)

TRAFALGAR MIDDLE
GORDON SARGENT ELEMENTARY,
No work would be undertaken on Trafalgar Middle School or Gordon Sargent Elementary School, which are to be closed and disposed of, intact with existing buildings in place.

BLEWETT ELEMENTARY
Blewett cannot accommodate this full population of students. An addition or a portable classroom will be required. This work is not specifically included in this study.

TOTAL PROJECTED CAPITAL COSTS FOR OPTION 3

Addition to L. V. Rogers Secondary	$3,425,000
Renovation of South Nelson Elementary	$7,518,000
Portable Classroom at Blewett Elementary	$110,000
Total	$11,053,000

-or-

Addition to L. V. Rogers Secondary	$3,425,000
Replacement of South nelson Elementary	$7,600,000
Portable Classroom at Blewett Elementary	$110,000
Total	$11,135,000

(Demolition, hazardous materials removal, and site rehabilitation included)

OPTION 4

NEW TRAFALGAR ELEMENTARY /JUNIOR MIDDLE SCHOOL (Grades K to 8)
A. I. COLLINSON ELEMENTARY (Closed)
SOUTH NELSON ELEMENTARY (Closed)
GORDON SARGENT PRIMARY (Closed)

Beyond the immediate impacts of on these four schools, there are other impacts to consider. This change will add one cohort group (grades 9) to L. V. Rogers Secondary, and reduce the cohort groupings (grade 6) at four elementary schools. L. V. Rogers can accommodate all of the grade 9 to 12 students.

The students from South Nelson and Gordon Sargent would attend the new Elementary / Junior Middle School, and the students from A. I. Collinson would attend Hume Elementary.

Not included are the possible impacts of changes due to St. Joseph's and Waldorf students.

This results in slight over-utilization of L. V. Rogers but three Elementary Schools will be below their operating capacity. Blewett drops to 100% utilization, while Hume, Redfish, and Rosemont Elementary schools all drop to between 60% and 70%. This reduces the number of facilities operated by three schools.

L. V. ROGERS SECONDARY

L. V. Rogers should not need an addition or portables in this scenario.

TRAFALGAR ELEMENTARY

There is adequate space on the Trafalgar site to construct an Elementary / Junior Middle School including site infrastructure. This project could proceed in a phased manner and would slightly impact the Trafalgar students' playgrounds in the initial construction phase. The project could retain the existing Trafalgar gymnasium to be utilized by the entire school, and some other new facilities could also be shared.

The new school would be constructed in accordance with the Ministry of Education space standards and within the prescribed cost allowances in place at the time of construction.

Subsequent to the construction of phase I (Elementary School) of the new school, the existing school would be demolished including any hazardous materials removal and the phase II construction would begin. In Phase II, the Elementary students would relocate to the new facility and the Middle School would be constructed. Finally, the balance of the site will be re-developed for playgrounds, parking, and access.

The Scope of work for the new Trafalgar Elementary / Junior Middle School will include the following:

- Construction of the new school on the existing playfields
- Temporary accommodation and phasing
- Demolition of the existing school
- New services, playfields, access, and parking

Total Project Costs Estimated at $15,187,200
(costs at 2nd quarter 2006 basis)

OPTION 4 (cont.)

BLEWETT ELEMENTARY
Blewett will be within its capacity and no work will be included.

HUME ELEMENTARY,
REDFISH ELEMENTARY, AND
ROSEMONT ELEMENTARY,
No work would be undertaken on any of these schools and all would be well below the operating capacity.

SOUTH NELSON ELEMENTARY,
GORDON SARGENT ELEMENTARY,
A. I. COLLINSON ELEMENTARY,
No work would be undertaken on South Nelson Elementary School, Gordon Sargent Elementary School, or A. I. Collinson which are to be closed and disposed of, intact with existing buildings in place.

TOTAL PROJECTED CAPITAL COSTS FOR OPTION 2

Construction of new Trafalgar Elementary / Junior Middle School $15,187,200

(Demolition, hazardous materials removal, and site rehabilitation included)

4.0 COMPARISON OF OPTIONS

CAPITAL COSTS

RENOVATION PROJECTS

School	NOMINAL CAPACITY	OPTION 1	OPTION 2	OPTION 3	OPTION 4
L. V. Rogers Secondary **	725	$0	$3,424,560	$3,424,560	$0
Trafalgar Middle	575	$16,364,935	-	-	-
Trafalgar Elementary	350	-	$9,716,000	-	-
Trafalgar Elem - Jr Middle	700	-	-	-	$15,187,200
A. I. Collinson Elementary	100	$0	$0	$0	-
Blewett Elementary *	100	$0	$110,000	$110,000	$0
Gordon Sargent Primary	75	$0	-	-	-
Hume Elementary	250	$0	$0	$0	$0
Redfish Elementary	125	$0	$0	$0	$0
Rosemont Elementary	150	$0	-	$0	$0
South Nelson Elementary	200	$7,517,990	-	$7,517,990	-
		$23,882,924	**$13,250,560**	**$11,052,550**	**$15,187,200**
RANK		**4**	**2**	**1**	**3**

*** Cost includes portables as required at $110,000 each, installed**

**** Addition of 1070 s.m. for 125 students**

NEW INSTEAD OF RENOVATION

School	NOMINAL CAPACITY	OPTION 1	OPTION 2	OPTION 3	OPTION 4
L. V. Rogers Secondary **	725	$0	$3,424,560	$3,424,560	$0
Trafalgar Middle	575	$14,644,621	-	-	-
Trafalgar Elementary	350	-	$9,716,000	-	-
Trafalgar Elem - Jr Middle	700	-	-	-	$15,187,200
A. I. Collinson Elementary	100	$0	$0	$0	-
Blewett Elementary *	100	$0	$110,000	$110,000	$0
Gordon Sargent Primary	75	$0	-	-	-
Hume Elementary	250	$0	$0	$0	$0
Redfish Elementary	125	$0	$0	$0	$0
Rosemont Elementary	150	$0	-	$0	$0
South Nelson Elementary	200	$7,599,000	-	$7,599,000	-
		$22,243,621	**$13,250,560**	**$11,133,560**	**$15,187,200**
RANK		**4**	**2**	**1**	**3**

*** Cost includes portables as required at $110,000 each, installed**

**** Addition of 1070 s.m. for 125 students**

ENERGY COSTS

The Energy Costs in the table below are based on the assumption that renovations will include the full HVAC system. In a renovated school, this will include a more energy efficient system with required ventilation rates and digital computerized controls. In a new school, there would also be a more efficient building envelope to reduce heat loss and gain.

School	Area in S.M.	STATUS QUO		OPTION 1		OPTION 2		OPTION 3		OPTION 4	
			$/s.m.		$/s.m.		$/s.m.		$/s.m.		$/s.m.
L. V. Rogers Secondary [1]	9774					$7,779	$7.27	$7,779	$7.27		
Trafalgar Middle	7650	$90,171	$11.79	$83,552	$10.92			$0	$0.00		
Trafalgar Elementary	3000					$21,796	$7.27				
Trafalgar Elem-Jr Middle	5940									$43,184	$7.27
A. I. Collinson Elementary [3]	1062										
Blewett Elementary [2]	1492										
Gordon Sargent Primary	608	$6,736	$11.08	$0	$0.00	$0	$0.00	$0	$0.00	$0	$0.00
Hume Elementary [2]	3254										
Redfish Elementary [2]	1579										
Rosemont Elementary	1608	$17,379	$10.81	$17,379	$10.81	$0	$0.00	$17,379	$10.81	$17,379	$10.81
South Nelson Elementary	4049	$30,376	$7.50	$28,977	$7.16	$0	$0.00	$28,977	$7.16	$0	$0.00
		$144,661		$129,908		$29,575		$54,135		$60,563	
RANK				4		2		3		1	

1 Operating costs will increase at this school as shown (baseline cost not available)
2 Operating costs will vary slightly at these schools but we have not considered the impacts
3 Operating costs will drop for this school, but the base line costs are not available
(note: This table does not consider the variance between "new" and "renovation" particularly in option #1)

Note that the energy costs do not decline substantially on renovation projects as these include the provision of adequate ventilation air. This is offset by better energy efficiency and controls. New schools tend to achieve better energy efficiencies.

The energy costs for South Nelson are noticeably lower on a unit basis. This is likely due in part to the fact that most of the basement is not used for classroom purposes. The renovation figures make the same assumption.

OTHER FACTORS

OTHER OPERATING COSTS

There is some short term savings in Operating costs in a renovated or new school other than energy. This relates to new finishes with lower custodial costs, lamp replacement, etc. These are not normally significant enough to warrant detailed study.

Bussing costs for the Nelson area schools should not be significantly impacted, though consolidation can occasionally increase or decrease bussing costs.

The significant savings in consolidation of schools comes about from the reduction in salaries. Fewer schools mean fewer Administrative Officers, Clerical Staff, Noon Hour Supervisors and the like. Smaller floor space results in fewer custodians. Larger schools will typically have a more efficient utilization of Teacher / Pupil ratios, possibly resulting in slightly fewer teaching staff. Educational Assistants will not likely be affected significantly.

The financial impacts of these changes are beyond the scope of this report, but should be considered in any decisions.

SURPLUS SITES DISPOSAL

In closing some schools where the District is unlikely to require those sites in the future, there is potential to generate Capital Reserves which could be applied to the proposed projects. The valuation of each site is not within the scope of this project, but should be reviewed separately. The value of the sites will be impacted by location, potential re-use for other purposes, possible revenue generation potential, and or re-development potential.

The Ministry of Education looks most favorably on those projects for which the School District commits some Capital Reserves towards the outcome.

5.0

Summary

Option 1

This scenario results in the fewest closures and the least upheaval for students, parents, and teachers. However, it has the highest Capital and Operating Costs. At the same time, it provides the fewest opportunities for the School District to sell surplus sites and contribute to the cost of the projects. It is unlikely that the Ministry of Education would support the completion of two projects of this magnitude simultaneously in the same district without significant input of Local Capital Reserves.

Option 2

With three school closures, this is by far the most disruptive scenario for students, parents, and teachers. With significant savings in operating costs, and possibly the greatest potential for the generation of Capital from the sale of surplus sites, this option requires serious consideration. The Capital Cost is not the lowest, but savings in Operating Costs and Life Cycle Costs may offset the difference.
An addition to L. V. Rogers Secondary is questionable as this site is very limited for the present development and number of students.

Option 3

This scenario results in two school closures. The comparison of these options, simply on a Capital Facility basis would appear to favor Option 3 as a Renovation Project for South Nelson Elementary. Life Cycle costing would prove that a new school would be more favorable over the long term with lower operating costs, better supervision and planning.
The South Nelson site is very small however and will not likely have the space to address all of the site development needs of the school. An addition to L. V. Rogers Secondary is questionable as this site is very limited for the present development and number of students.

Option 4

This scenario results in three school closures and like Option 2 generates the greatest revenue from sales of surplus sites and operating cost savings. This Option also is similar to Option 1, resulting in a Junior Middle School and a single Elementary for the South Nelson and Gordon Sargent students. The added consideration is the closure of the now very small A. I. Collinson Elementary. Comparison of the options, simply on a Capital Facility basis would appear to favor Option 3 as a Renovation Project.
Life Cycle cost advantages of a new school, operating costs, and reduction in the total number of sites are important however and should be included in a comparison. In this option, there is no requirement for an addition at L. V. Rogers or any work at other schools. This site is adequate to address all of the site development needs of the school.
The disruption of student populations is primarily limited to South Nelson and Gordon Sargent as the change to Middle School students simply occurs one year earlier.

APPENDIX B

Educational Rationale:
Trafalgar Middle School
Grades (6-8)

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

SCHOOL DISTRICT #8
(KOOTENAY LAKE)

Educational Rationale:
Trafalgar Middle School
Grades 6-8)

School District #8 (Kootenay Lake) is one of several districts in the province in which have moved to create one or more middle schools. The middle school model has two key educational purposes:

- To address the unique needs of the adolescent learner
- To ease the transition to secondary school

School District #8 is an example of a district which has several small elementary schools: The recent reconfiguration of Trafalgar enabled students in Grade 5 from schools of between 70 and 200 students to attend Grades 6-8 in a school of over 500 students, prior to entering L.V. Rogers Secondary, which is now a grades 9-12 school of 750 learners.

Some of the key educational concepts and programming realities in middle schools, all designed to support the unique needs of the adolescent learners, are as follows:

1. **Programming: Teams of Teachers**
   Students in elementary schools stay with one teacher for most of the day. In middle schools, students are typically taught by a team of teachers. In many cases, two teachers will teach the four core academic subject areas (English, Social Studies, Math and Science), supported by others who cover the remaining subject areas.

   Having students taught by a combination of core and specialist teachers is another way to help ease the transition from elementary to secondary school.

2. **Teacher Advisory Groups (TAG)**
   Teacher advisory groups are established to establish positive relationships between young adolescents and adults and to enable students to engage in learning activities beyond the subject areas. Advisory groups are designed to ensure that students have the opportunity to establish connections with at least one adult in the school. In some cases,

TAGs may be places to engage students in discussions about school issues and in service activities. Students also learn organizational skills and cover the Health and Career Education in their Teacher Advisory Groups.

3. **Exploratories**
   Exploratory classes are provided to enable students to explore a range of subject areas and to come to terms with interests that may influence course choices in grades 9-12, when students have many options and will ultimately make choices regarding how to fulfill requirements of the Graduation Program. Exploratory classes can be key in supporting students' career development. At Trafalgar and many other middle schools throughout the province, exploratory classes include:
   - Fine Arts (Art, Music, Drama, Dance)
   - Applied Skills (Tech Ed, Home Ec, Computers)
   - Leadership Programs

4. **Teacher collaboration**
   Teachers in middle schools work in teams; there is a Grade 6 team, a Grade 7 team and a Grade 8 team. In grades 6 and 7, teachers meet during common planning time to develop integrated curricula and to design flexible scheduling which allows for in-depth study of some content. Teacher teams also have the opportunity to share practices and ideas which are working well for students.

5. **Student Activities and Support**
   Adolescent learners are curious and social beings: Peer relationships and a choice of activities are important in order to build self esteem and help the students discover their unique talents and interests. A variety of intra-mural activities such as clubs and extracurricular activities are designed to help build self-esteem and promote healthy lifestyles. Depending on the interests and strengths of the staff, opportunities will vary: Currently, Trafalgar students have many opportunities related to healthy schools, social responsibility, leadership and student support services.

APPENDIX C

Enrollment Projections

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

TRAFALGAR MIDDLE SCHOOL PIR (including consideration of the South Nelson Elementary closure in 2016/2017) **APPENDIX C - Revised 2012-10-19**

ENROLLMENT PROJECTIONS - NELSON AREA SCHOOLS to 2018/2019

SCHOOL		CAPACITY			11/12	12/13	13/14		14/15	15/16	16/17		17/18	18/19	19/20	20/21	21/22
		Nominal	Operating	Operating 2016/2017				Utilization				Utilization					
	K	20	19	0													
Gordon Sergeant Primary	1-3	75	63	0													
	K	20	19	0													
A. I. Collinson Elementary	1-6	100	92	0													
	K	20	19	19	22.0	24.0	22.0	115.8%	22.0	23.0	23.0	121.1%	23.0	22.0	22	22	22
Blewett Elementary	1-5	100	90	90	90.0	86.0	96.0	106.7%	107.0	109.0	114.0	126.7%	114.0	113.0	113	113	112
	K	20	38	38	29.0	44.0	38.0	100.0%	38.0	35.0	35.0	92.1%	35.0	33.0	33	35	35
Hume Elementary	1-5	250	203	203	159.0	157.0	177.0	87.2%	176.0	180.0	181.0	89.2%	190.0	181.0	176	171	171
	K	20	19	19	13.0	20.0	17.0	89.5%	17.0	17.0	18.0	94.7%	18.0	18.0	17	17	17
Redfish Elementary	1-5	125	113	113	75.0	79.0	86.0	76.1%	94.0	105.0	116.0	102.7%	118.0	117.0	118	117	116
	K	20	19	19	23.0	25.0	23.0	121.1%	23.0	23.0	24.0	126.3%	24.0	24.0	22	22	22
Rosemont Elementary	1-5	150	135	135	75.0	79.0	86.0	63.7%	94.0	105.0	116.0	85.9%	118.0	117.0	118	117	116
	K	20	38	38	31.0	36.0	33.0	86.8%	33.0	34.0	0.0	0.0%					
South Nelson Elementary	1-5	200	157	157	151.0	153.0	141.0	89.8%	130.0	114.0	0.0	0.0%					
	K *	0	0	38	0.0	0.0	0.0		0.0	0.0	34.0	89.5%	32.0	32.0	33	33	33
Traffalgar Elem./Middle	elem*	200	375	425	293.0	285.0	255.0	68.0%	264.0	283.0	380.0	89.4%	364.0	407.0	424	408	406
	sec*	375	200	150	148.0	136.0	156.0	78.0%	129.0	126.0	138.0	92.0%	145.0	113.0	126	160	144
		575	575	613	441.0	421.0	411.0	71.5%	393.0	409.0	552.0	90.0%	541.0	552.0	583.0	601.0	583.0
L. V. Rogers Secondary	9-12	725	725	725	752.0	737.0	684.0	94.3%	692.0	671.0	652.0	89.9%	662	667	651	650	666
	Total students excluding "K"			1841.0			1681.0	91.3%			1697.0	92.2%					1731.0
																	94.0%

* Grade configuration changes in 2016

Capacity adjustments included for Hume Elem. and South Nelson Elem. to accommodate Full Day Kindergarten in two rooms.

APPENDIX D

DESIGN AID SHEETS
EXISTING AND REPLACEMENT OPTIONS

Trafalgar Middle & South Nelson Elementary

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

Renovated Trafalgar Jr. Middle School — Option 1.1

DESIGN AID SHEET FOR MIDDLE SCHOOLS - SHEET #1

Grades: 7 - 8 - 9

SCHOOL NAME: SD #8 (Kootenay Lake) — Facility Code: _____ — Date: 1-Jun-10

DISTRICT

School Capacity — *Nominal - E: 300 S: 150 — *Operating - 300 150

Total Elective Modules: 1

This sheet is for use in the design proceedures in PART 2 of the building manual.

Agreed Nominal / Operating Capacity:

Ministry of Education — Date

PART 1 - ACADEMIC/VOCATIONAL

Space Function	1A - EXISTING Description	Area	Mods.	1B - MODULES Core	Deficit	Surplus	1C - NEW CORE Description	Area	Mods.	1D - NEW ELECTIVE Description	Area	Mods.
Business Education	Computers	80	0.80								0	
			0.00	1.0	0.20	0.00		0	0.20		0	
			0.00								0	
			0.00								0	
Fine Arts	Art 166.9		0.00								0	
	Coral Music		0.00	1.0	0.00	0.00		0	0.00		0	
	Music	167	1.00								0	
	Music Office		0.00								0	
	Drama & Theatre 262.2		0.00								0	
Home Economics	Clothing		0.00								0	
	Foods	134.5	1.22	1.0	0.00	0.22		0	0.00		0	
	Clothing/Foods		0.00								0	
											0	
Industrial Education	Drafting		0.00								0	
	Drafting 78.0		0.00								0	
	General Shop 108.7		0.00	1.0	0.00	0.00		0	0.00		0	
	General Shop										0	
	General Shop	146.1	1.00								0	
	Technology		0.00								0	
	Technology 75.1		0.00								0	
Science	Science	91.88	1.00								0	
	Science 77.6		0.00	1.0	0.00	0.80		0	0.00		0	
	Science	79.9	0.80								0	
			0.00								0	
Other*												
General Instruction	4 rooms 75-95 s.m.	320	4.00	E: 12			Area = no. of			Area = no. of		
	9 other rooms	703.9	8.80	S: 1.0	0.20	-0.20	modules x 80 s.m.	16.06	0.20	modules x 80 s.m.	0	
Sub-Totals		1723 Ai				0.82 Bi		16.06 Ci			0 Di	0.18 Dii

*Note - May not be used except for spaces agreed in writing by the Ministry.

Total of New Elective Modules: 0.00

Renovated Trafalgar Jr. Middle School — Option 1.1

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #2 Jun 01, 10

(See sheet #1 for base information)

PART 2 - SERVICE ACTIVITY

Space Function	E-Exist.	F-Allowable	G-Deficit	H-New
Administration / Health	273.8	155	-118.8	0
Counselling	48.13	50	1.87	1.87
Gen. Storage	148.73	80	-68.73	0
Gym Activity	729.01	600	-129.01	0
Gym Ancilliary	183.85	150	-33.85	0
Media / Tech Centre	239.41	270	30.59	30.59
Multi-purpose	236.72	160	-76.72	0
Spec. Education	240	240	0	0
Mechanical	179.31	135	-44.31	0
Design Space	1453.01	990	-463.01	0
* Other				
SUB-TOTAL	Ei 3731.97	Fi 2830		Hi 32.46
			Fi-Ei=	-901.97

PART 3 - TOTAL AREAS

		N-EXISTING		P-NEW
Existing Acad./Voc.	Ai	1723.4		
Core Acad./Voc. Additions			Ci	16.06
Elective Acad./Voc. Additions			Di	0
Service Activity	Ei	3731.97	Hi	32
SUB-TOTAL		5455.37	Pi	49
			Ni	5455
Total Gross Allowable Area		**4650**		5504

ENROLLMENT:	as of:		Gr. Structure:		
Kgn:	Gr. 1-7	Gr. 8-12	Type 1	Type 2	Port. Cr's.

SITE REQUIREMENTS	PROVIDED	REQUIRED
HECTARES		
ACRES	0.00	0.00

Mothballed space

Mothballed Space	**768.5**
Renovated space	**4687**

Existing South Nelson Elementary School — Option 1.2

DESIGN AID SHEET FOR ELEMENTARY SCHOOLS

Grades: K - 5

SCHOOL NAME: **South Nelson Elementary** Facility Code: 07014 Date: Jun 01, 10

DISTRICT

SCHOOL CAPACITY

* Nominal	Kindergarten	40	Elementary	200
* Operating	Kindergarten	38	Elementary	176

Agreed Nominal / Operating Capicty:

Ministry of Education Date

PART 1 - BASIC AREAS

SPACE FUNCTION	A-Existing	B-Allowable	C-Deficit	D-New
Administration / Health	124.0	80.0	-44.0	0.0
Gen. Instruction	640.0	640.0	0.0	0.0
Gen. Storage	96.0	40.0	-56.0	0.0
Gym Activity	362.0	380.0	18.0	18.0
Gym Ancilliary	83.0	65.0	-18.0	0.0
Media / Tech Centre	214.0	160.0	-54.0	0.0
Multipurpose	128.0	80.0	-48.0	0.0
Spec. Education	112.0	120.0	8.0	8.0
Mechanical	106.0	60.0	-46.0	0.0
Kindergarten	108.0	180.0	72.0	72.0
Design Space	2076.0	405.0	-1671.0	0.0
* Other			0.0	0.0
				98.0
SUB-TOTAL	Ai 4049.0	Bi 2210.0		Di 98.0
Surplus Classroom Area included in Design Space=				

Comments

Renovated Area 4049.0

No Strong start, No full day Kindergarten

* Other

PART 2 - TOTAL AREAS

	E-Existing		F-New	
Ai	4049.0	Di	98.0	
		Ji	4049.0	
TOTAL GROSS ALLOWABLE AREA			4147.0	

SITE REQUIREMENTS	PROVIDED		REQUIRED
HECTARES	0.71		2.00
ACRES	1.76		4.94

New Trafalgar Jr. Middle School — Option 2.1

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #1

Grades: 6 to 8

SCHOOL NAME: Trafalgar Middle — Facility Code: _____ — Date: 1-Jun-10

DISTRICT: SD #8

School Capacity						
	*Nominal -	E	300	S	150	
	*Operating -	E	300	S	150	

Total Elective Modules: 1

Agreed Nominal / Operating Capacity:

Ministry of Education _____ Date _____

This sheet is for use in the design proceedures in PART 2 of the building manual.

PART 1 - ACADEMIC/VOCATIONAL

Space Function	1A - EXISTING Description	Area	Mods.	1B - MODULES Core	Deficit	Surplus	1C - NEW CORE Description	Area	Mods.	1D - NEW ELECTIVE Description	Area	Mods.
			0.00								0	
Business Education			0.00	1.0	1.00	0.00	Computers	100	1.00		0	
			0.00								0	
			0.00								0	
	Art		0.00								0	
Fine Arts	Coral Music		0.00	1.0	1.00	0.00	Music	160	1.00	Drama & theatre	0	
	Music		0.00								0	
	Drama & Theatre		0.00								0	
	Clothing		0.00								0	
Home Economics	Foods		0.00	1.0	1.00	0.00	Clothing/foods	140	1.00		0	
	Clothing/Foods		0.00								0	
											0	
	General Shop		0.00								0	
	Drafting		0.00								0	
Industrial Education	Electricity/Electronics		0.00	1.0	1.00	0.00	General Shop	155	1.00	Technology	125	1.00
											0	
	Technology		0.00								0	
											0	
	General Science		0.00								0	
Science	Physics		0.00	1.0	1.00	0.00	Science	100	1.00		0	
	Chemistry		0.00								0	
	Biology		0.00								0	
Other*												
General Instruction	rooms 75-95 s.m.	0	0.00	E: 12			Area = no. of			Area = no. of		
	other rooms		0.00	S: 1.0	13.00	0.00	modules x 80 s.m.	1040	13.00	modules x 80 s.m.	0	
Sub-Totals		0 Ai				0.00 Bi		1695 Ci			125 Di	1.00 Dii

Total of New Elective Modules: 1.00

*Note - May not be used except for spaces agreed in writing by the Ministry.

New Trafalgar Jr. Middle School — Option 2.1

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #2 Jun 01, 10

(See sheet #1 for base information)

PART 2 - SERVICE ACTIVITY

Space Function	E-Exist.	F-Allowable	G-Deficit	H-New
Administration / Health		155	155	155
Counselling		50	50	50
Gen. Storage		80	80	80
Gym Activity		600	600	600
Gym Ancilliary		150	150	150
Media / Tech Centre		270	270	270
Multi-purpose		160	160	160
Spec. Education		240	240	240
Mechanical		135	135	135
Design Space		990	990	990
* Other		635	635	635
	Ei	Fi		Hi
SUB-TOTAL	0	3465		3465
			Fi-Ei=	3465

Other:
Neighborhood Learning Centre at 15% of 4230 s.m. =635 s.m.

ENROLLMENT: 2014 / 2015
Full Day K at 0 FTE
Elementary (6 to 7) at 286
Secondary (gr 8) at 155

PART 3 - TOTAL AREAS

		N-EXISTING		P-NEW
Existing Acad./Voc.	Ai	0		
Core Acad./Voc. Additions			Ci	1695
Elective Acad./Voc. Additions			Di	125
Service Activity	Ei	0	Hi	3465
SUB-TOTAL		0	Pi	5285
			Ni	0
Total Gross Allowable Area		**4650**		5285
Plus 'Other		635		
Total		**5285**		

SITE REQUIREMENTS	PROVIDED	REQUIRED
HECTARES		
ACRES	0.00	0.00

Area new	**5285**

Existing South Nelson Elementary School — Option 2.2

DESIGN AID SHEET FOR ELEMENTARY SCHOOLS

Grades: K - 5

SCHOOL NAME: **South Nelson Elementary** Facility Code: 07014 Date: Jun 01, 10

DISTRICT

SCHOOL CAPACITY

* Nominal	Kindergarten	40	Elementary	200
* Operating	Kindergarten	38	Elementary	176

Agreed Nominal / Operating Capicty:

Ministry of Education Date

PART 1 - BASIC AREAS

SPACE FUNCTION	A-Existing	B-Allowable	C-Deficit	D-New
Administration / Health	124.0	80.0	-44.0	0.0
Gen. Instruction	640.0	640.0	0.0	0.0
Gen. Storage	96.0	40.0	-56.0	0.0
Gym Activity	362.0	380.0	18.0	18.0
Gym Ancilliary	83.0	65.0	-18.0	0.0
Media / Tech Centre	214.0	160.0	-54.0	0.0
Multipurpose	128.0	80.0	-48.0	0.0
Spec. Education	112.0	120.0	8.0	8.0
Mechanical	106.0	60.0	-46.0	0.0
Kindergarten	108.0	180.0	72.0	72.0
Design Space	2076.0	405.0	-1671.0	0.0
* Other			0.0	0.0
				98.0
SUB-TOTAL	Ai 4049.0	Bi 2210.0		Di 98.0
Surplus Classroom Area included in Design Space=				

Comments

Renovated Area 4049.0

No Strong start, No full day Kindergarten

* Other

PART 2 - TOTAL AREAS

	E-Existing		F-New	
Ai	4049.0	Di	98.0	
		Ji	4049.0	
TOTAL GROSS ALLOWABLE AREA			4147.0	

SITE REQUIREMENTS	PROVIDED		REQUIRED
HECTARES	0.71		2.00
ACRES	1.76		4.94

Renovate Trafalgar to Elem / Middle School — Option 3.1

DESIGN AID SHEET FOR MIDDLE SCHOOLS - SHEET #1

Grades: K to 8

SCHOOL NAME: SD #8 (Kootenay Lake) Facility Code: 07005 Date: 1-Jun-10

DISTRICT

School Capacity								
*Nominal -	E	450	S	150	K	40	Total Elective Modules	1
*Operating -	E	440	S	155	K	38		

This sheet is for use in the design proceedures in PART 2 of the building manual.

Agreed Nominal / Operating Capacity:

Ministry of Education Date

PART 1 - ACADEMIC/VOCATIONAL

Space Function	1A - EXISTING Description	Area	Mods.	1B - MODULES Core	Deficit	Surplus	1C - NEW CORE Description	Area	Mods.	1D - NEW ELECTIVE Description	Area	Mods.
Business Education	Computers	80	0.00 0.80 0.00 0.00	1.0	0.20	0.00		0	0.20	Computer	0 0 0 0	
Fine Arts	Art 166.9 Coral Music Music 167.0 Music Drama & Theatre	262.2	0.00 0.00 0.00 0.00 2.18	1.0	0.00	1.18		0	0.00		0 0 0 0 0	
Home Economics	Clothing Foods Clothing/Foods	134.5	0.00 1.22 0.00	1.0	0.00	0.22		0	0.00		0 0 0 0	
Industrial Education	General Shop Drafting/Elec. 80.0 Technology Metalwork 146.1 Technology Woodwork 75.2	108.7	0.00 0.00 0.87 0.00 0.00 0.00	1.0	0.13	0.00		0	0.13		0 0 0 0 0 0 0	
Science	Science 77.6 Science 79.9 Science	91.88	0.00 0.00 0.66 0.00	1.0	0.34	0.00		0	0.34		0 0 0 0	
Other*												
General Instruction	# 8 rooms 75-95 s.m. other rooms	800 703.9	10.00 8.80	E: 18 S: 1.0	0.20	0.00	Area = no. of modules x 80 s.m.	16.06	0.20	Area = no. of modules x 80 s.m.	0	
Sub-Totals		2181 Ai				1.41 Bi		16.06 Ci			0 Di	-0.41 Dii

*Note - May not be used except for spaces agreed in writing by the Ministry.

Total of New Elective Modules: 0.00

Convert to General Shop (108.7 s.m.)

Convert to Kindergarten and/or Strong Start (167 s.m.)

Convert to classrooms (479.6 s.m.)

Convert to classroom & Special Ed (146.1 s.m.)

Renovate Trafalgar to Elem / Middle School — Option 3.1

DESIGN AID SHEET FOR MIDDLE SCHOOLS - SHEET #2 Jun 01, 10

(See sheet #1 for base information)

PART 2 - SERVICE ACTIVITY

Space Function	E-Exist.	F-Allowable	G-Deficit	H-New
Administration / Health	193.8	190	-3.8	0
Counselling	48.13	50	1.87	0
Gen. Storage	148.73	90	-58.73	0
Gym Activity	729.01	600	-129.01	0
Gym Ancilliary	183.85	150	-33.85	0
Media / Tech Centre	239.41	310	70.59	0
Multi-purpose	156.72	160	3.28	0
Spec. Education	240	320	80	0
Mechanical	179.31	160	-19.31	0
Design Space	1453.01	1170	-283.01	0
* Other	160	160	0	0
	Ei	Fi		Hi
SUB-TOTAL	3731.97	3360		0
			Fi-Ei=	-371.97

ENROLLMENT: 2014 / 2015
Full Day K at 36 FTE
Elementary (1 to 7) at 437
Secondary (gr 8) at 155

Other:
Re-purpose space for 2 Kindergartens and one Strong Start
Convert portions of Admin, Multipurpose to Strong Start and Kindergarten.
Re-purpose Admin 80 s.m.
Re-purpose Multipurpose 80 s.m.

Total of re-purposed space = 1061.4
Total of renovated space = 4852

PART 3 - TOTAL AREAS

		N-EXISTING		P-NEW
Existing Acad./Voc.	Ai	2181.21		
Core Acad./Voc. Additions			Ci	16.06
Elective Acad./Voc. Additions			Di	0
Service Activity	Ei	3731.97	Hi	0
SUB-TOTAL		5913.18	Pi	16
			Ni	5913
Total Gross Allowable Area		**5500**		5929

ENROLLMENT:	as of:		Gr. Structure:		
Kgn:	Gr. 1-7	Gr. 8-12	Type 1	Type 2	Port. Cr's.

SITE REQUIREMENTS	PROVIDED	REQUIRED
HECTARES		
ACRES	0.00	0.00

Total of re-purposed space =	1061.4 s.m.
Balance of renovated Space =	4852.0 s.m.
New Space =	155.7 s.m.

New Trafalgar Elementary / Jr. Middle School — Option 4.1

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #1

Grades: K to 8

SCHOOL NAME: Trafalgar Elementary / Middle — Facility Code: _____ — Date: 2-Jun-10

DISTRICT: SD #8

School Capacity							
	*Nominal -	E	500	S	150	K 40	Total Elective Modules: 1
	*Operating -	E	440	S	150	K 38	

This sheet is for use in the design proceedures in PART 2 of the building manual.

Agreed Nominal / Operating Capacity:

Ministry of Education — Date

PART 1 - ACADEMIC/VOCATIONAL

Space Function	1A - EXISTING Description	Area	Mods.	1B - MODULES Core	Deficit	Surplus	1C - NEW CORE Description	Area	Mods.	1D - NEW ELECTIVE Description	Area	Mods.
			0.00								0	
Business Education			0.00	1.0	1.00	0.00	Computers	100	1.00		0	
			0.00								0	
			0.00								0	
	Art		0.00								0	
Fine Arts	Coral Music		0.00	1.0	1.00	0.00	music	160	1.00	Drama & Theatre	120	1.00
	Music		0.00								0	
	Drama & Theatre		0.00								0	
	Clothing		0.00								0	
Home Economics	Foods		0.00	1.0	1.00	0.00	clothing/foods	140	1.00		0	
	Clothing/Foods		0.00								0	
											0	
	General Shop		0.00								0	
	Drafting		0.00								0	
Industrial Education				1.0	1.00	0.00	General Shop	155	1.00		0	
											0	
	Technology		0.00								0	
											0	
	General Science		0.00								0	
Science	Physics		0.00	1.0	1.00	0.00	Science	100	1.00		0	
	Chemistry		0.00								0	
	Biology		0.00								0	
Other*												
General Instruction	rooms 75-95 s.m.	0	0.00	E: 20			Area = no. of			Area = no. of		
	other rooms		0.00	S: 1.0	21.00	0.00	modules x 80 s.m.	1680	21.00	modules x 80 s.m.	0	
Sub-Totals		0 Ai				0.00 Bi		2335 Ci			120 Di	Dii

*Note - May not be used except for spaces agreed in writing by the Ministry.

Total of New Elective Modules: 1.00

New Trafalgar Elementary / Jr. Middle School — Option 4.1

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #2 Jun 02, 10

(See sheet #1 for base information)

PART 2 - SERVICE ACTIVITY

Space Function	E-Exist.	F-Allowable	G-Deficit	H-New
Administration / Health		190	190	190
Counselling		50	50	50
Gen. Storage		90	90	90
Gym Activity		600	600	600
Gym Ancilliary		150	150	150
Media / Tech Centre		320	320	320
Multi-purpose		160	160	160
Spec. Education		320	320	320
Mechanical		170	170	170
Design Space		1225	1225	1225
* Other		1212	1212	1212
SUB-TOTAL	Ei 0	Fi 4487		Hi 4487
			Fi-Ei=	4487

Other' is:
2 X Kindergarten @ 90 sm + 20 sm (design space)
Strong start @90 s.m. + 20 sm (design space)
Neighborhood Learning Centre at 15% of 5880 s.m. = 882 s.m.

ENROLLMENT: 2014 / 2015
Full Day K at 36 FTE
Elementary (1 to 7) at 437
Secondary (gr 8) at 155

PART 3 - TOTAL AREAS

		N-EXISTING		P-NEW
Existing Acad./Voc.	Ai	0		
Core Acad./Voc. Additions			Ci	2335
Elective Acad./Voc. Additions			Di	120
Service Activity	Ei	0	Hi	4487
SUB-TOTAL		0	Pi	6942
			Ni	0
Total Gross Allowable Area		**5775**		6942
extra gross area for 25 Elem. students		117.5		
plus Other		1212		
		7104.5		

SITE REQUIREMENTS	PROVIDED	REQUIRED
HECTARES		
ACRES	0.00	0.00

Area New	6942

New + part renovateTrafalgar Jr. Middle School — Option 5.1

DESIGN AID SHEET FOR MIDDLE SCHOOLS - SHEET #1

Grades: 7 - 8 - 9

SCHOOL NAME: SD #8 (Kootenay Lake) Facility Code: _____ Date: 1-Jun-10

DISTRICT

School Capacity					
*Nominal -	E	300	S	150	Total Elective Modules: 1
*Operating -	E	300	S	150	

This sheet is for use in the design proceedures in PART 2 of the building manual.

Agreed Nominal / Operating Capacity:

Ministry of Education | Date

PART 1 - ACADEMIC/VOCATIONAL

Space Function	1A - EXISTING Description	Area	Mods.	1B - MODULES Core	Deficit	Surplus	1C - NEW CORE Description	Area	Mods.	1D - NEW ELECTIVE Description	Area	Mods.
Business Education	Computers		0.00								0	
			0.00	1.0	1.00	0.00	COMPUTER	100	1.00		0	
			0.00								0	
			0.00								0	
Fine Arts	Art		0.00								0	
	Coral Music		0.00	1.0	0.00	0.00		0	0.00		0	
	Music	167	1.00								0	
	Music Office		0.00								0	
	Drama & Theatre		0.00								0	
Home Economics	Clothing		0.00								0	
	Foods		0.00	1.0	1.00	0.00	CLOTHING FOODS	110	1.00		0	
	Clothing/Foods		0.00								0	
Industrial Education	Drafting		0.00								0	
	Drafting		0.00								0	
	General Shop		0.00	1.0	1.00	0.00	GENERAL SHOP	155	1.00	TECHNOLOGY	125	1.00
	General Shop										0	
	General Shop		0.00								0	
	Technology		0.00								0	
Science	Science		0.00								0	
	Science		0.00	1.0	1.00	0.00	SCIENCE	140	1.00		0	
	Science		0.00								0	
			0.00								0	
Other*												
General Instruction	rooms 75-95 s.m.	0	0.00	E: 12			Area = no. of			Area = no. of		
	other rooms		0.00	S: 1.0	13.00	0.00	modules x 80 s.m.	1040	13.00	modules x 80 s.m.	0	
Sub-Totals		167 Ai				0.00 Bi		1545 Ci			125 Di	1.00 Dii

*Note - May not be used except for spaces agreed in writing by the Ministry.

Total of New Elective Modules: 1.00

New + part renovateTrafalgar Jr. Middle School — Option 5.1

DESIGN AID SHEET FOR SECONDARY SCHOOLS - SHEET #2 Jun 01, 10

(See sheet #1 for base information)

PART 2 - SERVICE ACTIVITY

Space Function	E-Exist.	F-Allowable	G-Deficit	H-New
Administration / Health		155	155	155
Counselling		50	50	50
Gen. Storage		80	80	80
Gym Activity		600	600	600
Gym Ancilliary		150	150	150
Media / Tech Centre		270	270	270
Multi-purpose		160	160	160
Spec. Education		240	240	240
Mechanical		135	135	0
Design Space	30	990	960	960
* Other		650	650	650
	Ei	Fi		Hi
SUB-TOTAL	30	3480		3315
			Fi-Ei=	3450

Other:
Neighborhood Learning Centre at 15% of 4335 s.m. = 650 s.m.

ENROLLMENT: 2014 / 2015
Full Day K at 0 FTE
Elementary (6 to 7) at 286
Secondary (gr 8) at 155

New space =	**4985**
Renovated Space	**197**

PART 3 - TOTAL AREAS

		N-EXISTING		P-NEW
Existing Acad./Voc.	Ai	167.01		
Core Acad./Voc. Additions			Ci	1545
Elective Acad./Voc. Additions			Di	125
Service Activity	Ei	30	Hi	3315
SUB-TOTAL		197.01	Pi	4985
			Ni	197
Total Allowable		**4650**		**5182**
Add Other		650		
		5300		

ENROLLMENT:	as of:		Gr. Structure:		
Kgn:	Gr. 1-7	Gr. 8-12	Type 1	Type 2	Port. Cr's.
	286	155			

SITE REQUIREMENTS	PROVIDED	REQUIRED
HECTARES		
ACRES	0.00	0.00

Existing South Nelson Elementary School — Option 5.2

DESIGN AID SHEET FOR ELEMENTARY SCHOOLS

Grades: K - 5

SCHOOL NAME: **South Nelson Elementary** Facility Code: 07014 Date: Jun 01, 10

DISTRICT

SCHOOL CAPACITY

* Nominal	Kindergarten	40	Elementary	200
* Operating	Kindergarten	38	Elementary	176

Agreed Nominal / Operating Capicty:

Ministry of Education Date

PART 1 - BASIC AREAS

SPACE FUNCTION	A-Existing	B-Allowable	C-Deficit	D-New
Administration / Health	124.0	80.0	-44.0	0.0
Gen. Instruction	640.0	640.0	0.0	0.0
Gen. Storage	96.0	40.0	-56.0	0.0
Gym Activity	362.0	380.0	18.0	18.0
Gym Ancilliary	83.0	65.0	-18.0	0.0
Media / Tech Centre	214.0	160.0	-54.0	0.0
Multipurpose	128.0	80.0	-48.0	0.0
Spec. Education	112.0	120.0	8.0	8.0
Mechanical	106.0	60.0	-46.0	0.0
Kindergarten	108.0	180.0	72.0	72.0
Design Space	2076.0	405.0	-1671.0	0.0
* Other			0.0	0.0
				98.0
SUB-TOTAL	Ai 4049.0	Bi 2210.0		Di 98.0
Surplus Classroom Area included in Design Space=				

Comments

Renovated Area 4049.0

No Strong start, No full day Kindergarten

* Other

PART 2 - TOTAL AREAS

	E-Existing		F-New	
Ai	4049.0	Di	98.0	
		Ji	4049.0	
TOTAL GROSS ALLOWABLE AREA			4147.0	

SITE REQUIREMENTS	PROVIDED		REQUIRED
HECTARES	0.71		2.00
ACRES	1.76		4.94

New + part renovate Trafalgar to Elem / Middle School — Option 6.1

DESIGN AID SHEET FOR MIDDLE SCHOOLS - SHEET #1

Grades: K to 8

SCHOOL NAME: SD #8 (Kootenay Lake) — Facility Code: _____ — Date: 1-Jun-10

DISTRICT

School Capacity							
*Nominal -	E	500	S	150	K	40	Total Elective Modules: 1
*Operating -	E	440	S	150	K	38	

This sheet is for use in the design proceedures in PART 2 of the building manual.

Agreed Nominal / Operating Capacity:

Ministry of Education — Date

PART 1 - ACADEMIC/VOCATIONAL

Space Function	1A - EXISTING Description	Area	Mods.	1B - MODULES Core	Deficit	Surplus	1C - NEW CORE Description	Area	Mods.	1D - NEW ELECTIVE Description	Area	Mods.
			0.00								0	
Business Education	Computers		0.00	1.0	1.00	0.00	Computer	100	1.00	Computer	100	1.00
			0.00								0	
			0.00								0	
	Art		0.00								0	
Fine Arts	Coral Music		0.00	1.0	0.00	0.00		0	0.00		0	
	Music	167	1.00								0	
	Music		0.00								0	
	Drama & Theatre		0.00								0	
	Clothing		0.00								0	
Home Economics	Foods		0.00	1.0	1.00	0.00	Clothing/Foods	140	1.00		0	
	Clothing/Foods		0.00								0	
											0	
	General Shop		0.00								0	
	Drafting/Elec.		0.00								0	
Industrial Education	Technology		0.00	1.0	1.00	0.00	technology	125	1.00	technology	0	
											0	
	Metalwork		0.00								0	
	Technology		0.00								0	
	Woodwork		0.00								0	
	Science		0.00								0	
Science	Science		0.00	1.0	1.00	0.00	science	140	1.00		0	
	Science		0.00								0	
			0.00								0	
Other*												
General Instruction	rooms 75-95 s.m.	0	0.00	E: 20			Area = no. of			Area = no. of		
	other rooms		0.00	S: 1.0	21.00	0.00	modules x 80 s.m.	1680	21.00	modules x 80 s.m.	0	
Sub-Totals		167 Ai				0.00 Bi		2185 Ci			100 Di	1.00 Dii

*Note - May not be used except for spaces agreed in writing by the Ministry.

Total of New Elective Modules: 1.00

New + part renovate Trafalgar to Elem / Middle School — Option 6.1

DESIGN AID SHEET FOR MIDDLE SCHOOLS - SHEET #2 Jun 01, 10

(See sheet #1 for base information)

PART 2 - SERVICE ACTIVITY

Space Function	E-Exist.	F-Allowable	G-Deficit	H-New
Administration / Health		190	190	190
Counselling		50	50	50
Gen. Storage		90	90	90
Gym Activity		600	600	600
Gym Ancilliary		150	150	150
Media / Tech Centre		320	320	320
Multi-purpose		160	160	160
Spec. Education		320	320	320
Mechanical		170	170	170
Design Space	30	1225	1195	1195
* Other		1209	1209	1209
	Ei	Fi		Hi
SUB-TOTAL	30	4484		4454
			Fi-Ei=	4454

Other' is:
2 X Kindergarten @ 90 sm + 20 sm (design space)
Strong start @90 s.m. + 20 sm (design space)
Neighborhood Learning Centre at 15% of 5860 s.m. = 879 s.m.

ENROLLMENT: 2014 / 2015
Full Day K at 36 FTE
Elementary (1 to 7) at 437
Secondary (gr 8) at 155

PART 3 - TOTAL AREAS

		N-EXISTING		P-NEW
Existing Acad./Voc.	Ai	167		
Core Acad./Voc. Additions			Ci	2185
Elective Acad./Voc. Additions			Di	100
Service Activity	Ei	30	Hi	4454
SUB-TOTAL		197	Pi	6739
			Ni	197
Total Gross Allowable Area		**5775**		**6936**
Add Other		1209		
Total Gross Allowable Area		**6984**		

ENROLLMENT: as of:			Gr. Structure:		
Kgn:	Gr. 1-7	Gr. 8-12	Type 1	Type 2	Port. Cr's.
36	437	155			

SITE REQUIREMENTS	PROVIDED	REQUIRED
HECTARES		
ACRES	0.00	0.00

Area of renovation	197
Area new	6936

APPENDIX E

ARCHITECTURAL CONDITION ASSESSMENT FOR RENOVATION

Trafalgar Middle School & South Nelson elementary School

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

McDonell Quiring Neumann
ARCHITECTS

RENOVATION REPORT

Project Title:	**Trafalgar Middle School**		
Project No:	**09443**		
Phase:	**Project Identification report**		
Date:	**May 07, 2009**	**Author:**	**Bob McDonell,** MQN Architects MAIBC
Revision:			

1.0 Project Summary

1.1 Background

Trafalgar Middle School was formerly a secondary school, converted first likely to a Jr. Secondary, then to a grade 7, 8, 9 Middle School, and last year to a grade 6, 7, 8 Middle School. This school comprises an original building built early in the 20th Century with numerous major and minor additions culminating with the gymnasium and/or the Music rooms at opposite ends of the school in the late 60's or early 70's. There does appear to have been one more minor addition at the gymnasium somewhat later. In addition, there have been exterior and interior upgrades on several occasions. The building currently consists of four major blocks in a linear plan which steps down the sloping site close to 20 M top to bottom on the east side from the single storey gym at the far south end of the site at level #4 which is more or less contingent with the third floor of the three storey original school (levels #2, #3, & #4). To the south of this is a newer three storey structure (levels #1, #2, & #3) the third floor of which aligns with the second floor of the original building. The Music room on the far south end is also at level #1. The number of levels belies the true extent of the elevation change from one end to the other. An elevator installed recently operates between the original three storey block and the newer three storey block and does provide handicapped accessibility to virtually all useable areas of the school.

The school is constructed on two full city blocks including the intervening street and two lanes. The existing residential lots, the streets, and the lanes have never been consolidated. Land title is a mix of School district and City of Nelson ownership. There are also municipal services transiting the site and under the buildings. The City of Nelson has expressed a willingness to transfer the underlying lands and to provide the property to the School District under a single, consolidated title, with easements as necessary.

The plan of the school is highly confusing to navigate to a newcomer and very difficult to supervise. The gross floor area is in excess of 8000 s.m., and the site coverage is approximately 3650 s.m. The gross allowable area for a new school of the current population would be 4650 s.m.

The construction is as varied as the floor levels. The original building is brick with heavy framed wood floors and roof, the newer three storey building and the music room are a combination of concrete masonry and wood floors and roofs. The Gymnasium is mostly masonry with wood frame and stucco to the upper portion and steel trusses.

The site is very small, but due to the multilevel plan, it is able to accommodate two adequate playfields, a paved play area, and on site staff parking.

There do not appear to be any recent upgrades of significance in this school. There are 24 separate areas of roofing with age variations from relatively new to near failure. The exterior is in fair condition but numerous areas of masonry and stucco require re-pointing, repair, or replacement. The windows and doors are generally not airtight, badly worn and ill fitting, poor in design and in very poor condition.

1.2 Intent

The intent of this report is to describe the scope of work for a full renovation of this school to accommodate 450 grades six to eight middle school students in a productive, efficient, and safe school that can operate without major capital infusions other than normal replacement and maintenance for at least forty years.

2.0 Project Overview

2.1 Building Code

The fundamentals of building code compliance need be addressed.

This very large, four storey, 3650 s.m. building of combustible construction is fundamentally non-compliant with any of the B.C. Building Code categories for a Group A-2 (School) Assembly building. Although the Building Code contains clauses related to non-compliance of existing buildings if renovations and repairs do not make the existing situation worse, the degree of non-compliance in this building is extreme. A two storey building of this type and construction, with fire protection sprinklers, would be limited to a building area of only 2400 s.m.

The basic building upgrades will likely consist of the following:

- The subdivision of this building with “Fire Walls” would assist in providing a higher level of safety, but construction of an effective fire wall at least between the Main Block and the North Block will be difficult though perhaps feasible. “Fire Walls” may also be required between the main buildings and the Gym and Music Room.
- All floor systems will require an upgrade to a full one hour fire rated separation.
- The installation of Fire Protection Sprinklers will be a necessity.
- It is likely that even with the above components, that travel distances from all points of the building to an exit may be excessive. This will necessitate the upgrading of all corridors including doors and windows to a one hour fire separation.
- This will not result in full compliance and further measures may be recommended by a Code Consultant for equivalencies to the code.

There are additional more minor code issues that are of lesser life safety importance, but necessary.

Although the building has an elevator and ramps, there are still accessibility issues with door widths, corridor widths maneuvering space, height of vanities and counters, accessible workstations in all teaching spaces and adequacy of washrooms etc. A full code review will indicate some issues with regard to exit and door widths, fire separations for mechanical and custodial spaces etc.

These issues should be addressed as part of a building renovation.

2.2 Building Utility and Planning / Renovations

This school was constructed as a Senior Secondary School. The school still contains all of the spaces appropriate to that use though it now operates as a grade 6, 7, 8 middle school with a very different curriculum. Most of the secondary elective areas need to be renovated to middle school “explorations” spaces, which tend to be smaller with different equipment and planning. The number of these spaces will also be far lower and many will need to convert to standard classroom space.

Business Education

The Computer Room (80 s.m.) is adequate but requires a complete refit of all floor, wall, and ceiling finishes, fittings, and millwork.

Fine Arts

There are three fine arts areas in this school that is entitled to no more than two. The Music (167 s.m.) and Drama (262 s.m.) rooms are very difficult to re-purpose, but the Art room (167 s.m.) can be mothballed. The Drama Room is over large but functional and requires new floor, wall, and ceiling finishes throughout as well as upgraded acoustic treatment. The Music Room is properly sized, well laid out, and requires new floor, wall, and ceiling finishes throughout as well as upgraded acoustic treatment.

Home Economics

The Foods Room (135 s.m.) is slightly oversized but adequate. The planning is not appropriate to a middle school and should be completely re-fitted. The room requires a complete refit of all floor, wall, and ceiling finishes, fittings, millwork, and equipment.

Industrial Education (Technology)

The entire lower floor of the North wing is dedicated to IE and not appropriate to a middle school curriculum. One to two IE/Tech spaces (220 s.m.) would be adequate for this school, and these should be re-planned including a complete refit of all floor, wall, and ceiling finishes, fittings, millwork, and equipment. The balance of the space is surplus and should be closed off and mothballed.

2.2 Building Utility and Planning / Renovations (cont.)

Science

The science rooms are located on the second floor of the main block and not appropriate to a middle school curriculum. One Science room (92 s.m.) is adequate and should have a complete refit of all floor, wall, and ceiling finishes, fittings, millwork, and equipment. The remaining two rooms (158 s.m.) should be re-fitted as 2 classroom spaces with all new floor, wall, and ceiling finishes, fittings, and millwork.

Administration and Health (274 s.m.)

The general office is centrally located but does not provide the requisite level of supervision and control of the school or of the entrance. There is an excessive amount of Administration space generally with a large Staff Room, Staff Prep Rooms and other spaces. There is little in the way of alternative uses for these spaces and they should be retained. They do require new floor, wall, and ceiling finishes, fittings, and millwork. Camera systems should be considered for building security.

Counseling (48 s.m.)

The Counseling area is well laid out and adequate but requires a complete refit of all floor, wall, and ceiling finishes, fittings, and millwork.

General Storage (149 s.m.)

There is an excess of general storage in this school. Some upgrades to shelving and flooring are the only requirements.

Gym (729 s.m.)

The gymnasium is over sized but in generally good condition. Upgrades to wall finishes, re-finishing of the hardwood floor, upgraded acoustics, and replacement of the basketball backstop supports are all required.

Gym Ancillary

The gym storage areas (24 s.m.) are adequate but require refinishing of walls and floor. The Gym change rooms (160 s.m.) require complete a complete re-fit and changes to accommodate handicapped accessibility.

Media Tech Centre (239 s.m.)

The Library is undersized but adequate but requires a complete refit of all floor, wall, and ceiling finishes, fittings, and millwork including shelving with seismic restraint.

Multi Purpose (237 s.m.)

The Cafeteria is oversized, but not conducive to social interaction and relaxation. These form an important part of the middle school experience. Re-location, perhaps to the abandoned shop area should be considered. At a minimum, the space requires a complete refit of all floor, wall, and ceiling finishes, fittings, and millwork; better acoustics; and upgrades to kitchen finishes and equipment.

Special Ed (240 s.m.)

Special Ed space is primarily classroom space with some office and small group areas. The space is adequate and requires a complete refit of all floor, wall, and ceiling finishes, fittings, and millwork.

Corridors, stairs, washrooms, custodial spaces, etc. (+/- 1450 s.m.)

The public spaces in the school are extensive and generally in poor condition. All areas require a complete refit of all floor, wall, and ceiling finishes; plumbing fixtures, partitions, and fittings; lockers; and virtually all interior doors and glazing systems.

2.3 Structural

See also Structural Report attached.

2.4 Mechanical

See also Mechanical Report attached.

2.5 Electrical and Communication

See also Electrical Report Attached.

2.6 Hazardous materials

The existing building contains areas of non-friable asbestos in numerous locations. There may also be friable asbestos in some inaccessible areas on hydronic heating piping and rainwater leaders within fixed ceiling and wall cavities throughout. Where this is to be disturbed (ie: flooring), or exposed in the case of friable material it must be removed in an approved manner.

2.7 Building Envelope

The exterior envelope of this school is original, with the exception of the roof membranes. Roofing has been replaced on a needs basis and is a mixture of relatively new and very old with about 70% of the roof area in need of replacement within the next five to eight years.

The window systems are a mix of systems with a few thermally broken frames and sealed units but most are non-thermally broken wood, steel or aluminum frames, single glazed, with some opening sash in very poor condition. All older systems are very poor with high infiltration levels, low thermal resistance, and failing hardware and weather-stripping. Replacement windows throughout will reduce the capital cost of the HVAC system, reduce operating costs, reduce maintenance costs, and increase occupant comfort, but must be included with consideration of the overall building envelope.

The exterior cladding is primarily brick and concrete masonry with areas of stucco. The masonry is generally good with some re-pointing and repairs required, and the stucco is generally in fair condition. Overall the building is very poorly insulated and not well weather sealed.

The insulation level and vapour barrier in the exterior walls is very poor by current standards. Insulation levels should be increased which will generally need to be installed from the interior with the accompanying interior wall reconstruction.

2.8 Site Development

The school was developed on a sloping site above and to the south of downtown Nelson. It is located within an older residential neighborhood. The actual school site is small and consists of the buildings, two playfields and some parking. Little other development exists on site. The school building abuts the street to the east for almost the full length of the property and stretches nearly from the south end of the

property to the north end. There is a small are of parking and service access at the southeast corner of the site. The playfields and the main parking area (former tennis courts) are arrayed along the west property line. There are no on-site drop off or bus zones but the excess of street frontage alleviates this issue. Access for fire fighting is not ideal. There is little that can be done to improve the site development here.

The existing playfields are in need of minor upgrading.

In the event of a replacement, a new school could be constructed on the west side of the site on the playfield and parking area. Subsequent demolition of the old school re-development for playfields and parking could then occur.

2.9 Off Site Development

The School has frontage on four streets with sidewalks only on the east side adjacent to the school. The sidewalks and retaining walls on this frontage are in very poor condition along the 120 M of school building abutting the street. The retaining walls vary from nil to 3M in height. These structures need thorough review and some replacement. The sidewalks are all in very poor condition and should be replaced. The west boundary of the property (175M) should also have sidewalks installed for bus and parent drop off.

3.0 Conclusion

While the renovation and upgrading of this school does appear to be feasible and it is able to accommodate the intended population, the costs of this project will be high. The floor are of this building is substantially higher than that of a new school designed for the same population and use. While renovation costs are normally lower than new construction, there is a significant amount of extra floor space to be renovated in this building.

The building will not achieve the reduction in energy consumption available with newer construction technologies due in part the large size and also due to the inability to upgrade the building envelope to equal standards. The finishes and systems in of the building that are replaced will often have a shorter depreciation schedule than the same systems installed in new buildings.

The building will not meet current codes for fire and life safety, seismic, and access for the disabled in all cases, despite the degree of upgrading contemplated.

It is likely that based on Capital cost comparisons and on life cycle cost analysis, that the renovation of the existing school is not warranted.

McDonell Quiring Neumann
ARCHITECTS

RENOVATION REPORT

Project Title:	**South Nelson Elementary School**		
Project No:	**09443**		
Phase:	**Project Identification report**		
Date:	**May 11, 2009**	**Author:**	**Bob McDonell,** MQN Architects **MAIBC**
Revision:			

1.0 Project Summary

1.1 Background

South Nelson Elementary School is a small three storey school locate just south of the downtown of the City of Nelson. The school dates to the early 60's and appears to be constructed, in part on the foundations of a much older building. The construction is largely non-combustible of masonry, concrete, and precast concrete. It is likely that combustible elements are included, but not so as to negate the classification as a non-combustible building. The building is a single building constructed concurrently. It was constructed as a 40 K / 200 grade 1 to 7 school and became a K to 6 school when Trafalgar became a middle school. It's current configuration is as a K to 5 school began in September 2008 when the Trafalgar school changed to a grade 6, 7, 8 school. In the same year, Gordon Sargeant Primary was closed and those students moved to South Nelson. The school is currently operating at about 71% utilization. A community day care operates within the building as well.

The school is constructed on one full city block and is very undersized for an elementary school. The site slopes steeply from the NW corner to the SE corner with vehicle access and entrance at the NW corner at the bottom level. The playfield is very small along the west side of the property at the second floor level. Slopes and retaining walls abound on this difficult site. Drainage is also a continuing issue. The existing residential lots, the streets, and the lanes have never been consolidated. Land title is a mix of School district and City of Nelson ownership. There are also municipal services transiting the site and under the buildings. The City of Nelson has expressed a willingness to transfer the underlying lands and to provide the property to the School District under a single, consolidated title, with easements as necessary.

There is very little parking available on site and all parent and bus drop off occurs on the street in front of the school, though there is very little busing to this school.

The plan of the school is simple but given the small floor plates and three levels, very difficult to supervise. The gross floor area is in excess of 4000 s.m., and the site coverage is approximately 1700 s.m. The gross allowable area for a new school of the current population of 40K + 150 grade 1 to 5 would be 1700 s.m.

The site is very small, but due to the multilevel plan, it is able to accommodate one small playfields, a primary play area, but no on site staff parking.

There do not appear to be any recent upgrades of significance in this school. The stucco, brick, and concrete exterior is in good condition but numerous very poor in terms of a building envelope. The windows and doors are generally poor with low insulation and high leakage as well as being worn.

1.2 Intent

The intent of this report is to describe the scope of work for a full renovation of this school to accommodate 40 K and 150 grades one to five elementary school students in a productive, efficient, and safe school that can operate without major capital infusions other than normal replacement and maintenance for at least forty years.

2.0 Project Overview

2.1 Building Code

The fundamentals of building code compliance need be addressed.

This small, three storey, 1700 s.m. building of non-combustible construction is not fully compliant with the B.C. Building Code categories for a Group A-2 (School) Assembly building. Although the Building Code contains clauses related to non-compliance of existing buildings if renovations and repairs do not make the existing situation worse, the degree of non-compliance in this building is extreme. A two storey building of this type and construction, with fire protection sprinklers, would be limited to a building area of only 2400 s.m.

The basic building upgrades will likely consist of the following:

- All floor systems will require an upgrade to a full one hour fire rated separation.
- The installation of Fire Protection Sprinklers will be a necessity.
- Travel distances from some points of the building to an exit may be excessive. This will necessitate the upgrading of all corridors including doors and windows to a one hour fire separation.
- This will not result in full compliance and further measures may be recommended by a Code Consultant for equivalencies to the code.

There are additional more minor code issues that are of lesser life safety importance, but necessary.

The building has no elevator and numerous obstacles to access for the disabled, there are accessibility issues with stairs, handrails, door widths, corridor widths maneuvering space, height of vanities and counters, accessible workstations in all teaching spaces and adequacy of washrooms etc.

A full code review will indicate further issues with regard to exit and door widths, fire separations for mechanical and custodial spaces etc.

These issues should be addressed as part of a building renovation.

2.2 Building Utility and Planning / Renovations

This school was constructed as an elementary school. The school still contains all of the spaces appropriate to that use. The building requires very little in the way of re-organization except that the general office should be moved to the ground floor to provide better supervision of the entrance and grounds.

2.2 Building Utility and Planning / Renovations (cont.)

Administration and Health (274 s.m.)

The general office is centrally located but does not provide the requisite level of supervision and control of the school or of the entrance. There is an excessive amount of Administration space generally though with the excess of floor space available, there is little need to consolidate this area. There is little in the way of alternative uses for these spaces and

they should be retained. The administration areas do require new floor, wall, and ceiling finishes, fittings, and millwork. Camera systems should be considered for building security.

General Storage (149 s.m.)

There is an excess of general storage in this school. Some upgrades to shelving and flooring are the only requirements.

Gym (729 s.m.)

The gymnasium is adequate and in generally good condition. Upgrades to wall finishes, re-finishing of the hardwood floor, upgraded acoustics and Mechanical and Electrical are all required.

Gym Ancilliary ( )

The gym storage areas are adequate but require refinishing of walls and floor. The Gym change rooms require complete a complete re-fit and changes to accommodate handicapped accessibility but showers and washroom facilities could be eliminated.

Media Tech Centre (239 s.m.)

The Library is adequate but requires a complete refit of all floor, wall, and ceiling finishes, fittings, and millwork including shelving with seismic restraint.

Multi Purpose (237 s.m.)

The school has a large cafeteria with a modern well equipped kitchen. These are important to this school and as a community amenity and should be retained. The space requires a complete refit of all floor, wall, and ceiling finishes, fittings, millwork, and better acoustics.

Special Ed (240 s.m.)

Special Ed space is classroom space with some office and small group areas. The space is adequate and requires a complete refit of all floor, wall, and ceiling finishes, fittings, and millwork.

Corridors, stairs, washrooms, custodial spaces,, etc. (+/- 1450 s.m.)

The public spaces in the school are extensive and generally in poor condition. All areas require a complete refit of all floor, wall, and ceiling finishes; plumbing fixtures, partitions, and fittings; and virtually all interior doors and glazing systems.

2.3 Structural

See also Structural Report attached.

2.4 Mechanical

See also Mechanical Report attached.

2.5 Electrical and Communication

See also Electrical Report Attached.

2.6 Hazardous materials

The existing building contains areas of non-friable asbestos in numerous locations. There may also be friable asbestos in some inaccessible areas on hydronic heating piping and rainwater leaders within fixed ceiling and wall cavities throughout. Where this is to be disturbed (ie: flooring), or exposed in the case of friable material it must be removed in an approved manner.

2.7 Building Envelope

The exterior envelope of this school is original, with the exception of the roof membranes. Roofing has been replaced on a needs basis and is a mixture of relatively new and very old with about 50% of the roof area in need of replacement within the next five to eight years.

The window systems are original aluminum frames, non thermally broken, and single glazed. Most opening sash are in very poor condition with high infiltration levels, low thermal resistance, and failing hardware and weather-stripping. Replacement windows throughout will reduce the capital cost of the HVAC system, reduce operating costs, reduce maintenance costs, and increase occupant comfort, but must be included with consideration of the overall building envelope.

The exterior cladding is primarily brick, concrete masonry, concrete, and stucco. The masonry is in good condition with some re-pointing and repairs required, the stucco is generally in fair condition, and the concrete an concrete masonry requires painting. Overall the building is very poorly insulated and not well weather sealed.

The insulation level and vapour barrier in the exterior walls is very poor by current standards. Insulation levels should be increased which will generally need to be installed from the interior with the accompanying interior wall reconstruction.

2.8 Site Development

The school was developed on a sloping site above and to the south of downtown Nelson. It is located within an older residential neighborhood. The actual school site is very small and consists of the building, one playfields, a primary play area, and minimal parking. Little other development exists on site. There is a small are of parking and service access to the east of the building. The playfield is in the top SW corner, difficult to supervise, and has major drainage problems that require reconstruction. There are no on-site drop off or bus zones but the excess of street frontage alleviates this issue. Access for fire fighting is poor. There is little that can be done to improve the site development here.

A replacement school would require the demolition of the existing building first along with temporary accommodation of students at an alternate site.

2.9 Off Site Development

The School has frontage on four streets with sidewalks only on the east side of the property. The sidewalks are all in very poor condition and should be replaced.

3.0 Conclusion

While the renovation and upgrading of this school does appear to be feasible and it is able to accommodate the intended population, the costs of this project will be high. The floor area of this building is substantially higher than that of a new school designed for the same population and use. While renovation costs are normally lower than new construction, there is a significant amount of extra floor space to be renovated in this building.

The building will not achieve the reduction in energy consumption available with newer construction technologies due in part the large size and also due to the inability to upgrade the building envelope to equal standards. The finishes and systems in of the building that are replaced will often have a shorter depreciation schedule than the same systems installed in new buildings.

The building can meet current codes for fire and life safety, seismic, and access for the disabled in most cases.

It is likely that based on Capital cost comparisons and on life cycle cost analysis, that the renovation of the existing school is not warranted.

APPENDIX F

STRUCTURAL CONDITION ASSESSMENT
FOR RENOVATION

Trafalgar Middle School & South Nelson elementary School

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

PROJECT IDENTIFICATION REPORT
STRUCTURAL ASSESSMENT
FOR
TRAFALGAR MIDDLE SCHOOL
NELSON, BC
SCHOOL DISTRICT #8

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TRAFALGAR MIDDLE SCHOOL
NELSON, B.C.

STRUCTURAL ASSESSMENT

1.0 Introduction & Scope

CWMM Consulting Engineers Ltd. has been retained to provide a general structural assessment of the existing Trafalgar Middle School in Nelson, B.C. The purpose of the assessment is to determine the general structural condition of the building, and to provide an opinion as to the adequacy of the existing structure to satisfy the current BC Building Code requirements.

2.0 Site Description and Inspection

An inspection of the school was carried out on April 30, 2009 by Jonathon Smith, a Senior Technologist of our Creston branch office. Most of the interior spaces were accessible as well as the exterior portions of the building and the roof. However, much of the existing structure was concealed behind building finishes and could not be observed directly.

The existing structure consists of a combination of concrete, masonry, steel, and wood construction that has been built in various stages over a period of approximately 80 years. The building has a plan area of approximately 7650 square meters and is located on a sloped site. The building steps down 2 levels along its length.

Structural drawings of the 1970 classroom addition, the 1972 gymnasium addition, 1975 auditorium roof renovations and the 2000 change room addition were obtained through the School District. No other structural drawings of the original building or subsequent additions were available. As a result, a detailed assessment is difficult, and therefore, comments are general in nature, believed to reflect the age and type of construction.

3.0 Design Criteria and Climatic Data

Original design loads have not been provided, as no drawings were available, however we do know that code design loads have increase significantly as compared with design loads at the time of original construction. This is particularly the case with roof snow loads, as well as seismic loads. Live loads due to use and occupancy have not changed appreciably over the years.

The design values for any additions and new construction based on the 2006 edition of the British Columbia Building Code, and local municipal bylaws, are as follows:

Climatic Data:

Ground Snow:	S_s = 4.2 kPa
Rain Load:	S_r = 0.1 kPa
Snow Load Factors:	Is = 1.15 for ULS
	Is = 0.9 for SLS
Wind Load:	q50 = 0.34 kPa
Wind Load Factors:	Iw = 1.15 for ULS
	Iw = 0.75 for SLS
Earthquake Factors:	Sa(0.2) = 0.27 Sa(0.5) = 0.16
	Sa(1.0) = 0.080 Sa(2.0) = 0.045
	Ie = 1.3 Rd = 1.5 Ro = 1.3
Wind uplift on roofs:	to BCBC Commentary
Foundation Bearing:	to be confirmed
Site Class:	to be confirmed

Design Specified Live Loads (uniform):

Classrooms, Staffroom, Laboratories:	2.4 kPa
Corridors, Stairways, Assembly Areas:	4.8 kPa
Administration Areas:	2.4 Kpa
Mezzanine Areas, Shops:	4.8 Kpa
Library:	7.2 Kpa
Mechanical Rooms:	3.6 kPa
Storage Rooms:	4.8 kPa

Superimposed Dead Loads:

Assumed superimposed dead loads (in addition to structural self weight) are as follows:

Roof:	0.75 kPa
Floors:	0.5 kPa+ partitions
Partitions (where live load < 4.8 kPa):	1.0 kPa

4.0 Existing Structure

The following is believed to be the general sequence of major construction, based on existing drawings where available, and in discussion with School District #8 maintenance staff:

- 1924, original three storey structure.
- 1953, 'L' shaped three storey concrete classroom addition with two storey shop and lab addition.
- 1970, two storey steel classroom addition including one storey on top of 1953 shop and lab addition.
- 1972, gymnasium addition including link to original 1924 structure.
- 1975, auditorium roof renovations to original 1924 structure.
- 1980's, elevator addition and link between original 1924 structure and 1970 classroom addition.
- 1980's, music room addition.
- 2000, change room and gymnasium entrance addition.

The exact dates are not know for all construction and other small additions or renovations may have occurred.

Original School:

The original school was built in 1924 and is a three storey brick and masonry stone building. The main floor level is a concrete slab-on-grade. The ceilings in the corridors and classrooms were coved but the floors and roof are believed to be wood joists supported by wood or steel beams. The corridor walls at the main floor level are exposed concrete walls. The upper floor corridor walls are covered by building finishes but are believed to be load-bearing brick or concrete. Further investigation, including the removal of building finishes, is required to verify the existing structural systems.

The roof over the auditorium was rebuilt in 1975. Existing steel 'I'-beams were removed and replaced with open web trusses. The trusses are 1070mm deep and consist of double 38x140 wood top and bottom chords and tubular steel webs. They are spaced at 1000mm o/c and span approximately 15.5m. The trusses are sheathed with 38x140 tongue and grove decking.

1953 Classroom Addition:

An 'L' shaped concrete classroom addition was built in the 1950's. It is located to the north and is stepped down one level from the original school. The addition consists of a three storey classroom wing and a two storey shop and lab area with a partial crawlspace. The main floor level is a combination of concrete slab-on-grade and a wood-framed floor over the partial crawlspace. Access to the crawlspace was sealed off and the structure could not be verified.

Again, the ceilings in the corridors and classrooms were coved but the floors and roof are believed to be a combination of flat suspended concrete slabs and concrete joists. The concrete floors and roof are supported by concrete beams along the exterior walls and corridor walls which in turn are supported by concrete columns typically spaced at

3.3m o/c. The corridor walls are unreinforced masonry walls. Some of the partition walls between classrooms are also unreinforced masonry walls. It should be noted that a city sewer main passes through the lower floor of the building running east to west located just north of the original school.

1970 Classroom Addition:

A two storey steel classroom addition with a partial basement was built in 1970. The addition was added to the east of 1953 addition and includes one level of framing on top of the 1953 shop and lab area. The first and second floor framing consists of open web steel joists with metal deck and concrete topping supported by steel beams and columns. The roof framing consists of open web steel joists with metal decking.

Gymnasium Addition:

The gymnasium addition was built in 1972 and ties into the south end of the original school. There is a partial basement with a concrete slab-on-grade and a crawlspace under the main gymnasium floor. The main floor consists of 38x286 floor joists spaced at 400m o/c typically spanning 4.2m. The joists are sheathed 16mm plywood and area supported by masonry walls over the basement area and 4 ply 38x286 beams in the crawlspace area. The built-up beams are supported by 150mmx150mm timber posts that bear on 600mmx600mm pad footings.

The exterior foundations are a combination of concrete walls and grade beams supported by pad and strip footings. Reinforced masonry walls and pilasters extend from grade to 2.8m above the main floor level. Steel columns bearing on the masonry pilasters support the steel roof beams and trusses. The roof trusses are 1500mm deep and are spaced at 1800mm o/c. 100mmx100mm timber purlins spaced at 600mm o/c support the metal roofing.

Music Room Addition:

A music room addition was added to the north end of the 1953 classroom addition in the 1980's. The main floor level was covered but is assumed to be a concrete slab-on-grade. The exterior walls are reinforced masonry walls and pilasters. The roof framing consists of open web steel joists with metal decking.

Change Room Addition:

Change rooms and a new gymnasium entrance were added to the east of the existing gymnasium in 2000. The change rooms are a single storey with concrete block walls on perimeter foundation walls and strip footings. The main floor level is a concrete slab-on-grade. The entrance addition main floor is concrete topped metal deck supported by steel beams and columns with a crawlspace below. The roof framing consists of steel beams and open web steel joists with metal decking.

5.0 Condition Assessment

Much of the existing structure is concealed behind building finishes and could not be observed directly, however there was little evidence of deterioration in the limited areas that were observed. The ceilings in the corridors and classrooms of the 1924 and 1953 concrete buildings were coved and the floors and roof could not be inspected. The perimeter foundation walls that were visible did not show any signs of excessive cracking or distress would cause structural concern. The gymnasium floor joists and built-up beams were dry and did not show any signs of distress or rot. The crawlspace area does not have a concrete skim coat and the soil was generally dry.

It should again be emphasized that our inspection was by no means exhaustive, limited to only a visual inspection of those components which could be observed directly. No building finishes were removed and no non-destructive testing was carried out.

6.0 Structural Assessment

A full analytical assessment of the existing structure is beyond the scope of this report. Comments here are general in nature and are based on the age of the building and changes to the Building Code since its construction.

Gravity Loads:

The Trafalgar Middle School is located in an area of relatively high snow load. The following are roof design loads based on the existing drawings were available:

- 1970 two storey steel classroom addition – 3.1 kPa.
- 1972 gymnasium addition – 2.5 kPa
- 2000 change room addition – 3.1 kPa

The current specified roof snow load is 4.0 kPa, incorporating the specified importance factor for schools. Design loads are not known for the other various roof structures but they are also likely to be deficient due to the increased snow load requirement since their construction. Various structural components would need to be upgraded to meet the current BC Building Code requirements. It is expected that the older portions would likely be the most deficient, and possibly in need of upgrading. Snow accumulations at the various roof steps would increase the probability of deficiencies. As the true snow loads have not increased over time, a more detailed investigation, incorporating engineering judgement, may deem that some of the roof areas could be found to be satisfactory, in areas where the deficiency is marginal, even though the design loads were substantially lower than presently required. We should note again, however, that carrying out such an analysis is difficult without available drawings to confirm structural details.

The various floors are much more likely to be in general conformance with the current BC Building Code but may require upgrades in some areas, particularly for the older structure. A full analytical assessment would be required to confirm the capacity and any upgrades required.

Lateral Loads:

Lateral resistance for the existing structure is provided by the roof and floor diaphragms which transfer the lateral forces from wind and seismic loads into the walls. A combination of concrete, masonry, and brick shear walls in turn transfer the lateral forces into the foundations.

Seismic design requirements, and the design for lateral loads in general for new construction, have become much more rigorous than at the time of original construction. The older portions of this building incorporating concrete and unreinforced masonry construction, would not behave in a ductile fashion, and would likely suffer significant damage in a major earthquake. In spite of being located in an area of low seismic activity, upgrading the existing structure to meet the current BC Building Code requirements for lateral resistance could be onerous. Such upgrading, if carried out, would likely involve adding various steel bracing or concrete wall segments along with foundations at a number of locations, possibly including corridors and exterior classroom walls. Upgrading of the existing wood-frame floor and roof diaphragms and their connection to the exterior and corridor walls would also be required. The exterior walls of the 3 storey 1953 classroom wing appear particularly vulnerable, with wide windows between columns, and infill brick. The 1924 structure similarly would likely be severely deficient in this regard. In addition, unreinforced masonry block and brick walls, which are poorly attached to the structure, may need to have attachment provided to the tops of walls to ensure stability.

Despite the above remarks, it should be noted that this school is located in a region of low seismicity (Seismic Zone 1) and therefore does not fall within the “Bridging Guidelines for the Performance Based Seismic Retrofit of British Columbia School Buildings”. As a result, the building is not considered a high priority for seismic upgrading, as compared with schools in coastal regions of the province.

7.0 Conclusions and Recommendations

As noted, it is anticipated that significant structural deficiencies are highly likely based on current BC Building Code requirements. This would most likely be the case with respect to roof snow loads, and overall lateral load requirements. The older portions of the building, including the 1924 original building, and the 1953 classroom wing would be the most significant, in this regard. If an upgrading to meet current code loading requirements was imposed, the cost of upgrading would likely be very substantial, and when considering associated costs from other disciplines, may reach

a level where upgrading represents a significant proportion of a new building cost. As noted, however, the overall condition of the building and its performance to date may suggest that a lesser level of upgrading could still provide adequate safety for the short term. A more detailed investigation would be needed to adequately determine the full scope of upgrading measures.

Report Prepared by:

Don D. Bergman, M.Eng., P.Eng., Principal

APPENDIX G

MECHANICAL CONDITION ASSESSMENT FOR RENOVATION

Trafalgar Middle School & South Nelson elementary School

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

TRAFALGAR MIDDLE SCHOOL

BUILDING REVIEW

MECHANICAL SYSTEMS

SCHOOL DISTRICT NO. 8

Nelson, B.C.

April 17, 2009

0.0 General

Poole and Associates has been commissioned to review the mechanical systems at the existing Trafalgar Middle School in Nelson, BC. Our inspection was conducted on March 12, 2009.

1.0 Professional Opinion of the Stage of the Life-Cycle of Building Components and Systems

- Plumbing systems are for the most part original equipment and materials. Sinks are enamel and vitreous china types and have aged to a point that chips and staining on the surface of the sinks would be considered unhygienic. Drainage systems are cast iron with sections containing lead and oakum fittings that are nearly impossible to renovate without upgrading to modern systems. Drainage systems require daily flushing and maintenance to keep systems operational. The plumbing systems and fixtures are past their life cycle and should be replaced.
- Airside and hydronic systems are 35 to 40 years old. The low efficiency, natural draft boilers are 25 years old. Equipment and associated piping show visible signs of aging and deterioration. HVAC system components are difficult to repair and expensive to replace. Some components are no longer available and will require wholesale replacement when individual components fail. HVAC systems are at the end of their life cycles, prone to failure and should be replaced.
- Building control systems are a combination of electronic and pneumatic systems. While the boilers are DDC controlled only a subset of the remaining building systems are operated pneumatically. Though the existing DDC system is functional the pneumatic system is obsolete, prone to failure and should be upgraded to a contemporary DDC control system operating all of the buildings mechanical systems.

2.0 Professional Opinion of Building Code Compliance, or Non-Compliance, of Building Components and Systems

- Chipped and stained enamel and vitreous china sinks could be considered a hygienic issue by a Health Inspector. Replacement is recommended.
- Domestic water supply system contains sections of galvanized steel piping which do not conform to the current edition of the British Columbia Plumbing Code. Replacement is recommended.
- Domestic water supply system contains sections of copper piping with lead solder joints which do not conform to the current edition of the British Columbia Plumbing Code. Replacement is recommended.
- Science Lab acid waste piping is not connected to an acid neutralizing system and does not comply to the current edition of the British Columbia Plumbing Code. Replacement of acid waste piping and provision of and acid neutralizer is recommended.
- Science Lab acid waste piping floor penetrations have not been provided with firestopping. Provision of adequate firestopping is recommended subsequent to system replacement as recommended above.
- Domestic water supply to the Science Lab has not been provided with backflow prevention devices to prevent cross-contamination. Installation of Reduced Pressure Backflow Prevention (RPBP) valves isolating the Science Lab from the remainder of the building is recommended.
- Staff Room is served with a residential gas furnace which is exposed to the occupied space. This installation is non-compliant with the current edition of the British Columbia Building Code and should be addressed as soon as possible.
- The Band Room is served with a residential gas furnace mounted in the ceiling space. This installation is non-compliant with the current edition of the British Columbia Building Code and should be addressed as soon as possible.
- The woodshop dust extraction system is nearing the end of its' useful life and recirculates 100% of its' air. Without an effective filtration system the resulting dust presents a health and safety hazard as it migrates throughout the upper floors of the school. The system needs to be replaced with a contemporary setup that exhausts 100% of the air or employs effective filtration on the recirculated air.
- Plumbing fixtures in this facility do not comply with current water efficiency requirements of the British Columbia Building Code.
- HVAC systems are decentralized, consisting of multiple site built air handlers ducted to the classrooms. This system is inherently energy wasteful and does not comply with ASHRAE 90.1 energy efficiency requirements.
- Sections of hydronic piping appear to be insulated with asbestoes containing materials. Removal and replacement of affected sections of insulation is recommended.
- Wood and Metal Shop as well as the Weight Room have not been provided with ventilation systems. Ventilation systems for each area should be installed.
- Metal Shop lacks an effective area hood exhaust system. An effective source capture exhaust system for welding, metal cutting and forge operations is required.
- The building is not fitted with a fire sprinkler system. While it is recommended that a fire sprinkler system be installed a building code analysis should be undertaken to determine the precise level of protection required.

3.0 Professional Opinion on Whether Building Component or System Should be Renovated, Renewed, and/or Replaced

- All plumbing fixtures should be replaced with water saving, durable and Code compliant fixtures. Supply piping systems should be replaced with copper pipe sized to suit current standards and should be insulated throughout the whole system. Piping connections should use lead free solder. Drainage piping systems should be replaced with cast iron and acid resistant pipe where required and removable fittings to ensure proper slope and adequate cleanout capability.
- Science Room Fume Hoods require flow calibration to determine maximum sash opening limits.
- Science Room Eyewash facilities consist of manual eyewash bottles which require constant maintenance. Plumbed eyewashes should be installed.
- Home Economics ranges lack exhaust ventilation. A range exhaust system should be installed.
- HVAC systems should be upgraded to energy efficient systems that comply with current Codes and Guidelines.
- During the course of any potential HVAC upgrade the building fresh air intake should be relocated away from parking areas to minimize the potential for automobile exhaust contamination air intake stream.
- Class, Band and Staff Room as well as Gymnasium HVAC systems show degradation beyond normal wear and tear and require replacement.
- Building control systems are a mix of pneumatic and electronic systems and should be upgraded to a contemporary DDC format.
- Ventilation and exhaust systems should be provided on zones required by Code. These areas include the Wood and Metal Shops as well as the Weight Room.
- The existing domestic water supply piping is of an advanced age and of minimal size. The water service should be upgraded such that it is capable of serving the fire protection and domestic water needs of the building.
- Pending results of a building code review a fire sprinkler system may need to be installed.
- A 24” municipal sanitary sewer line is routed directly underneath the building. The operational integrity of this line should be verified in order to prevent potential failures which may adversely affect the building and/or its’ contents.
- Sections of hydronic piping insulation confirmed to contain asbestoes should be removed and replaced.
- The potential exists for the presence of radon gas in below grade areas of the school. Monitoring for Radon gas is recommended and may lead to the requirement for supplemental ventilation of affected areas.

4.0 Explanatory Photographs

Building Fresh Air Intake Location Adjacent to Vehicle Parking

Galvanized Water Service Piping

Inefficient Natural Draft Boilers

Pneumatic Building Control Systems

Piping Insulation Potentially Containing Asbestoes

Source Capture Exhaust System Required for Wood Shop Finishing Room

Ineffective Metal Shop Area Hood Exhaust System,

Ineffective Fresh Air Intake Damper Sealing

Science Room Fume Hoods Require Calibration

Science Room Eyewash Facilities Inadequate

Enamelled Sinks Show Evidence of Chipping and Wear

HVAC Systems Show Evidence of Deterioration

Cast Iron Drainage Piping with Lead and Oakum Joints

Stained Vitreous China Plumbing Fixtures

Stained Vitreous China Plumbing Fixtures

Inadequate Ventilation of Storage Areas

Home Economics Ranges Lack Exhaust Ventilation

APPENDIX H

ELECTRICAL CONDITION ASSESSMENT
FOR RENOVATION

Trafalgar Middle School & South Nelson elementary School

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

ELECTRICAL REPORT

for

TRAFALGAR MIDDLE SCHOOL
FEASIBILITY STUDY PHASE 1

School District No. 8
Nelson, B.C.

FALCON ENGINEERING LTD.
Consulting Electrical Engineers

#210 - 1715 Dickson Avenue
Kelowna, B.C. V1Y 9G6
Tel: (250) 762-9993
Fax: (250) 861-3290
www.falcon.ca

April 15, 2009

DRAFT COPY

1. INTRODUCTION

1. The purpose of this report is to review the existing electrical systems at Trafalgar Middle School in Nelson, B.C. with respect to the possible demolition / addition / renovation or replacement of the existing facility.

2. This report is based on a site review of the existing building that took place on March 12, 2009.

2. SERVICE AND DISTRIBUTION

1. The existing main service is run underground at 25kV from a primary dip pole on Hall Street to a unit substation on the lower floor of the main (centre) block of the building. The unit substation consists of a Merlin Gerin 25 kV 600A loadbreak switch and a Polygon 500 KVA 25kV:120/208V dry type transformer, with a bus duct to the adjacent secondary main distribution centre (MDC).

2. The main service appears to have been installed in the late 1980s and to be in good condition.

3. The MDC, which as rated 1600A – 120/208V 3 phase 4 wire, consists of a Westinghouse circuit breaker distribution section with a 1600A main breaker and the following sub-breakers:

1.	150A	Panel GB
2.	60A	HWT Room
3.	70A	Panel G
4.	70A	Panel J
5.	100A	HWT
6.	100A	Panel F
7.	???A	SDC B
8.	???A	SDC D
9.	60A	Panel E
10.	60A	Panel D
11	70A	???
12.	90A	Dust Collector
13.	100A	Panel C
14.	100A	Panel A
15.	???A	SDC C

4. Sub-Distribution Centre SDC D is located adjacent and is rated 800A - 120/208V 3 phase 4 wire. It feeds the elevator, a north wing panel and Panel 2B.

5. The distribution equipment is of varying ages and is a mixture of manufacturers and types. Parts are readily available for the most recent equipment, but will become hard to get for some of the older equipment.

6. Many panelboards are in locations accessible to students, and are unlocked.

2. SERVICE AND DISTRIBUTION (cont'd)

Unit Substation

MDC – Main Breaker Section

MDC – Distribution Section

Typical Newer Panelboards

Typical Older Panelboard

Shop Panelboard and Contactor

3. LIGHTING

1. The existing lighting is generally T12 fluorescent with magnetic ballasts, of various vintages.

2. Various styles of fluorescent luminaires have been utilized, depending on the era of construction and the room type.

3. The gymnasium lighting consists of fluorescent "gym lighters" that appear to be in good condition. The changeroom lighting is fairly new, vandal resistant, and in good condition.

4. Typical classroom lighting consists of recessed fluorescent 2' x 4' troffers in t-bar ceilings and fluorescent "wraps" in other areas.

5. Exterior lighting is sparse and is a mixture of incandescent and high intensity discharge (HID)

Recessed Lighting – Typical Classroom

Lighting – Home Economics Room

Lighting - Gymnasium

Lighting - Changerooms

4. CONVENIENCE POWER

1. Specialty rooms (e.g. home ec, shops) are generally wired to current standards, however receptacles are located sparsely through the remainder of the building.

2. It does not appear that many receptacles have ever been added for computers.

5. EXIT AND EMERGENCY LIGHTING

1. The emergency lighting consists of battery packs of various ages, with integral and remote heads. Some are vandal resistant. Coverage is marginal in some areas.

2. The older exit lights observed were compact fluorescent and the newer ones LED.

Gymnasium Speaker and Emergency Lighting

Drama Room Sound and Dimming Equipment

6. FIRE ALARM SYSTEM

1. The fire alarm panel is an Edwards 6500 series, located in the mechanical room west of the main electrical room. A remote annunciator is located at the main entrance.

3. There are manual pull stations at the exits and bells throughout. Smoke detectors are located strategically (e.g. main electrical room) and heat detectors are located throughout the rest of the building.

4. The alarm zoning is as follows:
   1. Lower floor north
   2. Ground floor north
   3. Second floor north
   4. First floor centre
   5. Second floor centre
   6. Third floor centre
   7. Second floor changerooms
   8. Gymnasium
   9. Elevator shaft

   There are three spare alarm zone spaces and four audible signal circuits.

Fire and Intrusion Alarm Panels

Clock, Emergency Lighting and Sound System Speaker

7. INTRUSION ALARM SYSTEM

1. The main intrusion alarm panel is a DSC 4020, located in the mechanical room. The main keypad/annunciator is located in the general office.

2. There are passive infrared detectors located in the corridors and in other strategic locations. Old ultrasonic motion detectors remain but are presumably not in use.

8. SOUND AND CLOCK SYSTEMS

1. The sound system central equipment is located in the general office area and consists of a Bogen amplifier, Televox zone selector and dual cassette tape player.

2. There is a mixture of older flush ceiling mounted and wall mounted speakers located throughout the school, but no call-in switches or handsets.

3. There is a Rauland 2424WM programmable master clock utilized for class change signals.

9. DATA COMMUNICATIONS

1. The main data rack and telephone terminations are located adjacent to the main electrical room.

2. Category 5 data cables are run to the data outlets.

3. There are minimal data outlets in the standard classrooms. Cabling, where observed, was run haphazardly.

Sound System Central Equipment

Telephone Terminations and Data Rack

10. DESIGN CONSIDERATIONS

1. The main service is in good condition, but may not have adequate capacity for increased loading such as a full HVAC upgrade.

2. The older sub-panels have limited spare breaker space and replacement breakers will be increasingly difficult to obtain.

3. Only the gymnasium and changeroom lighting would be retained (although upgraded) if the building were renovated. New lighting would be provided elsewhere to provide better colour rendition, eliminate ballast hum and lamp flicker, and vastly improves energy efficiency.

5. New receptacles and 120V circuits would be required throughout the building to bring coverage up to current standards and to avoid nuisance tripping.

6. The fire alarm system would be completely replaced if the building was renovated. The main panel is obsolete and parts will become difficult to obtain.

7. The existing sound system equipment would be removed if the building was renovated, with a completely new system to current standards installed in its place.

8. A completely new voice/data cabling system would be provided in a major renovation.

11. LIFE CYCLE STAGE

1. The main service equipment and newer panelboards are at about 60% of their expected life.

2. The lighting noted as to be retained is at about 20% of its expected life. The balance is essentially at 100%, as it would be replaced for reasons of energy efficiency and maintenance costs if the building wasn't to be renovated or demolished.

3. The exit and emergency lighting equipment has been replaced as it fails, so is at roughly 50% of expected life on average.

4. The fire alarm system is at about 90% of expected life, and would be expected to be replaced before too long as it becomes more of a nuisance.

5. The intruder alarm system is at 50% of expected life.

6. The sound system equipment is at 100% of expected life; and upgrade to current standards is in order.

12. BUILDING CODE COMPLIANCE

1. The electrical installation generally complies with the current building code. Minor upgrades would be required in this respect if the building was to be renovated, including the following:

    1. Smoke detectors are required within 1.5m either side of doors equipped with magnetic holders (some are too far), although if the doors are not part of a required fire separation, this would not apply.

    2. Fire alarm strobe lights are required in areas of high ambient noise (e.g. gymnasium and shops).

    3. The emergency lighting coverage should be increased to meet current code requirements.

13. CONCLUSION

1. The electrical construction cost of a major renovation project in this building would be less, but not significantly, than the cost of new construction.

APPENDIX I

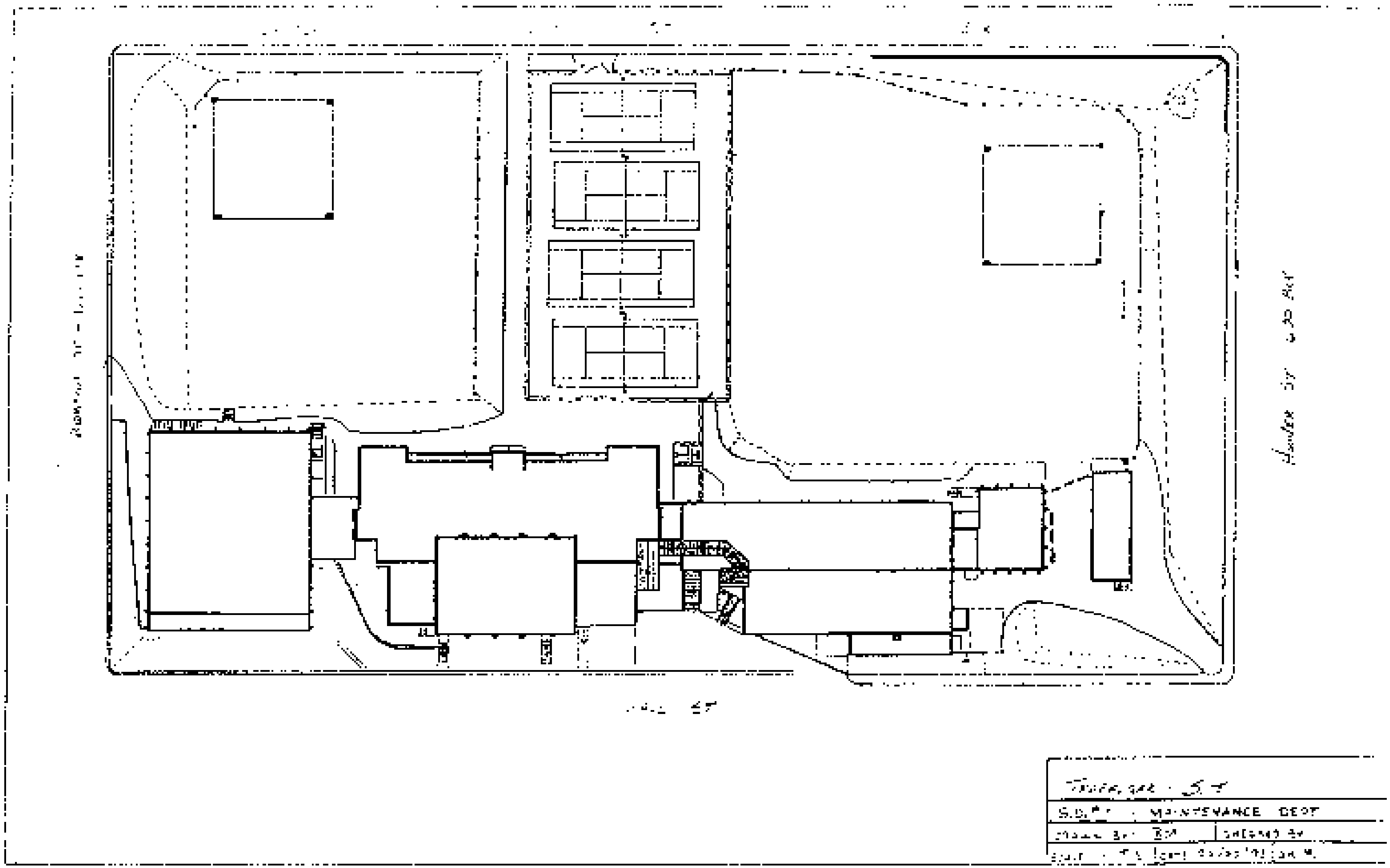
EXISTING FLOOR PLANS

Trafalgar Middle School

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)


MAINTENANCE DEPT
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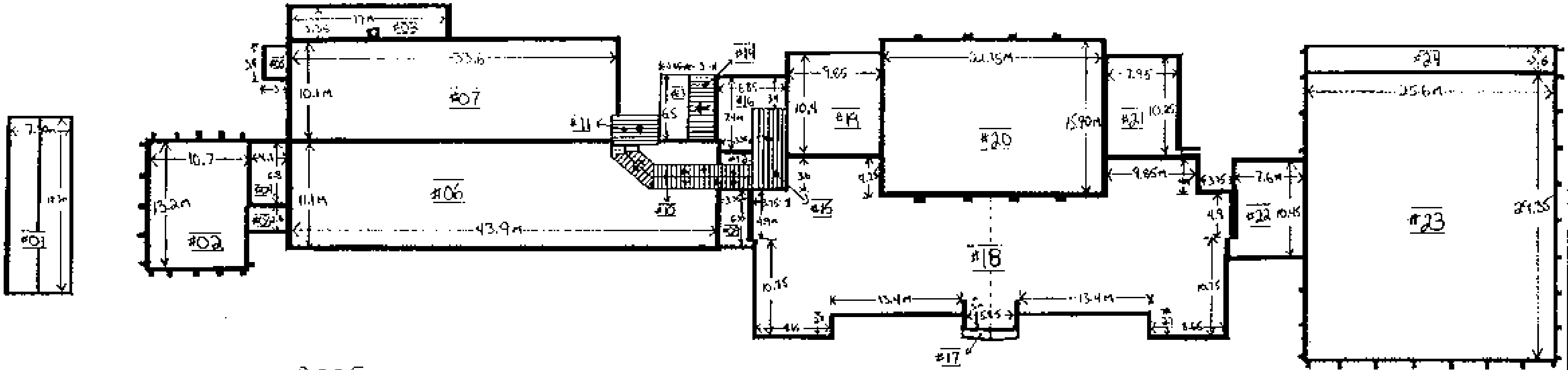


ROOF LEGEND

#	SECTION	TYPE OF ROOF	NET AREA (SQ. METRES)	NET AREA (SQ. FEET)
01	PORTABLE	GALVANIZED SHEET METAL	134	1440
02	MUSIC ROOM	TAR + GRAVEL	141	1520
03	MUSIC ROOM OFFICE	TAR + GRAVEL	11	115
04	STAIRWELL	TAR + GRAVEL	28	300
05	SAWDUST ROOM (SHOP)	TAR + GRAVEL	10	110
06	NORTH WING/FRONT	TAR + GRAVEL	487	5246
07	NORTH WING/BACK-HALL	TAR + GRAVEL	339	3653
08	ADDITONAL AREA TO SHOPS	TAR + GRAVEL	57	613
09	JOSEPHINE ST. ENT. (SIDE)	TAR + GRAVEL	21	229
10	ELEVATOR PASSAGE	CORRUGATED SHEET METAL	42 (MAXIMUM)	453
11	ELEVATOR ROOF	CORRUGATED SHEET METAL	16	170
12	HALLWAY ROOF	TAR + GRAVEL	14	153
13	STAIRWELL (1ST TO 2ND)	TAR + GRAVEL	19	199
14	STAIRWELL (1ST TO 2ND)	CORRUGATED SHEET METAL	24	258
15	STAIRWELL (2ND TO 3RD)	CORRUGATED SHEET METAL	29	317
16	HALL ST. ENTRANCE	TAR + GRAVEL	37	395
17	MAIN ENTRANCE	CEDAR SHINGLES	9	95
18	CENTRE BLOCK (MAIN)	TAR + GRAVEL	777	8364
19	C. BLOCK (OFFICES)	TAR + GRAVEL	102	1103
20	TILE INSULATING ROOF	TAR + GRAVEL	362	3894
21	C. BLOCK (CLASSROOMS)	TAR + GRAVEL	31	337
22	GYMNASIUM HALLWAY STAIRS	TAR + GRAVEL	79	855
23	GYMNASIUM	TAR + GRAVEL	751	8082
24	STORAGE - GYMNASIUM	TAR + GRAVEL	67	717

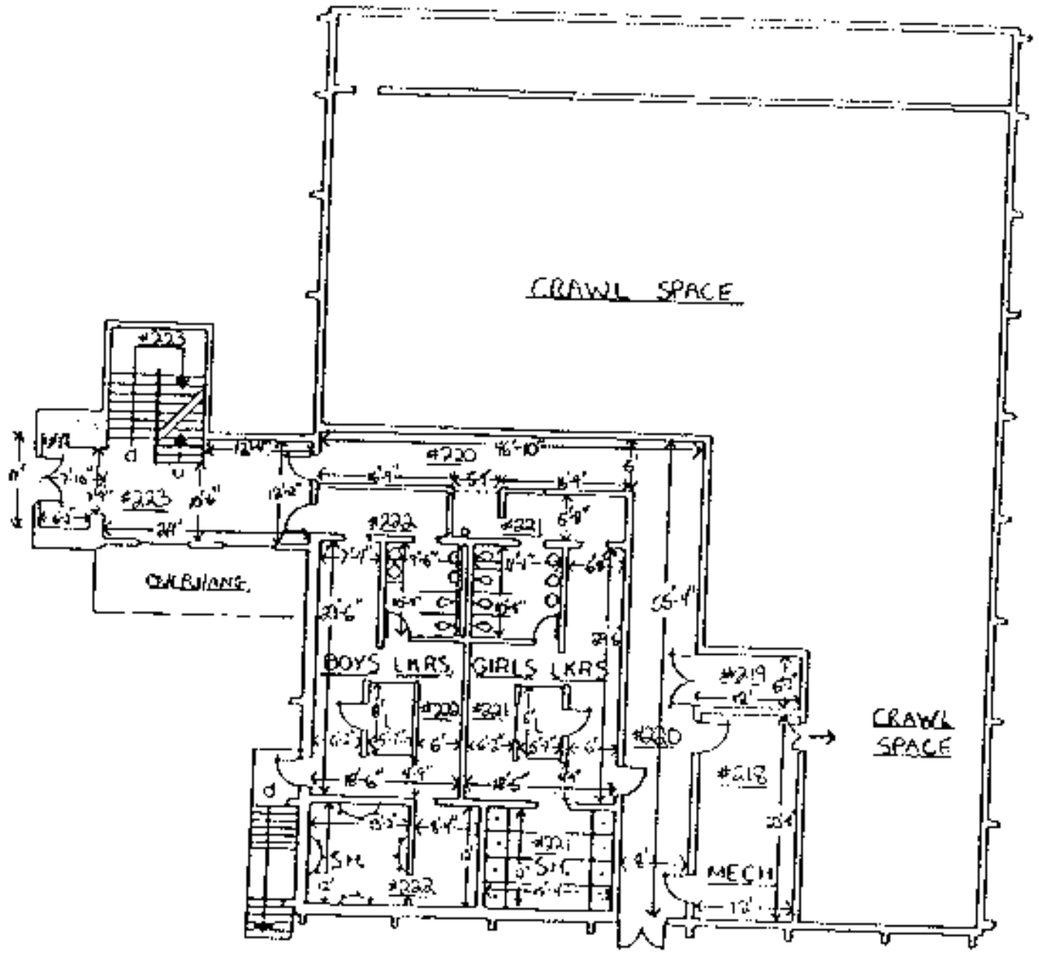
SCALE - 1:400

TRAFALGAR JUNIOR SECONDARY

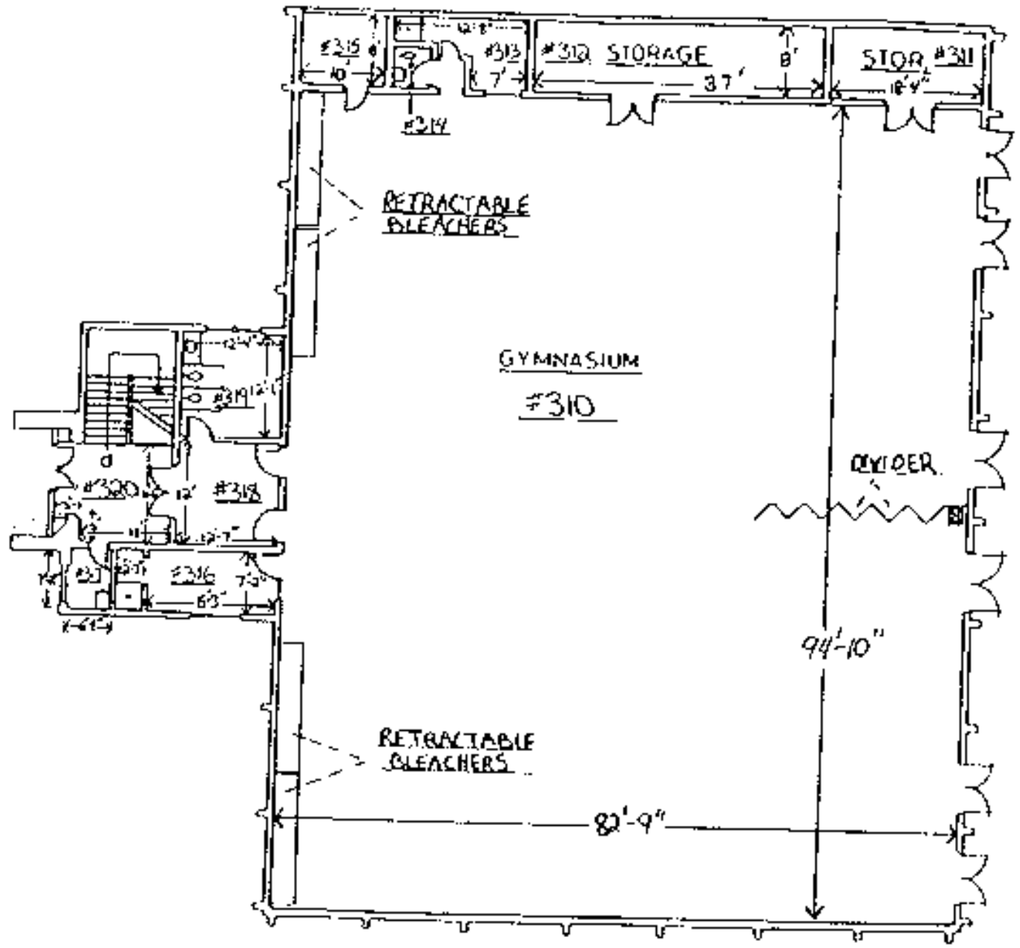
SCHOOL DISTRICT NO. 7

NELSON B.C. JUNE 1987

ROOF DIMENSIONS



SECOND FLOOR



THIRD FLOOR

0 1m 3m 5m 10m

SCALE - 1:200

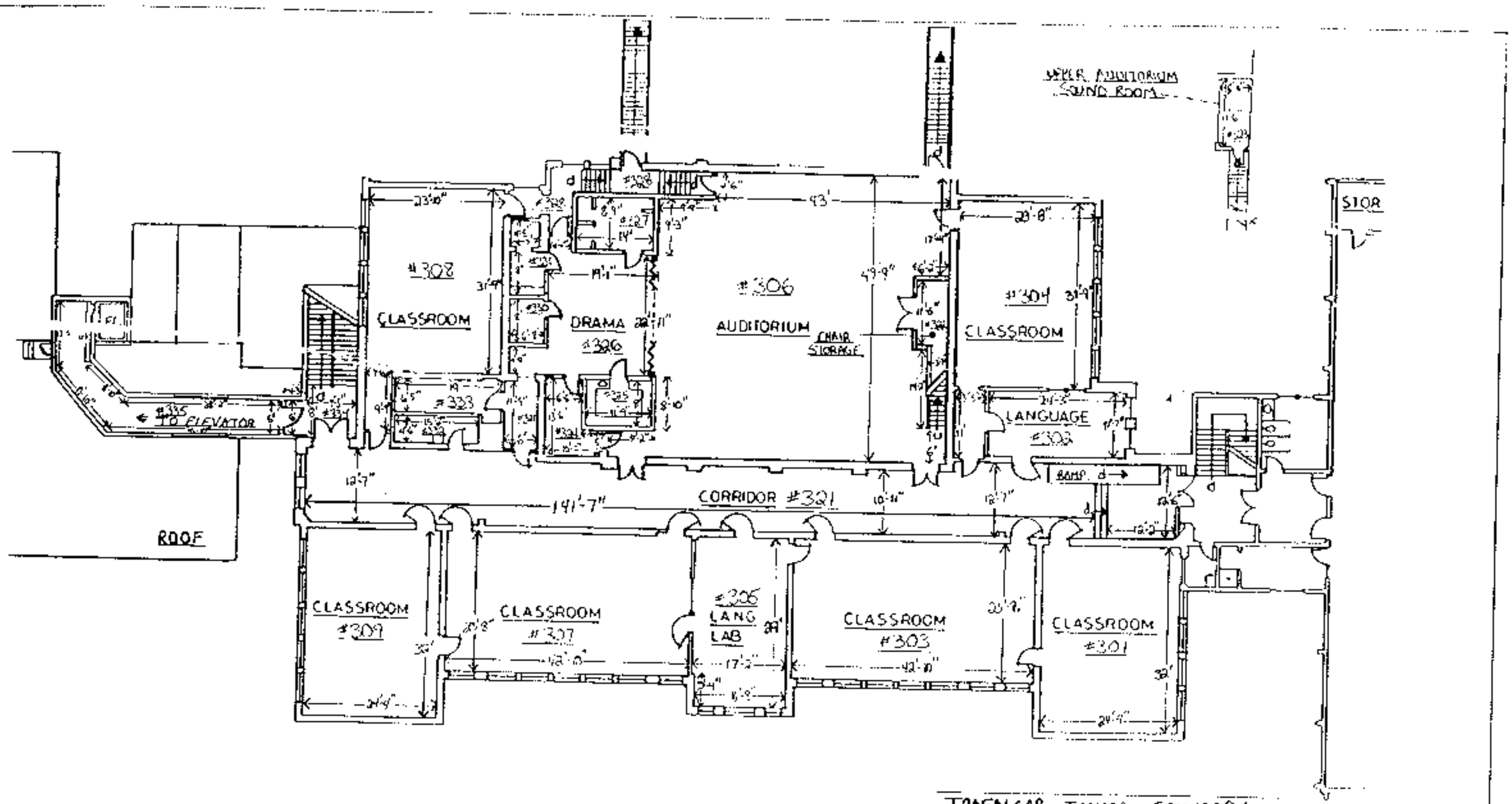
TRAFALGAR JUNIOR SECONDARY

SCHOOL DISTRICT NO. 7

NELSON, B.C. JUNE 1987

GYMNASIUM WING & BLOCK CONNECTING IT ON 2ND & 3RD FLOORS TO CENTRE BLOCK

S.D.L.



SCALE = 1:200

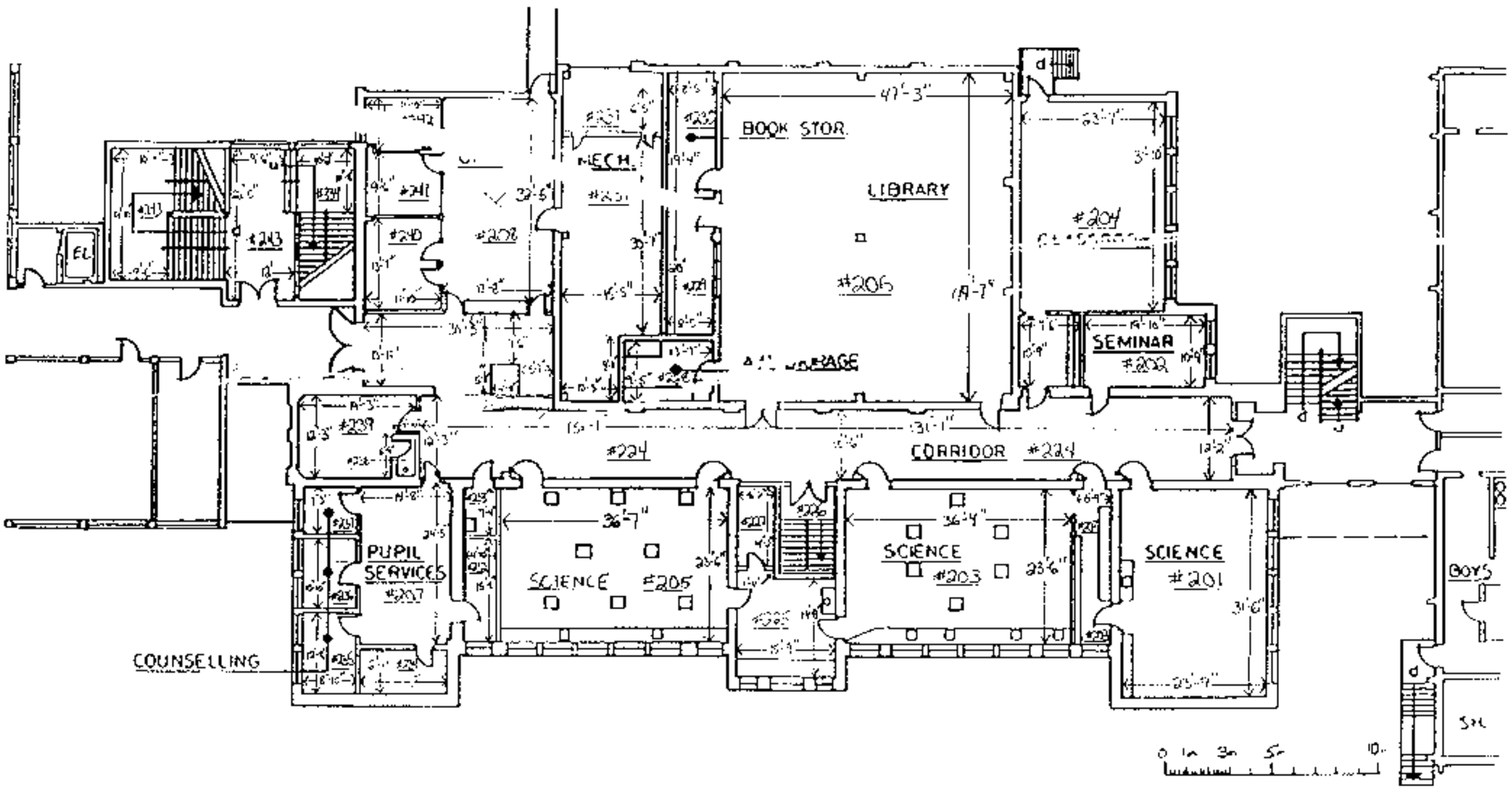
TRAFALGAR JUNIOR SECONDARY

SCHOOL DISTRICT NO. 7

NELSON, B.C. JUNE 1967

CENTRE BLOCK = 3RD FLOOR

S.J.L.



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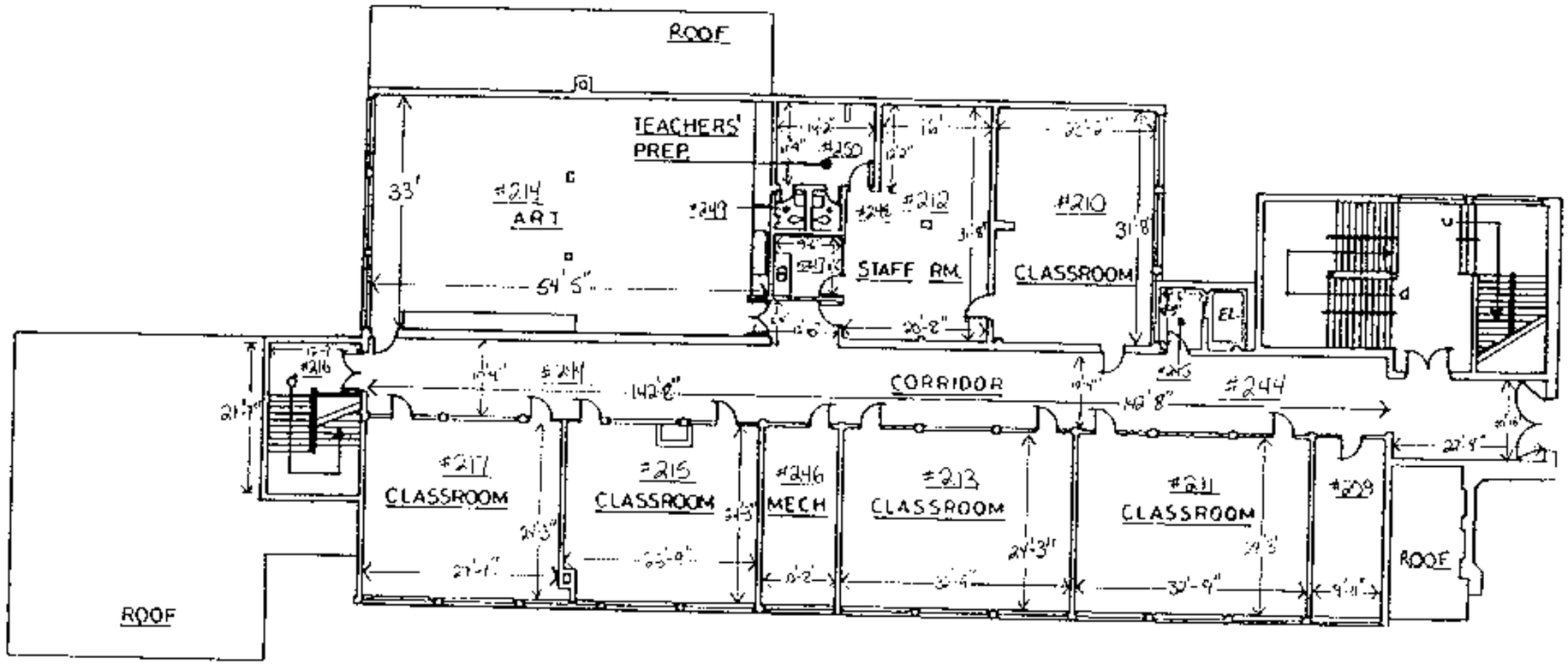
TRAFALGAR JUNIOR SECONDARY

SCHOOL DISTRICT NO. 7

NELSON, B.C. JUNE 1987

CENTRE BLOCK - 2ND FLOOR

SJL



0 1 3 5m

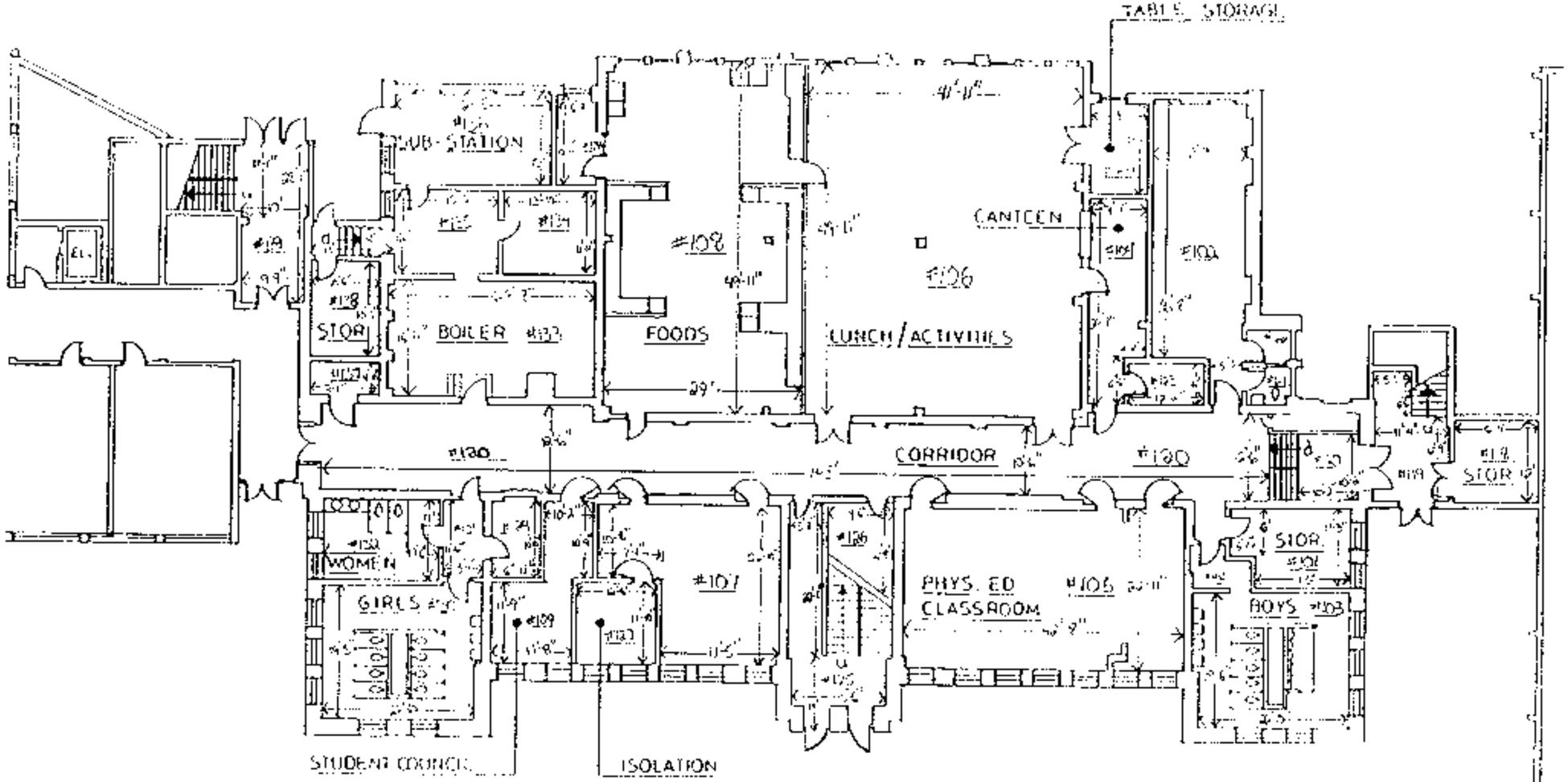
SCALE - 1:200

IRAFALGAR JUNIOR SECONDARY

SCHOOL DISTRICT NO. 7

NELSON, B.C. JUNE 1987

NORTH WING - 2ND FLOOR



SCALE - 1:200

SITE	CONNECTION	DISTRICT - ALL SHUT-OFF LOCATIONS
TRAFALGAR	SECURITY	KEYPAD LOCATIONS - MAIN OFFICE - CORRIDOR - MAIN ENTRY (1ST FLR SOUTH STAIRWELL) ISOLATES GYM (+ HANDICAP ACCESS BY GYM
	WATER	BELOW CRAWLSPACE ACCESS BESIDE OFFICE IN TECH AREA (SMALL ROOM ACROSS FROM BOYS WASHROOM / BASEMENT)
	GAS	OUTSIDE BELOW MAIN OFFICE ENTRY
	FIRE PANEL	BOILER ROOM - FIRE SYSTEM SHUT OFF SAME AS WATER (LISTED ABOVE)
	ELECTRICAL	BOILER ROOM
	IRRIGATION	LOWER FIELD - SHUT OFF BELOW CRAWLSPACE ACCESS IN TECH AREA FIELD SHUT OFF IN RAMP ACCESS OUTSIDE WOOD SHOP CLOCK IN CUSTODIAL ROOM IN TECH AREA UPPER FIELD - INSIDE BOILER ROOM DOOR / ACCESS DOORS TO FIELD CLOCK INSIDE BOILER ROOM DOOR

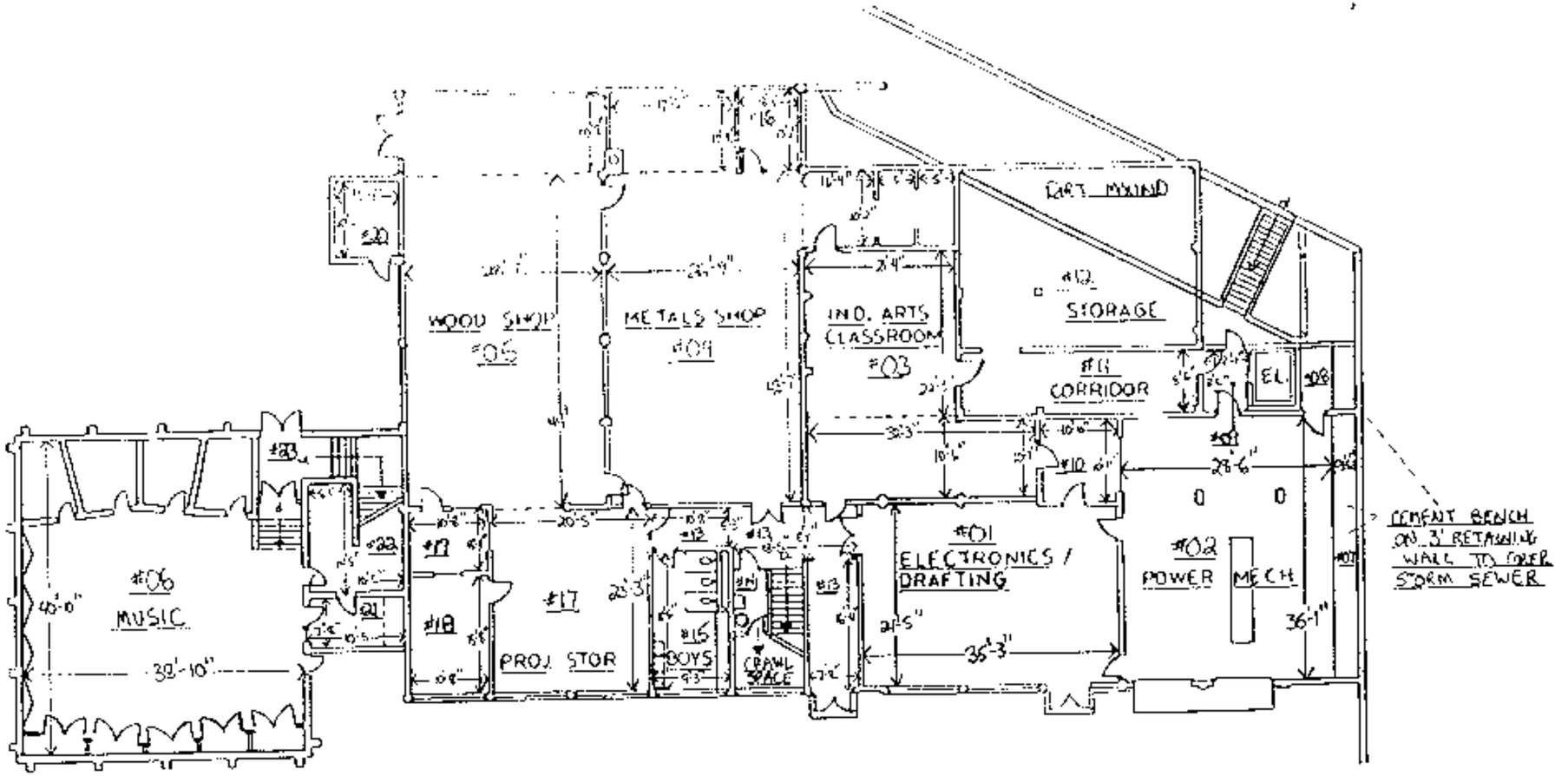
TRAFALGAR JUNIOR SECONDARY

SCHOOL DISTRICT NO. 7

NELSON, B.C. JUNE 1987

(CENTRE BLOCK - 1ST FLOOR)

S3.2



SCALE - 1:200

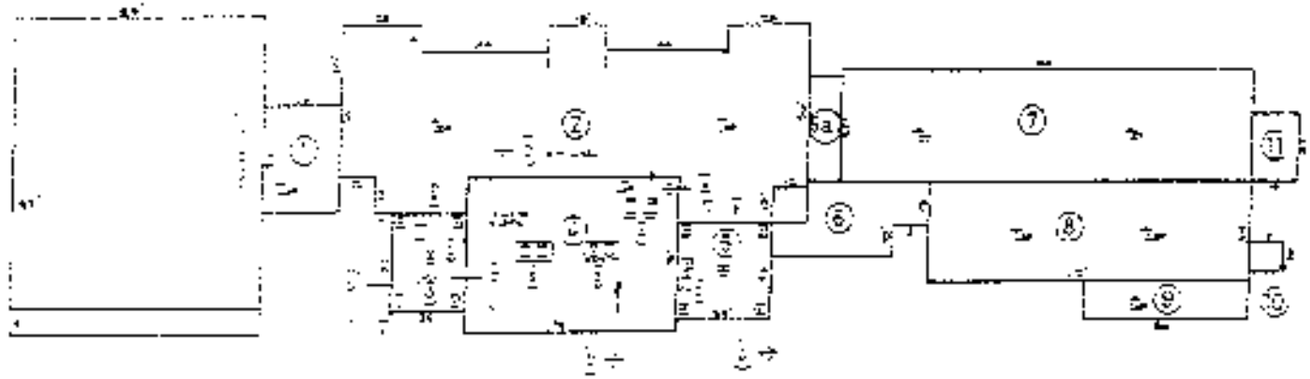
TRAFALGAR JUNIOR SECONDARY

SCHOOL DISTRICT NO. 7

NELSON, B.C. JUNE 1987

NORTH WING - GROUND FLOOR

SJL



TOTAL SQUARES

Notes:

-New in 1980 - area 6

-Reroofed in 1986 - gym & storage

-Reroofed in 1987 - area 7

-Reroofed in 1989 - area 3,4,5.

-Reroofed in 1994 - Areas 1, 2.

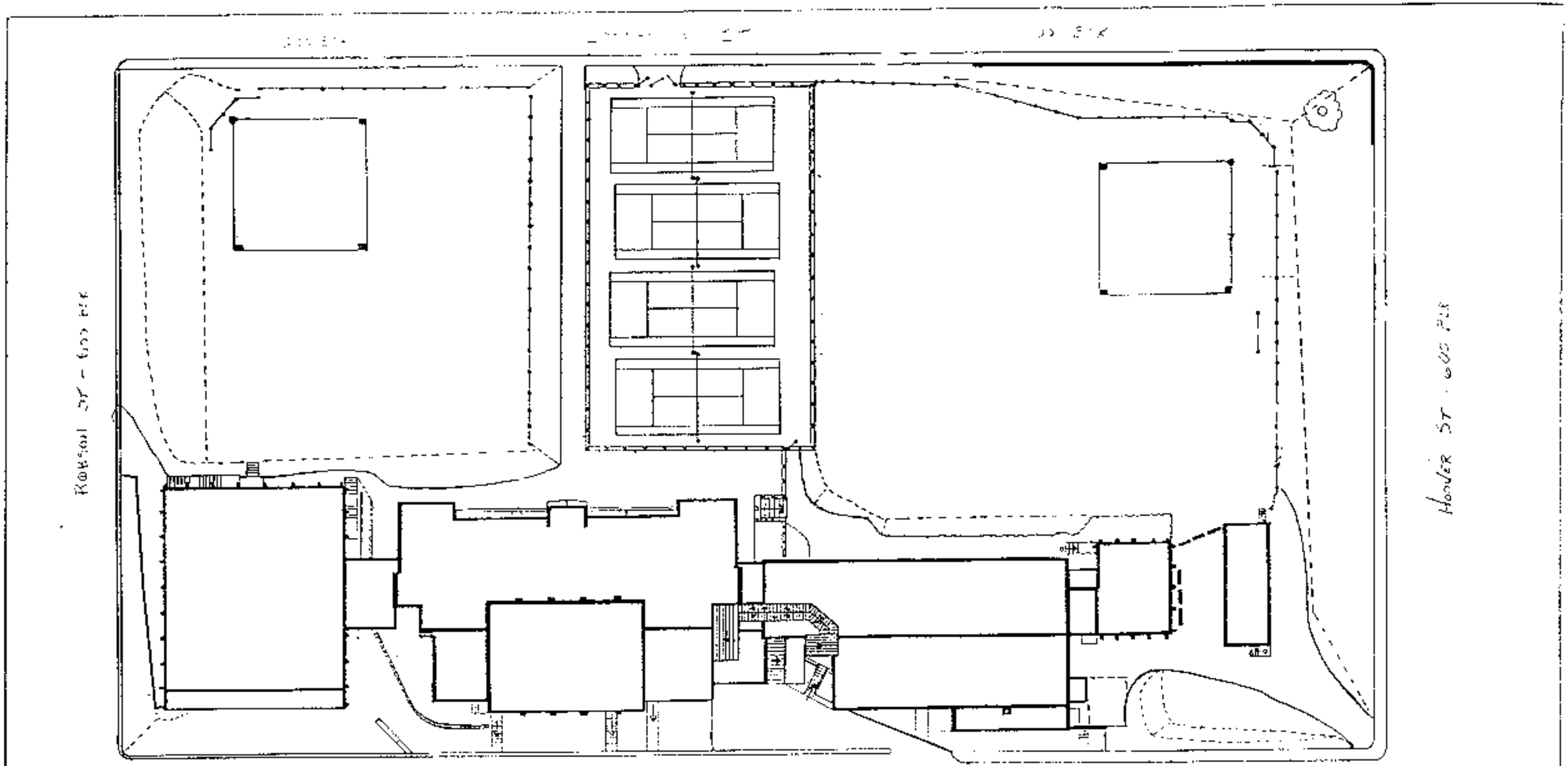
- Reroofed in 1996 - Areas 64,68 [illegible]

- Reroofed in 1984 - Areas 10 [illegible]

ROOFING INVENTORY

School District No. 7 - Nelson

Trafalgar Jr. High - Nelson



TRAFALGAR - S/T

S.D.# 7 - MAINTENANCE DEPT

DRAWN BY: B.M | CHECKED BY:

SCALE: N.T.S | DATE: 24/03/93 | SK #:

APPENDIX J

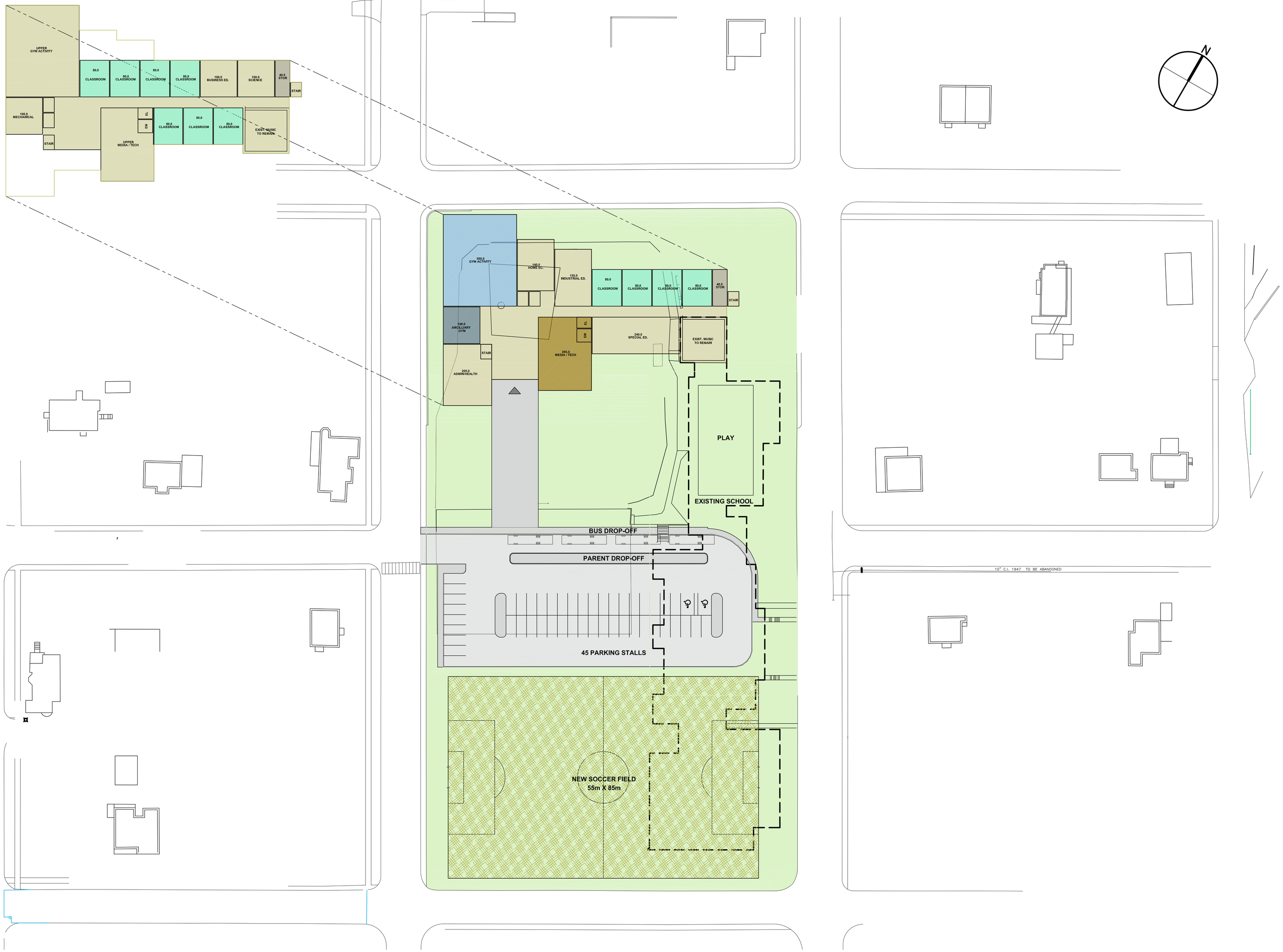
GREATER NELSON SCHOOLS
FACILITY REVIEW

Site and Floor Plans
Options2, 4, 5, & 6

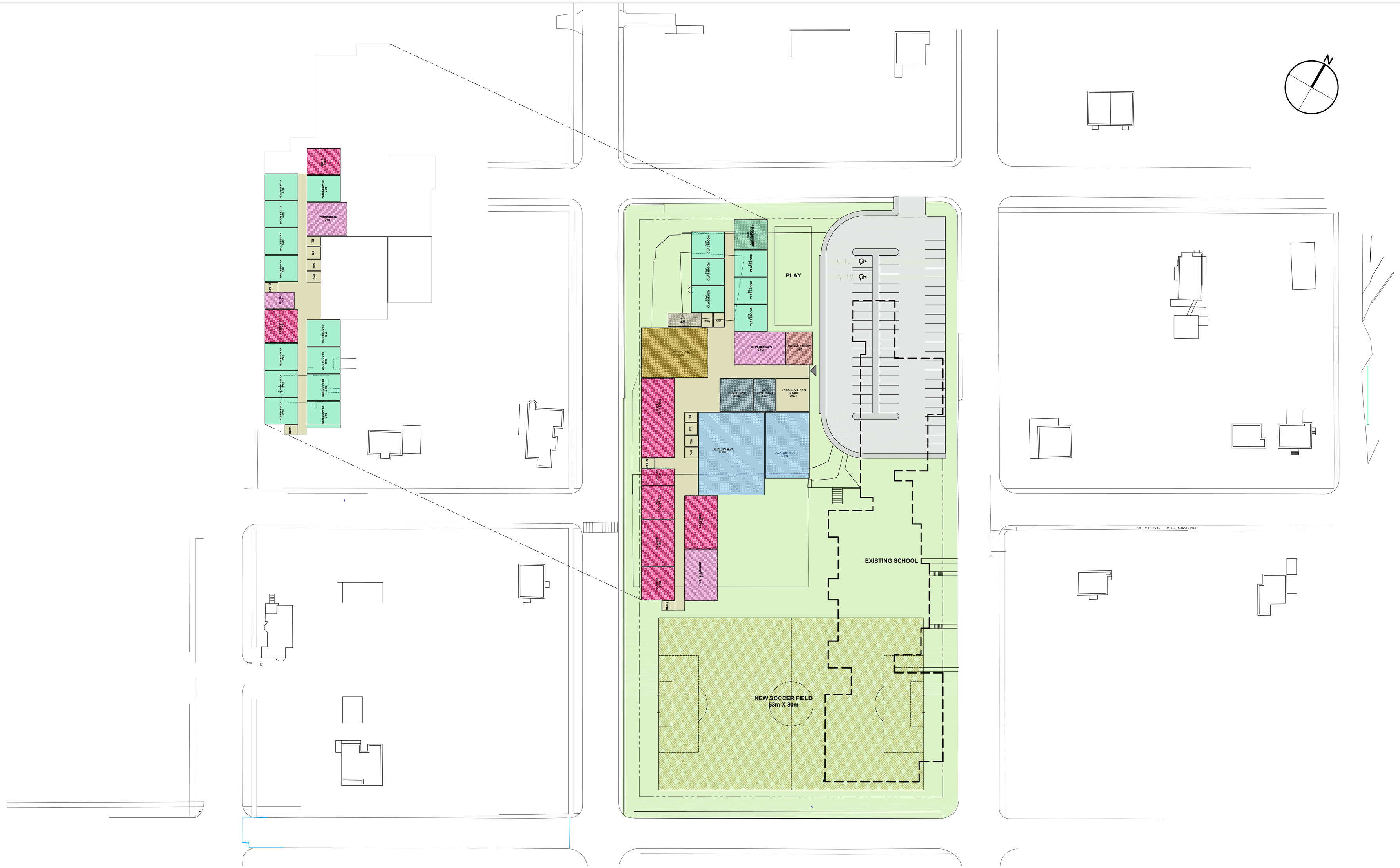
PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

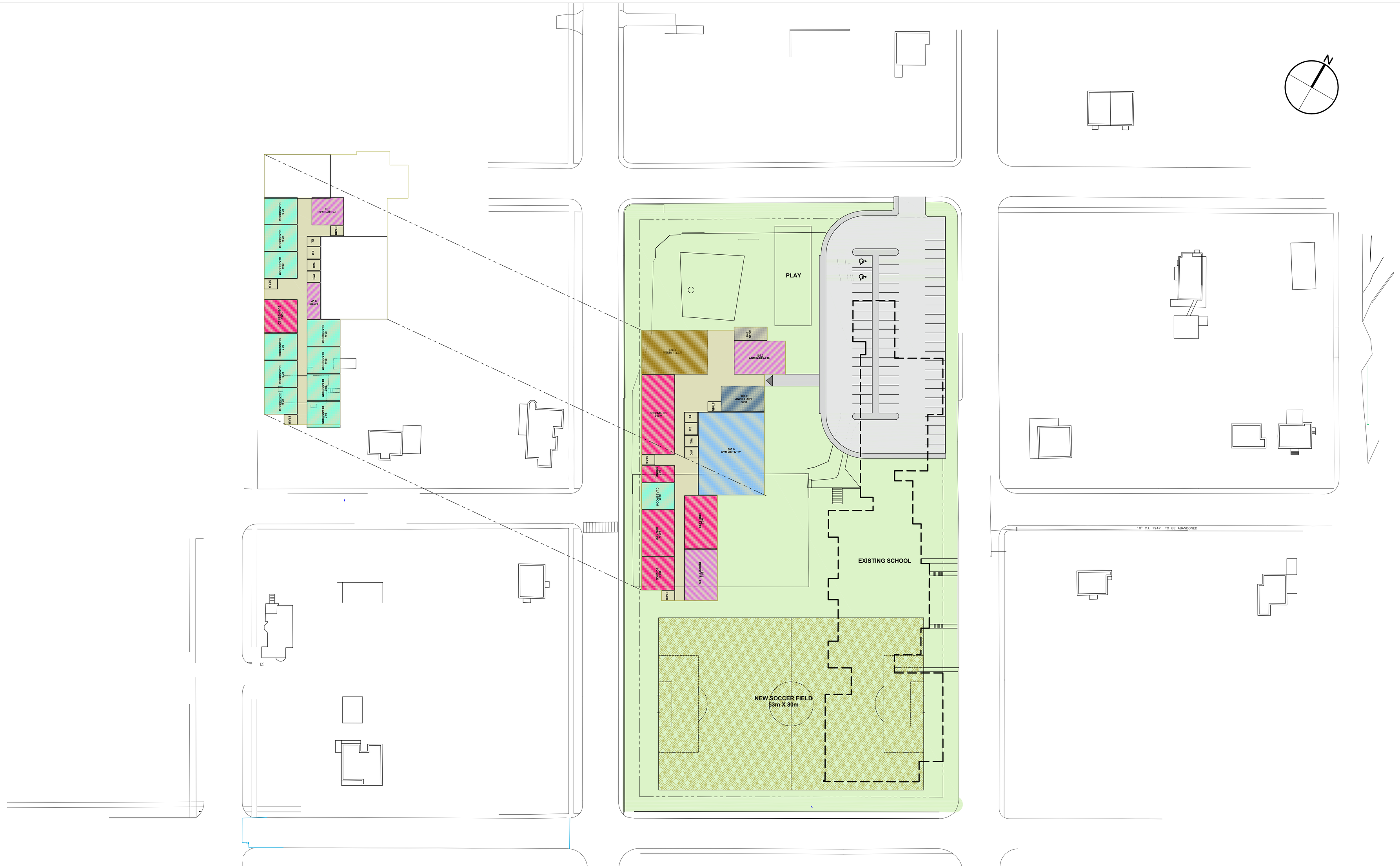


Project	TRAFALGAR SCHOOL	Project No. 09443	Date APRIL 6, 2009	MQN ARCHITECTS McDonell Quiring Neumann
Drawing	PROPOSED SITE PLAN OPTION 5	Scale 1:500		



Project	TRAFALGAR SCHOOL	Project No. 09443	Date MAY 11, 2009
Drawing	PROPOSED SITE PLAN OPTION 4	Scale 1:500	

MQN ARCHITECTS — McDonell Quirling Neumann



Project TRAFALGAR SCHOOL

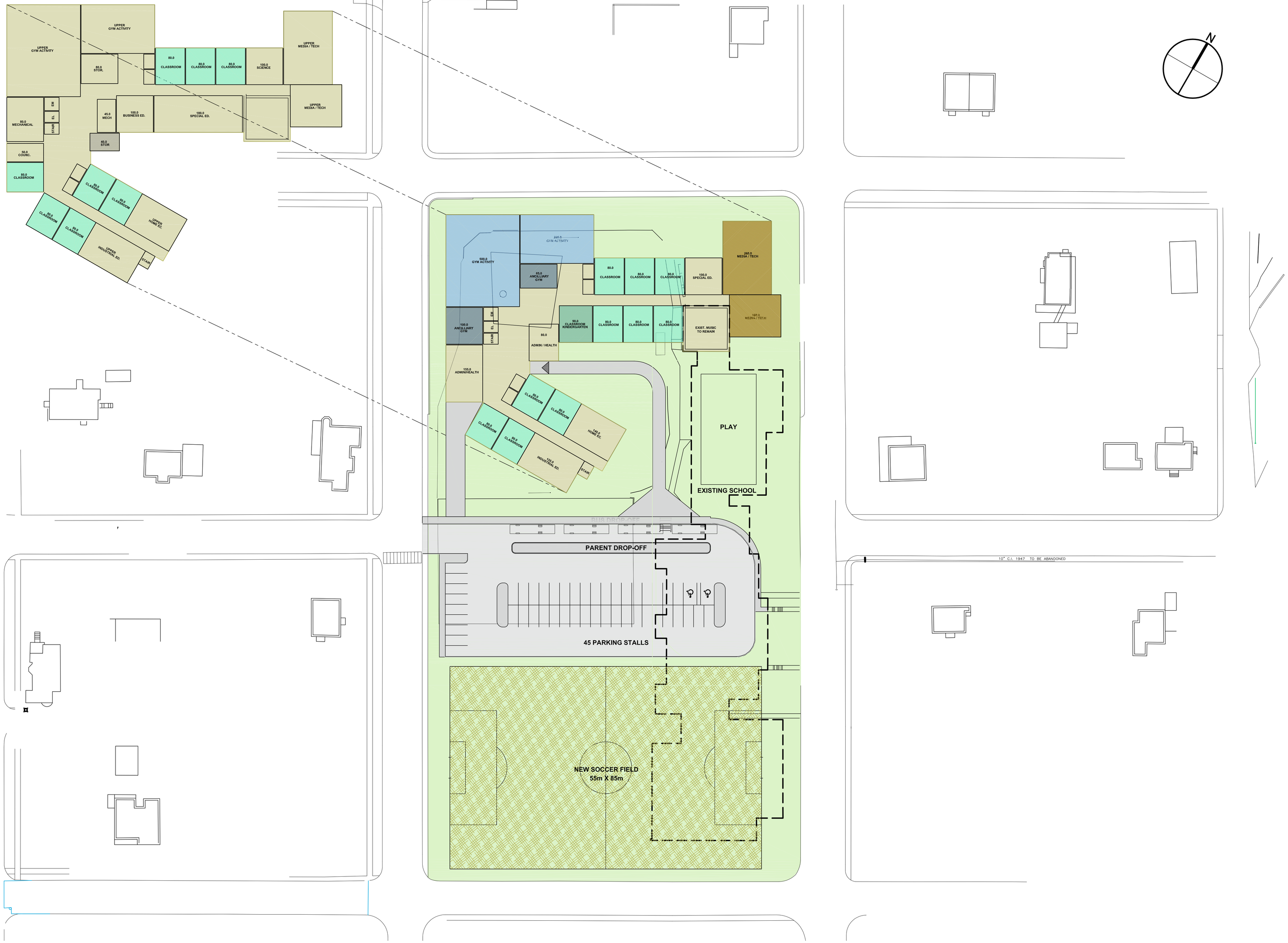
Drawing PROPOSED SITE PLAN
OPTION 2

Project No. 09443

Scale 1:500

Date MAY 11, 2009

McDonell Quirling Neumann
MQN ARCHITECTS



Project TRAFALGAR SCHOOL

Drawing PROPOSED SITE PLAN
OPTION 6

Project No. 09443

Scale 1:500

Date APRIL 6, 2009

McDonell Quiring Neumann ARCHITECTS

APPENDIX K

GREATER NELSON SCHOOLS
FACILITY REVIEW

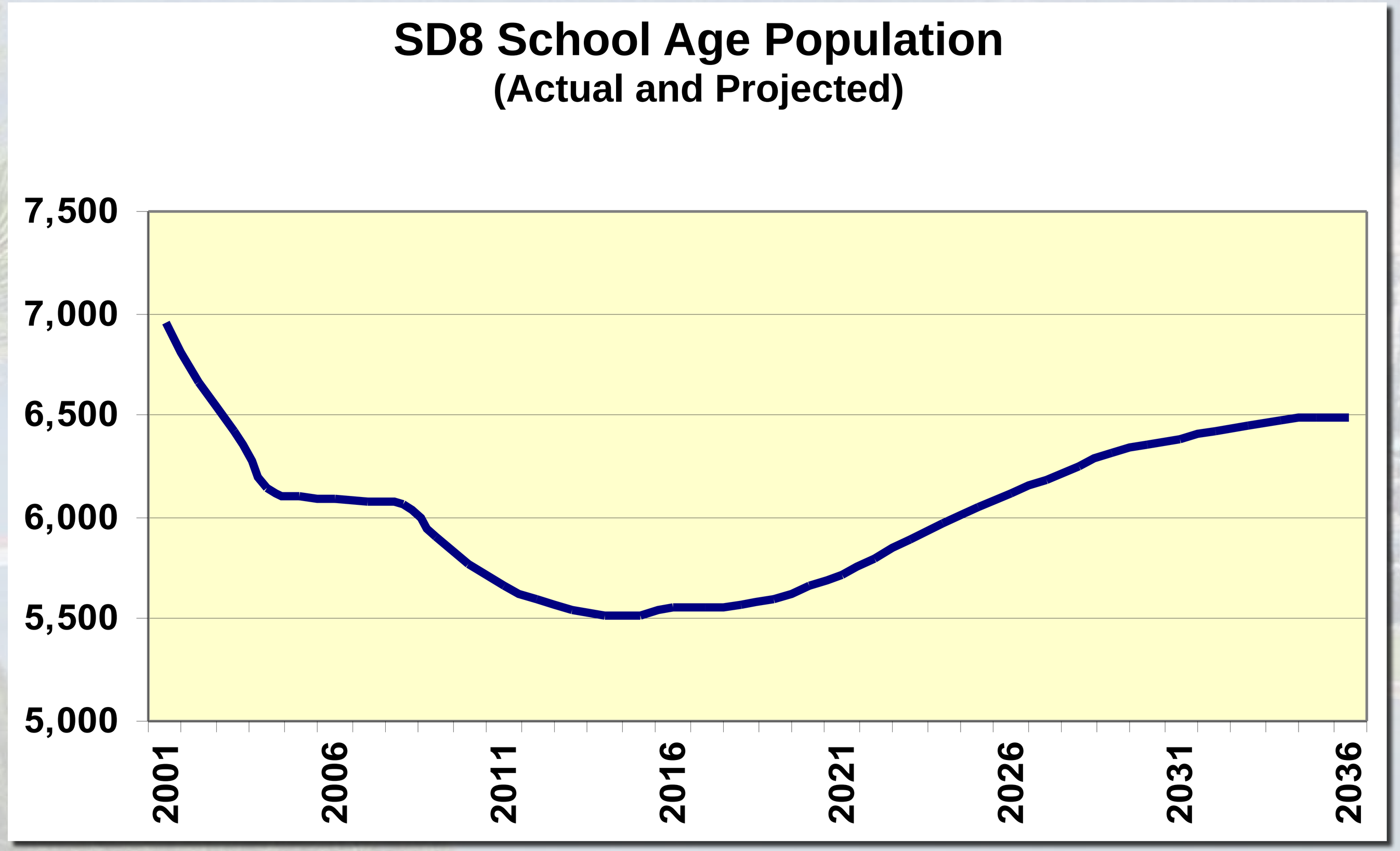
Public Input Process
and
Outcomes

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

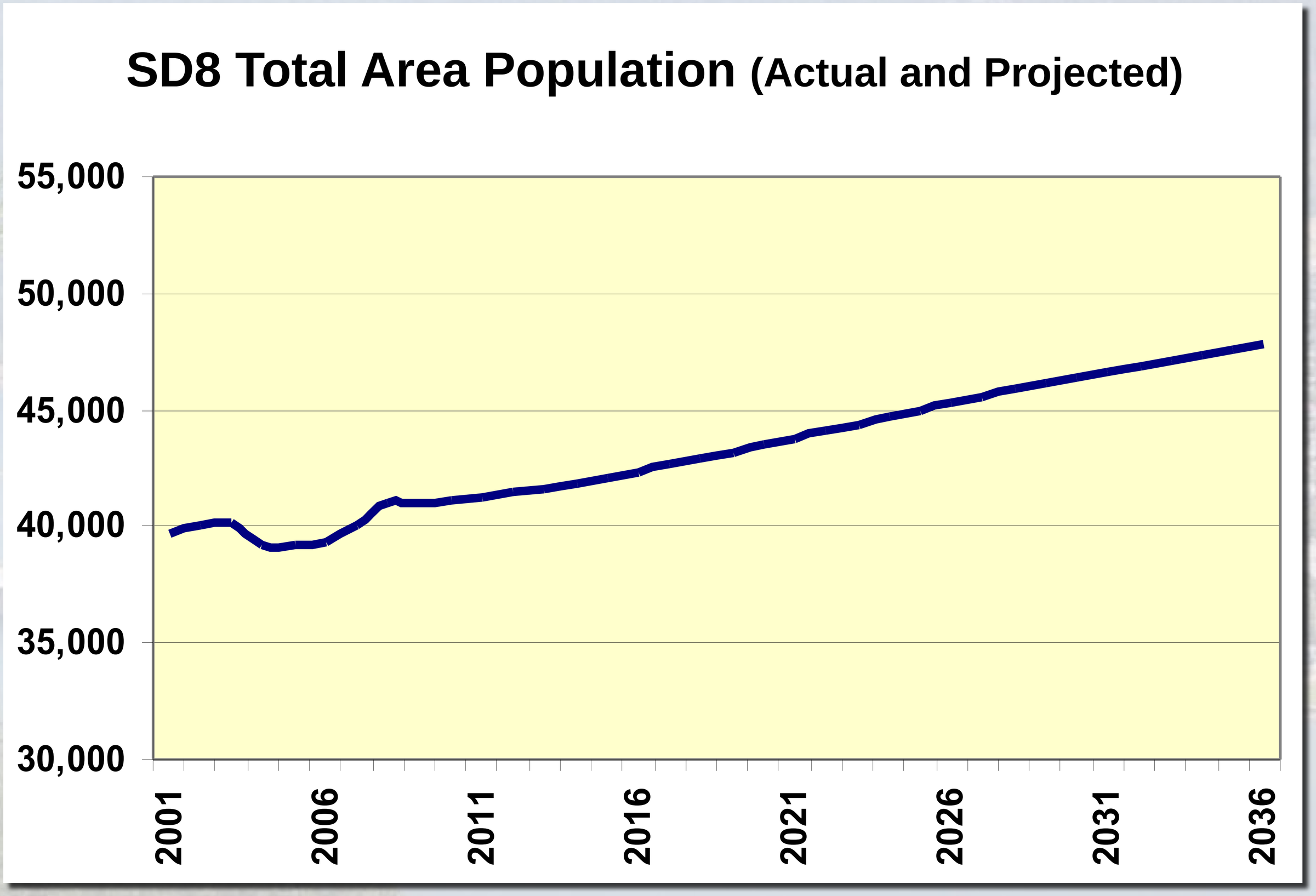
SCHOOL DISTRICT #8 (KOOTENAY LAKE)

SD8 SCHOOL AGE POPULATION



TRAFALGAR SCHOOL PROJECT

SD8 TOTAL AREA POPULATION

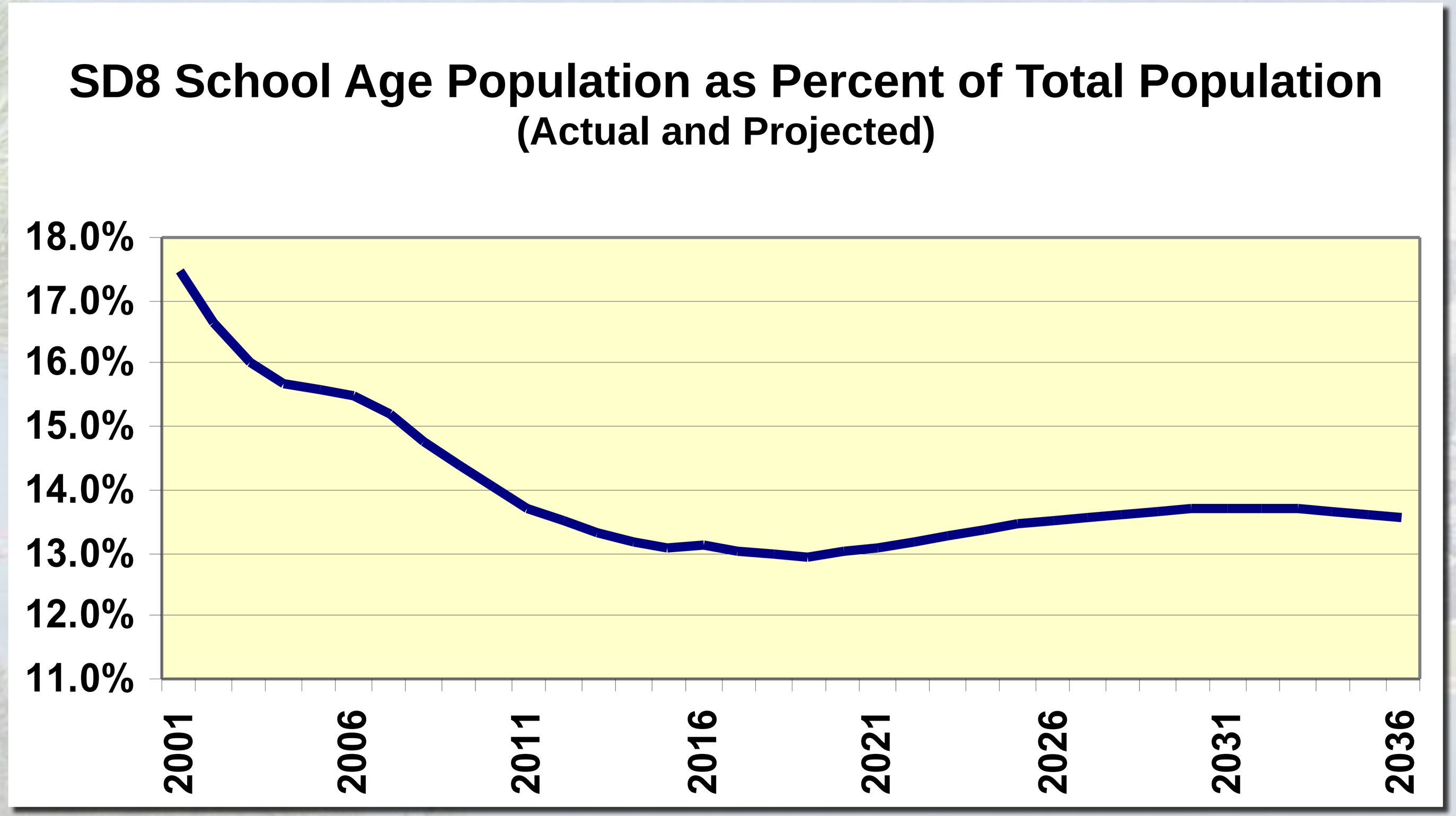


TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

SD8 SCHOOL AGE POPULATION

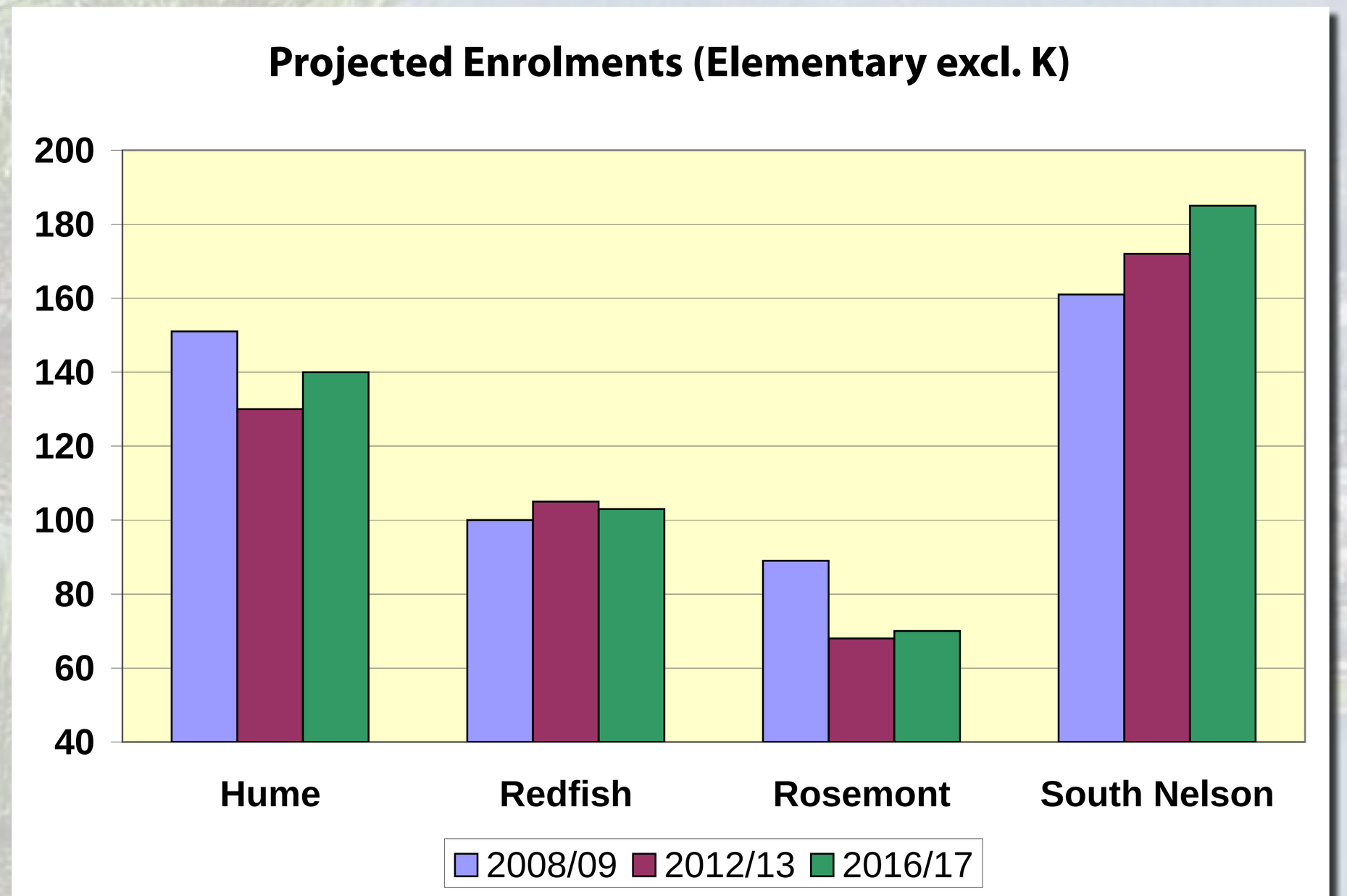
AS % OF TOTAL POPULATION

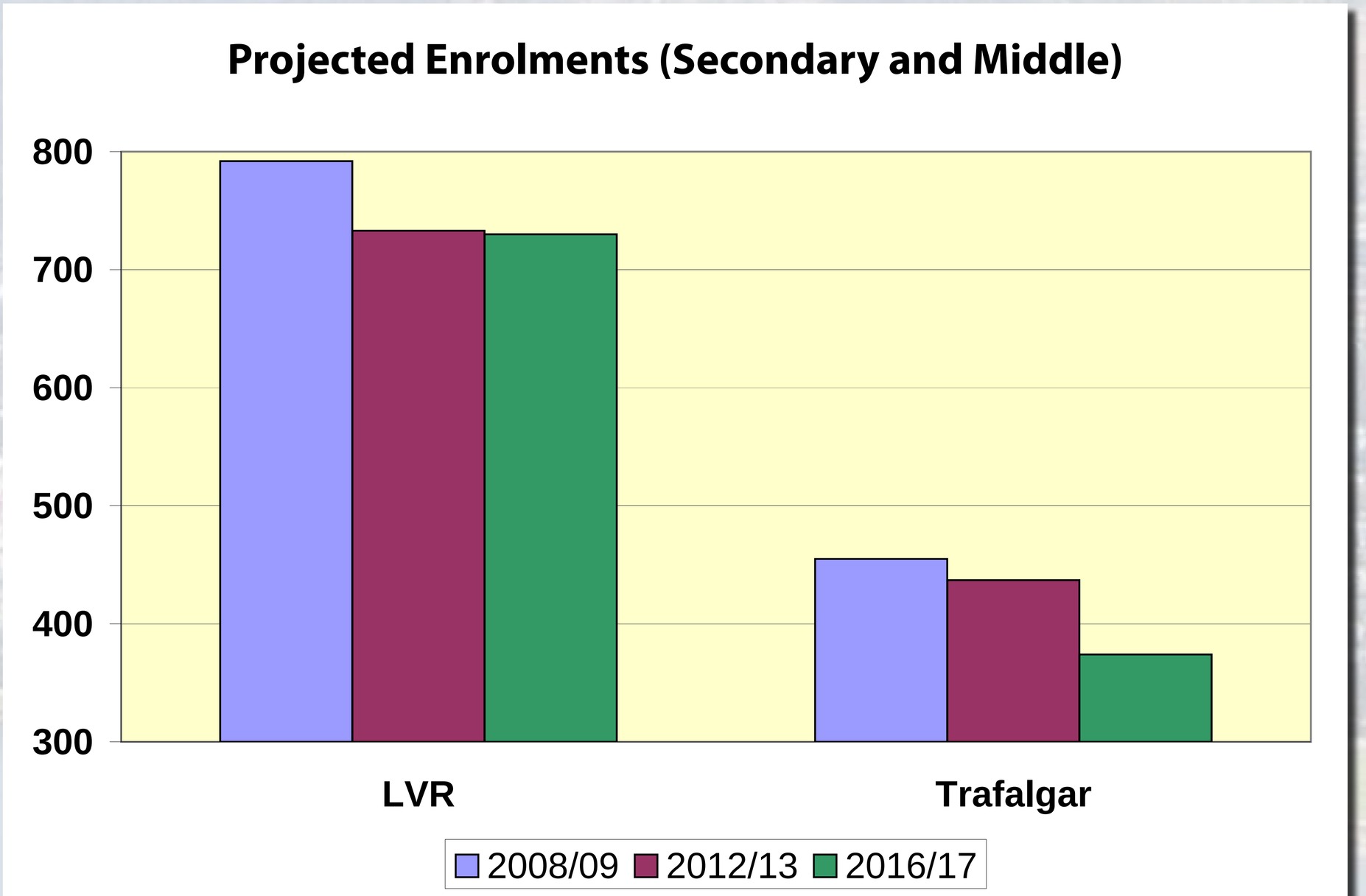


TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

PROJECTED ENROLMENTS

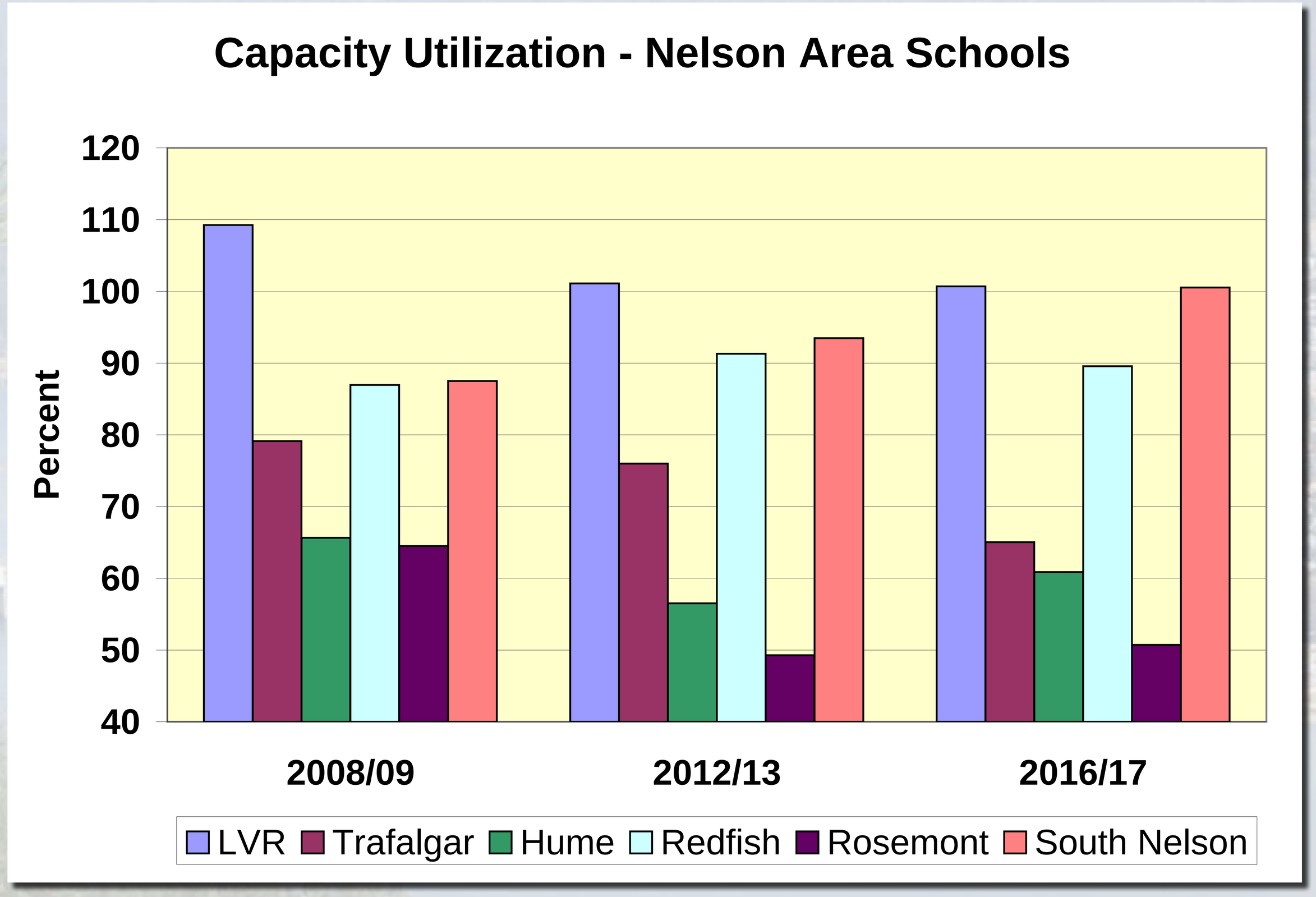




TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

CAPACITY UTILIZATION



TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

AGE AND CONDITION OF FACILITIES

Trafalgar Middle School
Built in 1920

- In 2005, Facility Audit team arranged by Ministry of Education gave an Audit score of 43.2%
- Audit score very low, indicating virtually all systems are in poor condition and near the end of their life cycle
- This score is within the range of projects being approved by the Ministry for Feasibility Studies

South Nelson Elementary School
Built in 1960

- In 2005, Facility Audit team arranged by Ministry of Education gave an Audit score of 41.7%
- Audit score very low, indicating virtually all systems are in poor condition and near the end of their life cycle
- This score is within the range of projects being approved by the Ministry for Feasibility Studies

Low score, combined with significantly oversized floor space, makes it unlikely the Ministry would support renovation in comparison with replacement of these schools

Hume, Rosemont & Redfish Elementary Schools
Built in 1920, 1962, and 1987 respectively

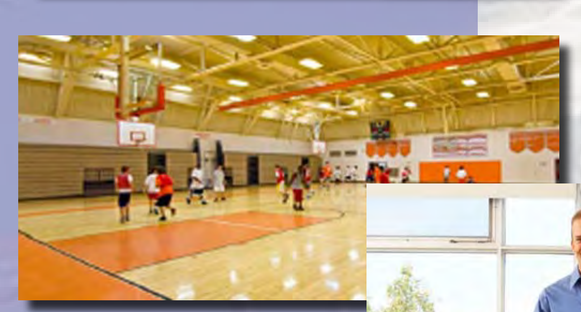
- Visited and reviewed in 2006 by MNQ Architects
- Deemed to be in reasonable condition, needing some upgrades including mechanical, electrical, and finishes
- Estimated Facility Audit Scores would be in the 55% to 65% range, well above scores for Trafalgar and South Nelson Schools

TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

OPTIONS

In 2006, MQN Architects investigated four options for increasing efficiencies in Nelson Schools



Option 1

- Trafalgar Junior Middle School Renovated or Replaced (Grades 6 to 8)
- Grade 9 shifted to L.V. Rogers Secondary School
- South Nelson Elementary School Renovated or Replaced (Grades K to 5)
- Gordon Sargent Primary School Closed
- A. I. Collinson Elementary School Possible Closure

Option 2

- New Trafalgar Elementary School (Grades K to 7)
- Grades 8 & 9 shifted to L.V. Rogers Secondary School
- South Nelson Elementary Closed
- Gordon Sargent Primary Closed
- Rosemont Elementary Closed

Option 3

- South Nelson Elementary School Renovated or Replaced (Grades K to 7)
- Trafalgar Middle School Closed
- Grades 8 & 9 shifted to L.V. Rogers Secondary School
- Gordon Sargent Primary School Closed

Option 4 - Selected Option

- New Trafalgar Elementary / Junior Middle School (Grades K to 8)
- Grade 9 shifted to L.V. Rogers Secondary School
- A.I. Collinson Elementary School Closed
- South Nelson Elementary School Closed
- Gordon Sargent Primary School Closed

TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

SELECTED OPTION

The Board of Education Passed a Resolution to Support Option 4 Because:

- Accommodates Elementary (Grades K-5) and Middle School (Grades 6-8) which aligns with new grade configuration for the District
- High potential for operating cost savings
- High potential for revenue from the sale of surplus sites
- Offers Life Cycle cost advantages of a new school
- Reduces the number of school sites held by the School District
- Increased utilization rates at a number of schools
- Requires no addition to L.V. Rogers Secondary School

Actions To Date:

- Closure of A. I. Collinson Elementary School (2007 / 08)
- Closure of Gordon Sargent Primary School (2007 / 08)
- Gordon Sargent Primary School program moved to South Nelson Elementary School (2008 / 09)

TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

SCHOOL SITES

TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

CONSIDERATIONS

- **Opportunities for enhanced community connections, like:**
  - -Performance space, art display space / gallery
  - -Sharing of fields, gymnasium and fitness facilities
  - -Community Services such as Ministry of Children & Families, Nelson City Police, RCMP, Mental Health, Freedom Quest etc.
  - -Child care and Early Learning Facilities, like Strong Start
  - -Garden area and composting program

- **A brand new state-of-the-art facility with up-to-date amenities. A better building makes for better learning**
- **Ability to design the school to meet today's needs of students and staff**
- **Enhances school pride for students and staff**
- **Healthier environment with improved heating and air quality**
- **Mentoring opportunities between older and younger students**
- **Opportunity for Neighbourhoods of Learning**
- **Built to LEED Gold standard**

- **Significant reductions in school operating costs. Energy savings alone are estimated to be $60,000 per year**
- **Minimal impact to student busing and other modes of getting to and from school**
- **Consolidation of space and enhanced utilization of facilities results in more resources for the classroom**
- **Proven capacity for project delivery by the School District, with recent completion of Crawford Bay Elementary Secondary School; including the development of exceptional community partnerships and anticipation of being the first new public school in BC to receive LEED Gold designation**

TRAFALGAR SCHOOL PROJECT

School District Kootenay Lake

NEIGHBOURHOODS OF LEARNING

What is the 'Neighbourhoods of Learning' initiative?

- Provincial initiative announced on September 3, 2008
- Intended to promote opportunities to access education and community services under one roof
- An application for funds would be submitted to the Neighbourhoods of Learning initiative to provide additional space within the new Trafalgar School for community services.
- A broad range of community interests could be considered for inclusion, including:
  - -Educational
  - -Physical
  - -Recreational
  - -Cultural
  - -Environmental
  - -Social
- Community input would be sought to assist in determining what community services may be included in the new school

TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

NEXT STEPS AND TIMELINES

1. Analyze and Synthesize input from the public open house
2. Complete and Submit the 2009 – 2010 Capital Plan to the Ministry of Education by May 15, 2009
3. Make the Capital Plan available to the public
4. The Ministry of Education may:
   - a. Approve the Capital Plan as submitted
   - b. Approve the Capital Plan with adjustments
   - c. Not support the Capital Plan at this time

Timelines for Ministry of Education decisions are not known at this time.

TRAFALGAR SCHOOL PROJECT

School District 8 Kootenay Lake

AGE & CONDITION OF FACILITIES

Trafalgar Middle School
Built in 1920

- In 2005, Facility Audit team arranged by Ministry of Education gave an Audit score of 43.2%
- Audit score very low, indicating virtually all systems are in poor condition and near the end of their life cycle
- This score is within the range of projects being approved by the Ministry for Feasibility Studies
- Low score, combined with significantly oversized floor space, makes it unlikely the Ministry would support renovation in comparison with replacement of this school

South Nelson Elementary School
Built in 1960

- In 2005, Facility Audit team arranged by Ministry of Education gave an Audit score of 41.7%
- Audit score very low, indicating virtually all systems are in poor condition and near the end of their life cycle
- This score is within the range of projects being approved by the Ministry for Feasibility Studies
- Low score, combined with significantly oversized floor space, makes it unlikely the Ministry would support renovation in comparison with replacement of this school

Hume, Rosemont & Redfish Elementary Schools
Built in 1920, 1962, and 1987 respectively

- Visited and reviewed in 2006 by MNQ Architects
- Deemed to be in reasonable condition, needing some upgrades including mechanical, electrical, and finishes
- Estimated Facility Audit Scores would be in the 55% to 65% range, well above scores for Trafalgar and South Nelson Schools

NEXT STEPS & TIMELINES

1. **Analyze and synthesize input from the public open house**
2. **Complete and submit the 2009 – 2010 Capital Plan to the Ministry of Education by May 15, 2009**
3. **Make the Capital Plan available to the public**
4. **The Ministry of Education may:**
   - **a. Approve the Capital Plan as submitted**
   - **b. Approve the Capital Plan with adjustments**
   - **c. Not support the Capital Plan at this time**

Timelines for Ministry of Education decisions are not known at this time.

DEADLINE FOR INPUT MAY 8TH

FOR FURTHER INFORMATION PLEASE CONTACT:

Larry Brown, Director of Operations
Phone: 250-354-4871
E-mail: trafalgarschool@shaw.ca
Website: www.sd8.bc.ca
Fax: 1-250-746-9831

Background materials and input questionnaire are on website.

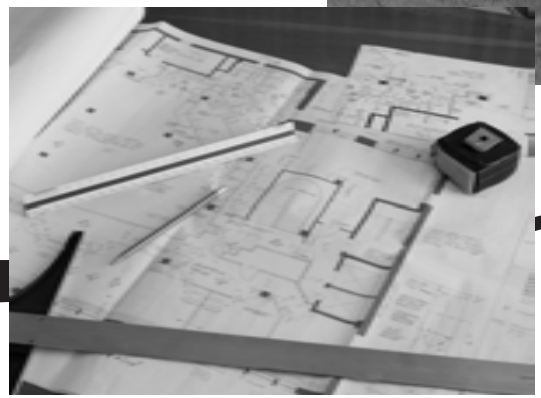
School District 8 Kootenay Lake

The Plan.....

a NEW Trafalgar Elementary/ Middle School (K-8)

Public Open House

7pm Tuesday May 5th /09
Trafalgar Middle School
1201 Josephine St.
Nelson, BC



OPTIONS

Option 1
- Trafalgar Junior Middle School Renovated or Replaced (Grades 6 to 8)
- Grade 9 shifted to L.V. Rogers Secondary School
- South Nelson Elementary School Renovated or Replaced (Grades K to 5)
- Gordon Sargent Primary School Closed
- A. I. Collinson Elementary School Possible Closure

Option 2
- New Trafalgar Elementary School (Grades K to 7)
- Grades 8 & 9 shifted to L.V. Rogers Secondary School
- South Nelson Elementary Closed
- Gordon Sargent Primary Closed
- Rosemont Elementary Closed

Option 3
- South Nelson Elementary School Renovated or Replaced (Grades K to 7)
- Trafalgar Middle School Closed
- Grades 8 & 9 shifted to L.V. Rogers Secondary School
- Gordon Sargent Primary School Closed

SELECTED OPTION

Option 4 - Selected Option
- New Trafalgar Elementary / Junior Middle School (Grades K to 8)
- Grade 9 shifted to L.V. Rogers Secondary School
- A.I. Collinson Elementary School Closed
- South Nelson Elementary School Closed
- Gordon Sargent Primary School Closed

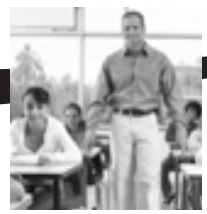
The Board of Education Passed a Resolution to Support Option 4 Because:
- Accommodates Elementary (Grades K-5) and Middle School (Grades 6-8) which aligns with new grade configuration for the District
- High potential for operating cost savings
- High potential for revenue from the sale of surplus sites
- Offers Life Cycle cost advantages of a new school
- Reduces the number of school sites held by the School District
- Increased utilization rates at a number of schools
- Requires no addition to L.V. Rogers Secondary School

Actions To Date:
- Closure of A. I. Collinson Elementary School (2007 / 08)
- Closure of Gordon Sargent Primary School (2007 / 08)
- Gordon Sargent Primary School program moved to South Nelson Elementary School (2008 / 09)

CONSIDERATIONS

- A brand new state-of-the-art facility with up-to-date amenities. A better building makes for better learning
- Ability to design the school to meet today's needs of students and staff
- Enhances school pride for students and staff
- Healthier environment with improved heating and air quality
- Mentoring opportunities between older and younger students
- Opportunity for Neighbourhoods of Learning
- Opportunities for enhanced community connections, like:
  - -Performance space, art display space / gallery
  - -Sharing of fields, gymnasium and fitness facilities
  - -Community Services such as Ministry of Children & Families, Nelson City Police, RCMP, Mental Health, Freedom Quest etc.
  - -Child care and Early Learning Facilities, like Strong Start
  - -Garden area and composting program
- Built to LEED Gold standard
- Significant reductions in school operating costs. Energy savings alone are estimated to be $60,000 per year
- Minimal impact to student busing and other modes of getting to and from school
- Consolidation of space and enhanced utilization of facilities results in more resources for the classroom
- Proven capacity for project delivery by the School District, with recent completion of Crawford Bay Elementary Secondary School; including the development of exceptional community partnerships and anticipation of being the first new public school in BC to receive LEED Gold designation

DEADLINE FOR INPUT MAY 8TH



TRAFALGAR SCHOOL PROJECT

A NEW TRAFALGAR SCHOOL
PUBLIC INPUT QUESTIONNAIRE

The Board of Education for School District 8 (Kootenay Lake) plans to submit a Capital Plan to the Ministry of Education in May, 2009 requesting support for the development of a new Trafalgar Elementary / Middle School (K – 8).

To assist in this process, the Board asks that you answer the following questions. The deadline for public input is May 8, 2009.

1. ***What do you like about this plan for a new Trafalgar Elementary / Middle School?***

2. ***Do you have any concerns about this plan for a new Trafalgar Elementary / Middle School?***

3. ***Do you have any ideas for how we might enhance this plan for a new Trafalgar Elementary / Middle School?***

4. ***Do you have any suggestions for community partnerships in the new Trafalgar School?***

5. ***Please provide any other comments or suggestions you may have.***

Deadline for submission is May 8, 2009
Submit Questionnaires in a number of ways:
Drop Boxes at Open House
Web-Based Questionnaire: www.sd8.bc.ca
E-mail: trafalgarschool@shaw.ca
Fax: 1-250-746-9831

Quest Consulting Services

DRAFT

Results of the Public Engagement Process about the Plan for a New Trafalgar Elementary / Middle School (K to 8) in Nelson, British Columbia

Presented To: School District 8 (Kootenay Lake)
Date: May 13, 2009

Background:

Over the past number of years School District 8 (Kootenay Lake) has been restructuring its grade configuration to reflect Elementary School as grades K to 5; Middle School as grades 6 to 8; and Secondary School as grades 9 to 12. Concurrent with this grade reconfiguration, the School District has been examining its level of efficiency in schools, with respect to current and projected enrollment, current and projected capacity utilization and facility age and conditions.

In this regard, MQN Architects Ltd. was commissioned in 2006 to investigate the relative merits of several options for increasing the efficiency of the schools in the City of Nelson.

Four options were considered in this analysis:

Option 1:

- Renovate and reconfigure Trafalgar as a Junior Middle School
- Move grade 9 students to L.V. Rogers Secondary
- Consolidate Gordon Sargent Primary into renovated South Nelson Elementary, and
- Possible consolidation of A.I Collinson into Hume Elementary

Option 2:

- Replace Trafalgar as a new grade K – 7 Elementary School
- Move grade 8 and 9 students to L.V. Rogers Secondary School, and
- Consolidate South Nelson, Gordon Sargent and Rosemont Elementary Schools into the new Elementary School

Option 3:

- Renovate (and add to if necessary) South Nelson Elementary School as a grade K to 7
- Move Grade 8 and 9 students to L.V. Rogers Secondary, and
- Close Gordon Sargent Elementary and Trafalgar Middle School

Option 4:

- Replace Trafalgar as a new grades K to 8 Elementary / Middle School
- Move Grade 9 students to L.V. Rogers Secondary
- Close A.I Collinson and consolidate into Hume Elementary School, and
- Close South Nelson and Gordon Sargent Schools and consolidate into the new Elementary / Middle School

The MQN report noted that all of the schools examined are in need of renovations and upgrades and two of the four had Facility Audits completed by the Ministry of Education

appointed Audit Team in the summer of 2005. Those schools, Trafalgar and South Nelson, had scores of 43.2% and 41.7% respectively.

Following extensive review of the report produced by MQN Architects Ltd. and deliberation of the options, the Board of Education passed a resolution to support option 4 because:

- Accommodates Elementary (K to 5) and Middle School (6 to 8) which aligns with new grade configuration for the District;
- High potential for operating cost savings
- High potential for revenue from the sale of surplus sites
- Offers Life Cycle advantages of a new school
- Reduces the number of school sites held by the School District
- Increases utilization rates at a number of schools
- Requires no addition to L.V. Rogers Secondary School

Actions taken by the Board of Education to date to support the move toward accomplishing Option 4 include:

- Closure of A.I. Collinson Elementary School (2007 / 08)
- Closure of Gordon Sargent Primary School (2007 / 08)
- Gordon Sargent Primary School program moved to South Nelson Elementary School (2008 / 09)

The Board of Education is now ready to submit its Capital Plan to the Ministry of Education for May 2009. As part of its submission preparation process, the School District has undertaken a community engagement process to learn more about the public's opinions of their new Trafalgar Elementary / Middle School plan.

The Public Engagement Process:

Objective:

The objective of the public engagement process was to clearly communicate information to the public such that they understood the background, process and future planned activities for the replacement of Trafalgar School as a new Elementary / Middle School (K to 8) and to seek comments from the public as to:

- What they liked about the plan;
- Any concerns they might have had about the plan;
- Ideas for how the plan might be enhanced;
- Suggestions for community partnerships in the new school; and
- Suggestions, comments or other input.

Presentation of Information to the Public:

Open House:
A traditional open house format was used with story boards positioned in stations in the meeting facility. School District staff were available at each station to engage the public and answer questions. A number of Trustees and local politicians also attended the sessions and liaised with the public. The story boards are attached for your reference.

The open house was held in the gymnasium at Trafalgar Middle School on Tuesday, May 5th, 2009 from 7pm to 9pm.

The public was provided with a backgrounder brochure (attached) and comment questionnaire (attached) as they entered the open house. An estimated 50 people attended the open house.

Web-Based:
An information tab was established on the SD8 web site that contained information regarding the Trafalgar School project, including the story boards, brochure, and survey monkey version of the questionnaire that could be completed and submitted on-line.

Other:
The brochure and questionnaire were also made available at South Nelson Elementary School, Trafalgar Middle School and the School District Administrative Offices.

Collection of Information from the Public:

1. **At the Open Houses:**
   Questionnaires were distributed throughout the open house facility, including at each story board station, asking five questions:
   - What do you like about this plan for a new Trafalgar Elementary / Middle School?

- Do you have any concerns about this plan for a new Trafalgar Elementary / Middle School?
- Do you have any ideas for how we might enhance this plan for a new Trafalgar Elementary / Middle School?
- Do you have any suggestions for community partnerships in the new Trafalgar School?
- Please provide any other comments or suggestions you may have.

Deposit boxes for the questionnaires were available in a variety of locations at the open houses.

2. **Web Based:**
   The survey monkey questionnaire on the SD8 website followed the same format as that provided at the open houses.

3. **Other:**
   Questionnaires were also available for pick up at the School District offices and at South Nelson Elementary and Trafalgar Middle Schools. Comments could also be communicated by:
   - Fax at 250-746-9831
   - E-mail at trafalgarschool@shaw.ca

The deadline for receipt of all comments was Friday, May 8, 2009.

Public Engagement:

Information about the project, public open house and public engagement process was communicated to the Port Alberni public and throughout the Alberni School District by:

- Media release
- Media advertising
- SD8 Website
- Handout Brochure
- Notification to parents of affected schools

Media Engagement:

Direct contact was made with local media. Media releases were sent and ads were placed. One hour prior to the start of the public portion of the open house, media were invited for a presentation and preview of information and an opportunity to interview the project spokesperson / people. Two media representatives attended.

Public Input Received:

A total of 45 pieces of written public input were received, as follows:

Source	*Number of Input Pieces*
Handed in at Open House	16
On-line Survey	25
Dropped off at School District Offices	1
E-mailed	2
Faxed	1
Total	***45***

All written comments were made on the comment questionnaire or equivalent.

Each input piece was evaluated and generally categorized as follows:

Level of Support	*Number of Input Pieces*	*Percentage*
Generally In Support	31	69%
Generally Opposed	8	17%
Uncertain / Mixed Comments	6	13%
Total	***45***	***100%***

Each input piece was reviewed in detail and specific comments were tallied by identified themes / general topics of information. The results for each of the questions are as follows (please note that responses to question five were integrated into the tallies for questions one to four):

Responses to Question #1:

What do you like about this plan for a new Trafalgar Elementary / Middle School?

Comment Topic	*No. of Input Pieces That Made Mention*
All for it	2
None / Nothing / Not much	7
A new school (related to pride, modern, up-to-date)	16
Healthier environment for students and staff	8
Energy Efficient / Green Facility / Low Environmental Impact / LEED standard	8
Creating connections between broader age group of students (mentoring, collaborative learning etc.)	6
Community use / multi-use concept	6
Good for students	3
Better Learning	2
Positive Community Impact	1
Better / more efficient use of space	1
Consolidation of smaller, older schools	1
Accommodation of Gordon Sargent Program	1
Cost savings	1
Meets educational goals of the District	1
Design will meet today's needs of student and staff	1
Centralized sports	1
Inclusion of Grades 6 to 8 French Immersion Students	1

Responses to Question #2:

Do you have any concerns about this plan for a new Trafalgar Elementary / Middle School?

Comment Topic	*# of Input Pieces That Made Mention*
None	2
Want 'better', not 'bigger' / overall size / number of students	11
Combining Elementary and Middle School-aged children	10
Reduction in square footage of new school / rate at which it may be outgrown	6
Lack of adequate space for playgrounds, sports fields etc.	6
Lack of parking / need for a better system	6
Decision made for economic not social / educational well-being reasons	5
Impact on students during construction / transition plan	4
Selling off of public land	4
Bullying	4
Process to completion is too long	3
Loss of specialty areas (i.e. gym, shops, Fine Arts etc.)	3
Quick timeframe / notice for public input	3
Questioning accuracy of numbers / projections shown	2
Plan is decided upon / no chance for community to change it	2
Limited amount of space on site for new school	1
Ability to control use of locals versus outsiders (size of project, TILMA etc.)	1
Different levels of funding for French Immersion and Gordon Sargent programs versus other students	1
Don't want other community groups as part of the school	1
If the new building is higher it will have negative impacts on some neighbours' views	1
Public use spaces in school duplicate or oversupply what already exists	1

Responses to Question #3:

Do you have ideas for how we might enhance this plan for a new Trafalgar Elementary / Middle School?

The responses to this question have been divided into two sections: Section One is General Comments; Section Two is Design Considerations.

Section One: General Comments:

Comment Topic	*# of Input Pieces That Made Mention*
Keep Gordon Sargent Program	6
Solicit extensive community input / involvement	4
Meet with Community / Neighbours about impacts	4
Follow Crawford Bay example	3
Extend Gordon Sargent to Grades 5 and 6	2
Create pro-active modeling program for older to younger children to avoid poor role models (i.e. style of dress etc.)	2
Add Early French Immersion	2
Keep South Nelson and Trafalgar on existing sites and build two smaller schools, two smaller / staged projects	1
More cellular design approach allowing for flexibility of uses	1
Rename the school, incorporating names of both schools	1
Alternate break times between age groups	1
Include teachers in every step of the process	1
Create a centre for competence for the region and focus on specialties (i.e. techniques / trades etc.)	1
Ensure South Nelson site remains available for public use	1
Represent the values of our community	1
Consult with City of Nelson about best community use of space	1
Model process for inclusion on building aboriginal schools (i.e. Seabird Island School, Agassiz, BC)	1
Reconsider Gordon Sargent program and need for dedicated space	1
Put grades 6 and 7 back to elementary and move grades 8's to LVR, eliminating the need for Trafalgar	1
Work more closely with PAC / DPAC and parent community	1
Use the new Trafalgar as part of the marketing program to draw families to Nelson	1

Section Two: Design Considerations:

Comment Topic	*# of Input Pieces That Made Mention*
Ensure as much local products, suppliers and trades people	6
Green focus on every component of project	5
Safe area for pick up / drop off / bussing	4
Research into special design features for Middle School needs / other models across the country	3
Needs to be whole school rebuilt, not just renovation or partial reconstruction	3
Recycle part of the existing structure / materials into the new building	3
Renovate instead of rebuild	3
Light / Open / Cheerful / Bright / Inviting design	3
Build with wood	2
Have sinks in classrooms	2
Physical separation in facility between K to 5 and 6 to 8	2
Upgraded gym, large outdoor play area and fields for sports	1
Bigger library / larger collection	1
More, updated computers	1
Green roof for growing food	1
Build solar	1
Expanded technology stations	1
Adequate restrooms on each floor	1
Kitchen (hot lunch / school events / community use etc.)	1
Revert to previous grade configuration	1
Create separate physical space and break times for Kindergarten	1
French wing	1
Secure teacher workrooms	1
Lots of storage	1
Teacher / student confidential meeting spaces	1
Lunchroom / eating space outside the classroom	1
Keep it a Middle School only	1
Public access areas separate from school space	1
Consider whole community and existing facilities in relation to creating Fine Arts space in the new school	1
Use a local designer to reflect local style	1
Acoustically designed band room	1
Large enough lockers for winter gear and books	1
All weather fields	1
Keep brick façade	1

Responses to Question #4:

Do you have any suggestions for community partnerships in the new Trafalgar School?

Comment Topic	*# of Input Pieces That Made Mention*
Recreation programs for ALL ages (0 to 100) including Fine Arts such as drama, music dance etc; adult continuing education; shops; sports; computers; weight room; fitness; recreation; library; art; kitchen and banquet facilities etc.	13
Child Care / Day Care Facilities	11
Preschool / Preschool Programs	8
Senior's Centre	6
Community Groups / Not-for-Profits / Cultural groups / Meeting Space	6
After School Care	4
Community Garden Space / Compost	4
Community Services (i.e. MCFD, Mental Health, IHA, Regional Districts, CBAL, RCMP, Columbia Basin etc.)	3
Youth Centre	3
Public Library	2
Skate Park	2
Smart Start Centre	2
Kootenay Kids, Seniors and Youth Centre	2
Senior's Housing	1
Mentorship opportunities	1
French programs (i.e. bilingual daycare, library etc. – Francophone Society – AFKO)	1
Open 12 months a year	1
Aboriginal programs / Aboriginal Elders involvement	1

Concluding Remarks:

The public engagement process to solicit public input about constructing a new Trafalgar Elementary / Middle School in Nelson was one of integrity. The information gained from this process is valid and can be used as part of the Board of Education's decision-making process moving forward.

APPENDIX L

GREATER NELSON SCHOOLS
FACILITY REVIEW

Capital Costs
And
Life Cycle Cost

PROJECT IDENTIFICATION REPORT
TRAFALGAR MIDDLE SCHOOL

NELSON B.C.

SCHOOL DISTRICT #8 (KOOTENAY LAKE)

TRAFALGAR ELEMENTARY / JUNIOR / MIDDLE SCHOOL
(SCHOOL DISTRICT NUMBER 8)
UPDATED PROJECT IDENTIFICATION REPORT (PIR)
CAPITAL COSTS AND LIFE CYCLE COST ANALYSIS
October 15, 2012

CAPITAL COSTS

Capital Costs have been developed based upon the information provided to us by the members of the PIR Team and the Ministry of Education's Capital Planning guidelines.

Descriptions of each Option can be found in other sections of the PIR Report.

LIFE CYCLE COST ANALYSIS:

We have carried out a preliminary Life Cycle Cost (LCC) Analysis for the Options over a 40 year time frame.

We have adjusted the energy consumption values for each option to take into account assumed energy savings for the options that have new areas.

Please refer to the attached Pages for the Detailed LCC Analysis that we have carried out showing all of the input parameters and results.

TRAFALGAR ELEMENTARY / JUNIOR / MIDDLE SCHOOL
(SCHOOL DISTRICT NUMBER 8)
UPDATED PROJECT IDENTIFICATION REPORT (PIR)
CAPITAL COSTS AND LIFE CYCLE COST ANALYSIS
October 15, 2012

OPTION 1.1 AND 1.2 – CAPITAL COSTS

School Name: SD8 - Trafalgar Junior / Middle and South Nelson Elementary
Project No:
Project Description: Renovate Existing Schools - Revised Option 1.1 and 1.2

AREA - UNIT RA

Allowable Site Area (ha)		
Allowable Building Area (sqm)		
Total Allowable Area	6,687	
Less: Previously Existing Space	7,336	
Add: Area to be Demolished	0	
Area of New Space	0	
Allowable Area of Renovations	10,617	
Unit Rate for Construction ($/sqm) [based on 1st Qtr, 2011 Location Factor and using Ministry Unit Rates]		
New	$0.00	
Renovation	$1,809	

ELIGIBLE EXPENDITURES

				Amounts Subject to Economic Adjustment
PROJECT BUDGET				
1	Site Acquisition		$0	
2	Site Development		$0	$0.00
3	New Construction:		$0	$0.00
4	Renovation		$19,209,500	$19,209,500.00
5	Design Fees and Disbursements		$3,493,726	$3,493,725.60
6	Construction Contingency		$1,091,789	$1,091,789.25
7	Equipment (as per MoE Guideline)		550,710.42	
8	Municipal Permits & Fees		$225,358	
	Documented Supplementary Items (including fees and related costs)			
9	Supplementary Site		$700,000	$700,000.00
10	Supplementary Building		$2,050,000	$2,050,000.00
11	Off-Site Costs		$0	$0.00
12	LEED® Gold (3%)		$576,285	$576,285.00
13	List of Other Budget Items i. Feasibility Costs		$50,000	$50,000.00
	ii.		$0	
14	**Sub-Total**		**$27,947,368**	
15	HST	12.00%	$3,353,684	
16	HST Rebate - Federal Portion	28.33% (68% of five twelfths)	-$950,099	
17	HST Rebate - Provincial Portion	50.75% (87% of seven twelfths)	-$1,701,995	
(A)	**Total Project Budget** (excluding Reserve Items)		**$28,648,959**	
(B)	Total Project Budget Eligible for Economic Adjustment			$27,171,299.85
	RESERVE ITEMS (as per Schedule C - Reserve Items)			
	List of Identified Risks 1 LEED® Gold (2%)		$384,190	
	2 Additional Hazardous Materials Removal and Possible Contaminated So		$450,000	
	3 Site Consolidation including Road Closure		$250,000	
	4 Municipal Requirements		$1,250,000	
(C)	Maximum "Not to Exceed" Contingency	Sub-Total	$2,334,190	
(D)	**Estimated Economic Adjustment** (from Location Factor as of 1st Qtr, 2011 to Tender Close 1st Qtr 2013)			$1,630,277.99
(E)	**Total Reserve Items**		$3,964,468	[=C+D]
(F)	**MAXIMUM POTENTIAL PROJECT COST** (including Reserve Items)		**$32,613,427**	[=A+E]

FUNDING SOURCES

(G)	Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]		$28,648,959	
(H)	Ministry of Education Restricted Capital [as per paragraph 3.04]			
(I)	Borrowing [as per paragraph 3.05]			
(J)	Local Capital Reserve [as per subparagraph 4.02(e)]			
(K)	Annual Facility Grant [as per subparagraph 4.02(e)]			
(L)	Other (specify) [as per subparagraph 4.02(e)]			
		Sub-Total	$28,648,959	[=A]
(M)	Capital Plan - Identified Risks [as per sub-paragraph 3.01(b)]		$2,334,190	[=C]
(N)	Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]		$1,630,278	[=D]
		Sub-Total	$3,964,468	[=E]
(O)	**MAXIMUM POTENTIAL PROJECT FUNDING** (includes Lines G, H, I, J, K, L, M and N)		**$32,613,427**	[=F]

TRAFALGAR ELEMENTARY / JUNIOR / MIDDLE SCHOOL
(SCHOOL DISTRICT NUMBER 8)
UPDATED PROJECT IDENTIFICATION REPORT (PIR)
CAPITAL COSTS AND LIFE CYCLE COST ANALYSIS
October 15, 2012

OPTION 2.1 AND 2.2 – CAPITAL COSTS

School Name: SD8 - Trafalgar Junior / Middle - South Nelson Elementary
Project No:
Project Description: Replace and Renovate Existing Schools - Revised Option 2.1 and 2.2

AREA - UNIT RA

Allowable Site Area (ha)	
Allowable Building Area (sqm)	
Total Allowable Area	6,687
Less: Previously Existing Space	7,336
Add: Area to be Demolished	7,336
Area of New Space	5,348
Allowable Area of Renovations	4,049

Unit Rate for Construction ($/sqm) [based on 1st Qtr, 2011 Location Factor and using Ministry Unit Rates]

New	$2,045.61
Renovation	$1,500

ELIGIBLE EXPENDITURES

				Amounts Subject to Economic Adjustment
	PROJECT BUDGET			
1	Site Acquisition		$0	
2	Site Development		$1,092,500	$1,092,500.00
3	New Construction:		$10,939,903	$10,939,903.19
4	Renovation		$6,073,500	$6,073,500.00
5	Design Fees and Disbursements		$2,404,503	$2,404,502.64
6	Construction Contingency		$755,167	$755,167.20
7	Equipment (as per MoE Guideline)		448,416.46	
8	Municipal Permits & Fees		$221,163	
	Documented Supplementary Items (including fees and related costs)			
9	Supplementary Site		$800,000	$800,000.00
10	Supplementary Building		$1,300,000	$1,300,000.00
11	Off-Site Costs		$1,400,000	$1,400,000.00
12	LEED® Gold (3%)		$510,402	$510,402.10
13	List of Other Budget Items i. Feasibility Costs		$50,000	$50,000.00
	ii.		$0	
14	**Sub-Total**		**$25,995,555**	
15	HST	12.00%	$3,119,467	
16	HST Rebate - Federal Portion	28.33% (68% of five twelfths)	-$883,745	
17	HST Rebate - Provincial Portion	50.75% (87% of seven twelfths)	-$1,583,129	
(A)	**Total Project Budget** (excluding Reserve Items)		**$26,648,147**	
(B)	Total Project Budget Eligible for Economic Adjustment			$25,325,975.12
	RESERVE ITEMS (as per Schedule C - Reserve Items)			
	List of Identified Risks 1 LEED® Gold (2%)		$340,268	
	2 Additional Hazardous Materials Removal and Possible Contaminated So		$450,000	
	3 Site Consolidation including Road Closure		$250,000	
	4 Municipal Requirements		$150,000	
(C)	Maximum "Not to Exceed" Contingency	Sub-Total	$1,190,268	
(D)	**Estimated Economic Adjustment** (from Location Factor as of 1st Qtr, 2011 to Tender Close 1st Qtr 2013)			$1,519,558.51
(E)	**Total Reserve Items**		$2,709,827	[=C+D]
(F)	**MAXIMUM POTENTIAL PROJECT COST** (including Reserve Items)		**$29,357,974**	[=A+E]

FUNDING SOURCES

(G)	Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]	$26,648,147	
(H)	Ministry of Education Restricted Capital [as per paragraph 3.04]		
(I)	Borrowing [as per paragraph 3.05]		
(J)	Local Capital Reserve [as per subparagraph 4.02(e)]		
(K)	Annual Facility Grant [as per subparagraph 4.02(e)]		
(L)	Other (specify) [as per subparagraph 4.02(e)]		
	Sub-Total	$26,648,147	[=A]
(M)	Capital Plan - Identified Risks [as per sub-paragraph 3.01(b)]	$1,190,268	[=C]
(N)	Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]	$1,519,559	[=D]
	Sub-Total	$2,709,827	[=E]
(O)	**MAXIMUM POTENTIAL PROJECT FUNDING** (includes Lines G, H, I, J, K, L, M and N)	**$29,357,974**	[=F]

TRAFALGAR ELEMENTARY / JUNIOR / MIDDLE SCHOOL
(SCHOOL DISTRICT NUMBER 8)
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CAPITAL COSTS AND LIFE CYCLE COST ANALYSIS
October 15, 2012

OPTION 3.1 – CAPITAL COSTS

School Name: SD8 - Trafalgar Elementary / Middle
Project No:
Project Description: Renovate Existing School - Revised Option 3.1

AREA-UNIT RA

Allowable Site Area (ha)	
Allowable Building Area (sqm)	
Total Allowable Area	6,687
Less: Previously Existing Space	7,336
Add: Area to be Demolished	0
Area of New Space	0
Allowable Area of Renovations	7,336

Unit Rate for Construction ($/sqm) [based on 1st Qtr, 2011 Location Factor and using Ministry Unit Rates]

New	$0.00
Renovation	$2,000

ELIGIBLE EXPENDITURES

				Amounts Subject to Economic Adjustment
	PROJECT BUDGET			
1	Site Acquisition		$0	
2	Site Development		$0	$0.00
3	New Construction:		$0	$0.00
4	Renovation		$14,672,000	$14,672,000.00
5	Design Fees and Disbursements		$2,681,946	$2,681,945.60
6	Construction Contingency		$838,108	$838,108.00
7	Equipment (as per MoE Guideline)		615,105.30	
8	Municipal Permits & Fees		$172,622	
	Documented Supplementary Items (including fees and related costs)			
9	Supplementary Site		$500,000	$500,000.00
10	Supplementary Building		$1,650,000	$1,650,000.00
11	Off-Site Costs		$0	$0.00
12	LEED® Gold (3%)		$440,160	$440,160.00
13	List of Other Budget Items i. Feasibility Costs		$50,000	$50,000.00
	ii.		$0	
14	**Sub-Total**		**$21,619,941**	
15	HST	12.00%	$2,594,393	
16	HST Rebate - Federal Portion	28.33% (68% of five twelfths)	-$734,991	
17	HST Rebate - Provincial Portion	50.75% (87% of seven twelfths)	-$1,316,654	
(A)	**Total Project Budget** (excluding Reserve Items)		**$22,162,687**	
(B)	Total Project Budget Eligible for Economic Adjustment			$20,832,213.60
	RESERVE ITEMS (as per Schedule C - Reserve Items)			
	List of Identified Risks 1 LEED® Gold (2%)		$293,440	
	2 Additional Hazardous Materials Removal and Possible Contaminated So		$300,000	
	3 Site Consolidation including Road Closure		$200,000	
	4 Municipal Off-Site Requirements		$1,000,000	
(C)	Maximum "Not to Exceed" Contingency	Sub-Total	$1,793,440	
(D)	**Estimated Economic Adjustment** (from Location Factor as of 1st Qtr, 2011 to Tender Close 1st Qtr 2013)			$1,249,932.82
(E)	**Total Reserve Items**		$3,043,373	[=C+D]
(F)	**MAXIMUM POTENTIAL PROJECT COST** (including Reserve Items)		**$25,206,060**	[=A+E]

FUNDING SOUR

(G)	Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]	$22,162,687	
(H)	Ministry of Education Restricted Capital [as per paragraph 3.04]		
(I)	Borrowing [as per paragraph 3.05]		
(J)	Local Capital Reserve [as per subparagraph 4.02(e)]		
(K)	Annual Facility Grant [as per subparagraph 4.02(e)]		
(L)	Other (specify) [as per subparagraph 4.02(e)]		
	Sub-Total	$22,162,687	[=A]
(M)	Capital Plan - Identified Risks [as per sub-paragraph 3.01(b)]	$1,793,440	[=C]
(N)	Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]	$1,249,933	[=D]
	Sub-Total	$3,043,373	[=E]
(O)	**MAXIMUM POTENTIAL PROJECT FUNDING** (includes Lines G, H, I, J, K, L, M and N)	**$25,206,060**	[=F]

TRAFALGAR ELEMENTARY / JUNIOR / MIDDLE SCHOOL
(SCHOOL DISTRICT NUMBER 8)
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OPTION 4.1 – CAPITAL COSTS

School Name: SD8 - Trafalgar Junior / Middle
Project No:
Project Description: Replacement School - Revised Option 4.1

AREA - UNIT RA

	Allowable Site Area (ha)	
	Allowable Building Area (sqm)	
	Total Allowable Area	6,687
	Less: Previously Existing Space	7,336
	Add: Area to be Demolished	7,336
	Area of New Space	6,687
	Allowable Area of Renovations	0
	Unit Rate for Construction ($/sqm) [based on 1st Qtr, 2011 Location Factor and using Ministry Unit Rates]	
	New	$2,018.12
	Renovation	$0.00

ELIGIBLE EXPENDITURES

				Amounts Subject to Economic Adjustment
	PROJECT BUDGET			
1	Site Acquisition		$0	
2	Site Development		$1,092,500	$1,092,500.00
3	New Construction:		$13,495,169	$13,495,169.16
4	Renovation		$0	$0.00
5	Design Fees and Disbursements		$1,538,290	$1,538,289.80
6	Construction Contingency		$485,776	$485,775.73
7	Equipment (as per MoE Guideline)		560,688.27	
8	Municipal Permits & Fees		$183,925	
	Documented Supplementary Items (including fees and related costs)			
9	Supplementary Site		$600,000	$600,000.00
10	Supplementary Building		$1,200,000	$1,200,000.00
11	Off-Site Costs		$1,000,000	$1,000,000.00
12	LEED® Gold (3%)		$404,855	$404,855.07
13	List of Other Budget Items i. Feasibility Costs		$50,000	$50,000.00
	ii.		$0	
14	**Sub-Total**		**$20,611,203**	
15	HST	12.00%	$2,473,344	
16	HST Rebate - Federal Portion	28.33% (68% of five twelfths)	-$700,698	
17	HST Rebate - Provincial Portion	50.75% (87% of seven twelfths)	-$1,255,222	
(A)	**Total Project Budget** (excluding Reserve Items)		**$21,128,627**	
(B)	Total Project Budget Eligible for Economic Adjustment			$19,866,589.76
	RESERVE ITEMS (as per Schedule C - Reserve Items)			
	List of Identified Risks 1 LEED® Gold (2%)		$269,903	
	2 Additional Hazardous Materials Removal and Possible Contaminated So		$300,000	
	3 Site Consolidation including Road Closure		$200,000	
	3 Relocation of Existing Watermain		$500,000	
(C)	Maximum "Not to Exceed" Contingency	Sub-Total	$1,269,903	
(D)	**Estimated Economic Adjustment** (from Location Factor as of 1st Qtr, 2011 to Tender Close 1st Qtr 2013)			$1,191,995.39
(E)	**Total Reserve Items**		$2,461,899	[=C+D]
(F)	**MAXIMUM POTENTIAL PROJECT COST** (including Reserve Items)		**$23,590,526**	[=A+E]

FUNDING SOURCES

(G)	Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]	$21,128,627	
(H)	Ministry of Education Restricted Capital [as per paragraph 3.04]		
(I)	Borrowing [as per paragraph 3.05]		
(J)	Local Capital Reserve [as per subparagraph 4.02(e)]		
(K)	Annual Facility Grant [as per subparagraph 4.02(e)]		
(L)	Other (specify) [as per subparagraph 4.02(e)]		
	Sub-Total	$21,128,627	[=A]
(M)	Capital Plan - Identified Risks [as per sub-paragraph 3.01(b)]	$1,269,903	[=C]
(N)	Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]	$1,191,995	[=D]
	Sub-Total	$2,461,899	[=E]
(O)	**MAXIMUM POTENTIAL PROJECT FUNDING** (includes Lines G, H, I, J, K, L, M and N)	**$23,590,526**	[=F]

TRAFALGAR ELEMENTARY / JUNIOR / MIDDLE SCHOOL
(SCHOOL DISTRICT NUMBER 8)
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CAPITAL COSTS AND LIFE CYCLE COST ANALYSIS
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OPTION 5.1 AND 5.2 – CAPITAL COSTS

School Name: SD8 - Trafalgar Junior / Middle and South Nelson Elementary
Project No:
Project Description: Replacement / Renovation School - Revised Option 5.1 and 5.2

AREA - UNIT RA

Allowable Site Area (ha)		
Allowable Building Area (sqm)		
Total Allowable Area		6,687
Less: Previously Existing Space		11,385
Add: Area to be Demolished		7,139
Area of New Space		4,985
Allowable Area of Renovations		4,246
Unit Rate for Construction ($/sqm) [based on 1st Qtr, 2011 Location Factor and using Ministry Unit Rates]		
	New	$2,053.06
	Renovation	$1,500.00

ELIGIBLE EXPENDITURES

				Amounts Subject to Economic Adjustment
PROJECT BUDGET				
1	Site Acquisition		$0	
2	Site Development		$1,092,500	$1,092,500.00
3	New Construction:		$10,234,494	$10,234,493.69
4	Renovation		$6,369,000	$6,369,000.00
5	Design Fees and Disbursements		$2,265,924	$2,265,924.36
6	Construction Contingency		$712,203	$712,202.96
7	Equipment (as per MoE Guideline)		417,979.82	
8	Municipal Permits & Fees		$216,941	
	Documented Supplementary Items (including fees and related costs)			
9	Supplementary Site		$800,000	$800,000.00
10	Supplementary Building		$1,300,000	$1,300,000.00
11	Off-Site Costs		$1,400,000	$1,400,000.00
12	LEED® Gold (3%)		$498,105	$498,104.81
13	List of Other Budget Items i. Feasibility Costs		$50,000	$50,000.00
	ii.		$0	
14	**Sub-Total**		**$25,357,147**	
15	HST	12.00%	$3,042,858	
16	HST Rebate - Federal Portion	28.33% (68% of five twelfths)	-$862,042	
17	HST Rebate - Provincial Portion	50.75% (87% of seven twelfths)	-$1,544,250	
(A)	**Total Project Budget** (excluding Reserve Items)		**$25,993,712**	
(B)	Total Project Budget Eligible for Economic Adjustment			$24,722,225.82
	RESERVE ITEMS (as per Schedule C - Reserve Items)			
	List of Identified Risks 1 LEED® Gold (2%)		$332,070	
	2 Additional Hazardous Materials Removal and Possible Contaminated So		$450,000	
	3 Site Consolidation including Road Closure		$250,000	
	4 Municipal Off-Site Requirements		$150,000	
(C)	Maximum "Not to Exceed" Contingency	Sub-Total	$1,182,070	
(D)	**Estimated Economic Adjustment** (from Location Factor as of 1st Qtr, 2011 to Tender Close 1st Qtr 2013)			$1,483,333.55
(E)	**Total Reserve Items**		$2,665,403	[=C+D]
(F)	**MAXIMUM POTENTIAL PROJECT COST** (including Reserve Items)		**$28,659,116**	[=A+E]

FUNDING SOUR

(G)	Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]		$25,993,712	
(H)	Ministry of Education Restricted Capital [as per paragraph 3.04]			
(I)	Borrowing [as per paragraph 3.05]			
(J)	Local Capital Reserve [as per subparagraph 4.02(e)]			
(K)	Annual Facility Grant [as per subparagraph 4.02(e)]			
(L)	Other (specify) [as per subparagraph 4.02(e)]			
		Sub-Total	$25,993,712	[=A]
(M)	Capital Plan - Identified Risks [as per sub-paragraph 3.01(b)]		$1,182,070	[=C]
(N)	Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]		$1,483,334	[=D]
		Sub-Total	$2,665,403	[=E]
(O)	**MAXIMUM POTENTIAL PROJECT FUNDING** (includes Lines G, H, I, J, K, L, M and N)		**$28,659,116**	[=F]

TRAFALGAR ELEMENTARY / JUNIOR / MIDDLE SCHOOL
(SCHOOL DISTRICT NUMBER 8)
UPDATED PROJECT IDENTIFICATION REPORT (PIR)
CAPITAL COSTS AND LIFE CYCLE COST ANALYSIS
October 15, 2012

OPTION 6.1 – CAPITAL COSTS

School Name: SD8 - Trafalgar Elementary / Middle
Project No:
Project Description: Replacement /Renovation School - Revised Option 6.1

AREA - UNIT RA

Allowable Site Area (ha)		
Allowable Building Area (sqm)		
Total Allowable Area		6,687
Less: Previously Existing Space		7,336
Add: Area to be Demolished		7,169
Area of New Space		6,486
Allowable Area of Renovations		167
Unit Rate for Construction ($/sqm) [based on 1st Qtr, 2011 Location Factor and using Ministry Unit Rates]		
New		$2,022.25
Renovation		$0.00

ELIGIBLE EXPENDITURES

				Amounts Subject to Economic Adjustment
PROJECT BUDGET				
1 Site Acquisition			$0	
2 Site Development			$1,092,500	$1,092,500.00
3 New Construction:			$13,116,288	$13,116,288.43
4 Renovation			$334,000	$334,000.00
5 Design Fees and Disbursements			$1,555,608	$1,555,608.22
6 Construction Contingency			$491,069	$491,068.91
7 Equipment (as per MoE Guideline)			557,837.45	
8 Municipal Permits & Fees			$177,463	
Documented Supplementary Items (including fees and related costs)				
9	Supplementary Site		$600,000	$600,000.00
10	Supplementary Building		$1,200,000	$1,200,000.00
11	Off-Site Costs		$1,000,000	$1,000,000.00
12	LEED® Gold (3%)		$403,509	$403,508.65
13 List of Other Budget Items	i. Feasibility Costs		$50,000	$50,000.00
	ii.		$0	
14 Sub-Total			**$20,578,275**	
15 HST		12.00%	$2,469,393	
16 HST Rebate - Federal Portion		28.33% (68% of five twelfths)	-$699,579	
17 HST Rebate - Provincial Portion		50.75% (87% of seven twelfths)	-$1,253,217	
(A) Total Project Budget (excluding Reserve Items)			**$21,094,872**	
(B) Total Project Budget Eligible for Economic Adjustment				$19,842,974.22
RESERVE ITEMS (as per Schedule C - Reserve Items)				
List of Identified Risks	1 LEED® Gold (2%)		$269,006	
	2 Additional Hazardous Materials Removal and Possible Contaminated So		$300,000	
	3 Site Consolidation including Road Closure		$200,000	
	3 Relocation of Existing Watermain		$500,000	
(C)	Maximum "Not to Exceed" Contingency	Sub-Total	$1,269,006	
(D) Estimated Economic Adjustment (from Location Factor as of 1st Qtr, 2011 to Tender Close 1st Qtr 2013)				$1,190,578.45
(E) Total Reserve Items			$2,459,584	[=C+D]
(F) MAXIMUM POTENTIAL PROJECT COST (including Reserve Items)			**$23,554,456**	[=A+E]

FUNDING SOURCES

(G)	Capital Plan [as per Capital Project Funding Agreement, subparagraph 3.01(a)]		$21,094,872	
(H)	Ministry of Education Restricted Capital [as per paragraph 3.04]			
(I)	Borrowing [as per paragraph 3.05]			
(J)	Local Capital Reserve [as per subparagraph 4.02(e)]			
(K)	Annual Facility Grant [as per subparagraph 4.02(e)]			
(L)	Other (specify) [as per subparagraph 4.02(e)]			
		Sub-Total	$21,094,872	[=A]
(M)	Capital Plan - Identified Risks [as per sub-paragraph 3.01(b)]		$1,269,006	[=C]
(N)	Capital Plan - Estimated Economic Adjustment [as per subparagraph 3.01(c)]		$1,190,578	[=D]
		Sub-Total	$2,459,584	[=E]
(O)	**MAXIMUM POTENTIAL PROJECT FUNDING** (includes Lines G, H, I, J, K, L, M and N)		**$23,554,456**	[=F]

LIFE CYCLE COST ANALYSIS

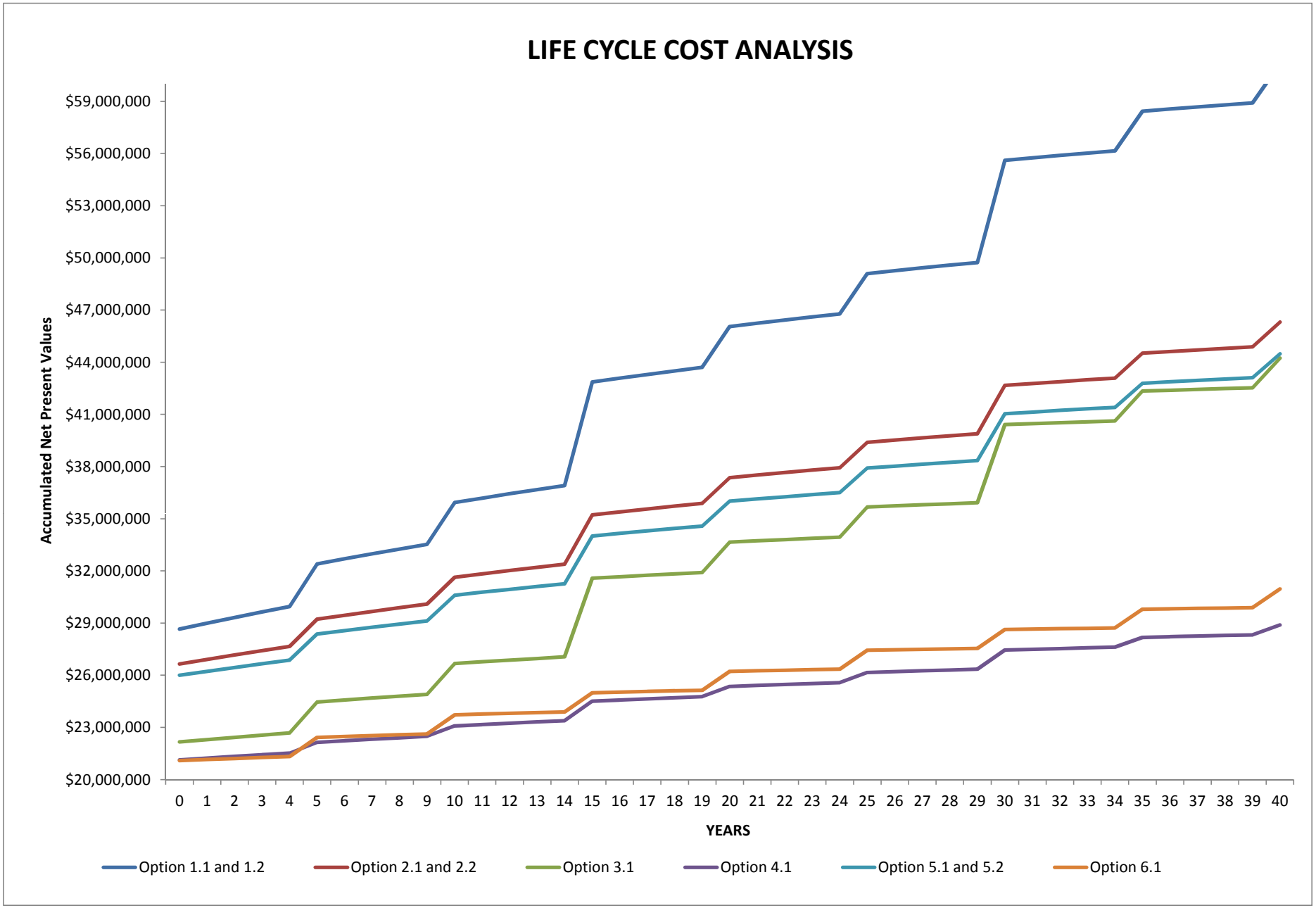
GENERAL VARIABLE PARAMETERS	
Start Year	2012
Discount Rate	6.00%

	GFA	GFA Difference	GFA Difference	Operating Cost Difference
Option 1.1 and 1.2	10,617	3,964	59.58%	$198,200
Option 2.1 and 2.2	9,397	2,744	41.24%	$137,200
Option 3.1	7,336	683	10.27%	$34,150
Option 4.1	6,687	34	0.51%	$1,700
Option 5.1 and 5.2	9,231	2,578	38.75%	$128,900
Option 6.1	6,653	0	0.00%	$0

Annual Operating Budget ($/m^2)	$50.00
Annual Electrical Consumption ($/m^2) EXISTING	$5.80
Annual Gas Consumption ($/m^2) EXISTING	$8.35

AREAS	Option 1.1 and 1.2	Option 2.1 and 2.2	Option 3.1	Option 4.1	Option 5.1 and 5.2	Option 6.1
New	0	5,348	0	6,687	4,985	6,486
Reno	10,617	4,049	7,336	0	4,246	167
Total GFA	10,617	9,397	7,336	6,687	9,231	6,653

NPV AT THE FOLLOWING OPERATING YEARS						
	Option 1.1 and 1.2	**Option 2.1 and 2.2**	**Option 3.1**	**Option 4.1**	**Option 5.1 and 5.2**	**Option 6.1**
GROSS FLOOR AREA	**10,617**	**9,397**	**7,336**	**6,687**	**9,231**	**6,653**
YEAR						
0	$28,648,959	$26,648,147	$22,162,687	$21,128,627	$25,993,712	$21,094,872
5	$32,397,330	$29,220,936	$24,458,259	$22,141,230	$28,369,424	$22,427,727
10	$35,931,784	$31,627,857	$26,669,135	$23,089,059	$30,601,246	$23,723,393
20	$46,050,660	$37,362,259	$33,650,922	$25,352,100	$36,007,300	$26,222,381
30	$55,610,409	$42,663,123	$40,411,334	$27,445,839	$41,037,262	$28,624,164
40	$61,169,450	$46,306,238	$44,235,282	$28,884,311	$44,485,305	$30,953,001


LIFE CYCLE COST ANALYSIS
Accumulated Net Present Values
$59,000,000
$56,000,000
$53,000,000
$50,000,000
$47,000,000
$44,000,000
$41,000,000
$38,000,000
$35,000,000
$32,000,000
$29,000,000
$26,000,000
$23,000,000
$20,000,000
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
YEARS
Option 1.1 and 1.2
Option 2.1 and 2.2
Option 3.1
Option 4.1
Option 5.1 and 5.2
Option 6.1