SCHEDULE 18

TECHNICAL REQUIREMENTS

TABLE OF CONTENTS

SECTION 1 -- GENERAL

1. GENERAL

1.1 INTRODUCTION

This Schedule sets out the general technical requirements applicable to all design, construction, maintenance and renewal and handback of the Schools.

The information in the Technical Requirements is organized as follows:

Section 1 – General
Section 2 – Description of Schools
Section 3 – Management Systems and Plans
Section 4 – Project Requirements for Schools
Section 5 – Maintenance and Renewal Requirements for Schools
Section 6 – Handback on Expiry Requirements
Section 7 – Handback Requirements

Appendix A – Basic Modular Classroom Informational Plans
Appendix B – Core School Designs
Appendix C – Site Layouts and Landscape Development Plans
Appendix D – Millwork Sketches
Appendix E – Basic Electrical Requirements and Basic Mechanical Requirements
Appendix F – Alberta Infrastructure, Modular Classroom Control Guideline
Appendix G – Minimum Material Requirements
Appendix H – Operation and Maintenance Manual Requirements for Electrical and Mechanical Systems
Appendix I – School Board Custodial Services
Appendix J – List of School Board Supplied Furniture and Equipment
Appendix K– Accessibility Criteria
Appendix L – Food Service Plans
Appendix M – Issued for Development Permit Drawings

In the event of any conflict or inconsistency between any Sections or Appendices to this Schedule 18, such conflict or inconsistency shall be resolved in the following order of priority, highest to lowest:

Sections 1, 2, 4, 5, 7, Appendix K
Appendices D, C, B, M, F, G, I, J, L
Sections 3 and 6 and Appendices A, E, H

Unless expressly otherwise specified, references to any specifically named Standards and Guidelines in the Technical requirements are to the specifically named Standards and Guidelines that existed as of the deadline for SR2 (as defined in the RFP).

1.2 DEFINED TERMS

In this Schedule 18 (Technical Requirements), capitalized terms shall have the meanings set out in section 1.1 of the DBFM Agreement (as defined below) and the following expressions shall have the following meanings (and where applicable their plurals have the corresponding meanings), except where a contrary meaning is clearly intended:

"Acceptable Third Party Use" means any use of a School, other than for Educational Activities, Educational Support Activities or Community Use, that is in accordance with applicable legislation and is pursuant to a lease or license of access agreement between a School Board and a third party lessee or licensee including the following:

(a) a license of access for the City of Red Deer and permitted invitees to occupy and use the library at Red Deer Public K-5; and

(b) a license of access for the Town of Beaumont and permitted invitees to occupy and use areas of BGRD Beaumont (K-9) and STAR Beaumont (K-9), including the reception, lunch room, administrative, washroom, storage, multipurpose room, wrap around offices, and wrap around family conference room areas.

"Accessible/Accessibility" means when an Area or the School Building meets all of the Accessibility Criteria;

"Accessibility Criteria" means those standards and criteria set out in Appendix "K" that an Area or the School Building is required to meet in order to be Accessible;

"Accessibility Failure" means a failure of an Area or the School Building to comply with all of the Accessibility Criteria;

"Adhoc School Use" means any unscheduled use of the School for Educational Activities or Educational Support Activities;

"After Hours" means 22:00 hours to 07:00 hours on any day;

"Amended Repair Period" means an extension to a Repair Period arising by the terms of this Schedule 18 (Technical Requirements) or by the agreement or direction of the Province;

"Area" means any area of a School Building identified in Table 5.9.6.1 of Section 5.9.6.1;

"Authorization" means any consent, registration, filing, license, permit, approval, authority or exemption from, by or with any Governmental Authority, given in respect of the Project or the M&R, whether given by express action or deemed given by failure to

act within any specified period;

"Base Consumption" means the energy and water consumption levels determined for a School at School Availability;

"Basic Modular Classroom" means the generic design for the Modular Classrooms, before the modifications required by the School Boards;

"BMCS" means the building management control system and controls which control the delivery of heat, ventilation and humidity to the Core Structure and the Modular Classrooms necessary to maintain indoor air quality and thermal comfort;

"Building Element" means the elements of a School Building, including but not limited the following: the functional areas listed in Section 4.9.2, the substructure listed in Section 4.9.4, the building envelope listed in Section 4.9.5, the building interior listed in Section 4.9.6, and the elements of the Modular Classrooms listed in Sections 4.10.2.2, 4.10.3.2 and 4.10.3.4;

"Building Equipment" means all equipment required to be supplied and installed at a School by the Contractor pursuant to the Project Requirements, but expressly excludes any School Board Supplied Furniture and Equipment and any playground equipment;

"Building Performance Failure" means, any failure of a Building Element or component thereof, a Building System or component thereof, any Building Equipment or any portion of the Exterior Improvements to meet the performance specifications described in Section 5.12;

"Building Performance Failure Category" means any one of the categories of Building Performance Failures described in Section 5.11.1;

"Building System" means those systems of a School Building which include the electrical system, heating and ventilation system, air conditioning, BMCS, plumbing system, fire protection, fire alarm system, security system, master clock and building elevators described in Section 4.9.7;

"CaGBC" means the Canada Green Building Council;

"Cleared Persons" has the meaning ascribed thereto in Section 5.4.1;

"Collaboration Plan" has the meaning ascribed thereto in Section 3.12;

"Commissioning and Startup Plan" has the meaning ascribed thereto in Section 3.4;

"Community Use" means any arrangements for the non-commercial use of a School for

community based programs, including those as contemplated by the Joint Use Agreements, including the following:

(a) a license of access for the Town of Beaumont and permitted invitees to use the community centre; and

(b) a license of access for the Town of Penhold and permitted invitees to occupy and use the School, including the library, recreation and gymnasium areas;

and including but not limited to community sports, arts and crafts, meetings, club activities, church services, election activities and any other community based function;

"Construction Management Plan" has the meaning ascribed thereto in Section 3.3;

"Contractor Construction Representatives" has the meaning ascribed thereto in Section 4.11.3;

"Contractor M&R Representatives" has the meaning ascribed thereto in Section 5.1.6;

"Core School Design" means any one of the designs and the electrical power and data plans for the Core Structure and the Modular Classrooms set out in Appendix "B";

"Core Structure" means the permanent and fixed core structure shown in the Core School Designs, which excludes the Modular Classrooms;

"DBFM Agreement" means the Agreement to Design, Build, Finance and Maintain Twelve New Schools in Central and Southern Alberta, between Her Majesty the Queen in right of Alberta and the Contractor, as defined therein, to which agreement this Schedule 18 (Technical Requirements) is attached;

"Decorating" means painting of any surface within the School Building, hanging of pictures, posters or drawings on the walls, hanging of ceiling decorations, flags, party favours, and any other decorative addition to the School Building not contemplated in the Technical Requirements;

"Detailed Designs" means the plans, specifications and drawings that the Contractor is required to provide pursuant to section 5.9 of the DBFM Agreement;

"Development Permit" means the permit from the relevant Municipality granting permission to develop a School Site upon the conditions prescribed therein by the relevant Municipality;

"Educational Activities" means all curriculum, teaching, career guidance, extra-curricular, remedial, training, practice, vocational, scholastic and educational activities

provided for the benefit of students to be undertaken at each School as contemplated by the *School Act*, R.S.A. 2000, c. S-3, as may be amended or replaced from time to time;

"Educational Support Activities" means all parent and administrative support functions carried out in support of the Educational Activities, including but not limited to, parent-teacher interviews, professional development activities of teaching staff, staff meetings, curriculum development activities, before and after school care activities and those support activities contemplated by the *School Act*, R.S.A. 2000, c. S-3, as may be amended or replaced from time to time, that support Educational Activities;

"Emergency Failure" has the meaning ascribed thereto in Section 5.11.1;

"Emergency Response Plan" has the meaning ascribed thereto in Section 3.10;

"**Energy and Water Consumption Report**" means the report detailing the total water and energy, by energy type, used over the period of one year to operate each School in accordance with the temperature, ventilation, humidity and air quality parameters set out in the Technical Requirements, for the specified hours of operation as stated annually by the Province, and detailing the minimum operating temperature and the degree day data for each School;

"Examination Periods" means those half term and year end comprehensive examination periods designated by the School Boards;

"Exterior Improvements" means, without limitation, all transportation and drop off areas, refuse areas, parking lots, hard surface play areas, sidewalks, fencing, signage, retaining walls, bicycle racks, flag poles, railings and all landscaped areas, including grass, trees, shrubs and other decorative plants, all as described in Section 4.9.8 and excludes any School Board Supplied Furniture and Equipment and excludes playground equipment;

"Failure" means an Accessibility Failure, Building Performance Failure, Service Failure or Reporting Failure;

"Food Service Plans" means any of the plans, specifications and drawings set out in Appendix "L";

"Good Industry Practice" means using standards, practices, methods and procedures to a good commercial standard, conforming to applicable laws and relevant Standards and Guidelines and exercising that degree of skill, care, prudence and foresight and industry practices which could reasonably and ordinarily be expected from time to time of a qualified, skilled and experienced person engaged in the same type of undertaking as that of the Contractor, under the same or similar circumstances;

"Governmental Authority" means any federal, provincial, territorial, regional, municipal or local governmental authority, quasi-governmental authority, court, government or self-regulatory organization, commission, board, tribunal, organization or any regulatory, administrative or other agency or any political or other subdivision, department or branch of any of the foregoing, having jurisdiction in any way over any aspect of the performance of the Project or the M&R, in each case to the extent it has or performs legislative, judicial, regulatory, administrative or other functions within its jurisdiction;

"Handback on Expiry Plan" has the meaning ascribed thereto in Section 3.11;

"Help Desk" means the help desk provided by the Contractor for the purposes of providing a single source for repair and maintenance requests and complaints, as is more particularly described in Section 5.7;

"ICT" means information and communication technology;

"Inaccessible/Inaccessibility" means when an Area or a School Building does not meet all applicable Accessibility Criteria or is otherwise declared Inaccessible in accordance with Section 5.9;

"Inaccessible but Used" means an Area which is Inaccessible, but nevertheless used to carry out Educational Activities, Educational Support Activities or used for Adhoc School Use, Community Use or Acceptable Third Party Use;

"Instructional Areas" means all teaching areas within a School Building including but not limited to Core Structure classrooms, Modular Classrooms, science rooms, music rooms, art rooms, early childhood services classrooms, CTS classrooms and food and fashion classrooms and also includes any areas of a School used for an Acceptable Third Party Use;

"Internal Reviewer" has the meaning ascribed thereto in Section 3.2.1;

"**Issued for Development Permit Drawings**" means any of the drawings set out in Appendix "M";

"Joint Use Agreement" means any of the Facilities Joint Use Agreement dated July 4, 1997 between The Board of Trustees of Black Gold Regional Division No. 18 and the Town of Beaumont as may be amended or replaced from time to time, the Agreement dated September 3, 1979 between the Town of Brooks and The Board of Trustees of Brooks School District No. 2092 as may be amended or replaced from time to time, the Reciprocal Use of Facilities Agreement dated June 25, 2009 between The Board of Trustees of Rocky View School Division No. 41 and the Chestermere Regional Community Association as may be amended or replaced from time to time, the

Reciprocal Use of Facilities Agreement dated June 13, 2008 between The Board of Trustees of Rocky View School Division No. 41 and the City of Airdrie as may be amended or replaced from time to time, the Agreement dated October 21, 2003 Providing for Reciprocal Use of City Recreation and School Facilities between the City of Red Deer, The Red Deer Catholic Regional Division No. 39, The Red Deer Public School District No. 104 and Greater North Central Education Region No. 2 as may be amended or replaced from time to time, and the Ownership and Operating Agreement for South Ridge Recreational Facility dated June 3, 2003 between The Southridge Community Association, The Medicine Hat Catholic Separate Regional Division No. 20, the City of Medicine Hat, the Medicine Hat Family Young Mens' Christian Association and The Medicine Hat Public School District No. 76 as may be amended or replaced from time to time, as applicable based upon the School in issue.

"Landscape Development Plans" means the landscape development plans for each School Site attached in Attachment 2 of Appendix "C";

"LEED™ Canada – NC 2009" means CaGBC's Leadership in Energy & Environmental Design (LEED™) Green Building Rating System for New Construction & Major Renovations LEED™ Canada NC 2009;

"LEED™ Certification Plan" has the meaning ascribed thereto in Section 3.5;

"LEED™ Rating System" means the credit rating system set out in LEED™ Canada – NC 2009;

"LEED™ Silver Certification" means the award of LEED™ Silver certification from the CaGBC;

"Maintenance Plan" has the meaning ascribed thereto in Section 3.8;

"Millwork Sketches" means those sketches set out in Appendix "D";

"Minimum Material Requirements" means those minimum standards of materials described in Appendix "G";

"Modular Classroom" means a non-permanent, removable, relocatable modular unit, which may include a classroom, corridor, and mechanical room, as shown in the Core School Designs, and excludes the Core Structure;

"Multipurpose Room" has the meaning ascribed thereto in Section 4.9.2.13;

"Operation and Maintenance Manuals" has the meaning ascribed thereto in Section 4.11.11.2;

"Original Payment Adjustment" means the Payment Adjustments specified in Section 5, excluding the Payment Adjustments for Repeat Failures;

"Outside the School Day" means the period commencing at 16:30 hours and ending at 22:00 hours, Monday to Friday, except for School Holidays, and the period commencing at 07:00 hours and ending at 22:00 hours on School Holidays, during the School Year;

"Payment Adjustment Period" means any period specified in Tables 5.9.6.1, 5.9.6.2 and 5.9.6.3 during which a specified Payment Adjustment is applied;

"PMP" has the meaning ascribed thereto in Section 5.8.1;

"Project Records" means all of the documents identified in Sections 4.11.11.1 and 4.11.11.2;

"Proposed Repair Period" has the meaning ascribed thereto in Section 5.11.5;

"Province" means Her Majesty the Queen in right of Alberta;

"Provincial Construction Representatives" has the meaning ascribed thereto in Section 4.11.3;

"Provincial M&R Representatives" has the meaning ascribed thereto in Section 5.1.6;

"Public Communication Strategies" has the meaning ascribed thereto in Section 3.13;

"QMS" has the meaning ascribed thereto in Section 3.2;

"Reasonable Wear and Tear" means wear and tear that is reasonable given the use and age of the School, and consistent with wear and tear that could reasonably be expected to exist at a school facility similar to the Schools, operating in a similar environment and similar circumstances and of a similar age, but does not include any degradation in the functionality or operability of the School, including decorative fittings, finishes (including paint, fabric and special finishes), floor coverings and other soft finishes so that the School or any of the Building Elements, Building Systems, Building Equipment and Exterior Improvements of the School fails to meet the Technical Requirements or fails to comply with applicable laws, any Authorizations or Standards and Guidelines;

"Renewal Management Plan" has the meaning ascribed thereto in Section 3.9;

"Repair Period" means any period stipulated in Section 5.12 within which the Contractor is required to perform temporary repairs, install temporary protective measures or complete permanent repairs of any damage, deficiency or impaired condition affecting a School;

"Repeat Failure" has the meaning ascribed thereto in Section 5.12.6;

"Reporting Failure" has the meaning ascribed thereto in Section 5.12.7;

"Response Time" has the meaning ascribed thereto in Section 5.11.2;

"Routine Failure" has the meaning ascribed thereto in Section 5.11.1;

"Safety Plan" has the meaning ascribed thereto in Section 3.6;

"School Board Supplied Furniture and Equipment" means the furniture and equipment listed in Appendix "J" and any other furniture and equipment supplied by the School Boards during the course of the Term;

"School Day" means the period between 07:00 hours and 16:30 hours, Monday to Friday, excluding School Holidays, during the School Year;

"School Holidays" means professional development days, teacher's convention, Saturdays, Sundays, statutory holidays, and generally the Christmas break, spring or Easter break, the summer break, which may be amended annually by the School Board for Schools, and including any other holiday declared by a School Board for its Schools;

"School Representative" means a representative of a School Board appointed by the relevant School Board pursuant to the terms of the Tri-Party Agreements;

"School Site Investigation Reports" has the meaning ascribed thereto in Section 2.3.3;

"School Year" means the period between September 1 and August 31 of each year during the School M&R Period and the M&R Period;

"Security Clearance Process" has the meaning ascribed thereto in Section 3.7;

"Service Failure" means:

(a) a failure to provide updated "as-built" drawings or updated Operation and Maintenance Manuals as contemplated in Section 5.1.4;

(b) a failure to comply with the security protocols described in Section 5.4.1(a) and (b);

(c) a failure to meet the service standards for the Help Desk as described in Section 5.7.2;

(d) a failure to provide the reports, forecasts or information described in Sections 5.8.2 and 5.12.8; or

(e) a failure to respond to a Help Desk request within the Response Times set out in this Schedule 18 (Technical Requirements);

"Site Layout" means the layout of a School on a School Site, as shown in the drawings attached in Attachment 1 of Appendix "C";

"Standards and Guidelines" means the standards, guidelines, policies or requirements, prescribed by the Province or any professional body, industry association or similar organization, specifically referred to or incorporated by reference in this Schedule 18 (Technical Requirements);

"Urgent Failure" has the meaning ascribed thereto in Section 5.11.1; and

"Utility Failure" means any failure or shortage in the supply of water, natural gas or electricity to or failure of a sanitary waste or storm water sewage system for an Area or a School Building provided that such failure or shortage is not caused or contributed to by the Contractor, its agents, contractors or subcontractors or those for whom the Contractor is legally responsible.

Words and abbreviations which are not defined in the Technical Requirements or the DBFM Agreement and which have well known technical or trade meanings and which are used in the Technical Requirements are used in accordance with such recognized meanings.

Standard units of measurement may be abbreviated in the Technical Requirements.

1.3 SECTION REFERENCES

Unless otherwise provided, references to Section numbers are references to Sections in this Schedule.

SECTION 2 - DESCRIPTION OF SCHOOLS

2. DESCRIPTION OF SCHOOLS

2.1 GENERAL

The DBFM Agreement provides for the design, build, finance and maintenance of twelve new Schools in Central and Southern Alberta, at the sites described in Schedule 12 (School Sites). The general details of the Schools are set out in Schedule 13 (Schools), with the layout for each School Site shown in the Site Layouts.

The Core School Designs were mandated by the Province for all future schools to be built in Alberta, with a view to creating a streamlined design applicable for all schools and all school sites within Alberta. The decision to use a streamlined school design and floor plan for all future schools was based upon the real savings achieved by the Province in utilizing the "core school" concept in which there is a fixed and permanent Core Structure which incorporates key functional areas such as the gymnasium, library, administration area, certain classrooms, gathering areas and project areas together with the provision of additional teaching areas through the use of Modular Classrooms to easily and economically allow for changing demographics.

The Core School Designs were prepared in consultation with the School Boards. The Site Layouts were also determined in consultation with the applicable School Board and the relevant Municipality.

Details of the Project Requirements, the M&R Requirements, the Handback on Expiry Requirements and the Handback Requirements for the Schools are detailed in this Schedule 18 (Technical Requirements).

2.2 DESCRIPTION OF SCHOOLS

2.2.1 Initial and Maximum School Build-Out

On or before the Total Availability Target Date, the Contractor shall carry out the Project for the following Schools as detailed in Table 2.2.1. The Contractor acknowledges that some Schools are designed to accommodate additional Modular Classrooms that may be required to be delivered after School Availability as contemplated in Section 2.2.2. Table 2.2.1 sets out the maximum number of Modular Classrooms that each School is designed to accommodate.

Table 2.2.1 – Initial and Maximum School Build-Out

School Board	Municipality	School Project Community	Approximate Address	Grade Structure	Core (Permanent Structure) Area - m2	Total Number of Modular Classrooms Delivered at School Availability	Maximum Number of Modular Classrooms Each School is Designed to Accom-modate	Approximate Initial Capacity of School with Modular Classrooms Delivered at School Availability
RVS	City of Airdrie	Airdrie 6-8	186 Sagewood Boulevard SW	6-8	6,462	16	16	900
RVS	City of Airdrie	Airdrie 9-12	2654 Chinook Winds Drive SW	9-12	10,547	0	8	1000
BGRD	Town of Beaumont	Beaumont Public K-9	Dansereau Meadows (Phase 9, SDA-11-01)	K-9	6,597	0	0	700
GRD	City of Brooks	Brooks K-6	Upland Boulevard	K-6	2,798	12	12	450
Red Deer Public	City of Red Deer	Red Deer Public K-5	300 Timothy Drive	K-5	3,609	8	12	500
RVS	Town of Chestermere	Chestermere K-9	325 Kinniburgh Boulevard	K-9	5,964	0	16	500
STAR	Town of Beaumont	Beaumont Catholic K-9	Dansereau Meadows (Phase 9, SDA-11-01)	K-9	4,200	0	4	400
MHSD	City of Medicine Hat	Medicine Hat K-9	751 Strachan Road SE	K-9	6,244	4	16	600
Greater North Central Francophone	City of Red Deer	Ecole La Prairie	48 Avenue and 34 Street	K-12	2,999	2	4	250
Red Deer Catholic	City of Red Deer	Red Deer Catholic K-5	60 Clearview Drive	K-5	3,088	2	10	300
CESD	Town of Penhold	Penhold 7-12	1 Waskasoo Avenue	7-12	4,484	6	6	500
Greater Southern Catholic	Town of Cochrane	Cochrane K-9	Quigley Drive and West Terrance Crescent	K-9	2,694	0	2	200

2.2.2 Additional Modular Classrooms

Where the demographics of the community the School serves change requiring the addition of further Modular Classrooms to accommodate any increased student enrollment, the Province may issue a Change Order pursuant to Schedule 1 (Change Orders) to the Contractor for the supply, installation and M&R of a new Modular Classroom or the installation and M&R of an existing Modular Classroom supplied by

the Province. For greater certainty, and in furtherance of the Contractor's responsibility for the M&R of the added Modular Classrooms, where the Province elects to supply a Modular Classroom the Contractor shall be entitled to include in its Estimate (as defined in Schedule 1 (Change Orders)) the cost of repairing or altering such Modular Classroom to meet the Technical Requirements. The Contractor agrees that where the Province supplies a newly manufactured Modular Classroom from the same manufacturer the Contractor employed to supply the existing Modular Classrooms and of the same design as those initially installed as part of the Project, the presumption in respect of the Estimate shall be that no such repairs or alterations are necessary to meet the Technical Requirements.

2.2.3 Removal of Modular Classrooms

The Contractor acknowledges that the Schools will be designed to have a Core Structure that incorporates key functional areas such as the gymnasium, library, administration area, certain classrooms, gathering areas and project areas, and Modular Classrooms to allow for the addition or removal of teaching areas to easily and economically allow for changing demographics.

The Province may require the removal of Modular Classrooms by the Contractor pursuant to a Change Order Directive governed by Schedule 1 (Change Orders), such that the affected Modular Classrooms cease to be subject to the DBFM Agreement. The last paragraph of section 7.2 of the DBFM Agreement shall not apply in respect of the removal of Modular Classrooms as required by the Province pursuant to this Section 2.2.3.

2.2.4 Addition and Removal of Modular Classrooms by Change Order

The work required to be undertaken by the Contractor to add or remove Modular Classrooms at a School by Change Order shall be undertaken in compliance with and under the terms of all applicable Project Requirements as though the addition or removal of the Modular Classrooms formed part of the Project. For greater certainty, except as otherwise may be agreed by the parties, additional Modular Classrooms must meet the Project Requirements with respect to their design, construction, installation and testing.

From and after installation, added Modular Classrooms will be subject to the M&R Requirements, the Handback on Expiry Requirements and the Handback requirements all to be performed by the Contractor.

Prior to beginning work to add or remove Modular Classrooms the Contractor shall purchase, and maintain in force until the completion of the work associated with such Change Order, insurance coverage acceptable to the Province. To the extent such insurance coverage is not already required to be maintained by the Contractor under the

DBFM Agreement, the Province will pay the Contractor's costs incurred in purchasing and maintaining such additional insurance coverage.

2.2.5 Payment Adjustments

In circumstances where:

(a) the Province has issued a Change Order Directive for the addition of Modular Classrooms or for the relocation of an existing Modular Classroom from one School to another;

(b) in respect of each School specified in the Change Order Directive, the Modular Classrooms required to be added to a School by the Change Order Directive do not exceed the maximum number of Modular Classrooms that the respective School is designed to accommodate, as set out in Table 2.2.1; and

(c) the Province has supplied to the Contractor the Modular Classrooms to be installed as contemplated in Section 2.2.2, or the Modular Classrooms to be installed are being relocated from other Schools subject to the DBFM Agreement and are available to the Contractor,

the Contractor fails to install such additional Modular Classrooms at the Schools as specified in the Change Order Directive (such that the additional Modular Classrooms are available for use and the Accessibility Criteria in respect of the additional Modular Classrooms are met), within 60 days from the date that the Development Permits (required as a result of the Change Order Directive) were issued, then each such Modular Classroom specified in the Change Order Directive shall individually be deemed to be an Inaccessible Area of the respective School to which such Modular Classroom is to be added and the Payment Adjustments for Inaccessible Instructional Area set out in Section 5.9.6.1 shall apply in respect of each such Modular Classroom until the Modular Classroom is installed and the Accessibility Criteria are met, subject only to any Modular Classrooms that are installed and Inaccessible but Used as set out in Section 5.9.3 in which case the Payment Adjustments in Section 5.9.6.2 shall apply.

2.3 SCHOOL SITES

2.3.1 School Sites

The Project will be carried out on the School Sites for the Schools, at the locations identified in Schedule 12 (School Sites). Certain of the Exterior Improvements will be constructed on the Municipal Lands within the School Sites as shown in Schedule 12 (School Sites) and the Site Layouts, and will be maintained by the Contractor throughout the Term.

Access to and use of the School Sites for the purpose of carrying out the Project and the M&R has been granted to the Contractor pursuant to section 4 of the DBFM Agreement. Access to the School Sites from Municipal streets is subject to the requirements set out in Section 4.11.9.5.

If the Contractor requires additional lands for construction activities at a School Site, it is the responsibility of the Contractor to obtain the necessary consents for access to such additional lands.

2.3.2 Development Permits

The Province has applied for Development Permits for each School Site with the relevant Municipality. The Development Permit applications submitted by the Province were based upon the Core School Designs, the Site Layouts and the Landscape Development Plans. Any variations to any of these documents by the Contractor that cause a delay in the issuance of a Development Permit for a School shall be at the sole risk of the Contractor.

The Contractor's points of contact regarding Development Permits and building permits are as follows:

The City of Airdrie

Development Permits:
Main Contact: Cynthia Rowen
Phone: 403-948-8800, Extension 8795
Email: cynthia.rowen@airdrie.ca

Second Contact: Jamie Dugdale
Phone: 403-948-8800, Extension 8796
Email: jamie.dugdale@airdrie.ca

Building Permits:
Main Contact: Sean Makowecky
Phone: 403-948-8800, Extension 8446
Email: sean.makowecky@airdrie.ca

The Town of Beaumont

Development Permits:
Main Contact: Brenda Matthews
Phone: 780-929-1354
Email: brenda.matthews@town.beaumont.ab.ca

Second Contact: Corey Levasseur
Phone: 780-929-4302
Email: corey.levasseur@town.beaumont.ab.ca

Building Permits:
Main Contact: Brenda Matthews
Phone: 780-929-1354
Email: brenda.matthews@town.beaumont.ab.ca

The City of Brooks

Development Permits:
Main Contact: Rebecca Taylor
Phone: 403-362-3333
Email: rtaylor@brooks.ca

Second Contact: Elly Martin
Phone: 403-362-3333
Email: emartin@brooks.ca

Building Permits:
Main Contact: Rebecca Taylor
Phone: 403-362-3333
Email: rtaylor@brooks.ca

The City of Red Deer

Development Permits:
Main Contact: Vicki Swainson
Phone: 403-342-8190
Email: vicki.swainson@reddeer.ca

Second Contact: Angus Schaffenburg
Phone: 403-309-8545
Email: angus.schaffenburg@reddeer.ca

Building Permits:
Main Contact: Vicki Swainson
Phone: 403-342-8190
Email: vicki.swainson@reddeer.ca

The Town of Chestermere

Development Permits:
Main Contact: Alan Boucher
Phone: 403-207-7030
Email: aboucher@chestermere.ca

Building Permits:
Main Contact: Bob Clarke
Phone: 403-207-7037
Email: rclarke@chestermere.ca

The City of Medicine Hat

Development Permits:
Main Contact: Doug Risk
Phone: 403-529-8207
Email: douris@medicinehat.ca

Building Permits:
Main Contact: Henry Epstein
Phone: 403-529-8169
Email: heneps@medicinehat.ca

The Town of Penhold

Development Permits:
Main Contact: Trish Willis
Phone: 403-886-3291
Email: developments@townofpenhold.ca

Second Contact: Rick Binnendyk
Phone: 403-886-3280
Email: cao@townofpenhold.ca

Building Permits:
Main Contact: Trish Willis
Phone: 403-886-3291
Email: developments@townofpenhold.ca

The Town of Cochrane

Development Permits:
Main Contact: Guy Gravely

Phone: 403-851-2574
Email: guy.gravely@cochrane.ca

Second Contact: Jared Kassel
Phone: 403-851-2279
Email: jared.kassel@cochrane.ca

Building Permits:
Main Contact: Guy Gravely
Phone: 403-851-2574
Email: guy.gravely@cochrane.ca

2.3.3 School Site Investigations

The Province retained Golder Associates Ltd. to perform site investigations for the School Sites. Golder Associates Ltd. prepared for the Province site investigation reports for each School Site ("**School Site Investigations Reports**") in connection with the above investigations. The School Site Investigation Reports are provided to the Contractor as information only. The School Site Investigation Reports provided to the Contractor shall not be construed as importing any duty of care to the Contractor on the part of the Province or Golder Associates Ltd. in relation to the accuracy of such School Site Investigation Reports or the studies or other information contained therein, it being mutually understood and agreed that the Contractor will perform its own research, investigation and due diligence at each School Site.

The Contractor is solely responsible for all geotechnical testing and analysis, site conditions, environmental conditions and requirements, historical assessments and other matters relating to the School Sites as may be required for the necessary Authorizations from Governmental Authorities in connection with the Project.

SECTION 3 -- MANAGEMENT SYSTEMS AND PLANS

3. MANAGEMENT SYSTEMS AND PLANS

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain, and shall monitor, update and manage, during the Construction Period and the M&R Period, as applicable, the Contractor's Construction Schedules and the Contractor's Management Systems and Plans to comply with the Technical Requirements.

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain and shall monitor, update and manage for each School until School Availability is achieved for that School, a Contractor's Construction Schedule for that School.

During the Project, the Contractor shall provide the Province with a Contractor's Construction Schedule for each School that is sufficiently detailed to give the Province an understanding of all significant construction activities at each School. The Contractor shall use a scheduling program that is readable by or compatible with Microsoft Project.

The Contractor's Construction Schedule shall include the design and construction activities for each School and a corresponding integrated overall construction schedule for the Project that:

- breaks down activities to a level of detail sufficient to enable the Province to readily interpret the schedule and facilitate monitoring of the construction progress at each School;

- breaks down long duration activities and sub-activities, which are continuous, repetitive or sequential in nature and which represent the construction activities planned for each School; and in this regard, the Contractor shall submit separate sub-network diagrams; and

- provides all the information evidencing the Contractor's construction plan, which clearly shows the inter-relationships of all activities related to each School and to the Project.

3.2 QUALITY MANAGEMENT SYSTEM

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain, and shall monitor, update and manage, during the Construction Period and the M&R Period, the Quality Management System (the "**QMS**"), as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The QMS shall demonstrate how the Contractor develops its quality control system and shall describe the Contractor's quality policies and procedures for all stages of the Project and the M&R, specifically addressing the following:

- Design;
- Construction;
- Commissioning and Startup; and
- Maintenance and Renewal.

The QMS shall also describe the Contractor's policies and procedures for implementing and assessing the effectiveness of its quality control system.

The QMS must be satisfactory to the Province, acting reasonably, with the Contractor using the *ISO 9001:2000 Standard* as a guideline for the development of the QMS and shall cover all activities, products and services related to the Project and the M&R, prior to the execution of these activities, products and services. The Contractor shall make all QMS records available to the Province for inspection and review. The Contractor shall provide the Province with a copy of any or all quality records when so requested.

The QMS shall demonstrate how compliance with the Technical Requirements and the Contractor's Management Systems and Plans is to be ensured. During all stages of the Project and the M&R, work shall not be started on any component of the Project or the M&R until after the QMS has been completed and implemented for that component of the Project or the M&R. All records from the QMS for design, construction, commissioning and startup and maintenance and renewal, including all audits, shall be maintained and retained by the Contractor until the end of the Term or until otherwise agreed to in writing by the Province.

The individuals responsible for carrying out quality control and quality assurance shall be identified in the QMS.

The QMS shall include, but not be limited to:

3.2.1 Design

The QMS shall require that all designs and professional documents, including plans, engineering drawings, detailed drawings, maps, specifications, reports or other documents or a reproduction of any of them, that describe engineering, geological or geophysical work as contemplated in the *Engineering, Geological and Geophysical Professions Act* (Alberta) and regulations, be authenticated by a professional member, in accordance with the *Association of Professional Engineers, Geologists and Geophysicists of Alberta's Practice Standard for Authenticating Professional Documents V2.0.*

The QMS shall also require that the Contractor's design reports, architectural drawings, specifications and related documents that describe architectural work as contemplated by the *Architects Act* (Alberta) and regulations and the *Safety Codes Act* (Alberta) and regulations be stamped and signed by an architect registered with the *Alberta Association of Architects.*

The QMS shall also require that all designs be reviewed, checked and verified by an independent reviewer (the "**Internal Reviewer**"). The Internal Reviewer shall be a qualified professional engineer or architect, as the design drawing so requires, who may be employed by the legal entity doing the design work.

The Internal Reviewer shall include independent design check notes and shall report that the design checks have been completed based on the information provided by the Contractor's design engineer or architect of record and is satisfied that the designs meet the Technical Requirements.

Changes made to the design of a School prior to School Availability must follow the same review process.

If a non-conformance in the design is determined at any time, including after School Availability, the Contractor shall undertake the necessary modifications at its own cost to ensure the Schools are in accordance with the Project Requirements.

3.2.2 Construction

The QMS shall provide for ensuring that the Schools are in conformance with the requirements of the Contractor's design reports, the Detailed Designs, the Technical Requirements and any related documents developed for the Schools.

The Contractor shall implement a methodology to verify compliance of the construction of the Schools with the Detailed Designs and the Technical Requirements. Changes made to the design of a School prior to School Availability shall be stamped and signed by a professional engineer or architect of record from the design team and any such changes are to be reviewed by the Internal Reviewer. Prior to School Availability, a professional engineer or architect of record from the design team shall be required to stamp and sign a declaration that the School has been constructed in accordance with the Contractor's design reports, the Detailed Designs and the Technical Requirements.

The QMS shall detail the pre-commissioning requirements, testing and acceptance program for all construction materials, products and equipment, Building Equipment, Building Systems and the Modular Classrooms, including, but not limited to, the following:

- Importance of construction quality, including material and Building Equipment

testing and inspections, testing and inspections frequencies, quality reference standards, product acceptance and rejection criteria;

- Procedures for corrective action when quality control and/or acceptance criteria are not met;

- Feedback to designers for improvement of construction material or Building Equipment quality;

- Recruitment, training and assignment of its skilled workforce;

- Measures to ensure that subcontractors are qualified and licensed as required; and

- Roles and responsibilities of the Contractor's employees in the quality assurance process.

The QMS shall require that complete testing/inspection reports be prepared for the Project and the M&R.

The Contractor shall make all QMS records available to the Province for inspection and review. The Contractor shall provide the Province with a copy of any QMS records when so requested.

Non-conforming construction works will be considered unacceptable and the Contractor shall undertake the necessary modifications at its own cost to ensure the as-built Schools conform to the requirements of the Detailed Designs and Technical Requirements.

3.2.3 Commissioning and Startup

The QMS shall provide for ensuring that the Commissioning and Startup Plan and activities thereunder meet all applicable laws, Authorizations, relevant Standards and Guidelines, and that all Building Equipment and Building Systems conform with and perform as required by the Technical Requirements.

The QMS for commissioning and startup shall include details for the following, including without limitation:

- QMS requirements for the commissioning and startup program that will break the required work into areas, with a matrix identifying the person responsible for such work. In addition, the plan shall provide for a schedule of the interactive testing of all Building Systems and Building Equipment;

- Procedures for inspections and receipt of any relevant permits, certificates or

Authorizations where required;

- Required QMS processes for testing, diagnosis and correction of problems, and repeat testing;
- Procedure to meet the requirements of Section 4.12; and
- QMS requirement for reporting the results of tests and for delivering a resultant commissioning and start-up report to the Province.

3.2.4 Maintenance and Renewal

The QMS shall provide for ensuring that the M&R performed by the Contractor conforms to the M&R Requirements.

The Contractor shall update annually during the School M&R Period and the M&R Period, the plans detailing the inspection, monitoring and M&R activities for the Schools that will be conducted during the upcoming year to ensure that all M&R Requirements are met.

The QMS shall detail the following, including without limitation:

- Importance of overall quality in the M&R for the Schools, including monitoring, inspections and regulatory compliance, testing and inspections frequency, quality reference standards, product acceptance and rejection criteria;
- Procedures, quality control and quality assurance criteria that include clearly stated deliverables, benchmarks/baselines to facilitate the measurement, reporting, analysis and the continual improvement of M&R and related business processes;
- Procedures, related business processes and accountabilities for inspections, monitoring, the Help Desk, Failure rectification and the Contractor's M&R performance;
- Procedures for recruitment, training and assignment of its skilled workforce;
- Measures to ensure that subcontractors are qualified and licensed as required; and
- Procedures for a formal document and record management system defining the control of Help Desk and M&R quality documents and records.

Non-conforming QMS requirements for inspection, monitoring and M&R activities will be considered unacceptable and the Contractor shall undertake the necessary modifications at its own cost to ensure that the inspection, monitoring and M&R are in

conformance with the QMS and the M&R Requirements.

3.2.5 Internal Audits

The Contractor shall undertake annual internal QMS audits to verify that the required levels of QMS performance prior to School Availability and during the School M&R Period and the M&R Period are being or have been achieved as required by the Technical Requirements. A full system internal audit shall be completed within one year of Execution of the DBFM Agreement and thereafter at least once per year until the end of the Term.

The QMS internal audits shall involve:

- document reviews or system audits to ensure that the Contractor has plans and procedures in place to cover all the required aspects of the QMS; and
- compliance or procedural audits to ensure that the specified plans and procedures are being effectively implemented.

The Contractor shall make all QMS records available to the Province at all times for inspection, review and further instructions. All QMS deficiencies identified by the internal audit must be addressed and corrective measures implemented by the Contractor.

3.2.6 External Audits

At any time during the Construction Period and the M&R Period, the Province may at its discretion and at its sole cost engage a third party to carry out a full system audit of the QMS to verify that the required levels of QMS performance are being achieved as required under the DBFM Agreement (the "**External Audit**"). The Contractor shall make available to the third party all QMS records relating to the Project and the M&R. The Contractor must address and implement appropriate corrective measures for all QMS deficiencies identified by the External Audit within 30 days of the Province providing the External Audit to the Contractor.

3.2.6.1 Payment Adjustments

If a deficiency or deficiencies identified by the External Audit have not been corrected within the specified time, a Payment Adjustment of $5,000/week or any partial week for the first four weeks and $10,000/week or any partial week thereafter shall apply until such deficiency or deficiencies are corrected.

3.3 CONSTRUCTION MANAGEMENT PLAN

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop,

implement and maintain, and shall monitor, update and manage, until the end of the Construction Period, the Construction Management Plan, as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The Construction Management Plan shall include the following, including without limitation:

- Integration of design and construction processes;
- Scope verification and scope controls;
- Resource planning and management;
- Monitoring and controlling progress;
- Materials and Building Equipment procurement;
- Modular Classroom procurement; and
- Pre-commissioning and testing plan.

The Province will review the Construction Management Plan for the Schools in accordance with Schedule 5 (Design and Plan Certification and Review Procedure) prior to the start of any procurement activities or construction of the Schools.

3.4 COMMISSIONING AND STARTUP PLANS

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain, and shall monitor, update and manage, for each School until School Availability is achieved for that School, a Commissioning and Startup Plan, as attached in Schedule 4 (Contractor's Management System and Plans) to the DBFM Agreement.

Prior to the start of any commissioning and startup activities at a School, the Contractor shall prepare a Commissioning and Startup Plan for that School and shall include, at a minimum, the following:

- a detailed description of how the Contractor intends to ensure that the School meets the Project Requirements prior to School Availability;

- if commissioning in accordance with the *LEED™ Enhanced Commissioning*, a detailed description of how the Contractor intends to implement the *LEED™ Enhanced Commissioning*;

- a detailed description of the Contractor's planned systematic testing and startup procedures for each Building System and all Building Equipment within the School

that will be undertaken to ensure that all Building Systems and Building Equipment in the School perform interactively and at the performance levels required in the Technical Requirements;

- testing requirements to meet all applicable laws, Authorizations and the relevant Standards and Guidelines;

- plans for diagnosis of problems, correction of deficiencies and repeating of testing; and

- a detailed description of how the Contractor plans to meet the requirements of Section 4.12.

The Province will review the Commissioning and Startup Plan for each School in accordance with Schedule 5 (Design and Plan Certification and Review Procedure) prior to the start of any commissioning and startup activities at that School.

3.5 LEED™ CERTIFICATION PLAN

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain, and shall monitor, update and manage, until LEED™ Silver Certification is achieved for all Schools, the LEED™ Certification Plan, as attached in Schedule 4 (Contractor's Management System and Plans) to the DBFM Agreement.

The Contractor shall develop the LEED™ Certification Plan to ensure that the Contractor attains at least a LEED™ Silver Certification for each School using the LEED™ Rating System, including the mandatory requirements set out in Section 4.8.2. In all cases, the credits pursued for the Core Structure and the Modular Classrooms must be consistent. The LEED™ Certification Plan must address general compliance requirements and identify procedures for compliance with the LEED™ Rating System.

The Province will review the LEED™ Certification Plan for the Schools in accordance with Schedule 5 (Design and Plan Certification and Review Procedure) within 30 days of Execution of the DBFM Agreement.

The Contractor's LEED™ Certification Plan shall incorporate the following, including without limitation:

- Submission of a completed LEED™ project checklist of estimated credits to demonstrate how the Contractor intends to achieve the LEED™ Silver Certification for each School. The LEED™ project checklist shall identify estimates for credits in the required, preferred (Y), possible (?) and not-preferred categories (N), including the mandatory requirements set out in Section 4.8.2;

- Sustainable design and construction processes by identifying processes to be used in the areas of design, construction and M&R;

- Records and documentation processes, which shall include an overall documentation process to support sustainable design and construction to attain the required LEED™ Silver Certification. The Contractor shall assign a LEED™ Accredited Professional as its LEED™ Coordinator. The LEED™ Coordinator shall be responsible for the development and tracking of the necessary LEED™ documentation for each credit and final submission thereof. LEED™ credits must be documented in the plans, specifications and design analyses where applicable. The LEED™ documentation and submissions shall be acknowledged and assigned milestone goals in the Contractor's Construction Schedule;

- Sustainability audits and assessments processes, which shall include evaluation processes and tools to provide information and analyses needed to support sustainability goals of the Schools. These audits and processes include, without limitation:

  Energy Modeling: Utilizing the latest software tools to predict the energy consumption of a School and identify and evaluate energy-saving strategies;

  Lighting Design: Designing end-user space to make the most use of natural lightning as well as energy efficient lighting systems; and

  Commissioning: Developing process for new construction which optimize building performance and incorporate sustainability goals.

- Waste management plan and implementation process, which shall include plans for reducing waste, recycling and salvaging of materials during the Project.

3.6 SAFETY PLAN

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain and shall monitor, update and manage, during the Construction Period and the M&R Period, the Safety Plan, as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The Contractor, through its Safety Plan, shall describe health and safety standards and practices that the Contractor will implement to reduce or eliminate the occurrence of accidents while performing its various obligations under the DBFM Agreement, prior to School Availability and during the School M&R Period and the M&R Period.

The Safety Plan shall include the following, including without limitation:

- Safety training program;
- Incident reporting system;
- Accidents prevention program;
- Compliance with applicable laws;
- Roles and responsibilities of safety personnel; and
- The requirements of Schedule 16 (Safety Requirements) to the DBFM Agreement.

The Safety Plan shall contemplate, for each School prior to School Availability, emergencies during construction and shall provide details on the manner and timing of reaction to emergencies to ensure public safety and protection of property while complying with the requirements of the DBFM Agreement regarding such matters.

The Province will review the Safety Plan for a specific component of the Project or the M&R, as applicable, in accordance with Schedule 5 (Design and Plan Certification and Review Procedure) prior to the start of that component of the Project or the M&R, as applicable.

3.7 SECURITY CLEARANCE PROCESS

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain and shall monitor, update and manage, during the Construction Period and the M&R Period, a Security Clearance Process, as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The Contractor shall finalize the Security Clearance Process prior to the first School achieving School Availability and shall update the Security Clearance Process annually on or before the first day of each School Year

School Availability will not be achieved for any School until the Security Clearance Process has been reviewed by the Province in accordance with Schedule 5 (Design and Plan Certification and Review Procedure).

The Contractor shall include the following, without limitation, in its Security Clearance Process:

- the Contractor's plan for requiring all individuals that will be performing the M&R at the Schools to obtain and submit to the Contractor criminal record searches and a *Child Intervention Record Check*, or its replacement, from the appropriate ministry of the Province, prior to such individuals attending at any School to perform the M&R;

- a description of how the Contractor plans to respond to security concerns of the Province and the School Boards; and

- a plan for regularly updating criminal record searches and *Child Intervention Record Check* after the initial clearance has been obtained.

3.8 MAINTENANCE PLAN

Subject to section 5.5 of the DBFM Agreement and in accordance with Section 3.2.4 (Quality Management System – Maintenance and Renewal), the Contractor shall further develop, implement and maintain and shall monitor, update and manage, during the Construction Period and the M&R Period, the Maintenance Plan, as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The Contractor shall finalize the Maintenance Plan prior to the first School achieving School Availability and shall update the Maintenance Plan annually on or before the first day of each School Year. The annually updated Maintenance Plan shall be a 5-year plan, and shall include the maintenance activities carried out in the previous 12 month period as well as the planned maintenance for the ensuing five years.

School Availability will not be achieved for any School until the Maintenance Plan has been reviewed by the Province in accordance with Schedule 5 (Design and Plan Certification and Review Procedure).

The Contractor shall ensure that it addresses in the Maintenance Plan all of the components necessary to ensure the Schools are:

- monitored and inspected regularly as required by applicable laws and relevant Standards and Guidelines and to ensure the M&R Requirements are being met;

- maintained to ensure efficiency, life cycle enhancement and minimal disruption to Educational Activities, Educational Support Activities, Community Use, Acceptable Third Party Use and Adhoc School Use;

- maintained, at a minimum, in accordance with applicable laws, relevant Standards and Guidelines and manufacturers' recommended maintenance practices to ensure that the Technical Requirements are being met; and

- maintained to ensure that the Handback Requirements will be met.

The Contractor, in its Maintenance Plan, shall also:

- provide a description of the scheduled or periodic maintenance work to be carried out by the Contractor including but not limited to:

(i) a process to identify, schedule, and undertake periodic maintenance activities that, to the greatest extent possible, will ensure efficiency, life cycle enhancement and minimal disruption to School operations;

(ii) a process to identify, schedule and undertake periodic maintenance activities that are in accordance with manufacturers' recommended maintenance schedules or Good Industry Practice;

(iii) a comprehensive list of periodic maintenance activities planned to be undertaken during the M&R Period; and

(iv) a process for communicating the periodic maintenance activities schedule with the Province and the School Boards in accordance with Section 5.3.

- provide a preventative maintenance plan to ensure that the Schools function in such a manner so as to meet the Technical Requirements;
- identify all the Building Systems, Building Elements, Building Equipment and components for cyclical maintenance that have predictable life spans;
- provide a planned schedule for preventative maintenance and major repairs;
- identify a structured approach, in accordance with the Technical Requirements, for the labeling and numbering of a School's Building Systems and Building Equipment. It shall include information about the cycle schedule, location, Building Equipment number, a description of the maintenance that the Contractor will be performing, and necessary Building Equipment specifications (i.e. part #, model #, serial # etc.).

3.8.1 Payment Adjustments

If the Contractor fails to develop and provide the Province with an annually updated 5-year Maintenance Plan on or before the first day of each School Year, a Payment Adjustment of $1,200/week or any partial week shall be assessed until the annually updated 5-year Maintenance Plan is submitted.

3.9 RENEWAL MANAGEMENT PLAN

Subject to section 5.5 of the DBFM Agreement and in accordance with Section 3.2.4 (Quality Management System – Maintenance and Renewal), the Contractor shall further develop, implement, and maintain and shall monitor, update, and manage, during the Construction Period and the M&R Period, the Renewal Management Plan, as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The Province will review the Renewal Management Plan in accordance with Schedule 5

(Design and Plan Certification and Review Procedure) within 180 days of achieving Total Availability.

The Contractor shall update the Renewal Management Plan annually on or before the first day of each School Year. The annually updated Renewal Management Plan shall be a 5-year plan, and shall include the renewal activities carried out in the previous 12 month period as well as the planned renewals for the ensuing 5 years.

The Renewal Management Plan shall include detailed information on the Contractor's plan for the renewal or replacement of Exterior Improvements, Building Equipment, Building Elements and Building Systems throughout the School M&R Period and the M&R Period. The Renewal Management Plan shall include the expected life of major Building Systems and Building Equipment having regard to the Handback Requirements set out in Section 7.

3.9.1 Payment Adjustments

If the Contractor fails to develop and provide the Province with an updated 5-year Renewal Management Plan on or before the first day of each School Year, a Payment Adjustment of $1,200/week or any partial week shall be assessed until the annually updated 5-year Renewal Management Plan is submitted.

3.10 EMERGENCY RESPONSE PLAN

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain and shall monitor, update and manage, during the Construction Period and the M&R Period, an Emergency Response Plan, as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The Contractor shall finalize the Emergency Response Plan prior to the first School achieving School Availability and shall update the Emergency Response Plan annually in conjunction with the relevant School Representative no later than October 1 of every year for each School following School Availability.

School Availability will not be achieved for any School until the Emergency Response Plan has been reviewed by the Province in accordance with Schedule 5 (Design and Plan Certification and Review Procedure).

The Contractor's Emergency Response Plan shall contemplate emergencies during the M&R Period and shall provide details on the manner and timing of reaction to emergencies to ensure public safety (including students and staff) and protection of property while complying with the requirements of the DBFM Agreement regarding such matters.

For each School, after School Availability, the Contractor's Emergency Response Plan must be incorporated into each School's emergency response plan with the requirements of the School taking priority.

The Contractor, in its Emergency Response Plan, shall address the following items:

- an activation process for mobilizing crews on short notice in the event of emergencies;
- a contingency plan if primary staff cannot be reached;
- training to be given to the Contractor's and subcontractor's staff and School Board and School staff with respect to the Contractor's Emergency Response Plan prior to School Availability at each School and the combined Contractor/School Emergency Response Plan during the School M&R Period and the M&R Period;
- communication strategies with the Province, the School Boards, the public, the media, local authorities, utility companies and the police and fire departments;
- an administrative process for the collection from the responsible party of "excluded risk" costs arising from accidents that are not covered by the insurance required pursuant to Schedule 11 (Insurance Requirements) to the DBFM Agreement;
- a strategy with respect to administration of fire calls from local fire departments; and
- a strategy with respect to the practice and administration of debris removal and recycling removal.

In addition to the above, the Contractor shall include in its Emergency Response Plan the following in respect of each School:

(a) a plan to maintain in readiness and implement where necessary, contingency plans should any of the fire safety systems in the School Building fail;

(b) a plan for the Contractor's and their subcontractor's employees, at any time they believe that any matter constitutes a fire risk, to report the deficiency or fire risk immediately to the Contractor M&R Representative, with the Contractor M&R Representative then immediately advising the School Representative;

(c) a plan to ensure all Contractor and subcontractor employees are given regular fire safety instruction and education in compliance with the *National Fire Code of Canada 2005* and are trained in the operation of the

fire alarm system; and

(d) a plan for reporting to the School Representative all circumstances where the Contractor believes Educational Activities, Educational Support Activities, Adhoc School Use, Community Use or Acceptable Third Party Use activities are contrary to compliance with applicable laws relating to fire safety.

3.10.1 Payment Adjustments

If the Contractor fails to provide the Province with an updated Emergency Response Plan by October 1 of every year for each School following School Availability of a School, a Payment Adjustment of $1,200/week or any partial week shall be assessed until the annually updated Emergency Response Plan is submitted.

3.11 HANDBACK ON EXPIRY PLAN

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain, and shall monitor, update and manage during the Construction Period and the M&R Period, the Handback on Expiry Plan, as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The Province will review the Handback on Expiry Plan in accordance with Schedule 5 (Design and Plan Certification and Review Procedure) within 180 days of achieving Total Availability.

The Contractor shall update the Handback on Expiry Plan every 10 years following Total Availability until the handback inspections commence as set out in section 8.2 of the DBFM Agreement. The Contractor shall update the Handback on Expiry Plan with each required handback inspection of a School described in section 8.2 of the DBFM Agreement.

In its Handback on Expiry Plan, the Contractor shall include detailed information on the Contractor's plan to handback certain documentation regarding the Schools and to train School Board employees on the Building Systems and Building Equipment at the expiry of the Term. The Contractor, in its Handback on Expiry Plan, must include plans for the following requirements:

(a) training sessions for the relevant School Board employees or subcontractors of the School Board that include, but are not limited to, description of design philosophy, systems descriptions, design parameters, constraints and operational requirements, system operation strategies, troubleshooting procedures, detailed information on all major Building Equipment, description of how the Building Equipment operates and recommended preventative

maintenance, demonstrations on the operation of all Building Systems and major Building Equipment, including start-up, operation and shut down and preventive maintenance, performance testing and balancing and troubleshooting. The Contractor shall arrange, at its own cost, the attendance of the applicable vendor representatives during such training; and

(b) delivery of records and information to the Province pertaining to the Schools, on a School by School basis, including but not limited to: description of the physical characteristics of each School; a list of all Building Systems and Building Equipment; up-to-date CAD "as built" drawings showing the current as built condition for each School; complete documentation on preventive maintenance, including a list of all inventory, checklists and records of preventive maintenance inspections and maintenance work for a period of 10 years prior to the expiration of the Term; updated Operation and Maintenance Manuals for each School, project files for all the M&R completed 10 years prior to the expiration of the Term; and current information for all Building Systems and major Building Equipment, including systems and controls descriptions and schematics, and maintenance tasks and schedules.

3.12 COLLABORATION PLAN

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain, and shall monitor, update, and manage, during the Construction Period and the M&R Period, the Collaboration Plan, as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The Province will review the Collaboration Plan for the Construction Period and the M&R Period in accordance with Schedule 5 (Design and Plan Certification and Review Procedure) prior to the start of the Project or the M&R, as applicable.

For each School prior to School Availability, the Contractor, in its Collaboration Plan, shall include a plan and framework for meetings with the Province, the relevant Municipality and School Board, and any other interested stakeholder the Contractor identifies, to collaborate on Project issues, access issues, coordination issues and any other issues arising prior to School Availability with a view towards streamlining the satisfactory resolution of issues arising during the construction of the School.

During the School M&R Period and the M&R Period, the Contractor, in its Collaboration Plan, shall include a plan and framework for the Contractor to participate with the Province and the School Representatives to discuss M&R performance issues, custodial services, general communication of the stakeholders, and any other matters arising in connection with the cleaning, maintenance, repairs and renewal of the Schools, with a view towards involving all stakeholders with respect to these issues to foster greater

cooperation and better services by all during the School M&R Period and the M&R Period. Recognizing that the Schools will have to adapt over time to changes in the School Boards' programming requirements (including by Change Order where applicable) the Collaboration Plan shall include details concerning how the Contractor would collaborate with the Province and School Boards to respond to and implement such changes in a timely fashion.

Collaboration meetings shall form part of the Collaboration Plan, the frequency of which shall take into account the need for timeliness of assistance and criticality of issues.

3.13 PUBLIC COMMUNICATIONS STRATEGIES

Subject to section 5.5 of the DBFM Agreement, the Contractor shall further develop, implement and maintain, and shall monitor, update, and manage, during the Construction Period and the M&R Period, the Public Communications Strategies, as attached in Schedule 4 (Contractor's Management Systems and Plans) to the DBFM Agreement.

The Province will review the Public Communications Strategies for a specific component of the Project or the M&R, as applicable, in accordance with Schedule 5 (Design and Plan Certification and Review Procedure) prior to the start of that component of the Project or the M&R, as applicable.

The Contractor shall be responsible for public communications in connection with the Project and M&R (but excluding matters relating to School Site selection, School footprint, education matters), which shall include, without limitation, project website development, project telephone hotlines, handling of public complaints, where applicable, coordination with the School Boards and the Province's Department of Education, public presentations and open houses, public advertisements and mail drops.

Any direct contact the Contractor makes with the media shall be subject to the prior review and approval of the Province. This shall include, without limitation, media releases, interviews and advertisements.

The Contractor shall maintain comprehensive records of all communications activities including, without limitation, documentation of the information presented, the audience and relevant dates for review and recall by the Province.

SECTION 4 – PROJECT REQUIREMENTS FOR SCHOOLS

4. PROJECT REQUIREMENTS FOR SCHOOLS

This Section 4 sets out the Project Requirements applicable to the Schools.

4.1 CORE SCHOOL DESIGNS

The Core School Designs were mandated by the Province for all future schools to be built in Alberta, with a view to creating a streamlined design applicable for all schools and all school sites within Alberta. The Core School Designs include a fixed and permanent Core Structure which incorporates key functional areas such as the gymnasium, library, administration area, certain classrooms, gathering areas and project areas together with the provision of additional teaching areas through the use of Modular Classrooms to easily and economically allow for changing demographics.

4.2 CORE SCHOOL DESIGNS

The Core School Design drawings as shown in Appendix "B" reflect the program requirements for each School Board.

4.3 BASIC MODULAR CLASSROOM

The Basic Modular Classroom is the generic design of the Modular Classrooms prior to the modifications requested by the School Boards. The Basic Modular Classroom Informational Plans attached in Appendix "A" show informational elevations, plans and sections for the Basic Modular Classroom, which are provided to assist the Contractor in its design of the Modular Classrooms as required in Section 4.

The locations of the Modular Classrooms in connection with the Core Structure for each School are shown in the Site Layouts.

4.4 CORE SCHOOL DESIGNS

4.4.1 Core School Designs

The Core School Designs were developed after a series of consultations with the School Boards. The Core School Designs have been developed to suit the program requirements of each School Board.

The Core School Designs are set out in Appendix "B" and include:

- the Core Structure floor plans;
- the Modular Classroom floor plans; and

- the electrical power and data plans.

The specific external layouts for each School on the applicable School Site are set out in Appendix "C" and include:

- the Site Layouts; and
- the Landscape Development Plans.

4.5 DESIGN PHILOSOPHY

The design philosophies that the Core School Designs and the Basic Modular Classroom were based upon and which the Contractor shall apply in carrying out the Detailed Designs for the Schools include the following:

(a) meet all programmatic and educational requirements;

(b) provide a flexible design that allows the School Building to be easily modified to respond to different teaching methods such as project based learning, collaborative learning, team teaching, seminar-style instruction and individual instruction;

(c) develop flexible learning and interactive spaces for students, teachers and the community;

(d) recognize and enhance the environmental systems and promote sustainability by the incorporation of sustainable design system into the building concept including the maximization of natural lighting and views for all occupied areas;

(e) use of materials and components that ensure minimum inconvenience and disruption from breakdowns, repairs and maintenance activities;

(f) use of lighting, thermal and visual designs, acoustics and air quality to ensure maximum student comfort and learning;

(g) consideration of the Minimum Material Requirements; and

(h) the LEED™ Silver Certification requirements.

4.6 RESPONSIBILITY FOR DESIGN

The Contractor is responsible for completing the detailed design of all elements of the Schools including, but not limited to geotechnical investigations, the requirements of all

Authorizations (including potentially, the finalization and issuance of the Development Permits as described in Section 2.3) and all technical analysis required to design the Schools in a professional and competent manner.

In carrying out the Detailed Designs for the Schools, the Contractor shall comply with the design requirements set out in Section 4, the Core School Designs, the Site Layouts and the Issued for Development Permit Drawings (Appendix "M"), except as otherwise required to accommodate structural grids or as required by applicable laws, and consider the design philosophy and intent set out in the Basic Modular Classroom Informational Plans, set out in Appendix "A", all of which form part of the Project Requirements. The interpretation and application of these documents shall be carried out in the following order of precedence:

First, Section 4.9.3;

Second, Sections 4.9.1, 4.9.2 to 4.9.8 and 4.10;

Third, Core School Designs (Appendix "B") and Site Layouts (Appendix "C");

Fourth, Issued for Development Permit Drawings (Appendix "M"); and

Fifth, Basic Modular Classroom Informational Plans (Appendix "A").

Notwithstanding the method of resolving inconsistencies between the Project Requirements and the Contractor's Designs set out in section 5.1 of the DBFM Agreement, where specified in Schedule 18, elements of the Issued for Development Permit Drawings take precedence over the Contractor's Designs. Accordingly, the Detailed Designs shall comply with any such specified elements of the Issued for Development Permit Drawings notwithstanding any other provision of this Agreement.

In addition, but subject to the above order of precedence, the following rules for interpreting these documents shall apply:

(a) figured dimensions shown on a drawing shall govern even though they may differ from dimensions scaled on the same drawing;

(b) drawings of a larger scale shall govern over those of small scale of the same date;

(c) specifications shall govern over drawings;

(d) documents of a later date shall always govern; and

(e) where applicable laws, Authorizations, or Standards and Guidelines dictate different standards then the higher standard shall govern.

All designs must comply with applicable laws, Authorizations, the relevant Standards and Guidelines and the Technical Requirements.

The requirements to be met in the design of the Schools include considerations with respect to safety, functionality, adaptability, durability, aesthetics, indoor environmental maximization, the Minimum Material Requirements, maintainability, life cycle and LEED™ Silver Certification requirements. These design requirements are generally specified in this Schedule 18 (Technical Requirements). If a requirement is not specified in this Schedule 18, the Contractor shall follow Good Industry Practice, all applicable laws, the relevant Standards and Guidelines, and the Minimum Material Requirements.

The Contractor, in the Contractor's Designs and the Detailed Designs, must take into account the addition of all future Modular Classrooms for each School, as shown on the Site Layouts.

4.7 CONTRACTOR'S DESIGN DOCUMENTATION

The Contractor shall prepare design documentation for each School that covers a full range of the elements required in the School. The Contractor shall prepare all design and other related documentation in accordance with the requirements of the *Standards for Consultant Deliverables, (February 2009)* publication and shall utilize the set project title blocks that were available in the ASAP III RFP electronic document room that the Contractor hereby acknowledges as having received.

The Contractor shall include, but not be limited to including, the following in its design documentation:

(a) design development reports for all aspects of the School;

(b) the Detailed Designs, as described below, prepared in accordance with standard architectural/engineering practices, including availability in electronic format (AutoCAD and PDF); and

(c) comprehensive construction specifications (complying with the *Construction Specifications Canada Master Format 2004* requirements) including but not limited to specifications for execution and products and material requirements, as necessary.

As a basis for this documentation, the Contractor shall further develop and finalize, as required by this Section 4, the design development reports, plans and specifications in the Detailed Designs for the Schools, including but not limited to the following detailed designs provided in size A1, suitably scaled and the following schedules:

(d) a site plan/design for each School including but not limited to parking lots,

drop off areas and access points, design of the School's drainage including curbs, gutters and catch basins, landscaping and geodetic designs and details of tie-ins with utilities and municipal services;

(e) architectural designs for each School including but not limited to floor plans, exterior elevation drawings, interior elevation drawings showing millwork, glazing and wall-mounted accessories, exterior wall sections with key wall, window and roof junction details, reflective ceiling plans, roof plans and wall, ceiling and floor finish schedules including Modular Classrooms;

(f) structural designs for each School including but not limited to foundation designs and superstructure framing designs including roof deck;

(g) mechanical system designs for each School including but not limited to mechanical foundation plans, plumbing floor plans, heating and ventilation floor plans, mechanical room plans, schematics and details and sprinkler floor plans;

(h) electrical system designs for each School including but not limited to floor plans for electrical power distribution system including transformers, main service, feeders, distribution panels and exterior power, floor plans indicating location of power, communications and fire alarm devices, lighting floor plans and exterior lighting, lighting fixture and security system design details and device locations;

(i) Modular Classroom designs for each School including but not limited to floor plans, building section, walls, skirting details, details of roof and wall sections where modular classrooms connect to each other and to the Core Structure, windows and roof details, reflective ceiling plan, structural design for standard duty and heavy duty units, mechanical description and plan for heating, ventilation and plumbing design, floor plans indicating location of power, lighting and communications devices and lighting fixture details; and

(j) detailed colour, finishing and materials schedules including but not limited to interior finishes, colours and materials for all exposed surfaces and exterior finishes, colours and materials for all exposed surfaces.

4.8 LEED™ SILVER CERTIFICATION REQUIREMENTS

4.8.1 General Requirements

The Contractor shall achieve LEED™ Silver Certification, including the mandatory points set out in section 4.8.2, for each School from CaGBC. The Contractor shall apply for certification of a School within 60 days of that School achieving School Availability

and shall provide the Province with proof of that application, together with a copy of all the supporting documentation submitted in support of the application. The Contractor shall promptly provide the Province with all communications from CaGBC respecting a School including but not limited to any notices that a School has or has not achieved LEED™ Silver Certification.

4.8.1.1 Payment Adjustments

If the Contractor fails to apply for certification of a School within the time stipulated, a Payment Adjustment of $200 per day or partial day shall be assessed for that School until the application for such School is submitted.

The Contractor shall carry out the Project in accordance with its LEED™ Certification Plan set out in Schedule 4 (Contractor's Management Systems and Plans), this Section 4.8 and Section 4.10.3.12.

4.8.2 Contractor Obligations

The Contractor shall meet all LEED™ Canada – NC 2009 prerequisites and credits necessary for each School to achieve LEED™ Silver Certification.

In addition to the foregoing, the Contractor must also achieve a minimum of eleven points for Energy & Atmosphere Credit 1 - Optimize Energy Performance.

In all cases, the credits for the Core Structure and the Modular Classrooms that are to be pursued must be consistent. The School as a whole will be evaluated for LEED™ Silver Certification.

4.8.3 Technical Requirements

The Province does not warrant that the Contractor will achieve LEED™ Silver Certification if the Technical Requirements are met. The Contractor shall design the Schools to meet the LEED™ Silver Certification requirements, including the mandatory points set out in Section 4.8.2, while at the same time meeting the Technical Requirements. The Contractor is solely responsible for attaining LEED™ Silver Certification for each School.

4.8.4 LEED™ Silver Certification

The Contractor shall apply to CaGBC to obtain LEED™ Silver Certification for each School as required under Section 4.8.1, with such certification being received no later than 24 months after School Availability.

If after Execution of the DBFM Agreement there is a change in the requirements for

achievement of LEED™ Silver Certification under the LEED™ Rating System, and the Contractor is required by CaGBC to comply with such change, then the Contractor shall notify the Province of such change and such change shall, subject to and in accordance with Schedule 1 (Change Orders), be addressed by a Change Order Directive.

4.8.4.1 Liquidated Damages

If LEED™ Silver Certification is not achieved in respect of the Schools within 24 months from School Availability then, except for delays caused solely by CaGBC or where a School Board breaches its Tri-Party Agreement obligation to maintain a recycling program and that breach is the sole and direct cause of the Contractor's inability to achieve LEED™ Silver Certification in respect of that School within the relevant time period, the Contractor shall pay to the Province liquidated damages in the amounts specified as follows:

(a) if the Contractor does not achieve LEED™ Silver Certification in respect of one School, $500,000 (five hundred thousand dollars); or

(b) if the Contractor does not achieve LEED™ Silver Certification in respect of more than one School, $500,000 (five hundred thousand dollars) for the first School plus $100,000 (one hundred thousand dollars) for each and every additional School.

If the requirements in respect of the mandatory points set out in Section 4.8.2 are not attained for a School within 24 months from School Availability then, except for delays caused solely by CaGBC, the Contractor shall pay to the Province liquidated damages of $50,000 (fifty thousand dollars) for each point that is not achieved to a maximum amount of $300,000 (three hundred thousand dollars) per School for each and every School that does not attain such points.

Payment of the liquidated damages to the Province shall be made on the first day of the month following the earlier of: (i) the date of notification from CaGBC that a School will not receive LEED™ Silver Certification; and (ii) the date that is 24 months after School Availability for that School.

Such payment shall constitute full and final settlement of any and all damages that may be claimed by the Province as a result of the Contractor not achieving LEED™ Silver Certification or the mandatory points set out in Section 4.8.2 as the case may be, for that School. For greater certainty, a failure by the Contractor to achieve LEED™ Silver Certification or the mandatory points set out in Section 4.8.2 as the case may be, shall not constitute a Termination Event under the DBFM Agreement.

4.9 ADDITIONAL DESIGN CRITERIA – CORE STRUCTURE

The additional design criteria set out in this Section 4.9 are intended to complete the design requirements for the Core Structure set out in the Core School Designs and the Site Layouts. The Minimum Material Requirements must be considered in conjunction with these additional design criteria.

4.9.1 Interior Environment Design Requirements

4.9.1.1 Acoustics

The Contractor's Core Structure design shall incorporate a high standard of acoustic design. The guidelines set out in Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)* are minimum guidelines. The Contractor shall design the Schools' Instructional Areas with minimal noise interference from adjacent classrooms, hallways, mechanical equipment and outside noises. The Contractor will consider such elements as reverberation, sound isolation and background mechanical noise in the Detailed Designs so as to ensure that in all Instructional Areas a high level of clear intelligible speech is achieved. Key design criteria to be implemented by the Contractor are as indicated below to ensure that all Instructional Areas have the following minimum acoustic characteristics:

(a) quiet background noise levels due to the operation of heating and ventilation systems and air conditioning ("**HVAC**") and plumbing systems;

(b) low reverberation;

(c) adequate noise isolation between classrooms and learning areas and adjacent classrooms, washrooms, corridors, music rooms, gymnasium, auxiliary gymnasiums and mechanical rooms;

(d) adequate structural isolation between classrooms and learning areas and adjacent classrooms, gymnasium, washrooms and corridors;

(e) adequate noise isolation from outdoor noise sources such as vehicular traffic or aircraft; and

(f) structural isolation between music rooms, mechanical rooms and adjacent spaces.

The Contractor's mechanical design shall address concerns related to background noise from the HVAC system. The Contractor shall design Instructional Areas so that in all locations where a student or teacher's desk could potentially be located the background HVAC noise shall not exceed RC30 (N) in the classroom and RC40 (N) in corridors. The HVAC system shall be designed so the background HVAC noise shall have a neutral

spectrum devoid of tones, low frequency rumbling noises and other distracting sounds. The Contractor shall, in the Detailed Designs, include vibration isolation for all appropriate mechanical equipment to prevent transmission of discernable vibration into the classrooms.

Reverberation time shall be designed to meet Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*.

The Contractor shall design the Core Structure with sound isolation requirements throughout the building. Refer to Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)* for minimum requirements for Sound Transmission Class ("**STC**"). The minimum Noise Isolation Class ("**NIC**") for classrooms is NIC 45 and for music rooms is NIC 55. Moveable partitions shall have a minimum STC rating of 52.

In addition, the Contractor shall design the acoustics for the Core Structure so as to:

(g) minimize sound flanking or structural bridging so the maximum potential noise isolation capability is reached. Wall, floor and ceiling assemblies around classrooms will require a STC rating that is 5 points higher than the required NIC rating;

(h) isolate noise between classrooms and mechanical rooms in order to meet the HVAC background noise level requirements. A mechanical room envelope with a rating of NIC 50 will accommodate most mechanical systems but may not be adequate in all circumstances;

(i) provide structural discontinuity between classrooms and adjoining spaces to prevent impact noises from creating a distraction in Instructional Areas. Typical activities such as walking in corridors, locker doors closing, etc. shall not exceed a maximum noise level of 40 dBA inside a classroom or other learning area;

(j) take into consideration that a building envelope with STC 40 and operable windows, if applicable, which may be acceptable for a suburban location is not acceptable if adjacent to a major arterial road or airport;

(k) provide acoustic treatment to both ceiling and walls of the gymnasium, auxiliary gymnasium and Multipurpose Room if applicable, to control noise and reverberation; and

(l) provide acoustic treatment to control noise and sound transmission in music rooms identified in the Core School Designs.

4.9.1.2 Indoor Air Quality

The Contractor shall ensure that the Detailed Designs incorporate materials that are compatible with prerequisites and credits sought under the LEED™ category for indoor environmental quality. The Contractor is encouraged to seek credits that place a priority on providing excellent indoor environmental quality for students. The elimination of materials that may off-gas or contain potential environmental pollutants is preferred. If the use of materials that may off-gas or contain potential environmental pollutants is required then the use of such materials should be minimized.

The Contractor's design for the ventilation system for Instructional Areas shall be designed for an average of 25 students per classroom.

For HVAC systems employing outside air economizers, the Contractor shall ensure that the minimum outside air flow rate to every occupied space in the School Building shall meet the requirements of the most current ASHRAE Standard 62.

Regardless of the proposed heating and ventilation system, the Contractor shall provide equipment to allow full outside air economizer cycle for "free cooling" when outside air temperatures permit.

4.9.1.3 Thermal Comfort

The Contractor shall, in the Detailed Designs of the Core Structure for thermal comfort, focus on implementing strategies that enhance student attention spans, productivity and energy conservation. The Contractor's HVAC design shall respond to the loads imposed by building envelope, internal loads and ventilation loads in an integrated fashion to achieve good thermal comfort, superior indoor air quality and to avoid excessive energy use. The Contractor shall, in the Detailed Designs, meet the requirements of the current ASHRAE Standard 55. The heating and cooling systems shall be designed to maintain the following conditions in the space, based on the worst case winter design conditions for each Municipality set out in the *Alberta Building Code 2006*:

(a) heating:

- occupied hours: 22°C, with humidity at a minimum of 15% RH during heating modes; and
- unoccupied hours: 18°C during heating modes;

(b) cooling:

- Mechanical cooling for the entire Core Structure will not be provided. All air handling systems shall include an economizer section to enable 100% outdoor air free cooling when outdoor temperatures permit.

The Contractor, in the Detailed Designs for the Core Structure for thermal comfort, shall ensure that the design condition temperatures are not exceeded:

(c) the temperature fluctuation shall not exceed ± 1°C from set point during the heating mode;

(d) temperature fluctuations in air conditioned areas, where forming part of the Detailed Designs, shall not exceed ±1°C from set point;

(e) the horizontal temperature gradient between 300 mm and 3000 mm from the exterior wall, at desk height shall not exceed 2°C;

(f) the vertical temperature gradient between 200 mm and 1700 mm above the floor at any point more than 300 mm from the exterior wall shall not exceed 2°C;

(g) the air velocity shall not exceed 0.15 m/s (30 ft./min.) within the occupied space; and

(h) the supply air change rate for a given space shall not be less than those indicated in Table 2.7-1 of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*.

4.9.1.4 Visual Comfort

The Contractor shall design the Core Structure to ensure that an enjoyable visual environment is provided through the use of materials, textures, colours, and natural and artificial lighting.

The Contractor in the Detailed Designs shall incorporate the following general strategies for achieving visual comfort:

(a) integrating natural and electric lighting with appropriate design and controls;

(b) balancing quantity and quality of light by avoiding excessively high light levels and by designing appropriate illumination levels for individual rooms or room use areas;

(c) controlling or eliminating glare; and

(d) incorporating direct and indirect lighting in specific areas to allow more versatility of the space.

The Contractor shall take advantage of incorporating natural daylight as much as possible in the Detailed Designs for the Core Structure. Daylighting is the controlled admission of natural light into a space. As a minimum, in the Detailed Designs the Contractor shall incorporate the design elements that relate to daylighting set out in the Issued for

Development Permit Drawings that detail the elevation of each School.

In addition to the minimum requirements set out in the Issued for Development Permit Drawings referenced above, the Contractor shall design for diffuse, uniform daylight throughout the Instructional Areas and corridors where possible. The Contractor shall consider bringing in light from overhead through the use of light pipes or vertical clerestory glazing in the Detailed Designs. Direct beams of sunlight and glare are to be avoided by the Contractor designing the natural light source with controls and filtering mechanisms such as interior shades, louvers, or blinds and exterior overhangs and/or light shelves. For window daylight filtering mechanisms that are not accessible from the ground level, the Contractor shall provide motorized interior shades to control light transmittance and reduce glare. Refer to Section 12 25 00 (Motorized Blinds) of the Minimum Material Requirements.

4.9.2 Functional Area Design Requirements

Certain millwork requirements are identified in this Section 4.9.2. If not specifically referred to, the Contractor should incorporate the design intent contained in the Millwork Sketches, as provided in Appendix "D", into the Detailed Designs.

The Contractor must review the functional area requirements set out in this Section 4.9.2 in conjunction with the specific design variations set out in Section 4.9.3.

4.9.2.1 General Classrooms

The Contractor shall design classrooms to be flexible enough to allow various options for the arrangement of student furniture. Each student is to be provided with a locker cubby within the classroom or corridor (refer to Millwork Sketch MW-47 for the design intent) or a locker outside the classroom where indicated in the Core School Designs. Single compartment sinks with clay traps are to be incorporated where indicated on the Core School Designs, if stipulated for a particular classroom.

The Contractor shall design each classroom for electronic whiteboard hook-ups including power surge protection. The Contractor shall design every classroom with power, data and telephone cabling as indicated in the Core School Designs. The Detailed Designs shall incorporate a dedicated power circuit and/or data cable for an overhead ceiling mounted LED projector or wireless device. Refer to the Core School Designs for additional details.

Solid backing shall be incorporated into the Contractor's perimeter wall design allowing for the fastening of electronic whiteboards, whiteboards and tackboards. Electronic whiteboards, whiteboards and tackboards will be supplied and installed by the School Boards. The solid backing is to be designed to be 19 mm fir plywood a minimum of 300

mm wide centered 2000 mm above the finished floor for K-4 grades and 2100 mm above the finished floor for grades 5-12. The Contractor shall incorporate millwork into the Detailed Designs of each classroom. The Contractor's millwork design shall be upper and lower cabinets. The Contractor shall design the upper cabinets with a combination of adjustable shelving without doors and adjustable shelving with doors. The Contractor shall design the lower cabinets with lockable doors and an adjustable shelf. The Detailed Designs shall include a 400 mm wide x 2200 mm high locker unit for the teachers' materials. Refer to Core School Designs for location of teachers' lockers and Millwork Sketch MW-20 and MW-21 (detail 1) for the design intent of the millwork.

Natural light shall be incorporated into the Contractor's design for each classroom. The Detailed Designs shall include a minimum of two operable or vented exterior windows within each classroom that has exposure to an exterior wall. A floor pattern is preferred to provide some visual relief. The Contractor shall design the ceiling height to a minimum of 3050 mm clear unobstructed height, with acoustic ceiling tiles and recessed light fixtures or direct-indirect luminaires. The entry doors are to include a ½ vision lite, as well as a classroom lockset.

The Contractor shall also provide the millwork design for the Modular Classrooms. Refer to Millwork Sketch MW-22 for the design intent of the millwork.

4.9.2.2 Science Rooms

The Contractor shall design science rooms to be between 75 – 120 sq. m. in size. Refer to Core School Design floor plans for layout. The Contractor shall design science rooms with perimeter millwork to extend along three walls and with sinks evenly spaced. The Detailed Designs shall include one eye-wash station at one sink location in each science room. The Contractor's design of the perimeter millwork shall be comprised of adjustable upper combination open shelving and lockable cabinets with glass inset in the doors for easy visual identification of stored items. The lower cabinets are to be designed with lockable doors and an adjustable shelf. Refer to Millwork Sketches MW-1, MW-3, MW-9, MW-10, MW-21 (detail 2) and MW-31 for details. The Contractor shall design the counter tops in both the science rooms and adjacent prep rooms where shown on the Core School Designs with chemical and heat resistant finish. Solid core countertops are required for all science rooms and prep rooms.

The Contractor shall incorporate solid backing into the perimeter wall design allowing for the fastening of electronic whiteboards, whiteboards and tack boards. Electronic whiteboards, whiteboards and tack board will be supplied and installed by the School Boards. The solid backing is to be designed to be 19 mm fir plywood a minimum of 300 mm wide centered 2100 mm above the finished floor. The Contractor shall design each science room for electronic whiteboard hook-ups including power surge protection. The Contractor shall design each science room with current technology with power, data and

telephone cabling as indicated in the Core School Designs. The Detailed Designs shall incorporate a dedicated power circuit and/or data cable for an overhead ceiling mounted LED projector or wireless device. Refer to the Core School Designs for additional details.

The Contractor shall include in the Detailed Designs a dual access fume hood and upper and lower cabinets located in the prep room, directly adjacent to the science room as shown on the Core School Designs. The Contractor in the Detailed Designs shall allow for disposal of acid waste. The Contractor shall design the countertops with chemical and heat resistant finish. Refer to Millwork Sketches MW-1, MW-9 and MW-34 for design intent. Refer to Section 10 00 00 (Specialties) of the Minimum Material Requirements.

Natural light shall be incorporated into the Contractor's design for each science room. A minimum of two operable or vented exterior windows are required. The Contractor's Designs must include floor finishes that are durable and chemical resistant. A floor pattern is preferred to provide some visual relief. The same floor finish and floor pattern used in the science rooms shall also be extended into the prep rooms. The Contractor shall design the ceiling height to a minimum of 3050 mm clear unobstructed height, complete with acoustic ceiling tiles and recessed light fixtures or direct-indirect luminaires. The entry door is to be designed to swing in the direction of exiting. Each entry door is to incorporate a ½ vision lite, as well as a classroom lockset.

4.9.2.3 Library

The Contractor shall design the libraries to be flexible enough to allow various options for the arrangement of bookcases and computer workstations. The Contractor's layout of each library shall be designed to allow for clear site lines for ease of supervision. The Contractor, in the Detailed Designs, shall include perimeter fixed shelving and a circulation desk and work area. Refer to the Core School Designs for design layout and to Millwork Sketches MW-19, MW-35, MW-41 and MW-43 for the design intent for the library millwork.

The Detailed Designs for the library shall accommodate sufficient power and data for a computer classroom of a minimum of 25 students. All outlets are to be located to allow for some flexibility in configuring desk locations. The Detailed Designs shall incorporate a dedicated power circuit and/or data cable for an overhead ceiling mounted LED projector or wireless device and a power circuit for a book detection system. The LED projector and book detection system will be supplied and installed by the School Boards. Refer to the Core School Designs for additional details.

The Contractor shall design the circulation desk and work area to accommodate a minimum of two computers, a telephone, layout space, photocopier, book drop-off and book borrowing station. The Detailed Designs shall include one sink within the library for the cleaning of books.

The Contractor shall design the ceiling height to a minimum of 3660 mm clear unobstructed height. The library will be separated from the central gathering area by glazed partitions and a lockable entrance. Refer to Core School Designs for additional details.

The Contractor shall include in the Detailed Designs a minimum of two operable or vented exterior windows within the library.

4.9.2.4 Music Room

The Contractor shall design the music rooms to be flexible enough to allow various options for the arrangement of student furniture. Acoustics within the space and sound transmission are critical design parameters which must be incorporated in the Detailed Designs. Refer to Core School Designs floor plans for locations of music rooms.

The Contractor shall incorporate millwork and an oversized sink for cleaning instruments in the Detailed Designs for the music rooms. The Contractor shall design the millwork with adjustable upper lockable cabinets. The lower cabinets are to be designed by the Contractor with lockable doors and an adjustable shelf. The Detailed Designs shall include a 400 mm wide x 2200 mm high locker unit for the teachers' materials. Refer to the Core School Design for the location of the locker unit and Millwork Sketches MW-3 and MW-24 for the design intent of the millwork.

The Contractor shall design each music room for electronic whiteboard hook-ups including power surge protection. The Contractor shall design each music room with current technology with power, data and telephone cabling as indicated in the Core School Designs. The Contractor, in the Detailed Designs, shall incorporate a dedicated power circuit and/or data cable for an overhead ceiling mounted LED projector or wireless device. Refer to the Core School Designs for additional details.

Solid backing shall be incorporated into the Contractor's perimeter wall design for the fastening of whiteboards and tackboards. Whiteboards and tackboards will be supplied and installed by the School Boards. The solid backing shall be 19 mm fir plywood a minimum of 300 mm wide centered 2000 mm above the finished floor for K-4 grades and 2100 mm above the finished floor for grades 5-12.

Natural light shall be incorporated into the Contractor's design for each music room. A minimum of two operable or vented exterior windows are required within each music room. Wall and ceiling materials shall have a durable finish. Acoustic wall panels shall be incorporated in the Contractor's Designs. The entry door is to be designed to swing in the direction of exiting, as well as including acoustic door seals, door bottom and a classroom lockset. A larger volume of space is required in the design to enhance the

quality of sound, accordingly, the Contractor shall design the ceiling height to a minimum of 3660 mm clear unobstructed height.

The Contractor, in the Detailed Designs, shall include practice rooms directly off the music room where shown on the Core School Designs. The doors to the practice rooms shall incorporate a ½ vision lite, as well as acoustic door seals, door bottom and a passage set. Practice room ceilings shall be a minimum of 2700 mm clear unobstructed height.

4.9.2.5 Administration Area

The administration area includes a number of staff functional program areas which include offices, reception, staff washrooms, staff lounge, workroom, conference room and infirmary. Refer to Core School Designs for layout configurations.

The Contractor shall design the reception area to allow visual supervision of the main entrance and a portion of the central core corridors. The Contractor shall design the area to either open directly onto the corridor or have sufficient window area to optimize visual supervision. The Contractor shall design the ceiling height to a minimum of 3050 mm clear unobstructed height. The Contractor shall design the reception desk to accommodate barrier-free access and parent, teacher and student enquiries. Refer to the Core School Designs for location and Millwork Sketch MW-27 for design intent. The Contractor shall incorporate a minimum of three work stations within the reception area including power, data and telephone cabling as indicated in the Core School Designs, including one telephone for student use.

The Contractor shall incorporate in the Detailed Designs separate offices for the principal, vice principal and administration functions as shown on the Core School Designs. The office doors shall incorporate a ½ vision lite, as well as an office lockset. The Contractor shall incorporate a minimum of one operable window in each office. The Contractor shall incorporate one telephone and one data outlet and a minimum two receptacles per room in the Detailed Designs. The Contractor shall design the ceiling height to a minimum of 3050 mm clear unobstructed height. Carpet shall be provided for these areas in the Detailed Designs.

The Contractor shall design the staff workroom/copy centre area to provide an area for the teachers and administration staff to layout and assemble materials related to their daily duties. The Contractor's millwork design shall be comprised of upper and lower cabinets as well as an area for staff mail all as shown on the Core School Designs. Refer to Millwork Sketches MW-1, MW-2, MW-8, MW-9 and MW-18 for details. Natural light shall be incorporated into the Contractor's design for each staff workroom/copy centre area, as will a location for a photocopier, laminator, fax, printer, computer workstation, telephone and loudspeaker, including power and data as required. The Contractor shall design and provide exhaust air grilles, ducted to a central exhaust

system, over photocopier and laminator locations. Refer to the Core School Designs for additional details. The Contractor shall incorporate solid backing into the Contractor's perimeter wall design for the fastening of whiteboards and tackboards. Whiteboards and tackboards will be supplied and installed by School Boards. The solid backing is to be 19 mm fir plywood a minimum of 300 mm wide and 2100 mm above the finished floor. The Contractor shall design the ceiling height to a minimum of 3050 mm clear unobstructed height.

The Contractor shall design the staff lounge to allow for flexibility of furniture placement. The Contractor shall ensure that natural light is incorporated into the design. An open area with a kitchenette is required. The Contractor shall design the kitchenette to accommodate full size kitchen appliances as shown on the Core School Designs. All appliances will be supplied and installed by the School Boards. Where stoves are shown on the Core School Designs, the Contractor shall design and provide vented range hoods. Refer to Core School Designs for location and Millwork Sketches MW-25 and MW-46. The Contractor's Designs shall provide a double compartment sink with an extra high gooseneck. The Contractor shall provide for power, data and telephone cabling as shown on the Core School Designs. The Contractor shall incorporate 19 mm fir plywood solid backing into the Contractor's perimeter wall design for the fastening of whiteboards and tackboards. Whiteboards and tackboards will be supplied and installed by the School Boards. The solid backing shall be 19 mm fir plywood a minimum of 300 mm wide and 2100 mm above the finished floor. The Contractor shall design the ceiling height to a minimum of 3050 mm clear unobstructed height.

The Contractor shall design the infirmary to allow visual supervision from the administration area. A door with ½ vision lite or sidelite is required. The Contractor shall incorporate sufficient space in its design of the infirmary for a cot, a sink, eye wash station connected to tempered water supply and millwork for storage of first aid supplies. Refer to the Core School Designs. The Contractor shall include an area for a small fridge or freezer in its design of the infirmary. The infirmary shall be located in close proximity to a barrier-free washroom. The Contractor shall design the ceiling height to a minimum 2700 mm clear unobstructed height. One telephone and a minimum of two receptacles are required within the infirmary. Refer to the Core School Designs for additional details. The Contractor shall incorporate 19 mm fir plywood solid backing into the Contractor's perimeter wall design for the fastening for one whiteboard and one tackboard (to be supplied and installed by School Boards).

4.9.2.6 Gymnasium

The Contractor shall design the gymnasium as a multifunctional space which will be used for Educational Activities, Educational Support Activities, Adhoc School Use, Community Use and Acceptable Third Party Use. Controlling access into adjacent spaces is essential in the Contractor's design layout. The Contractor shall incorporate into the

Detailed Designs double doors from the interior as well as from the exterior to handle large volume of people and over-sized objects. The Detailed Designs of the gymnasium shall incorporate mullionless door openings. The Contractor shall design the gymnasium with a minimum clear unobstructed ceiling height of 8000 mm to allow for tournament events. The Contractor shall provide an acoustic design for the ceiling and walls. The Contractor shall design and provide acoustic treatment to both ceiling and walls of the gymnasium to control noise and reverberation. The lower 3000 mm portion of wall shall be smooth masonry walls, with no projections which may cause injury or abrasion. The Detailed Designs shall include two electric winch controlled ceiling mounted full court basketball backboards and four wall-mounted, swing-side, manually- operated cross court basketball backboards. The Detailed Designs shall incorporate a ceiling-hung, electronically operated, gymnasium curtain utilizing a combination of vinyl fabric and mesh to allow separating the gymnasium into two equal parts. The gymnasium curtain when fully folded shall be a minimum of 8000 mm above the finished floor. The gymnasium floor design shall be hardwood flooring complete with painted lines for regulation sized activities as follows; basketball full-court and two cross-court layouts, volleyball full-court and two cross-court layouts, three badminton cross-courts. The Contractor shall include a painted School logo in the centre of each gymnasium. The School Boards will provide School logo designs. The Detailed Designs shall provide recessed floor sockets for the badminton and volleyball layouts complete with flush-mounted covers. The overhead sprinkler heads shall be designed by the Contractor with wire guards. The over-head light fixtures are to be designed by the Contractor as impact resistant. The Detailed Designs shall provide a minimum of two receptacles per wall, and data cabling for a minimum of two locations per wall. Refer to the Core School Designs for additional details. The Detailed Designs shall provide power and data cabling for the following pieces of equipment supplied and installed by the School Boards: shot clock, score board, sound system, portable stage speakers and projection screen.

The Contractor shall design a storage room for gymnasium equipment with a set of double doors. Gymnasium equipment will be supplied by the School Boards. Refer to Core School Designs for location and Millwork Sketch MW-26 for the design intent of the millwork. Solid backing shall be incorporated into the Contractor's perimeter wall design. The Contractor shall provide floor sockets without covers for storage of volleyball and badminton poles.

The Detailed Designs shall include two change / locker rooms, one female and one male, with direct access from the gymnasium. The Contractor shall include toilets, sinks and 6 tier lockers in each change / locker room where shown on the Core School Designs. Benches shall be designed by the Contractor in accordance with Millwork Sketch MW-15. The change / locker room walls shall be masonry and the ceiling and floor finish designs shall be durable and scrubbable.

The Contractor shall design a teacher gymnasium office complete with sink and shower

where located in the Core School Designs. The wall, ceiling and floor finishes shall be durable and scrubbable. The Contractor shall provide one telephone and one data outlet and a minimum of two receptacles. The Contractor shall design the ceiling height to a minimum of 2700 mm high.

The Detailed Designs shall provide for drama-type stage lighting in the gymnasium ceiling space. The Detailed Designs will consist of two ceiling mounted pipe rails each having three outlets, and perimeter outlets for portable spotlights. All outlets are to be tied to a hardwired dimmer panel located in the gymnasium. Lighting fixtures will be the responsibility of the School Boards.

The Detailed Designs shall provide for two wall-mounted speaker boxes for portable speakers with conduit and cable to amplifier locations as shown in the Core School Designs. Portable speakers will be supplied by the School Boards.

4.9.2.7 Art Room

The Contractor shall design the art room with perimeter millwork and an open central area that is flexible enough to allow various options of arrangement of student furniture. Acoustics within the space and sound transmission are critical design parameters which must be incorporated in the Detailed Designs. Refer to Core School Design floor plans for layout.

The Contractor shall incorporate a kiln into the Detailed Designs where shown on the Core School Designs. The kiln will be supplied and installed by the School Boards. The designs for all hook-ups, power and exhaust are the Contractor's responsibility. Refer to Section 10 00 00 (Specialties) of the Minimum Material Requirements. The Detailed Designs shall include an oversized sink complete with an interceptor/sediment trap located in close proximity to the kiln. Refer to Millwork Sketches MW-6 and MW-42. The Detailed Designs shall include additional sinks throughout the room as shown in the Core School Designs. Additional exhaust requirements are to be incorporated into the Detailed Designs to eliminate odours from various art materials being stored and used. The Contractor's perimeter millwork shall be designed with adjustable upper lockable cabinets with glass inset in the doors for easy visual identification of stored items. The Contractor shall design the lower cabinets with lockable doors and an adjustable shelf. The Detailed Designs shall include sufficient storage for art supplies as well as art projects. Refer to Millwork Sketches MW-1, MW-8, MW-32, MW-33 and MW-24 (detail 2).

The Contractor shall design the art room for electronic whiteboard hook-ups including power surge protection. The Contractor shall provide power, data and telephone cabling as indicated in the Core School Designs. The Contractor shall incorporate a dedicated power circuit and/or data cable for an overhead ceiling mounted LED projector or

wireless device into the Detailed Designs. Refer to the Core School Designs for additional details.

Solid backing shall be incorporated into the Contractor's perimeter wall design for the fastening of whiteboards and tackboards. Whiteboards and tackboards will be supplied and installed by the School Boards. The solid backing shall be 19 mm fir plywood a minimum of 300 mm wide centered 2000 mm above the finished floor for K-4 grades and 2100 mm above the finished floor for grades 5-12.

The Contractor shall ensure that natural light is incorporated into the Detailed Designs for the art room. A minimum of two operable or vented exterior windows are required. Floor finishes must be durable. A floor pattern is preferred to provide some visual relief. The Contractor shall design the ceiling height to a minimum 3050 mm clear and unobstructed height, including acoustic ceiling tiles and recessed light fixtures or direct-indirect luminaires. The Contractor shall design the entry door to swing in the direction of exiting. The Contractor shall design each entry door to incorporate a ½ vision lite, as well as a classroom lockset.

4.9.2.8 Early Childhood Services

The Contractor shall design the early childhood services classroom with lower heights in mind for the younger children. The space is to be designed by the Contractor with flexibility to allow various options of arrangement of student furniture. Each student is to be provided with a locker cubby within the early childhood services classroom. A single compartment sink with bubbler is to be incorporated in all early childhood services classroom designs. Refer to the Core School Designs and Millwork Sketch MW-47.

The Contractor shall design the early childhood services classroom for electronic whiteboard hook-ups including power surge protection. The Contractor shall design the early childhood services classroom with power, data and telephone cabling where indicated in the Core School Designs. The Contractor shall incorporate a dedicated power circuit and/or data cable for an overhead ceiling mounted LED projector or wireless device into the Detailed Designs. Refer to the Core School Designs for additional details.

Solid backing shall be incorporated into the Contractor's perimeter wall design for the fastening of electronic whiteboards, whiteboards and tackboards. Electronic whiteboards, whiteboards and tackboards will be supplied and installed by the School Boards. The solid backing shall be 19 mm fir plywood a minimum of 300 mm wide located 1800 mm above the finished floor. The Contractor shall incorporate millwork into the Detailed Designs of the early childhood services classroom with upper and lower cabinets provided. The upper cabinets shall be open adjustable shelving and the lower cabinets to be designed with lockable doors and an adjustable shelf. The Contractor shall include a 400 mm wide x 2200 mm high locker unit for the teachers' materials in the Detailed

Designs of each early childhood services classroom. Refer to Core School Designs and Millwork Sketch MW-23.

The Contractor shall ensure that natural light is incorporated into the designs of the early childhood services classroom. A minimum of two operable or vented exterior windows are required within each early childhood services classroom. A floor pattern is preferred to provide some visual relief. The Contractor shall design the ceiling height to a minimum of 3050 mm clear unobstructed height, with acoustic ceiling tiles and recessed light fixtures or direct-indirect luminaires. The entry door shall be designed by the Contractor to swing in the direction of exiting and will include a ½ vision lite and a classroom lockset.

Separate washrooms are required for early childhood services classrooms. Refer to Core School Designs. The toilet and sink are to be of a child design to ensure that they are more user friendly for the younger students.

4.9.2.9 Auxiliary Classrooms

These classrooms shall be designed with the same requirements as general classrooms in Section 4.9.2.1, except as noted below.

4.9.2.9.1 CTS (Career Technology Studies) Classroom

The Contractor shall include a dust collector that is suitably sized for the intended use in the Detailed Designs of each CTS classroom where shown on the Core School Designs. The Contractor shall supply and install the dust collector suitable for outdoor installation. The Contractor shall install the dust collector outdoors adjacent to the CTS classroom. The dust collector shall be either a 100% exhaust type with a sufficient supply of make-up air being provided or a recirculation type that includes a spark arrestor system. The exterior enclosure must be conducive to the overall aesthetics of the Core Structure exterior design. The Contractor's Designs shall provide a minimum of one oversized sink including an interceptor/sediment trap and a sink mounted eyewash station. The Contractor shall incorporate solid backing into the perimeter wall design allowing for the fastening of electronic whiteboards, whiteboards and tack boards. Electronic whiteboards, whiteboards and tack boards will be supplied and installed by the School Boards. The solid backing is to be designed to be 19 mm fir plywood a minimum of 300 mm wide centered 2100 mm above the finished floor. The Contractor's Designs shall include dedicated circuits with emergency shutoff stations for the hook-ups of power tools and machinery. Typical equipment used in a CTS classroom, and that will be supplied and installed by the School Boards, includes the following: table saw, band saw, scroll saw, drill press, belt sander, spray booth and miscellaneous shop tools. Millwork in this area is to be designed by the Contractor with adjustable upper lockable cabinets. The lower cabinets are to be designed by the Contractor with lockable doors and an adjustable shelf.

The Contractor shall design the walls to minimize sound transmission throughout the room. The Contractor shall design the ceiling height to a minimum of 3660 mm clear unobstructed height, with a preferred height of 4500 mm. Sealed concrete flooring is the preferred material. The Detailed Designs shall provide a storage room for supplies and student projects. Refer to the Core School Designs for design layout and Millwork Sketches MW-22 (detail 2), MW-44, MW-45 for design intent.

4.9.2.9.2 Food and Fashion

The Contractor shall provide sufficient workstations to accommodate stoves, fridges, sinks, dishwashers, washers and dryers in the Detailed Designs of the food and fashion classroom. Stoves, fridges, sinks, dishwashers, washers and dryers will be supplied and installed by the School Boards. Refer to Core School Designs. Appliances will be supplied by the School Boards. The Detailed Designs for all hook-up connections is the Contractor's responsibility. Refer to drawing layouts in the Core School Designs to indicate the millwork layouts. For the stoves and dryers, the Contractor's Designs shall provide for vented range hoods that discharge outdoors. Typical components of the millwork that are to be incorporated in the Detailed Designs are set out in Millwork Sketches MW-7, MW-46, MW-49 and MW-50. The Contractor shall incorporate solid backing into the perimeter wall design allowing for the fastening of electronic whiteboards, whiteboards and tack boards. Electronic whiteboards, whiteboards and tack boards will be supplied and installed by the School Boards. The solid backing is to be designed to be 19 mm fir plywood a minimum of 300 mm wide centered 2100 mm above the finished floor.

4.9.2.10 Washrooms

The Contractor shall design all washrooms to be vandal resistant and to meet barrier-free guidelines. The Contractor shall provide standard stock sized mirrors that can be quickly replaced if damaged. The Contractor shall include steel supports for the sink vanities in the Detailed Designs of all washrooms. The Contractor shall design the wall and floor finishes with moisture resistant materials. Multi-student washroom walls shall be constructed using masonry. In the Detailed Designs the multi-student washrooms shall have an unrestricted clear ceiling height of 3050 mm. Refer to the Core School Designs for design layout and Millwork Sketch MW-5 for design intent. The Contractor shall design the floor finish to be slip resistant and sloped to the floor drains. In the Detailed Designs, the Contractor shall include a minimum of one floor drain per four washroom fixtures, located in close proximity to the sinks and toilets. Washrooms for early childhood services classrooms shall comply with Section 4.9.2.8.

4.9.2.11 Servery

The Contractor shall design the servery area to allow for the sale and distribution of

snacks and refreshments. The Contractor shall design the servery to enable use by the public and students. A rolling shutter is required to lock the area off when not in use. Refer to Section 08 35 00 (Folding Doors and Grilles) in Minimum Material Requirements. In the Detailed Designs, the Contractor shall include fixed millwork, sinks and provision to accommodate appliances as shown on the Core School Designs. Appliances will be supplied and installed by the School Boards. Where stoves are shown on the Core School Designs, the Contractor shall provide vented range hoods that discharge outdoors. The Contractor shall design the ceiling height to a minimum of 2700 mm clear unobstructed height.

4.9.2.12 Storage Rooms/Janitor Rooms

In the Detailed Designs for storage rooms and janitor rooms, the Contractor shall include shelving and mop sinks, including 1200 mm high ceramic surround for a minimum of two sides of the mopsinks, as shown on the Core School Designs. Refer to Millwork Sketch MW-17 for shelving design intent.

The Contractor shall provide service connections for washers, dryers and auto floor scrubbers (to be supplied and installed by the School Boards) with dedicated 110 outlets as shown on Core School Designs.

The Contractor shall design the ceiling height to a minimum of 2700 mm clear unobstructed height.

4.9.2.13 Multipurpose Room

The Contractor shall design the Multipurpose Room as a multifunctional space which will be used for Educational Activities, Educational Support Activities, Adhoc School Use, Community Use and Acceptable Third Party Use. Controlling access into adjacent spaces is essential in the Contractor's design layout. The Contractor shall incorporate into the Detailed Designs double doors from the interior as well as from the exterior to handle large volumes of people and over-sized objects. The Detailed Designs of the Multipurpose Room shall incorporate mullionless door openings from the interior entrances and removable mullion for the exterior exits. The Contractor shall design and provide acoustic treatment to both ceiling and walls of the Multipurpose Room to control noise and reverberation to the same performance standards as the gymnasium. The lower 3000 mm portion of wall shall be smooth, with no projections which may cause injury or abrasion.

4.9.2.14 Student Corridors and Gathering Spaces

In the Detailed Designs the student corridors and student gathering places shall have an unrestricted clear ceiling height of 3050 mm.

4.9.3 Further Design Variations

The following additional design variations are required for the Schools but not detailed in the Core School Designs. The following additional design variations amend the functional area requirements set out in Section 4.9.2 to reflect each School Board's program requirements:

4.9.3.1 BGRD Variations

The Contractor shall provide a water-bottle filler attachment at each drinking fountain. The Contractor shall provide polished concrete flooring in all corridors including the central gathering space labeled as "Flexible Space", and all classrooms. The music room flooring shall be durable hard surface flooring in lieu of carpet. The Contractor shall revise under-counter clearance to 1200 mm for carts at MW-26 in gym storage room. The Contractor in the Contractor's Designs and the Detailed Designs for the administration area shall construct the north, east and west walls around the storage area to 2300 mm high, and also apply this to adjacent walls illustrated with the same pattern in order to convey openness and continuity throughout this area. The Contractor shall increase the number of outlets at each science base cabinet (MW-31) from four to eight or ensure that plug-in points are circuited separately for uninterrupted and simultaneous use. For all classroom millwork MW-21, MW-22, MW-23 and MW-24 the Contractor shall delete the drawers at the top of the base cabinet modules. Also replace one 800 mm base module with an MW-48 unit. The Contractor shall, in the Contractor's Designs and the Detailed Designs, include additional revenue-quality metering devices to measure electricity, natural gas and water usage for each occupant (STAR, BGRD and Town of Beaumont) and provide data on an ongoing basis throughout the Term to enable the determination of each occupant's monthly electricity, natural gas and water consumption. The Contractor shall provide a fire alarm system complete with main control panel in each of the Beaumont Catholic K-9, Beaumont Public K-9 and community centre. The Contractor shall utilize "networked" fire alarm control panels or have each facility provided with a separate "loop" for connection of devices within respective occupancies. When providing separate "loop" connection systems the Contractor shall provide remote annunciators. The Contractor's Designs and the Detailed Designs shall include separate security systems for each of the following areas: the STAR area, the BGRD area, the Town of Beaumont area.

As the community centre and both Schools are housed in the same building and are fed from one service and one utility meter, the Contractor shall "sub-meter", with revenue-quality metering devices, each School Board's lighting panel load, receptacle panel load and mechanical equipment load and be able, using a meter "totalizer" means, to determine each School Board's electricity consumption.

The Town of Beaumont's Development Permit requirements may require the Contractor to adhere to the Town of Beaumont's *French Village Design Guidelines*.

4.9.3.2 CESD Variations

The Contractor shall provide a water-bottle filler attachment at each drinking fountain. The Contractor shall provide a shower in the physical education office and an eyewash station in the custodial office. In each of the science rooms, in lieu of the eyewash station at the sink the Contractor shall provide emergency showers. The Contractor's Designs and the Detailed Designs of the central core corridor walls shall include smooth durable masonry surfaces with bullnose corners. Walls covered by lockers shall be masonry or drywall construction. The Contractor shall provide polished concrete flooring in all corridors, classrooms and central gathering space labeled as "Flexible Space" in the Contractor's Designs and the Detailed Designs. The music room flooring shall be durable hard surface flooring in lieu of carpet. The Contractor shall revise under-counter clearance to 1200 mm for carts at MW-26 in gym storage room. The Contractor shall provide a student lunch prep centre as shown on Millwork Sketch PH-1 in both the south and east pod student gathering spaces. The Contractor shall provide plastic laminated countertops under the rolling shutter openings in the servery.

The Contractor shall include all necessary demolition and replacement/renovation/repair of the existing Penhold Regional Multiplex building envelope to accommodate the connection of the new School. The Contractor may re-use the existing removable pre-cast panels currently used along the east side of Penhold Regional Multiplex gymnasium. From the new fire alarm control panel the Contractor shall provide a conduit interconnection to the existing fire alarm control panel in the Penhold Regional Multiplex to allow for a "trouble" or supervisory signal to be annunciated at each fire alarm control panel. The Contractor shall be responsible for snow removal on the Municipal sidewalks at the Penhold School Site. The Contractor shall be responsible for snow removal of the School Site sidewalks to the same standards as the Municipal sidewalks, as outlined in Section 5.12.4.1.2.

The Contractor shall make all necessary arrangements with the Town of Penhold regarding the demolition and replacement/renovation/repair of the existing Penhold Regional Multiplex building envelope to accommodate the connection of the new School. The Contractor will have to obtain the permission of the Town of Penhold to access the existing Penhold Regional Multiplex building envelope. The Contractor shall provide a temporary enclosure between the Penhold Regional Multiplex and the School Site to enable the ongoing use of the Penhold Regional Multiplex during the construction of the new CESD 7-12 School, and this will include the construction of a weatherproof enclosure. The Detailed Designs shall allow for the removal and temporary reinstallation of the existing basketball cross court backstops on the temporary gymnasium wall and the relocation of the score clock to the south wall of the existing gymnasium. The Detailed

Designs shall include the supply and installation of two ceiling mounted electric winch type basketball stops for the existing cross courts.

The Contractor shall design the operable partition wall between the Penhold Regional Multiplex and the new CESD 7-12 School's gymnasium to be a 7000 mm high electrically operated wall.

The exit corridor between the north wall of the new gymnasium and the south wall of the existing Penhold Regional Multiplex shall be open to the exterior and shall not be enclosed except at the east end where a chain link fence at least 3000 mm in height with an exit gate shall be installed to restrict access into this exit corridor from the exterior.

4.9.3.3 GRD Variations

The Contractor shall provide two flag poles in locations shown on the Site Layout. The Contractor shall provide a base for a pylon sign in location shown on the Site Layout.

The following Millwork Sketches included in Schedule 18 Appendix "D" are applicable to GRD K-6 and are referenced in the Appendix "B" Core School Design drawing for GRD K-6:

GRD-1 Display Cabinet;
GRD-2 Amplifier Upper Cabinet;
GRD-3 Teacher Locker; and
RVS-5 Servery.

The Contractor shall provide deck mounted bubblers at all sinks in regular and Modular Classrooms**.**

The Contractor shall provide bottle fillers on the two drinking fountains located just near the gym.

The Contractor shall provide double tier lockers 305 mm wide x 381 mm deep x 1830 mm high.

Contractor shall provide blocking at 2500 mm above finished floor in corridors where indicated for School Board supplied picture rail.

The Contractor shall provide blocking within west gymnasium wall to allow the installation of a School Board supplied motorized pull down screen. Coordinate size and mounting height with School Board.

In the recycling/bike storage room the Contractor shall provide a minimum of two wall mounted "C" shaped 42 dia. 'black hot-dip' galvanized steel pipe bike brackets, with 150

mm square mounting brackets (provide backing at necessary locations). The Contractor shall coordinate with the School Board with respect to the location of the bike brackets. The bottom bracket centerline shall be fastened to the wall at 450 mm high, with the top bracket at 850 mm high. The "C" shall extend 250 mm out from wall face.

The Contractor shall provide slip resistant resilient flooring in boot rooms (a total of two) adjacent to north and south student entries. The Contractor shall provide carpet for the administration areas, learning commons I, learning commons II and media classroom. The Contractor shall provide carpet for the storage rooms off of the general administration and learning commons I to match the adjacent flooring. The Contractor shall provide resilient flooring in the servery, the staff lounge kitchenette area and the work room.

In the Detailed Designs the counseling and wrap-around services area shall have an unrestricted clear ceiling height of a minimum of 3050 mm.

The Contractor shall provide DX cooling units in each Modular Classroom to ensure that each Modular Classroom maintains a space temperature of no greater than 24°C.

4.9.3.4 Greater North Central Francophone Variations

The Contractor shall provide a water-bottle filler attachment at each drinking fountain. The Contractor's Designs and the Detailed Designs of the central core corridor walls shall include smooth durable masonry surfaces with bullnose corners. Walls covered by lockers shall be masonry or drywall construction. The Contractor shall provide polished concrete flooring in all corridors including the central gathering space labeled as "Flexible Space" in the Contractor's Designs and the Detailed Designs, and all classrooms. The music room flooring shall be durable hard surface flooring in lieu of carpet. The Contractor shall revise under-counter clearance to 1200 mm for carts at MW-26 in gym storage room. The Contractor shall provide 2700 mm high sliding glass doors between library and flex/corridor space - these doors stack into a pocket and provide a clear opening of 6 m in width. The Contractor shall provide millwork and sliding white boards as shown on Millwork Sketch RDF-1 in four high school classrooms as shown on the Core School Design drawing. The Contractor shall provide millwork and sliding white boards as shown on Millwork Sketch RDF-1 plus an MW-32 millwork unit in three elementary classrooms as shown on the Core School Design drawing. The Contractor shall provide bubblers for sinks in all classrooms and Modular Classrooms. The Contractor shall provide bilingual exit signs throughout the School.

The Contractor shall provide a 2500 mm wide sidewalk at the bus drop-off area and the student drop-off area to meet the City of Red Deer's *Roadway Design Standards*. The Contractor shall include a 120/208V, 3PH, 4W panel in a weather-proof enclosure with

20-1P-15A breakers for future car plug-ins as shown on the Development Permit drawings.

4.9.3.5 Intentionally Deleted

4.9.3.6 Greater Southern Catholic Variations

The Contractor shall provide two flag poles in locations shown on Site Layout.

The Contractor shall provide bottle fillers on the drinking fountains.

The Contractor shall provide for battleship linoleum flooring finish in the stage ancillary / music room that is 2.5 mm in thickness, solid black tone, with a 2-layer water based surface protective finish installed over a subfloor consisting of 50 mm adhesive cloth seaming tape over screws, 19 mm good one-side plywood, 16 mm "Exterior Grade Plywood Square Edge", and 19 mm resilient EPDM rubber shock-pads on top of raised slab.

The Town of Cochrane's Development Permit requirements may require the Contractor to adhere to the Town of Cochrane's *Western Heritage Design Guidelines*.

The following Millwork Sketches included in Schedule 18 Appendix "D" are applicable to Greater Southern Catholic K-9 and are referenced in the Appendix "B" Core School Design drawing for Greater Southern Catholic K-9:

GSC-1 Laptop Storage Cabinet;
GSC-2 Display Cabinet;
RVS-1 Science Lab Workstation; and
RVS-2 CTS Kitchen Station.

In the Contractor's Designs and the Detailed Designs, the Contractor shall not use a carpet floor finish in any of the spaces.

The Contractor shall provide a resilient floor finish in the CTS classroom, the project area, CTS kitchen / servery, filing room, learning storage material room, work room within the learning commons area and ECS storage room.

In the Detailed Designs the break-out rooms, counseling and wrap-around services shall have an unrestricted clear ceiling height of a minimum of 3050 mm.

In the Detailed Designs, the Contractor shall provide blocking at 2500 mm above finish floor in corridors for the School Board supplied picture rail.

The Contractor shall provide single tier and double tier lockers 305 mm wide x 381 mm deep x by 1820 mm high and single tier lockers 305 mm wide x 381 mm deep x by 91 5 mm high.

In the male and female locker room the Contractor shall provide double tier lockers 305 mm wide x 381 mm deep x 1820 mm high.

The Contractor shall, in the Contractor's Designs and the Detailed Designs of the ancillary/music room, provide a raised floor elevation 864 mm above the main floor slab elevation. The Contractor shall provide:

(a) an enclosed universal lift between the gathering area and the ancillary/music room; and
(b) two sets (four total) of ceiling mounted 42 mm OD pipe rails, structurally designed to support drama-type stage lighting and props.

The Contractor shall, in the Contractor's Designs and the Detailed Designs of the science lab, provide natural gas line with single shut off valve mounted in a cabinet near the entrance. The cabinet shall also have an "Emergency Shutoff" pushbutton. The gas line shall also feed to dual gas turrets at each sink and the fume hood.

The Contractor shall, in the Contractor's Designs and the Detailed Designs of the CTS kitchen area, provide a range hood over each electric range and connect each hood to a common exhaust duct tying into a single exhaust fan.

The Contractor shall provide an outside connection for natural gas barbeque on north side of the School by the outside storage room.

In the storage room/bike storage the Contractor shall provide two wall mounted "C" shaped 42 dia. 'black hot-dip' galvanized steel pipe bike brackets, with 150 mm square mounting brackets (provide backing at necessary locations). The Contractor shall coordinate with the School Board with respect to the location of the bike brackets. The bottom bracket centerline shall be fastened to the wall at 450 mm high, with the top bracket at 850 mm high. The "C" shall extend 250 mm out from wall face.

The Contractor shall provide an IP clock in the staff lounge and a 15" IP clock in the gymnasium. The public announcement speaker system shall be IP style and CAT6 cable from the IT closet to each speaker.

4.9.3.7 MHSD Variations

The Contractor shall provide a 2.4 m high security chain link fencing with double access gates (3660 mm) and man gates (1200 mm) as shown on the Site Layout. The Contractor

shall provide a lockable man gate complete with electric strike or magnetic guard tied into the School's fire alarm system on south side of hard surface play area. The Contractor shall provide two flag poles in locations shown on Site Layout.

The Contractor shall supply and install two automated barrier arm gate systems on Sprague Way SE as shown on Schedule 18 (Technical Requirements) Appendix C – Site Layout Drawing for Medicine Hat, MHSD K-9. The barrier arm gate system must have a 14 ft. aluminum arm with a push button controller, a remote control system for at least 8 controllers, extrasensory or contact safety edge, and an internal access controller. The Contractor shall provide a 3#12+GND in 27 mm underground schedule 40 PVC conduit to one gate barrier at the northeast corner and one at the far southeast corner of the School Site with a wiring size of 3#10+ in 27 mm underground schedule 40 PVC conduit. The power requirements of the motors are 208 Volt, 1 HP, single phase.

The Contractor shall provide a "right in/right out" access point from Strachan Road S.E., to the existing recreation centre parking lot and the Municipal Lands, as shown on Schedule 18 (Technical Requirements) Appendix C – Site Layout Drawing for Medicine Hat, MHSD K-9. The Contractor shall construct the new entrance and bus barrier to the standards of the Municipality.

The following Millwork Sketches are applicable to MHSD K-9 and are referenced in Appendix "B" Core School Design for MHSD K-9:

RVS-2 – CTS Food;
MHSD-1 – Teacher's Station Millwork;
MHSD-2 – N-Computing Station Millwork;
MHSD-3 – Standup Counter;
MHSD-4 – LC Bench Seating; and
MHSD-5 – LC Story Time Seating.

Throughout all instructional areas the Contractor shall provide 300 mm plywood backing centered at 2100 mm above finished floor. The Contractor shall provide 19 mm fir plywood backing at bracket locations of millwork MHSD-1 and MHSD-2. The Contractor shall provide blocking at 1800 mm above finished floor in corridors where indicated for the School Board supplied picture rail.

The Contractor shall provide deck mounted bubblers at all sinks in regular, and Modular Classrooms.

The Contractor shall provide lockers at second floor level to be 305 mm wide x 381 mm deep x 1830 mm high single tier lockers and the high shelf in locker shall be mounted minimum 350 mm down from top of door opening.

The Contractor shall supply two display cabinets at outboard side of gymnasium doors to be similar to MW-16 but with angled faces to protect children from door swing.

The Contractor shall provide lockable horizontally sliding glass panes with a minimum clear opening of 800 mm wide x 600 mm high within the interior screens located between the corridor and the general admin office and between the work room and the learning commons (library). The screen sill height shall be 100 mm above desk surface.

The conference room wall that links to the staff lounge is to have glazed windows above the MW-18 millwork, minimum 3000 mm in length with equally divided glazing panels to allow natural light from the staff lounge into this space.

The Contractor shall provide a resilient floor finish in the CTS project area, foods, servery, pantry, learning commons storage, studio and work room, administration storage and ECS storage room. The Contractor shall provide carpet in the administration offices, counseling and the dark room located in the learning commons.

In the music room the Contractor shall provide acoustic rubber flooring tiles 3 mm thick.

In the Detailed Designs the break-out rooms, counseling and wrap-around services area shall have an unrestricted clear ceiling height of a minimum of 3050 mm.

The administration area, including the offices, is to have hard surface flooring in lieu of carpet.

For the learning commons (library) carpet at the story-time area, the Contractor shall allow for the use of up to five colours. For the remaining carpeted area, the Contractor allow for up to three colours that tie in with the story-time scheme. For the linoleum/VCT or other floor finish, the Contractor shall allow for the use of up to three colours.

The Contractor shall design the dark room to be flexible enough to accommodate a variety of audio-visual studies including voice recording, filming and editing. The dark room will have at least one wall painted chroma green (to use as a green screen wall). Acoustics within this space and sound isolation between the dark room and the adjacent spaces are critical design parameters. Walls for the dark room shall be designed to an STC rating of 55 in the Contractor's Designs and the Detailed Designs. The Contractor shall provide a lockset for each classroom.

The Contractor shall provide a book drop slot from the gathering space into the studio room within the learning commons. The Contractor shall locate the book drop slot so that it is accessible at all times (whether the moveable partition Mp-3 is in the open or closed

position). The Contractor shall design the book slot for barrier free operation and to accommodate varying book sizes.

MHSD-5 millwork shall be designed to allow for an organic curved flow. Seating height shall allow for a range of ages from 5-10 to sit comfortably. Each seating step riser shall be a minimum 150 mm and maximum of 250 mm high. A minimum 450 mm tread depth shall be provided to allow kids to sit and place their feet on the next step. The Contractor shall provide a minimum 6 mm thick urethane foam carpet underlay for the seating surface and the Contractor shall allow for the use of up to five colours.

MHSD-4 millwork shall be designed to accommodate children age 10+, with a seating edge a minimum of 400 mm above finish floor.

In the CTS project area the Contractor shall provide mounting supports from the joists to allow for the mounting of a suspended motorized screen as indicated on the Core School Design.

For wood shop equipment layout the Contractor shall refer to Appendix "B" Core School Design. The Contractor shall provide an in-slab connection for table saw complete with grated cover for inspection and maintenance. The Contractor shall provide parquet flooring. The Contractor shall provide backing above the worktable along the eastern wall for pegboard installation. Millwork MW-17 in wood shop shall be 861 mm deep.

The Contractor shall provide garburators on two of the sinks in the foods area.

The Contractor shall core fill the block wall as required and provide backing on south and east gymnasium walls to accommodate the School Board supplied bouldering wall (south wall) and TRX training system (east wall) in locations shown on the Core School Design.

The Contractor shall provide blocking within wall above moveable partition (Mp-1) to allow the installation of a School Board supplied motorized pull down screen and shall coordinate the size and mounting height with the School Board.

In each male and female change room the Contractor shall provide 21 lockers 305 mm wide x 381 mm deep x 1830 mm high double tier (42 compartments total).

In the activity room the Contractor shall provide cushioned rubber flooring with painted alphabet lettering and numbering from A thru Z and 1 thru 9 to allow for up to five colours of paint. The Contractor shall randomly distribute the letters and numbers throughout the activity space. The height of each letter and number should be a minimum of 375 mm high. The Contractor shall provide two ceiling mounted pipe rails, structurally designed to support drama-type stage lighting and props and shall coordinate

the location with the School Board. The Contractor shall provide locks on all MW-33 storage units in this room.

In the servery, the Contractor shall provide rough-ins for School Board supplied coffee machine and fridge with ice maker.

In the music room the Contractor shall provide the following MW-33 SIM units:

- 3 Units at 650 mm deep x 800 mm wide;
- 3 Units at 850 mm deep x 800 mm wide; and
- 4 Units at 1150 mm deep x 800 mm wide

All units shall be lockable.

In the recycling/bike storage room the Contractor shall provide two wall mounted 'C' shaped 42 dia. 'black hot-dip' galvanized steel pipe bike brackets with 150 mm square mounting brackets (provide backing at necessary locations). The Contractor shall coordinate with the School Board with respect to the location of the bike brackets. The bottom bracket centerline shall be fastened to the wall at 450 mm high, with the top bracket at 850 mm high. The 'C' shall extend 250 mm out from wall face.

In the science prep area the Contractor shall provide a natural gas line to a single shutoff valve with a pushbutton labeled "Emergency Shutoff" located in a cabinet at the entrance to the room and run a supple line to a double natural gas turret located on the counter near the fume hood.

The Contractor shall provide a tempered glass glazed balustrade that extends the length of the gym viewing and viewing corridor.

The Contractor shall provide a mechanical cooling system to be installed within the Core Structure and the gymnasium air handling units. The mechanical cooling system shall be sized to maintain a space temperature of no greater than 24°C using the climatic data as set out in the *Alberta Building Code 2006*.

With the addition of mechanical cooling the airflow rates for the gymnasium system shall be increased to provide optimum discharge set points within the space.

With the addition of mechanical cooling to the Core Structure, the airflow rates shall be increased to maintain reasonable discharge air temperatures. The Contractor may use variable air volume (VAV) boxes to provide individual room control. Minimum outside air rates must be maintained. If the Contractor uses variable air volume (VAV) boxes, then either a variable speed drive will have to be installed on the main air handling unit supply and return fans or a system of bypass ductwork will have to be installed to ensure the minimum ventilation rates are maintained.

The Contractor shall provide DX cooling units in each Modular Classroom to ensure that each Modular Classroom maintains a space temperature of no greater than 24°C.

The Contractor shall design the opening on the second floor overlooking the main entrance onto the main floor so that in the future the opening can be in-filled as additional floor space. The design for the future in-fill shall accommodate live loading of 4.8 kPa.

4.9.3.8 Red Deer Catholic Variations

For all classrooms and Modular Classrooms, except the music room and ECS classrooms, the Contractor shall refer to Millwork Sketches RDC-1, RDC-2 and RDC-3. The Contractor shall provide polished concrete flooring in all corridors, vestibules, music room, classrooms and the central gathering space labeled as "Flexible Space". Gymnasium flooring shall be a Pulastic flooring system (refer to Section 09 67 13 of Schedule 18 Appendix "G" Minimum Material Requirements). Student lockers shall be single tier type lockers in the hallways where shown on the Core School Design drawing.

The "emergency lock down" door security feature shall be activated by the telephone system and not a manual station. In the Contractor's Designs and the Detailed Designs, the Contractor shall provide eight six tier lockers, one in each male/female change room and six in the staff area.

4.9.3.9 Red Deer Public Variations

The Contractor shall provide additional lettering for exterior signage for the Red Deer Public Library, refer to elevation drawings for location. All classrooms and Modular Classroom millwork, (MW-21, MW-22 and MW-23) units shall have doors on the upper cabinets. All lower cabinets to be open shelving without doors. Sink unit to remain with doors. The Contractor shall provide polished concrete flooring in all corridors, vestibules and in central gathering spaces labeled as "Flexible Space" on the Core School Design drawings. The Contractor shall provide bubblers for sinks in all classrooms and Modular Classrooms. The Contractor shall provide a weatherproof book drop off into the public library space accessible from outside. In the Contractor's Designs and the Detailed Design, the Contractor shall provide a total of nine six-tier lockers, one in each male/female change room and seven in the staff area.

4.9.3.10 RVS Variations

All RVS Schools

For clarity, the specification for "permeable concrete sidewalks" in Appendix "M" is not the specification required of the Contractor. Rather the Contractor shall provide concrete sidewalks to the City of Airdrie's standards.

The Contractor shall provide two flag poles in locations shown on Site Layout.

The Contractor shall provide locks on all millwork doors and drawers.

The Contractor shall provide rough-ins for the School Board supplied coffee machine in the staff lounge.

In the Contractor's Designs and the Detailed Designs for flooring, the Contractor shall not use carpet as a floor finish in any of the RVS schools.

The Contractor shall provide bottle fillers on drinking fountains, classrooms sinks and on one locker room sink in each male and female locker room. The Contractor shall provide non-refrigerated type drinking fountains.

For wood shop equipment layouts, the Contractor shall refer to Appendix "B", Core School Design drawings. The Contractor shall provide an in-slab connection for the table saw complete with grated cover for inspection and maintenance. The Contractor shall provide parquet flooring. The Contractor shall provide laminated wood countertops for all worktop counters.

In the storage room / bike storage the Contractor shall provide two wall mounted 'C' shaped 42 dia. brackets extended 250 mm out from wall face. The Contractor shall use 'black hot-dip' galvanized steel pipe bike brackets, with 150 mm square mounting brackets (provide backing at necessary locations). The Contractor shall coordinate with the School Board with respect to the location of the bike brackets. The bottom bracket centerline fastened to the wall at 450 mm high, with the top bracket at 850 mm high.

The Contractor shall, in the Contractor's Designs and the Detailed Designs of the ancillary/drama room, provide a 6 mm masonite floor painted black on two layers of 19 mm plywood on sleepers. The Contractor shall design a ramp at the entry door for accessibility and the ramp shall be separated from rest of room and shall feature a 1200 mm pony wall and complete with handrail. The Contractor shall provide two ceiling mounted 42 mm OD pipe rails that are structurally designed to support drama-type stage lighting and props.

Airdrie 6-8

There is an existing abandoned oil well on site as shown on the Site Layout.

Well head Coordinates in 3TM
-Northing 5683732.651
-Easting (-)2917.284

-Elevation 1085.938

The Energy Resources Conservation Board requires a 35 m x 20 m setback access area for a capped oil well with the wellhead a minimum of 5m away from any structures. The Site Layout provides an 8m clearance to the wellhead.

The Contractor shall NOT place any utilities, site services, storm drainage, or other appurtenances within the wellhead setback area. ConocoPhillips Canada shall review the abandoned oil well to determine if modifications will be required. If they are required they will be implemented by ConocoPhillips Canada.

Prior to commencing construction on this School Site the Contractor shall conduct a meeting with representatives of the Province, ConocoPhillips Canada, and the City of Airdrie.

For further information the Contractor may contact
ConocoPhillips Canada

Bentley N. Anderson, P. Eng
Chief Operations Engineer
Engineering Services
Production Operations – WCG
Tel: (403) 532-7509
Cell: (403) 803-6241
bently.n.anderson@conocophillips.com

The following Millwork Sketches included in Schedule 18 Appendix "D" are applicable to RVS 6-8 and are referenced in the Appendix "B" Core School Design drawing for RVS 6-8:

RVS-1 – Science Lab Workstation;
RVS-2 – CTS Food;
RVS-3 – Tote Storage CTS Fashion;
RVS-4 – CTS Media Design Station;
RVS-5 – Servery Counter;
RVS-6 – Green House Counter;
RVS-7 – Stand-up Gathering Counter;
RVS-8 – Learning Commons Counter; and
RVS-9 – Teachers' Collaboration Office.

The Contractor shall provide a track and privacy curtain in assisted washrooms, infirmary, and for change area in food/fashion.

The Contractor shall provide a resilient floor finish in the teachers' collaborative room, the food/fashion area including storage, servery and pantry, learning commons storage, administration storage and music room storage.

In the Detailed Designs the teachers' collaboration rooms, wrap-around services and food /fashion area shall have an unrestricted clear ceiling height of a minimum of 3050 mm.

The Contractor shall provide an exhaust hood and fan for a School Board supplied kiln located in the storage room of CTS project area.

In the Contractor's Designs and the Detailed Designs of the science project area, the Contractor shall provide one science workstation to meet barrier free guidelines in the location indicated on the Core School Design drawing. The Contractor shall provide 1200 mm high pony walls separating the "U"-shaped Science Lab Workstations.

The auxiliary gymnasium floor design shall be hardwood flooring (same as in the main gymnasium) complete with painted lines for regulation sized activities as follows: a half basketball court, a half volleyball court, one full cross volleyball court, a full circle court, and one badminton court. The Detailed Designs shall provide for recessed floor sockets for badminton and volleyball layouts complete with flush-mounted covers and include one wall mounted, swing side, manually-operated crosscourt basketball backboard.

The Detailed Designs shall provide for four staff-only parking power receptacles located on lighting poles as shown on the Development Permit drawings.

Chestermere K-9

The following Millwork Sketches included in Schedule 18 Appendix "D" are applicable to RVS K-9 and are referenced in the Appendix "B" Core School Design drawing for RVS K-9:

RVS-1 – Science Lab Workstation;
RVS-2 – CTS Food;
RVS-3 – Tote Storage CTS Fashion;
RVS-4 – CTS Media Design Station;
RVS-5 – Servery Counter;
RVS-6 – Green House Counter;
RVS-7 – Stand-up Gathering Counter;
RVS-9 – Teacher Collaboration Office; and
RVS-12 – Service Desk.

In the learning commons (library) the Contractor shall modify MW-33 to have two half high doors to each cabinet, in lieu of one full height door. The Contractor shall revise overall height to 2200 mm to match adjacent cabinets.

The Contractor shall supply two display cabinets at outboard side of gymnasium doors to be similar to MW-16 but with angled faces to protect children from the swinging of the door.

The Contractor shall provide double tier lockers 305 mm wide x 381 mm deep x 1830 mm high in all corridors as indicated in Core School Design drawing.

The Contractor shall provide a resilient floor finish in foods /media including storage, servery and pantry, learning commons storage, administration storage and music room storage.

In the Detailed Designs the wrap-around services, staff work area and foods /media area shall have an unrestricted clear ceiling height of a minimum of 3050 mm.

In the Detailed Designs the drama area shall have an unrestricted clear ceiling height of a minimum of 3660 mm.

The Contractor shall provide a track and privacy curtain in assisted washrooms, infirmary and food and fashion area as shown on Core School Design drawing.

The Contractor shall provide residential type two piece flush tank toilet and standard sink in the early childhood services.

The Contractor shall provide a 1200 mm high masonry pony wall, with solid birch capping as indicated on second floor gathering.

In the Contractor's Designs and the Detailed Designs of the science project area, the Contractor shall provide one science workstation to meet barrier free guidelines in location indicated on Core School Design. Provide 1200 mm high pony walls separating the "U"-shaped science lab workstations.

The auxiliary gymnasium floor design shall be hardwood flooring (same as in the main gymnasium) complete with painted lines for activities as follows: a partial basketball court (with key and partial 3-point line), a half volleyball court, a scaled down (80%) circle court, and a scaled down (80%) badminton court. The Detailed Designs shall provide recessed floor sockets for badminton and volleyball layouts complete with flush-mounted covers and include one wall mounted, swing side, manually-operated crosscourt basketball backboard.

The Detailed Designs shall provide for five staff-only parking power receptacles located on lighting poles as shown on the Development Permit drawings.

Airdrie 9-12

The Contractor acknowledges that there exists a cluster of modular classrooms located at the RVS (9-12) School Site in Airdrie and these modular classrooms will continue to function as a school during the Construction Period. For greater certainty, and as otherwise required by the DBFM Agreement, the Contractor as "prime contractor" shall take all required safety precautions in undertaking construction on this School Site having regard to the existing cluster of modular classrooms.

Effective from Execution to August 31, 2013, the School Site Boundary for the RVS (9-12) School Site in Airdrie shall exclude the area occupied by the existing cluster of modular classrooms, as shown on Schedule 12 (School Sites) - DBFM Agreement (Rev.1) drawing**.** The Province will relocate the existing cluster of modular classrooms to another location by August 31, 2013.

Effective September 1, 2013, the School Site Boundary for the RVS (9-12) School Site in Airdrie shall be expanded to include the area previously occupied by the existing cluster of modular classrooms, as shown on Schedule 12 (School Sites) - DBFM Agreement (Rev.1) drawing**.**

Provided that the Province removes the modular classrooms on the RVS (9-12) School Site, the Contractor shall, no sooner than September 1, 2013, remove the modular classroom foundations and site services to allow completion of the student parking lot and bus drop-off roadway and related landscaping on the RVS (9-12) School Site.

The Contractor's Designs and the Detailed Designs of the central core corridor walls shall include smooth durable masonry surfaces with bullnose corners. Walls covered by lockers shall be masonry or drywall construction.

The following Millwork Sketches included in Schedule 18 Appendix "D" are applicable to RVS 9-12 and are referenced in the Appendix "B" Core School Design drawing for RVS 9-12:

RVS-10 Small Servery Pass Through;
RVS-11 Large Servery Pass Through;
RVS-12 Learning Commons Service Desk;
RVS-13 Cosmetology Reception Desk;
RVS-14 Cosmetology Work Stations;
RVS-15 Cosmetology Shampoo Station;
RVS-16 CTS Design Area Millwork;

RVS-17 Wall Mounted Stand up Gathering Counter;
RVS-18 Column Mounted Stand Up Gathering Counter;
RVS-19 HS Science Project workstation;
RVS-20 HS Science Project Demonstration Counter;
RVS-21 CTS Work Bench/Cabinet;
RVS-22 Cosmetology Display Cabinet;
RVS-23 Waste Cabinet;
RVS-24 Learning Commons Cabinet;
RVS-25 Art Room Vertical Storage;
RVS-26 Art/Music Room Sink;
RVS-27 Student Gathering Condiments Stand; and
RVS-28 Art Room Storage Cubbies.

The Contractor shall provide a track and privacy curtain in the assisted washroom, infirmary and cosmetology areas.

The Contractor shall provide a resilient floor finish in the art storage room, learning commons storage, administration storage, and the second floor resource area storage room. The Contractor shall provide flooring throughout the cosmetology area, including the storage room, which is easily cleanable and withstands staining from hair dyes.

The Contractor shall provide triple tier lockers 381 mm wide x 451 mm deep x 1830 mm high at main and second floor level as indicated in Core School Design.

The Contractor shall provide double tier lockers 381 mm wide x 451 mm deep x 1830 mm high, in male and female staff change rooms.

The Contractor shall provide two types of lockers for the male/female student change room: Type A-381 mm wide x 451 mm deep x 1830 mm high, 6 tier, and Type B-600 mm wide x 451 mm deep x 1830 mm high, 1 tier, fully vented, and shall be laid out two Type A's between every Type B.

In the library the Contractor shall provide a sloped ceiling/room above the single storey breakout rooms and storage. The Contractor shall provide ceiling clouds for sound absorption.

In the Detailed Designs of the drama room, the Contractor shall provide a 1500 mm x1500 mm ceiling mounted 42 mm OD pipe rail grid structurally designed to support drama-type stage lighting and props.

The Contractor shall paint the south wall chroma green (to use as a green screen wall). The Contractor shall provide blocking within the south wall to allow the installation of a School Board supplied motorized pull down screen. The Contractor shall coordinate size

and mounting height with the School Board and paint all walls and ceilings black in order to match color of masonite floor.

In the Detailed Designs of the classroom/breakout area adjacent to drama, the Contractor shall provide one ceiling mounted 42 mm OD pipe rail on a motorized cable system designed to support drama-type stage lighting. This classroom space shall also function as a seating area for performances. The Contractor shall provide acoustic ceiling clouds.

In the Detailed Designs the dance and drama area, and the adjacent classroom and breakout area next to the drama area, shall have an unrestricted clear ceiling height of a minimum of 4500 mm.

In the Detailed Designs the mechanics and building construction area shall have an unrestricted clear ceiling height of a minimum of 4500 mm.

In the Detailed Designs the commercial kitchen shall have an unrestricted clear ceiling height of a minimum of 3050 mm.

In the Detailed Designs the wraparound services areas, break out rooms and teachers' collaboration rooms shall have an unrestricted clear ceiling height of a minimum of 3050 mm.

The Contractor shall provide full mirrors and a continuous ballet barre' on the south wall of the dance area and provide a wood floor system recommended for dance programs that meets DIN 18032 Part 2 Test.

The Contractor shall paint the south wall of design classroom in chroma green (to use as a green screen wall).

The Contractor shall provide appropriate acoustic treatment and sound isolation for the recording booth and editing/mixing room including acoustic door sweeps and seals. The glazed wall separating the recording booth and editing/mixing room shall be tilted five degrees forward from the vertical axis.

The Contractor shall provide full height load bearing or non-load bearing block walls with acoustic block in the gymnasium. The Contractor shall provide glass backboards for main basketball courts.

The Contractor shall provide a hose bib connection next to the stainless steel bradley shop sink in design area outside mechanics/building construction.

In the Contractor's Designs and the Detailed Designs of mechanics, the Contractor shall equip each welding booth with a slotted welding bench hood exhaust and connect each to a single exhaust fan.

The Contractor shall provide an eyewash shower near the welding booths and a trench drain that includes a complete oil separator. The Contractor shall provide insulation for the slab underneath the oxygen/acetylene tank storage room. The Contractor shall provide an insulated 3000 mm x 3000 mm overhead door complete with a CO2 exhaust port with spring loaded cover cap.

The Contractor shall provide parquet flooring for building construction and an epoxy membrane application to the concrete floor for mechanics.

In the Detailed Designs of cosmetology area, the Contractor shall provide fiberglass shampoo sinks and each shall feature a single lever swivel faucet, pull out shampoo spray with two settings and hair/lint separators.

The Contractor shall provide natural gas line to the science project area. The Contractor shall install a run line to a single shutoff valve with a pushbutton labeled "Emergency Shutoff" located in a cabinet at the entrance to the room. The Contractor shall run the supply line from the cabinet, below the floor to each work station and terminate the supply line in a 2 x 2 sided gas turret, one for each sink. The Contractor shall locate the gas turret on the countertop, centre of each working station. The Contractor shall provide a double turret at the demo counter and a double turret in the science prep room. The Contractor shall provide an eyewash shower station near the fume hood.

The Detailed Designs shall for provide seven staff-only parking power receptacles located on lighting poles as shown on the Development Permit drawings.

Commercial Kitchen – Airdrie 9-12

The Contractor shall refer to and incorporate the requirements in the Appendix "L" Food Service Plans, as further detailed below, in the Contractor's Designs and the Detailed Designs.

The drawings are:

- F-1: Food Service Equipment Plan;
- F-2: Food Service Electrical Plan;
- F-3: Food Service Mechanical Plan;
- MK3-1 Food Service Plan – Plumbing/HVAC; and
- E3C Food Service Equipment Electrical Connection Plan.

Kitchen equipment listed in the Food Service Plans will be supplied and installed by others on behalf of the School Board after completion of construction by the Contractor. Installation of kitchen equipment by others will include tie-in of gas, water and sanitary mechanical connections and electrical connections of the equipment to rough-ins or outlets which shall be installed by the Contractor.

The Contractor is to provide all architectural components including walls, doors and finishes, general mechanical HVAC, plumbing and fire suppression systems and electrical power for the kitchen equipment.

The Contractor shall provide all of the finishes including safety flooring with integral cove base over entire floor (including under all equipment), wall finishes and mylar ceiling tile that shall conform with all occupational health and safety legislation, regulations and the codes adopted in such enactments.

The Contractor shall provide mechanical and electrical rough-ins and outlets, in locations and at specific dimensions as shown in the drawings in Appendix "L".

The Contractor shall refer to F-3 Food Service Mechanical Plan in Appendix "L" for the Contractor's Designs and the Detailed Designs. This drawing provides a detailed description and design of all equipment that is to be installed within the kitchen. This description includes size and mounting heights of domestic hot and cold water connections, size of sanitary connections, size and mounting heights of natural gas connections, and exhaust ventilation requirements. The Contractor shall provide all sanitary drainage piping, floor drains and in-slab flush mounted grease interceptors at locations indicated on drawing F-3 Food Service Mechanical Plan. The Contractor shall provide all domestic hot and cold water lines to locations shown on drawing F-3 Food Service Mechanical Plan. Domestic hot and cold water lines shall be terminated with isolation valves at the height as indicated on drawing F-3 Food Service Mechanical Plan. Where equipment is located on the interior of the room (island) the Contractor shall terminate the domestic cold and hot water lines complete with isolation valves in the ceiling space directly above the equipment. The Contractor shall provide a natural gas line complete with shut off valve to equipment locations that require natural gas. The natural gas line shall be terminated at the location and height indicated on drawing F-3 Food Service Mechanical Plan. Where equipment requiring natural gas is located on the interior of the room (island), the Contractor shall terminate the natural gas line complete with shut off valve in the ceiling directly above the equipment.

The Contractor shall provide exhaust fans, exhaust canopies complete with fire suppression systems, and make-up air unit to match the exhaust requirements as indicated on drawing F-3 Food Service Mechanical Plan. The Contractor shall supply all ductwork necessary to provide the indicated ventilation requirements. Ductwork and equipment shall be supplied and installed as per the requirements of the National Fire Protection

Association. Location of exhaust canopies shall be as per drawing F-3 Food Service Mechanical Plan. Ductwork shall run through second floor to the roof of the School. The dishwashing equipment exhaust shall be independent of the food processing exhaust. The Contractor shall refer to drawing MK3-1 Food Service Plan-Plumbing/HVAC for additional details.

The Contractor shall refer to E3C Food Service Equipment Electrical Connection Plan in Appendix "L" for electrical requirements for the kitchen. The Contractor must provide all conduit and wire necessary to accommodate electrical services to equipment or the junction boxes above equipment.

4.9.3.11 STAR Variations

The Contractor shall provide a water-bottle filler attachment at each drinking fountain. The Contractor shall provide polished concrete flooring in all corridors including the central gathering space labeled as "Flexible Space", and all classrooms. The music room flooring shall be a durable hard surface flooring and not of carpet. The Contractor shall revise the under-counter clearance to 1200 mm for carts at MW-26 in gym storage room. The Contractor shall, in the Contractor's Designs and the Detailed Designs, provide a raised area similar to fixed bench seating on the main floor beneath the open stair, to match the footprint of the open stair. The Contractor shall delete open shelving for science room millwork MW-21 and provide lockable doors on upper millwork. The Contractor shall include in the Contractor's Designs and the Detailed Designs a free-standing two-storey false column in the central gathering/flex space, as an architectural feature clad in stone and equipped with appropriate hooks, anchor points and dedicated lighting suitable to hang banners and the display faith-related objects and imagery. The Contractor shall include one or more niches for display and allow for accent or backlighting. The Contractor shall, in the Contractor's Designs and the Detailed Designs, include additional revenue-quality metering devices to measure electricity, natural gas and water usage for each occupant (STAR, BGRD and Town of Beaumont) and provide data on an ongoing basis throughout the term of the Agreement to enable the determination of each occupant's monthly electricity, natural gas and water consumption.

The Contractor shall provide a fire alarm system complete with main control panel in each of the Beaumont Public K-9, Beaumont Catholic K-9 and community centre. The Contractor shall utilize "networked" fire alarm control panels or have each facility of the respective Schools and community centre provided with a separate "loop" for connection of devices within their respective occupancies. Where the Contractor has provided separate "loop" connection systems, the Contractor shall also provide remote annunciators. The Contractor's Designs and the Detailed Designs shall include separate security systems for each of the following areas: the STAR area, the BGRD area, the Town of Beaumont area.

The Contractor shall provide air conditioning and temperature control for the Town of Beaumont area as identified on Schedule 18 (Technical Requirements) Appendix B Attachment 1 – Core School Design (Rev 2) for year round use. The Contractor shall ensure that the capacity of the equipment is sufficient to maintain 22 deg C space temperature at local climate cooling conditions and 24 deg C space temperature at local climate heating conditions. The Contractor shall ensure the air conditioning and temperature control equipment is arranged to provide separate monitoring of heating, air supply, and cooling energy use for the specified Town of Beaumont area referenced above. The Contractor shall install revenue-quality metering devices to measure electricity and natural gas usage of this equipment.

The Contractor shall provide a shower in the physical education office as shown in the Core School Designs.

As the community centre and both Schools are housed in the same building and are fed from one service and one utility meter, it will be necessary to "sub-meter", with revenue-quality metering devices, each School Boards' lighting panel load, receptacle panel load and mechanical equipment load and be able, using a meter "totalizer" means, to determine each School Board's electricity consumption.

The Town of Beaumont's Development Permit requirements may require the Contractor to adhere to the Town of Beaumont's *French Village Design Guidelines*.

4.9.4 SUBSTRUCTURE

4.9.4.1 Foundations

The Contractor shall design the foundation for each School to take into account the specific geotechnical information, recommendations and requirements obtained by the Contractor. A concrete footing design supporting a continuous foundation for the Core Structure may be an acceptable foundation system, however, site specific geotechnical conditions will govern. Screw pile foundations supporting the design of the Modular Classrooms (supporting the loads as provided by the manufacturer of the Modular Classrooms) may also be acceptable but must take into account geotechnical conditions and drainage of crawl spaces below the Modular Classrooms.

4.9.4.2 Floor Slab

The Contractor shall design the floor slab to ensure that reinforced cast in place concrete will be provided for the main floor. The floor slab shall be designed as either a slab on grade or structural slab by the Contractor's after taking into consideration the geotechnical information of each School Site. The minimum thickness of slab when using a slab on grade is 130 mm. The Detailed Designs shall take into consideration adequate

support to accommodate areas where movement may occur, and areas where heavier loads may occur, i.e. library and gymnasium. Additionally, the Detailed Designs shall include drainage for elevator pits.

4.9.5 Building Envelope

4.9.5.1 Superstructure

4.9.5.1.1 Floor Design

The Contractor shall use the most restrictive live load indicia set out in the *Alberta Building Code 2006* in the Detailed Designs.

The Contractor shall meet the requirements of the current edition of the *Alberta Building Code 2006* for the relevant "Climatic Data Design", as described respectively therein, information for each of the Schools in their respective Municipalities. The climatic data the Contractor shall consider will include, but not be limited to: "Ground Snow Loading", "Design Temperatures", "Heating Degree-Days", "One day and 15 minute Rainfalls", "Annual Total Precipitation" and "Seismic Data".

The Contractor's Designs and the Detailed Designs for upper floors shall utilize metal steel decking with reinforced concrete topping supported by a steel structure. For floor systems consisting of concrete topping on steel deck in non-mechanical areas of the School the thickness of the concrete topping shall be a minimum of 80 mm, measured from the top of the floor down to the top flute of the 38 mm steel deck, provided it can be shown that the engineered floor structure provides the required strength and the required stiffness for deflection and vibration control within an acceleration ratio limit of 0.5% of g. Vertical deflection criteria for floors supporting construction and finishes susceptible to cracking shall not exceed L/360. Floors supporting construction and finishes not susceptible to cracking shall not exceed L/300.

The Contractor shall design floors to accommodate the extra loading without requiring the foundations to be modified or adding additional structural columns. Load bearing masonry may also be used in the Detailed Designs.

4.9.5.1.2 Roof Design

The Contractor must include open web steel joists to support the roof and second floors in the Detailed Designs. The Contractor shall design clear spans through the majority of the rooms, i.e. classrooms, gymnasium. The Contractor's assembly area design will allow columns to be incorporated into the Detailed Designs. The Contractor shall include in the Detailed Designs, suitable support for moveable partitions where identified in the Core School Designs. In the Detailed Designs, the Contractor shall include a waterproof roofing structure that is designed to collect and shed water to the appropriate drainage

system (minimum 2% slope). Where possible roof slopes shall be provided by the structure with limited use of sloped insulation except where necessary for backsloping. The Contractor shall design a fully adhered roofing system with proven satisfactory performance in Alberta climates.

Where the Contractor designs a flat to low slope roof, the Contractor shall design to include a complete roofing system consisting of waterproof membrane, insulation cover panels, insulation and vapour retarder.

The Contractor shall design roof curbs to a minimum 200 mm high for all roof mounted equipment and penetrations through the roof, except roof drains.

Deflection of the roof system shall be as specified in CAN/CSA S16-01 Appendix D, Table D1 Deflection Criteria for the specified live loading. The Contractor's design of the roof system is to be designed and stamped by a professional engineer licensed in Alberta. The Contractor shall design the roof system to accommodate thermal movement of the roof sheet caused by ambient temperature range of 80˚C to -40˚C. The roof design shall include a minimum thermal resistance of RSI 4.4 m^2* C/W for the roof assembly, including thermal bridging, across all areas of the roof, except where conflict with equipment and penetration through the roof occurs. In its roof design, the Contractor shall allow for full thermal expansion and contraction of the exterior roof sheet. The Contractor shall design the roof system so as to provide for positive drainage of condensation occurring within metal siding construction and water entering at joints, to exterior face of wall in accordance with NRC "Rain Screen Principals". The Contractor shall design the roof system to withstand dead loads, snow loads, snow build-up and rain load. The Contractor shall design the fastener systems to withstand wind uplift on the roof and sliding forces induced by environmental loads.

Thermo plastic polyolefin roof systems are not acceptable. SBS modified bitumen membrane roofing systems and thermo plastic polyvinyl chloride roofing systems as per FM Class 1-75 (for increased wind exposure) are acceptable. Roof panel systems are not acceptable.

Sloped roofs, where used, shall be constructed of a Standing Seam Metal roof system over a waterproof membrane.

The Contractor's roof design shall ensure that the primary access onto the roof will be from within the School Building. The Contractor will connect different roof heights with exterior access ladders or roof top stairs. The Contractor's design of the roof access hatch shall be lockable from the interior and have incorporated a railing system. The Contractor shall include tie-offs, anchors and a fall arrest system in the Detailed Designs, as required by occupational health and safety legislation, regulations and the codes adopted in such enactments.

4.9.5.2 Exterior Enclosure

4.9.5.2.1 Exterior Walls

In the Detailed Designs the Contractor shall design the exterior façade of each School to contain the design elements set out in the Issued for Development Permit Drawings that detail the elevation of each School.

The Contractor shall ensure that exterior walls shall be designed to stand up to the majority of vandalism and high wear and tear. The Contractor shall design exterior wall assemblies that separate spaces that require differing environmental conditions by controlling the flow of air, water and energy. The Contractor shall design exterior wall assemblies to withstand wind and internal suction forces as prescribed in the *Alberta Building Code 2006*.

The Detailed Designs of the exterior walls shall be based upon the "**Pressure Equalized Rain Screen Insulated Structure Technique**", or "**PERSIST**". This approach is characterized by the following:

(a) exterior cladding covering an air space that shall be pressure equalized with the exterior; and

(b) insulation shall be:

(i) mainly located to the exterior of structural components;
(ii) in direct contact with an air barrier system; and
(iii) exterior of an air barrier system.

The use of spray-foam insulation within the wall system is not acceptable. Pressure sensitive waterproof membranes are required. Trowel-on methods are not acceptable. Refer to Section 07 13 00 (Sheet Membrane Waterproofing) of the Minimum Material Requirements.

The Contractor shall design minimum overall thermal resistance of the walls, including thermal bridging, to be RSI 2.6 m^2* C/W.

The Contractor shall design the exterior walls to ensure that water, snow and ice sheds safely from exterior surfaces and is not trapped in the assembly to cause deterioration, staining or mould. The air barrier system shall be designed to also function as a vapour retarder.

The Contractor shall design the exterior masonry to have an aesthetic finish which will enhance the School's appearance to the community which it is located within, while providing a durable surface that withstands the majority of vandalism and high wear and

tear.

The Contractor shall ensure that building surfaces are not designed to be climbable. The Contractor shall avoid the use of ledges, horizontal siding and low roofs in the Contractor's Designs. The Contractor shall include a hard surface, durable, tall, smooth finish "ball wall" adjacent to the paved play area in the Detailed Designs.

4.9.5.2.2 Exterior Windows

The Contractor shall, as a minimum, include hermetically sealed double glazed windows in the Detailed Designs of the exterior windows, doors and sidelites. Low emissivity (Low E) coating on surface #2 in sealed double glazing units shall be used in the Contractor's Designs. The Contractor shall include the performance of a small box aluminum curtain wall as the exterior window assembly design.

Windows shall meet or exceed requirements of CAN/CSA-A440-M90, and the following performance ratings:

(a) air tightness: A3 (m3/h) m-1 to ASTM E283-91;
(b) water tightness: B7;
(c) wind load resistance: C5; and
(d) minimum temperature index: 56.

The Contractor shall utilize overall window assemblies that have minimum thermal resistance of RSI 0.45 m^2* C/W (maximum U 2.2 W/m^2* C).

The Contractor's curtainwall design shall use mechanically keyed gaskets in the box section and pressure plate. The Contractor shall design the main mass of window frames so they do not project beyond the exterior plane of the air barrier. The Contractor shall bridge the cavity of the wall by means of flashings (not the frame or covercap). Caulking covercaps to flashings is not acceptable and caulking the cover cap in place is not acceptable.

The Contractor shall design exterior sills with a minimum 6% drainage slope to exterior.

The Contractor shall provide a minimum of two operable or venting windows in all classrooms with exterior windows in the Detailed Designs.

4.9.5.2.3 Exterior Doors

In the Detailed Designs, the Contractor shall ensure that the exterior doors will resist the majority of vandalism and allow some vision through the doors. The Contractor shall design the exterior doors to meet the requirements of Section 4.9.7.6.3.2 (Security Access

and Surveillance) and Section 4.9.1.1 (Acoustics). The Contractor shall design the exterior doors to withstand the exterior environmental elements while providing a strong enough finish to withstand the usual vandalism that occurs on school property. The doors must be designed to be able to endure abusive contact with minimal visual dents and damage.

The Contractor shall design the door to the main entrance to the building to meet the Minimum Material Requirements. All other exterior entrance doors and frames are to be designed to use insulated hollow metal. In the Detailed Designs, the Contractor shall include ½ vision lite glazing for the upper half of the doors which are directly accessed by the main corridors and smaller vision panels for doors exiting from the main stairwells. Float glass is unacceptable. Doors for the gymnasium, auxiliary gymnasium or Multipurpose Room do not require glazing.

The Contractor shall design all corridor exterior doors and exit doors to swing outward. The Contractor shall design the exterior doors to include fixed mullions for the double doors in most areas. In the Detailed Designs the Contractor shall include removable mullions to main designated delivery area, the gymnasium and all interior corridors to allow the ability to move large items through more easily.

4.9.6 Building Interior

4.9.6.1 Interior Structure

4.9.6.1.1 Interior Walls

The Contractor shall design all interior walls and partitions to meet the acoustic requirements set out in Section 4.9.1.1 (Acoustics). The Contractor shall design interior wall assemblies to withstand internal suction forces as prescribed in *Alberta Building Code 2006*.

The Contractor shall design the central core corridor walls to be abuse resistant with durable finishes. The Detailed Designs shall include smooth durable masonry surfaces with bullnose corners or abuse resistant drywall. Where wet areas are foreseeable, such as janitor rooms and drinking fountain areas, the Contractor shall design these walls with a waterproof substrate and a water resistant finish to prevent mould, deterioration and staining. The Contractor shall include double plumbing partitions accessible between washrooms and instructional space in the Detailed Designs.

Depending on the School Board program requirements as shown in the Core School Designs, a number of partitions are to be designed by the Contractor to ensure flexible use of the space. This may be accommodated in a number of ways such as moveable partitions or removable walls. Refer to Core School Designs and Section 10 22 26 (Operable Partitions) of the Minimum Material Requirements for specifics.

4.9.6.1.2 Interior Doors and Windows

The Contractor shall design all doors to meet Section 08 70 00 (Hardware) of the Minimum Material Requirements, Section 4.9.7.6.3.2 (Security Access and Surveillance) and Section 4.9.1.1 (Acoustics) and to withstand frequent use. All doors for Instructional Areas are to be designed by the Contractor to swing out in the direction of exiting. The Contractor may design School support rooms and rooms within a "suite" allowing those doors to swing into the room. The Contractor shall include in the Detailed Designs hollow metal, ½ vision lite doors for corridors and ½ vision lite panels for stairwells doors. The Contractor shall design the doors for mechanical rooms and facility support services as solid hollow metal doors. Vision lites are not required for these types of doors. Solid core wood doors designed to meet this Section 4.9.6.1.2 (Interior Doors and Windows) are required for all interior administration and classrooms and other learning areas complete with ½ vision lites. Round or oval shape vision lites are not permitted. Vision lites in doors can be deleted in locations where a sidelite is provided. The Contractor shall use fixed mullions in most double door locations in the Detailed Designs. However, the Contractor shall design removable mullions for double doors to designated delivery areas and storage areas to allow for improved access for large items. The Contractor shall design all door frame throats to match wall thickness. Use of wood frames or knock down metal frames by the Contractor is not acceptable. The Contractor shall design all doors with grade 1 institutional hardware. Double interior corridor doors and double stairwell access doors must be designed by the Contractor with no mullions and to remain open, automatically closing when the fire alarm is activated. The Contractor shall design corridor doors to have the flexibility to allow sections of the School to be securely locked off as desired by the users.

Interior windows, sidelites and glazed doors shall be designed to have 6 mm wired glass at rated closures and 6 mm tempered glass at others. The Detailed Designs shall allow for blackout blinds on room side for all glazed doors and sidelites off of the main corridors (blinds supplied and installed by School Boards) for use during "lock down" times.

4.9.6.1.3 Interior Stairs and Landings

The interior stair design shall be closed riser steel pan construction. See also Section 05 51 00 (Metal Stairs) of the Minimum Material Requirements.

4.9.6.1.4 Fittings: Lockers, Toilet Partitions, Handrails, Interior Signage, Storage Shelving, Washroom Accessories, Entry Mats

The Detailed Designs shall provide solid backing in partitions for all fittings.

The Contractor shall provide lockers where indicated on the Core School Designs. The student corridor lockers shall be designed as a two tier configuration, 381 mm wide x 457

mm deep x 1830 mm high. The change / locker room lockers shall be designed as a six tier configuration 381 mm wide x 457 mm deep x 1830 mm high. The Contractor shall design lockers to be fully recessed to ensure that the face of the lockers is flush with the adjacent wall or with sloped tops. The Contractor shall design plywood bases (pressure treated for wet areas). The Contractor shall select up to four colours per School for the locker doors, which colours shall be reviewed and approved by the Province prior to the Contractor utilizing the selected colours.

In the Detailed Designs, the Contractor shall provide the following number of student corridor lockers for the identified Schools:

School Board	School Project Community	# of Single-Tier Lockers	# of Two-Tier Lockers	# of Three-Tier Lockers	Total # of Lockers
RVS	Airdrie 6-8	none	450	none	900
RVS	Airdrie 9-12	none	72	352	1200
BGRD	Beaumont Public K-9	none	150	none	300
GRD	Brooks K-6	none	204	none	408
Red Deer Public	Red Deer Public K-5	none	none	none	none
RVS	Chestermere K-9	none	328	none	656
STAR	Beaumont Catholic K-9	150	none	none	150
MHSD	Medicine Hat K-9	340	94	none	528
Greater North Central Francophone	Red Deer Ecole La Prairie K-12	75	none	none	75
Red Deer Catholic	Red Deer Catholic K-5	226	none	none	226
CESD	Penhold 7-12	none	250	none	500
Greater Southern Catholic	Cochrane K-9	108	26	none	160

The Contractor shall design toilet partitions to resist vandalism. The Contractor's hardware design is to be heavy duty, brushed stainless steel, institutional grade with tamperproof screws. The Contractor shall design toilet partitions that are floor mounted and overhead braced. The Contractor shall incorporate privacy panels in the design between urinals. The Contractor shall select up to two colours for the doors, which colours shall be reviewed and approved by the Province prior to the Contractor utilizing the selected colours.

In the Detailed Designs the Contractor shall incorporate handrails on both sides of all stairwells and ramps. The Contractor must design for round steel handrails, with tamperproof fasteners. Wood handrails are not acceptable. In the Detailed Designs for the handrails the Contractor shall comply with the *Alberta Building Code 2006*.

The Contractor shall design an interior signage package. The Detailed Designs for the signage shall not allow the lettering be removed from the exposed surface. The Contractor shall design the signage to incorporate tamperproof screws as part of the installation. The Contractor, in its signage design, shall incorporate the name of the room and room number in title case. The Contractor shall use lettering on the signage that is clearly legible from a minimum distance of 3 m. In the Detailed Designs, the Contractor shall include the graphic symbol and barrier-free symbol, where applicable, for all washroom and change / locker room signage. The Contractor shall include in the Detailed Designs overhead directional signage for key rooms that will be typically accessed by the general public. These key rooms will include areas such as the gymnasium, library, administration area, Multipurpose Rooms, and zones for different grades of classrooms.

The Contractor shall design storage shelving to have adjustable shelves. The Contractor shall design the storage unit and shelves to inhibit tipping. The Contractor shall design units to *Architectural Woodwork Manufacturer Association of Canada* ("**AWMAC**") standards. The maximum length of shelves is to be 1070 mm. The Contractor shall design shelving units to incorporate proper functionality of users utilizing the space, i.e. grade one vs. grade six users. Heights, depths and locations will need to be taken into account by the Contractor in the Detailed Designs. Refer to Millwork Sketches MW-9, MW-17, MW-19, MW-21, MW-22, MW-23, MW-24, MW-26 and MW- 43 for design intent.

The School Boards will provide the following surface mounted washroom accessories for installation by the Contractor in the washrooms and similar areas: paper towel dispensers and disposal units, toilet paper dispensers and soap dispensers, that are of institutional quality, heavy duty, brushed stainless steel finish complete with tamperproof fasteners. The Contractor shall provide and install sanitary napkin disposal units. The Contractor shall design washrooms as barrier-free where indicated on the Core School Designs. The Contractor shall design washrooms for kindergarten and grade one use with small

plumbing fixtures. Refer to Section 4.9.2.8 (Early Childhood Services) and Section 4.9.2.10 (Washrooms).

The Contractor shall design the main entry with a system to prevent and/or remove the bulk of the wet and dirt products from entering the School such as integrated recessed walk off mats. The Contractor shall design the entrances and exits to the exterior play areas to allow for removable entry mats. Refer to Section 12 48 13 (Entrance Floor Mats and Frames) of the Minimum Material Requirements.

4.9.6.2 Interior Finishes

4.9.6.2.1 Wall Finishes

The Contractor shall design all wall finishes to be durable, impact resistant and to require minimal maintenance. The central core wall will receive the most abuse, accordingly, designs including masonry painted walls are recommended. The Contractor shall design the overall colour scheme with light colours for added reflectance and brightness. The Contractor's chosen colours shall be designed to minimize trends that will go out of style in a few years. The Contractor must design the wall finishes for painting a combination of base and accent colours. Dark coloured walls will be required in drama areas as designated for backdrops. The Contractor shall include in the Detailed Designs a rubber base throughout the School, except in wet areas such as washrooms. For wet areas the Contractor shall design wall finishes with a waterproof backing board and with a water and impact resistant finish such as ceramic or porcelain tile complete with an integral base. The Contractor shall incorporate a waterproof substrate in change / locker rooms and shower areas. Specific acoustic partition design and treatment is required in all high open spaces over 3050 mm in height.

4.9.6.2.2 Floor Finishes

The Contractor shall design all floor finishes to be durable. The Contractor shall design the main central core and corridors to have slip resistant and low maintenance flooring installed where minimal maintenance other than cleaning is required. The Contractor shall design the floor finish for Instructional Areas and the Multipurpose Rooms with a durable cleanable finish. The Contractor shall design all washrooms and wet areas with slip resistant and waterproof surfaces. The Contractor shall design the entire gymnasium and auxiliary gymnasium with a wood floor.

4.9.6.2.3 Ceiling Finishes

The Contractor shall design the ceiling finishes in the central core area and central corridors to reflect light while absorbing sound. The Contractor shall design the gymnasium, Multipurpose Rooms, student gathering areas, library and project centres as high volume spaces with exposed structure. When designing spaces with exposed

structure the Contractor shall use acoustic decking that is designed to absorb sound. The Contractor shall design a cleanable, durable ceiling finish for all washrooms and change / locker room areas. The Contractor shall design the majority of classrooms and administrative spaces with a lay-in t-bar ceiling, to allow access into the ceiling space as well as to provide the required NRC (Noise Reduction Coefficients) set out in Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*. The Contractor shall design the ceiling such that the ceiling grid is centered in each room and so that cut panels are not less than 300 mm where practical. The use of power activated fasteners to underside of concrete structure and metal decking tabs or clips to underside of metal deck structure for anchoring of ceiling system support system is not permitted.

4.9.7 Building Systems

4.9.7.1 Elevators

The Contractor shall include an elevator in the Detailed Designs for all two storey Schools. The Contractor shall design such elevators to be primarily for passengers and also for vertical transportation of heavy and bulky materials and equipment. Refer to Section 14 21 00 (Elevators) of the Minimum Material Requirements. The Contractor shall design elevators to a minimum load capacity of 1588 kg. The Contractor's elevator platform design shall be a minimum of 1648 mm wide x 2032 mm deep and a minimum ceiling height of 2235 mm. The Contractor shall design the elevator to include a single slide door, a minimum of 1067 mm wide x 2134 mm high. The Contractor shall design the elevators to travel at a minimum of 0.50 metres per second. In the Detailed Designs the Contractor shall provide a hands-free telephone for emergency use and protective pads and hooks. The Contractor shall design the elevators to CAN/CSA-B44-07 requirements.

4.9.7.2 Plumbing System

The Contractor shall design the plumbing system to meet the requirements of this Section 4.9.7.2, and where applicable, the LEED™ Silver Certification requirements, Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, all applicable laws and all other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the Contractor shall apply the highest standard.

In the Detailed Designs, the Contractor shall provide domestic hot water recirculation piping complete with a balance valve where hot water supply piping exceeds 15 m. The Contractor's design for branch piping from a fixture to a recirculation main shall not exceed 8 m. The Contractor shall provide isolation valves to isolate fixtures or groups of fixtures from the main and sub-main distribution piping in the Detailed Designs.

4.9.7.2.1 Plumbing Fixtures

The Contractor shall design the plumbing fixtures to meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*. The Contractor shall design the plumbing fixtures for barrier-free use where applicable.

In the Detailed Designs the Contractor shall include floor mounted low flow toilets (4.2 lpf) in student washrooms with infrared activated flush valve; wall hung ultra-low flow urinal (0.5 lpf) with infrared activated flush valve; and lavatories in washrooms with infrared activated brass. The use of pressure assisted low flow toilets (3.8 lpf) is permitted in staff area washrooms only. The Contractor shall provide a baby devoro size toilet and sink in the early childhood services washroom. The Contractor shall design drinking fountains as refrigerated where indicated on the Core School Designs. The Contractor shall include handicap fixtures and brass and stainless steel countertop sinks with low consumption brass in the Detailed Designs. The Contractor may propose alternate single piece solid surface lavatory systems in lieu of stainless steel countertop sinks. The Contractor's sink outlet designs shall include laminar flow outlets. The Contractor shall design key-operated non-freeze hose bibbs installed at 30 m intervals along School exterior. The Contractor shall design traps or interceptors for sinks in general classrooms areas such as art rooms and CTS classrooms.

4.9.7.2.2 Domestic Water Distribution

The Contractor shall design domestic water distribution to meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, applicable laws and all other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the Contractor shall apply the highest standard.

Pipes, fittings, valves, hose bibbs, water heaters, supply equipment, insulation, supports and backflow preventers shall be designed by the Contractor to meet the requirements of applicable laws and relevant Standards and Guidelines. The Contractor shall design all water lines to be insulated to maintain water temperature, minimize heat loss and to prevent condensation on the piping.

4.9.7.2.3 Sanitary Waste

The Contractor shall design sanitary waste and vent distribution systems to meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, applicable laws and all other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the

Contractor shall apply the highest standard.

Pipes, fittings, floor drains, waste equipment, insulation and supports are to be designed to meet the requirements of applicable laws and relevant Standards and Guidelines. The sanitary waste system is to be designed to ensure positive drainage and provide sufficient cleanout for maintenance purposes.

4.9.7.2.4 Rain Water Drainage

The Contractor shall design the rain water drainage distribution system to meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, applicable laws and all other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the Contractor shall apply the highest standard.

Pipes, fittings, roof drains, insulation and supports are to be designed by the Contractor to meet the requirements of applicable laws and relevant Standards and Guidelines. The Detailed Designs shall provide full flow roof drains with cast iron or aluminum domes.

4.9.7.3 Heating and Ventilation (HVAC)

The Contractor shall design the heating and ventilation systems to meet the requirements of this Section 4.9.7.3, the Minimum Material Requirements, the LEED™ Silver Certification requirements, Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, all applicable laws and all other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the Contractor shall apply the highest standard.

4.9.7.3.1 Heating Systems

The Contractor shall design a hot water heating plant, two-pipe reverse return distribution system, terminal heat transfer units and accessories to maintain comfortable conditions that meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, applicable laws and all other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the Contractor shall apply the highest standard.

The Contractor shall use the design heating equipment, piping distribution, heating elements, piping, fittings, valves, supports, insulation and chemical treatment to meet the requirements of applicable laws and relevant Standards and Guidelines.

The heating system shall be designed to suit the appropriate "Design Data" as specified in the *Alberta Building Code 2006* for the respective Municipality in which each School is

located.

The Contractor shall design the heating system so that when one boiler is out of service the remaining boiler or boilers shall be of sufficient capacity to offset building heat loss excluding heat for ventilation. The Contractor shall design for boilers with a minimum 85% efficiency. The Contractor shall design the boilers with standalone controls and BMCS interface. The heating distribution system shall be designed by the Contractor to include a primary and secondary pumping arrangement. The Contractor shall design the heating media distribution system with a two-pipe reverse return system. In the Detailed Designs the Contractor shall include heating piping distribution materials that are Schedule 40 black iron or Type L copper. Grooved mechanical joints as manufactured by Victaulic are permitted for heating piping that is over 65 mm in diameter and located in the mechanical room. The Contractor shall design a means of isolation, balancing and flow measurement at major pieces of equipment and major circuits. The Detailed Designs shall provide an isolation valve and a balance valve on each terminal at the supply and return connections. The Contractor shall include a drain valve with cap and chain on all system low points. The Detailed Designs shall include ball valves for isolation. Globe valves shall be used for balancing. Butterfly valves are not acceptable. The Contractor shall provide terminal heat transfer units on the basis of the maintainability, controllability and life cycle costs in the Detailed Designs. The Detailed Designs for each terminal heat transfer unit shall be thermostat controlled to provide individual room control. In the Detailed Designs the Contractor shall provide glycol heat exchanger with related piping and circulation pumps for air system preheat coils. The Detailed Designs shall provide for a 50-50 mixture utilizing propylene glycol.

4.9.7.3.2 Ventilation and Exhaust Systems

The Contractor shall design ventilation and exhaust systems to meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, applicable laws and all other relevant Standards and Guidelines. In lieu of Table 2.7-1 in the above noted *Standard and Guidelines for School Facilities (August 2007)*, minimum supply air change rates within a given space shall be calculated as per the current version of ASHRAE Standard 62. Ventilation rates shall exceed this ASHRAE Standard to the penalty-free limit prescribed by the CaGBC. Total air change rates may be increased to maintain the maximum space temperature of 27°C. In the event of any conflict or inconsistency between these two documents, the Contractor shall apply the highest standard.

The Contractor shall include design criteria, system configurations, ductwork distribution, filtration and insulation to meet the requirements of applicable laws and relevant Standards and Guidelines. The Contractor's air system design shall consist of fresh air and exhaust air roof/wall outlets, motorized fresh, return and exhaust dampers, supply fan, return fans, MERV 13 filter box on supply tunnel, filter box on exhaust

tunnel, heat recovery, preheat coil, cooling section, ductwork and air outlet distribution and ducted exhaust/return air. The Contractor shall design air handling systems to provide free cooling. Air handling units shall be located inside the Schools, within designated mechanical rooms. The Contractor shall not use mechanical rooms as air plenums. The Contractor shall design the gymnasium with a separate air system with provisions to provide reduced outdoor air volumes for normal usage versus peak occupant usage utilizing variable frequency drives and CO_2 sensors. Heat recovery for the gymnasium air system is not required. The Contractor shall design zone air systems in accordance with function, occupied hours and air quality requirements. The Contractor shall ensure that the Detailed Designs provide that good air distribution and occupant comfort are achieved through appropriate air outlet application, selection and location. The Contractor shall ensure that the Detailed Designs provide for a return air fan when recirculating air to the air system. Usage of a supply fan only is not acceptable.

If the Contractor designs an air system that distributes supply air utilizing displacement ventilation the air system must include all components noted for air systems in this Section 4.9.7.3.2 and be a 100% outdoor air system

4.9.7.3.3 Cooling Systems

Essential cooling systems are to be provided in high heat areas such as the data server rooms and are to be designed to meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, applicable laws and all other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the Contractor shall apply the highest standard.

Air handling systems, with the exception of the gymnasium system, shall include once through evaporative cooling with water softening or mechanical cooling equal in capacity to that of the evaporative cooling system. The Contractor shall ensure that the maximum space temperature shall not exceed 27°C by providing mechanical cooling. Minimum humidification and minimum supply air volume flow rates, as required by this Schedule 18 must be met.

The cooling system shall be designed by the Contractor to suit the appropriate "Design Data" as specified in the *Alberta Building Code 2006* for the respective Municipality in which each School is located. The Contractor shall design the insulation and system configuration to meet the requirements of applicable laws and relevant Standards and Guidelines. In the Detailed Designs the Contractor shall use outdoor air for free cooling when ambient conditions permit.

4.9.7.3.4 Humidification

The Contractor shall design the humidification system to meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, applicable laws and all other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the Contractor shall apply the highest standard.

The Contractor shall ensure that the Detailed Designs for the humidification equipment and insulation shall meet the requirements of applicable laws and relevant Standards and Guidelines. The Contractor shall design the humidification system for each air system to provide moisture addition to the supply air to maintain indoor humidity. Electric steam humidifiers are not permitted. In the Detailed Designs, the Contractor shall allow the humidification system to reset in accordance with outdoor air with a minimum 15% humidity during the heating mode. In the Detailed Designs, the Contractor shall provide make-up water provided via water softener. In the Detailed Designs, the Contractor shall provide insulation around the humidification piping to meet minimum the *Model National Energy Code of Canada for Buildings 1997* requirements.

4.9.7.4 Fire Protection

The Contractor shall design the Core Structure and the Modular Classrooms (including corridors) to be fully sprinklered and to meet the requirements of *National Fire Protection Association* ("**NFPA**") Standard 13. The Contractor shall meet the requirements of NFPA's Standard 10 – Portable Fire Extinguishers. The Contractor shall provide semi-recessed sprinkler heads in ceiling areas to minimize vandalism. In the Detailed Designs, the Contractor shall provide wire guards in gymnasium and maintenance rooms. The Contractor shall provide fire extinguishers in recessed cabinets in School corridors and will be surface mounted in other areas to meet the minimum applicable laws and the Standards and Guidelines.

4.9.7.5 HVAC/Mechanical Controls (BMCS)

The Contractor shall design the mechanical controls system in accordance with the requirements of the Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*. The Contractor shall design the Core Structure to include a BACnet compliant BMCS system using direct digital controls. The Contractor shall incorporate a system to conserve energy in the design of the BMCS by:

(a) controlling primary energy consuming equipment;
(b) develop optimum start and stop time for equipment and systems that do not operate 24 hours a day;
(c) resetting air and heating water supply temperatures using feedback from

occupied space demand;
(d) reset humidity from outside air;
(e) using air system to preheat, precool or purge to achieve the objective space temperature at the start of occupancy;
(f) control car plugs;
(g) control of zone temperature utilizing user adjustable DDC thermostats; and
(h) control of exterior lighting.

All BMCS components shall be BACnet compliant. The Contractor shall provide in the Detailed Designs electrically powered actuators to drive all valves, dampers and other control devices. The Contractor shall provide in the Detailed Designs insulated blades for fresh and exhaust air dampers. The Contractor shall provide for offsite support access by including a modem or serial device server for telephone or internet connectivity.

4.9.7.6 Electrical

The Contractor shall design the electrical system to meet the requirements of this Section 4.9.7.6, the Minimum Material Requirements, the LEED™ Silver Certification requirements, Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007),* all applicable laws and all other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the Contractor shall apply the highest standard.

4.9.7.6.1 Electrical System and Distribution

The Contractor shall design the electrical system and distribution to meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August, 2007).* In the Detailed Designs the Contractor shall include a complete building power distribution system consisting of main distribution centre, sub-distribution centers, transformers, if required, and branch circuit panelboards and customer digital metering and TVSS system equipment. The Contractor shall include coordination, arc flash and fault level studies. The Contractor shall design a motor control centre where quantity and electrical motor sizes warrant. The Detailed Designs of motor control centers shall meet Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August, 2007).*

The Contractor shall design and provide, if voltage and amperage dictate, ground fault protection at the main distribution centre.

The Contractor shall provide power surge protection on all electronic whiteboard and computer outlets and shall comply with Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007).* The Contractor shall

supply a coverplate, back box and conduit with pull string stubbed into the ceiling space to accommodate the installation of two future hand dryers in each student washroom. The School Board will supply and install hand dryers. The Contractor shall confirm the locations of the hand dryers in the Detailed Designs.

Dry type transformers, where utilized, shall be of the harmonic mitigating type where they feed panels with only electronic loads connected. For panels feeding mixed electronic loads and non-electronic loads K rated transformers may be used.

4.9.7.6.2 Lighting System

The Contractor shall design a complete lighting system to meet, but not exceed, the latest Illuminating Engineering Society of North America ("**IESNA**") recommended practices for school lighting (See IESNA RP3 – *Guide for Educational Facilities Lighting*), Alberta Infrastructure and Transportation's *Standards and Guidelines for Schools (August 2007)* and LEED™ Silver Certification requirements for lighting.

The Contractor shall design to provide a maintained lighting illuminance range of 380 – 450 lux average at a work plane height of 760 mm while ensuring average maintained illuminance does not exceed 500 lux or less than 400 lux. Illuminance ratios (maximum: minimum) are not to exceed 3:1.

The Contractor shall design the lighting system so that the Lighting Power Density ("**LPD**") in all areas of each School will be a maximum of 10W/m^2 on average.

The Contractor shall design the lighting system in the gymnasium such that gymnasium luminaires will be surface mounted or suspended, incorporate 2 level switching (within fixture), and be equipped with energy efficient T5HO fluorescent lamps, electronic ballasts and wireguards.

4.9.7.6.2.1 Interior Lighting and Control

The Contractor shall design an interior lighting system using T8 or T5 linear fluorescent lamps and energy efficient electronic ballasts with a minimum Color Rendering Index of 80 and Correlated Color Temperature of 3500K. Core School classroom lighting shall use recessed or suspended direct/indirect luminaires with minimum 50% direct component. Other general purpose lighting shall use recessed luminaires.

The Contractor shall design and provide a low voltage switching system consisting of local control and interface capability with the BMCS to de-energize selected room and area light fixtures at pre-selected times. Each classroom's lighting shall be controlled in a minimum of three segments, one along the window wall to compensate for daylighting, and two perpendicular to the window wall one of which controls the area at the electronic

whiteboard and one for the remainder of the room. The Contractor shall incorporate daylight sensors into lighting controls to reduce illumination levels in high ceiling areas taking into account the natural light level.

The Contractor shall design a "motion sensor" control system for operation of light fixtures in secondary rooms such as storage rooms and selected offices and support rooms.

4.9.7.6.2.2 Exit and Emergency Lighting System

The Contractor shall design an exit and emergency lighting system throughout the Core Structure in accordance with the *Canadian Electrical Code* and the *Alberta Building Code 2006*. Emergency lighting battery packs shall be of the self contained type incorporating 2-LED heads, a test switch and have the capability of powering remote mounted dual LED heads.

4.9.7.6.2.3 Exterior Lighting System

The Contractor shall design a complete exterior building lighting system including on-building and pole mounted luminaires. The exterior building lighting system shall be designed to operate via photo-electric cell overridden by BMCS operation.

The Detailed Designs shall utilize either HPS (High Pressure Sodium) or LED (Light Emitting Diodes) lighting source and provide lighting levels in accordance with IESNA and Governmental Authority recommendations or bylaws. Lighting fixtures selected are to have sharp cut-off photometrics and be of "dark sky friendly" design. The Detailed Designs shall provide security lighting to illuminate alcoves and concealed areas. Fixture control design is to be via both photocell and BMCS. Low use entrances and adjacent walkways are to be illuminated with LED illumination using motion sensor and daylight control.

4.9.7.6.2.4 Branch Wiring

The Contractor shall design a complete system of wiring devices in accordance with each School's Core School Design. The Contractor shall design receptacles for electronic whiteboards and data workstations with surge protection facilities. Circuit data receptacle designs shall meet the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*.

The Contractor shall design a complete branch circuit power distribution system throughout the Core Structure. The Detailed Designs shall provide for circuitry for computer equipment in accordance with Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*. The Detailed Designs

shall provide dedicated circuits for equipment as required.

Where utilizing floor boxes, the Contractor, in the Detailed Designs, shall use multi-service units with 2 split receptacles and four gang voice/data outlets.

4.9.7.6.3 Communication and Security

The Contractor shall provide conduits and cable including underground service conduits and cables, termination backboards, interior conduits and cables, and cable distribution trays to accommodate a communications system including public address system, telephone system and cable television and to comply with all the requirements for each School as set out in the Core School Designs.

The Contractor must also comply with the following requirements:

(a) Telephone System Interconnection Cabling: Provide a 50 pair copper cable from demarcation location to the main distribution frame and a 25 pair copper cable from main distribution frame to each horizontal distribution frame; and

(b) Paging and Public Address System: Provide and label cabling for paging and public address systems. Provide speaker back boxes and twisted pair shielded audio cable (in conduit where cable must be protected) from the amplifier to each speaker zone and daisy chain the same cable to all speaker box outlets within each zone.

The Contractor shall provide in each School for a paging and public address system with all zones controlled from the administration area. In addition, the gymnasium zone must also be capable of being controlled from the gymnasium office After Hours. The zones in each School are as follows:

(i) all classrooms and labs are to be individually zoned;

(ii) all corridors and administration areas are to be individually zoned;

(iii) gymnasium (including change / locker rooms), collectively are one zone; and

(iv) exterior areas, collectively are one zone.

The Contractor shall provide and install suitably sized conduit for Supernet and cable

television from within the School Building to the existing utility service line. If the utility service is not yet installed in the streets or boulevards adjacent to the School Site boundaries the conduit shall be stubbed-off at the School Site boundary.

4.9.7.6.3.1 Fire Alarm System

The Contractor shall design a complete microprocessor based, addressable, non-coded, single stage fire alarm system meeting the requirements of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*, all applicable laws and other relevant Standards and Guidelines. In the event of any conflict or inconsistency between these documents, the Contractor shall apply the highest standard.

The Contractor shall design fire alarm systems that allocate individual fire alarm zones for each floor area, sprinkler systems (including gate valves and tamper switches), stairwells, Modular Classrooms, elevator shafts and air handling equipment. The Contractor shall design the fire alarm system to include visual signal devices.

In the Detailed Designs, the Contractor shall provide fan shutdown facilities and connection between fire alarm control panel and master clock system controller to inhibit period signal tones and exterior horns.

In the Detailed Designs, the Contractor shall provide for interface of fire alarm system panel and off-site monitoring function by both the Contractor and the School Boards.

The Contractor shall complete a fire alarm verification inspection in accordance with the requirements of the CAN/ULC-S537 Standard, Verification of Fire Alarm System and any other applicable laws or the Standards and Guidelines.

4.9.7.6.3.2 Security Access and Surveillance

The Contractor shall design a complete intrusion security system and shall include all electrical and electronic equipment required to allow for a complete operating system. The Contractor shall design an intrusion security system utilizing infra-red motion sensors. All sensors are to be on individual zones. The Contractor shall ensure that the Detailed Designs provide both long range and short range motion detectors. In the Detailed Designs, the Contractor shall include coverage for exterior doors, all corridors, administration office areas, CTS classrooms, and service rooms including electrical room and mechanical room, stairways, library and computer lab including related storage areas. The Contractor shall design the security system such that it shall be capable of future expansion through the addition of security cameras, video monitors, and additional access devices; this includes a conduit and outlet box to all exterior camera locations as shown on the Core School Designs.

The Contractor shall ensure that the Detailed Designs provide for boiler room flood water detection and low building temperature detection.

In the Detailed Designs, the Contractor shall make provision for interface of security system panel with lighting control panel.

In the Detailed Designs, the Contractor shall provide for interface of security system panel and off-site notification to both the Contractor and the School Boards.

4.9.7.6.3.2.1 Door Security System

The Contractor shall design a complete door security system and shall include all electrical equipment required to allow for a complete operating system. The Detailed Designs shall provide card readers at two designated entrances and electric strikes at all exterior entrance doors utilized by students and staff.

The door security system shall be controlled from a central control point in the administration area and shall include two features. One feature is a single “emergency lock down” switch that would cut the power to the electric strikes at the exterior entrances to prevent entry from the exterior. Interior panic hardware and fire alarm release must remain active. The second feature is the ability to program the electric strikes through a door security control panel that would allow the doors to be locked or unlocked at various times of the day either individually or in groups as dictated by the door security program. This program will be required to be manually activated through a “staff-on-site” manual switch to ensure an authorized staff member is always on site before the door control program is activated.

Swiping the card readers by an authorized staff member shall not allow access into the Schools during a “lock down” and shall allow unscheduled access back into the Schools through an exterior door when the door is normally locked by the door security program.

4.9.7.6.3.2.2 C.C.T.V. System

In the Detailed Designs, the Contractor shall provide for a rough-in conduit to accommodate School Board supplied complete closed circuit television systems. The design coverage shall include all exterior door entries, corridors, administration areas and computer lab.

4.9.7.6.3.2.3 Cable Television System

In the Detailed Designs, the Contractor shall provide for a rough-in conduit including underground service conduit to accommodate future cable television service. The

Contractor shall provide cable from the property line to the splitter/amplifier location in the telephone room only. The Contractor shall provide boxes and plates at field outlets with conduit stubs to ceiling spaces at locations as shown on the electrical power and data plans.

4.9.7.6.3.3 Master and Secondary Clocks System

The Contractor shall design and provide a master clock system with main receiver/ transmitter synchronized with the internet or GPS. The Contractor shall provide secondary clocks with GPS settings throughout the facilities.

4.9.7.6.3.4 Voice and Data System, Cable, Conduits and Raceways

The Contractor shall ensure that the Detailed Designs shall provide conduits and cables to accommodate a complete voice and data system to meet the needs of each School as set out in the Core Schools Designs.

The Contractor shall utilize conduits from individual outlet boxes into accessible ceiling space areas in the Detailed Designs. The Contractor shall design a cable tray, at strategic locations, to run cabling from outlets to respective voice and data head end equipment.

The Contractor shall provide data cabling for each School including installation, termination, labeling and testing of patch panels, jacks and copper and fibre cables to meet the requirements specified in the following articles of the Alberta Infrastructure and Transportation's *Consultant Guide for Accommodation and Tenant Improvement (September 2007)*:

2.14.5- Voice and Data Cabling Standard- General;
2.14.6- Voice and Data Cabling Standard- Specific Criteria;
2.14.6- Equipment Closet Provisions;
2.14.7- Backbone (Riser) Wiring;
2.14.8- Labeling; and
2.14.9- Testing.

The Contractor can access this document at Alberta Infrastructure's Technical Resource Centre at:

http://www.infrastructure.alberta.ca/Content/docType486/Production/AccommodationGuide.pdf

The Contractor shall provide a copper cabling system to meet CAN4, EIA/TIA requirements for Category 6 systems. The Contractor shall provide copper patch panels to

consist of RJ45 jacks mounted in standard 19" floor racks at each horizontal distribution frame location, maximum 48 ports per patch panel. The Contractor shall provide horizontal cabling consisting of one four pair copper cable to each outlet from the horizontal distribution frame to each data outlet. The Contractor shall provide this same system for each voice outlet.

The Contractor shall provide fibre patch panels consisting of 12 port fibre patch panels with ST connectors, at each termination point, mounted in floor mounted data rack where practicable and wall mounted where space requirements dictate. The Contractor shall provide backbone cabling consisting of one 12 strand 65/125 micron multi mode cable between the demarcation points for Supernet and main server room, and between main server room and each horizontal distribution equipment location for performance installation, labeling and testing standards for data cabling. For additional requirements refer to Section 27 10 00 of Alberta Infrastructure's *Basic Master Specifications - MasterFormat 2004* at:

http://www.infrastructure.alberta.ca/3468.htm

For the public address system speakers the Contractor shall use two conductor unshielded FT4 rated copper cable of a minimum 14 gauge for exterior speaker zone, and 18 gauge for interior speaker zones.

4.9.7.6.3.5 Parking Controls

The Contractor shall design a complete parking area control system including receptacles mounted in metal pedestals, relay cabinets, timers and temperature detection equipment. The Contractor shall design the parking control system to utilize the BMCS to regulate energization cycles to minimize consumption and demand based upon a time of day and outside temperature basis.

4.9.8 Exterior Improvements

4.9.8.1 Transportation and Drop-Off Areas and Refuse Areas

The Contractor shall design the transportation and drop-off areas for each School, as shown on the Site Layouts to include three key areas, namely a separate bus loading/unloading area, a parent drop-off area and staff parking areas. The Detailed Designs are to have minimal access points off the Municipality's streets and provide students the opportunity to access the School Site with a minimal number of locations required to cross traffic. The bus loading/unloading areas are to be located as indicated on the Site Layouts, subject to any changes that may be required by the relevant Municipality's transportation department. The Contractor shall design the bus loading/unloading areas to include a curbline sidewalk with a minimum width of 2.0 m.

The Contractor shall design one parent drop-off area for each School Site in close proximity to each School's main entrance, allowing sufficient width to ensure traffic can flow past while vehicles are parked. Where the parent drop-off is on the street, a 2.0 m curbline sidewalk is required. The Contractor shall design parking lots, parent drop-off area and bus lanes to be paved and these shall be sloped to drain in accordance with the respective Municipality's requirements.

The Contractor shall design all bus drop-off, drive aisles and refuse pick-up areas to heavy duty asphalt requirements (minimum 100 mm asphalt thickness), the remaining areas are to be designed for standard duty asphalt requirements (minimum 75 mm asphalt thickness). Refer to Section 32 10 00 (Bases, Ballasts, and Paving) of the Minimum Material Requirements.

In the Detailed Designs, the Contractor shall include standard concrete curbs around the parent drop-off area. The Contractor shall design all sidewalks and curbs off the Municipal streets to the relevant Municipality's standards. Storm water retention shall also be designed to meet the relevant Municipality's requirements.

The Contractor shall design all refuse areas to include concrete aprons for the refuse storage area and these shall be designed to extend to ensure that the front wheels of the dumpster truck will also be on the concrete apron when dumping occurs. The Detailed Designs shall include concrete block screening around the refuse area, including gates and bollards.

The Detailed Designs shall ensure that bollards are included around the front main entry to prevent vehicles from driving up to the main entrance.

4.9.8.2 Parking Areas

The Contractor shall design each School to include two separate parking areas, one for staff and one for visitors as shown in the Site Layouts. In the Detailed Designs, the Contractor shall include the minimum number of parking stalls as indicated in the Site Layouts. In the Detailed Designs, the Contractor shall include the minimum number of barrier-free stalls as required by the relevant Municipality's land use bylaws. Asphalt shall be designed to standard duty requirements (minimum 75 mm asphalt thickness). Refer to Section 32 10 00 (Bases, Ballasts, and Paving) of the Minimum Material Requirements. The Contractor shall also ensure that its parking area design includes painted lines, a minimum of 100 mm wide, for demarcating parking stall locations, the loading and drop-off areas and the refuse areas and crosswalks. In the Detailed Designs, the Contractor shall include an international graphic symbol at all barrier-free parking stall locations. Parking stalls are to be designed using pre-cast wheel stops to prevent vehicles from obstructing adjacent sidewalks and damage to plug-in posts. The Contractor shall design plug-in posts for all staff parking stalls. In the Detailed Designs,

the Contractor shall include appropriate signage to designate staff, visitor and barrier-free parking.

4.9.8.3 Pedestrian Area Paving

In the Detailed Designs, the Contractor shall include barrier-free, concrete walkways from the Municipal street to the main entrance with a minimum width of 1.5 m unless noted otherwise. In the Detailed Designs, the Contractor shall include barrier-free, hard surface walkways to sufficient other egress doors to the School to meet minimum barrier-free requirements. The Contractor's Designs shall include a concrete pad for a future storage shed that will be supplied and installed by the School Board for outdoor storage (refer to the Site Layouts). The Contractor hereby acknowledges and agrees that the future addition of a storage shed by the School Board shall not be considered a Modification.

4.9.8.4 Barriers

In the Detailed Designs, the Contractor shall include barriers to direct pedestrians to marked cross walks leading from the bus drop-off zones to the School entrances. In the Detailed Designs, the Contractor shall include a barrier, such as ornamental fencing, to prevent pedestrian traffic crossing the vehicle drop-off area at uncontrolled crossings. Ornamental fencing shall be a minimum of 1200 mm high. Chain link fencing is unacceptable. Refer to Site Layouts.

4.9.8.5 Athletic and Recreational Surfaces

The Contractor shall design a suitable area for a future playground (excluding playground equipment) as shown on the Site Layouts. The Contractor hereby acknowledges and agrees that the future addition of playground equipment by the School Board shall not be considered a Modification.

In the Detailed Designs, the Contractor shall include access to Municipal owned athletic and recreational areas adjacent to the School Site. The Contractor shall design a hard surface play area for each School as shown on the Site Layouts. The Contractor shall design the hard surface play area such that it shall have a minimum of 2% slope away from the School. Asphalt shall be designed to light duty requirements (minimum 35 mm asphalt thickness).

4.9.8.6 Bicycle Racks, Flag Poles and Refuse Containers

In the Detailed Designs, the Contractor shall include bicycle rack capacity for a minimum of 10% of the students for each School. The design shall locate the bicycle racks on a hard surface. Refer to Core School Designs for location. The Contractor shall also design for one aluminum flag pole per School, minimum 9 m high. The flag pole is to be

designed to be tilted and serviced by one person. The Detailed Designs shall include a minimum of two fixed refuse containers near the main entrance of the School. Refer to Section 10 75 00 (Flagpoles) of the Minimum Material Requirements.

4.9.8.7 Exterior Signs

In the Detailed Designs, the Contractor shall include vandal resistant, cast aluminum/brass lettering for the exterior of each School. The Contractor shall design and provide lettering for the name of the School and the School Board once the Province has advised the Contractor of each School's name. These letters are to be a minimum of 300 mm high for the name of the School and 150 mm high for the name of the School Board and School address. The Contractor shall design the lettering to highlight the entrance and to be visible from the front street, where applicable. All lettering shall be a minimum of 3000 mm above the ground to reduce the likelihood of vandalism to the letters. The School's municipal address shall be set out in vinyl lettering located on the glazing panel above the main entrance.

4.9.8.8 Landscaping

The Contractor shall design the landscaping for the designated areas as shown on the Landscape Development Plans. Designs including berms will be considered as a measure for dealing with grading issues. Trees, shrubs, sod and all other plant material must meet requirements of Section 32 90 00 (Planting) of the Minimum Material Requirements and the requirements of the relevant Municipality's department. The landscaping design for each School Site is to be completed in conjunction with the relevant Municipality's parks and landscaping departments. Landscaping designs must meet the relevant Municipality's land use bylaws.

The Contractor shall remove or relocate those trees requiring such removal or relocation as identified in the Landscape Development Plans.

4.10 ADDITIONAL DESIGN CRITERIA – MODULAR CLASSROOMS

4.10.1 Design Objectives

The Contractor shall, at a minimum, design the Modular Classrooms to be high-performance, long-life modular units capable of being moved.

The Modular Classrooms shall be designed to meet, at a minimum, all applicable laws, including but not limited to the *National Building Code of Canada* and the *Alberta Building Code 2006*, applicable Standards and Guidelines, the requirements of this Section 4.10, and any other applicable requirements in the Technical Requirements.

The Modular Classrooms shall be designed to support the attainment of LEED™ Silver

Certification, including the mandatory points set out in Section 4.8.2, for the new Schools to which they will be attached.

4.10.2 Functional Area Requirements

4.10.2.1 General

The Basic Modular Classroom Informational Plan is set out in Appendix "A" and is provided as information only to assist the Contractor with its design of the Modular Classrooms. The Contractor's Designs and the Detailed Designs must comply with all modifications to the Basic Modular Classroom required by each School Board and set out in the Core School Designs.

The Contractor shall take into account the Minimum Material Requirements when completing the Contractor's Designs and the Detailed Designs for the Modular Classrooms.

The Contractor shall design the Modular Classrooms for a 50-year service life. It is intended that the Modular Classrooms can be, if required, moved to any other school in the province, and accordingly, the Contractor shall include the flexibility in design and construction to configure the Modular Classrooms and their adjoining corridors, in three different ways on any given school site:

(a) individually attached to schools end-on;

(b) installed side-to-side in multiples, with exterior side walls remaining intact, while being attached to schools end-on with an adjoining corridor; or

(c) installed end-to-end, with an adjoining corridor separating the units.

4.10.2.2 Classrooms

The Contractor shall ensure that the design for the classrooms (referred to as "**classrooms**" in this Section 4.10) within the Modular Classrooms has a useable area of 80.0 m^2. In order to allow the Modular Classrooms to be connected, the Contractor shall design to constrain the maximum external dimensions of Modular Classrooms once installed on the School Site to the following dimensions:

A Unit

(a) Width: 7315 mm (24'0");
(b) Length: 15245 mm (50'0"); and
(c) Height from top of subfloor to parapet: 3810 mm (12' 6" nominal),

B Unit

(a) Width: 7315 mm (24’0”);
(b) Length: 12195 mm (40’0”); and
(c) Height from top of subfloor to parapet: 3810 mm (12' 6" nominal).

Vestibules

(a) Width: 3658 mm (12’0”);

(b) Length: 3658 mm (12’0”); and

(c) Height from top of subfloor to parapet: 3810 mm (12’6”).

The type of unit to be used at each School is set out in the Site Layouts.

In the Detailed Designs, the Contractor shall include a 45 minute fire-rated wall between classrooms and the corridor and shall include a one hour fire-rated separation between the mechanical room and a classroom. The Contractor shall design locker/coat hanging space in the corridors while maintaining a minimum clear egress distance of 2830 mm between doors, lockers or coat storage when the Modular Classrooms are installed end to end. In the Detailed Designs, the Contractor shall include double egress doors to be provided at one end of the corridor where necessary.

4.10.2.2.1 Classroom Interior

The classrooms within the Modular Classrooms shall be designed to meet the requirements of Section 4.9.2.1 (General Classrooms). Clear unobstructed ceiling height for the classroom portion of the Modular Classroom shall be 2743 mm (9'0" nominal) and 2895 mm (9'6" nominal) in the corridor portion of the Modular Classroom.

The Contractor shall design floors for the classrooms within the Modular Classrooms that are slip resistant, durable and easily cleaned.

The Contractor shall design all classroom doors to ensure handicap access. Doors shall be hollow metal with ½ vision lite and shall include hardware to match Core Structure classroom door design.

The mechanical room doors within a classroom must be a rated metal door and frame designed to meet the acoustical requirements set out in Section 4.10.3.3 below. Hardware is to match the Core Structure design for hardware.

4.10.2.3 Other Interior Requirements

The Contractor shall design floors for areas outside the classrooms within the Modular Classrooms that are slip resistant, durable and easily cleaned.

The Contractor shall design the Modular Classrooms (including corridors) to be fully sprinklered to meet the requirements of *National Fire Protection Association* ("**NFPA**") Standard 13. The Contractor shall meet the requirements of NFPA's standard – Portable Fire Extinguishers. The Contractor shall provide recessed sprinkler heads in ceiling areas to minimize vandalism. The Contractor shall provide wire guards in the mechanical rooms. The Contractor shall provide fire extinguishers in recessed cabinets in School corridors and will be surface mounted in other areas to meet minimum applicable laws and the Standards and Guidelines.

4.10.2.4 Other Constraints

The Detailed Designs shall allow Modular Classrooms to be assembled at the factory from smaller sub-units, provided that:

(a) the structural and building envelope requirements for connections are met;

(b) structurally the Modular Classrooms are not disassembled for subsequent moves; and

(c) the Modular Classrooms are effectively a single unit for all subsequent moves within the province in order to address concerns about the integrity of the connections.

The Contractor shall design the Modular Classrooms for a minimum of 10 moves over the service life.

4.10.2.5 Physical Connection to the Core Structure

The Contractor shall design the Modular Classrooms so that physical connection of the Modular Classroom at the School Site to the Core Structure can be accomplished with a minimum of on-site construction. The Detailed Designs shall ensure that electrical, communications and control wiring shall be terminated in easily-accessible panels or junction boxes at suitable locations. The Detailed Designs shall ensure that mechanical system water and drain lines shall be capped at suitable locations.

4.10.3 Modular Classroom Design Criteria

4.10.3.1 General

Applicable laws, including but not limited to the *Alberta Building Code 2006*, the *National Building Code of Canada*, Authorizations, relevant Standards and Guidelines, this Section 4.10, together with the LEED™ Silver Certification requirements, are intended to provide both minimum requirements and guidance on the technical strategies for designing and building high-performance Modular Classrooms. Integrated design of the various disciplines is critical to achieving high-performance.

Additional guidance on detailed technical design strategies, together with integration process strategies, can be found in:

> ***High Performance School Buildings Resource and Strategy Guide***, published by the Sustainable Buildings Industry Council, http://www.sbicouncil.org/displaycommon.cfm?an=1&subarticlenbr=115
>
> ***Energy Design Guidelines for High Performance Schools, Cool and Dry Climates***, published by the National Renewable Energy Laboratory, http://www.nrel.gov/docs/fy02osti/29109.pdf

4.10.3.2 Structural

4.10.3.2.1 General Requirements

The Contractor shall ensure that the structure of the Modular Classrooms is sufficiently sound to permit safe occupancy and use of the Modular Classrooms. The Contractor shall design the Modular Classroom unit to be constructed by various methods, similar or equivalent to Structural Insulated Panels ("**SIP**") with an under-frame suitable to withstand a minimum of 10 subsequent relocations without any detrimental effects to their structural integrity. The interior and exterior surfaces of all SIPs must be protected to inhibit the possibility of deterioration due to moisture and prohibit the growth of mould. The Contractor shall design to limit deflections in accordance with recommended criteria in the *National Building Code of Canada* and the *Alberta Building Code 2006*. Structural details and building envelope details shall be developed taking into consideration other movements including but not limited to the effects of shrinkage, settling and contraction. The Contractor shall structurally design and detail the fastening, support, and backing systems of the Modular Classrooms for exterior wall cladding and attachments. Steel connections outside the air barrier shall be galvanized. The Contractor shall avoid thermal bridging in its design. Where this is not possible, the Contractor shall incorporate measures in its design to minimize the effect of thermal bridging.

4.10.3.2.2 Design Loads

The Contractor shall design the Modular Classrooms for the following design loads:

(a) Wind Loads – The Modular Classrooms shall be designed for a 1/50 hourly wind pressure of 1.02 kPa;

(b) Snow Loads, Base Model (Standard Duty) – The structure of the Modular Classrooms shall be designed for a uniformly distributed snow load of 3.6 kPa;

(c) High Snow Load Model (Heavy Duty) – The Contractor shall include, in addition, a high snow load design, for Modular Classrooms that will be used in high snow load locations or when placed adjacent to Schools with high walls or other structures that could result in snow drifting onto the roof of the Modular Classroom. The units in these cases shall be designed for a uniformly distributed snow load of 10.75 kPa;

(d) Snow Loads, Identification of Modular Classrooms – The Contractor shall include permanent identification of unit type as an SD (Standard Duty) unit or an HD (Heavy Duty) unit, by affixing a metal plate showing this designation, with one way screw heads, to the inside of the mechanical room wall, and, in addition, provide a label showing this designation attached to the door frame. Structural design loads shall be shown on Modular Classroom shop drawings;

(e) Other Roof Loads – Roof structures shall also be designed for mechanical or equipment loads and other concentrated loads in accordance with the requirements of the *National Building Code of Canada* and the *Alberta Building Code 2006*; and

(f) Occupancy Loads – The Modular Classrooms shall be designed for a uniformly distributed load of 2.4 kPa, except for assembly areas including corridors, which shall be designed for a uniformly distributed load of 4.8 kPa. Floor structures shall also be designed for mechanical or equipment loads and other concentrated loads in accordance with the requirements of the *National Building Code of Canada* and the *Alberta Building Code 2006*.

4.10.3.3 Acoustics

4.10.3.3.1 General

The Modular Classrooms shall be designed by the Contractor to minimize noise

interference from outside the School, hallways, other classrooms, mechanical equipment and from within the classroom itself and to achieve a high level of speech intelligibility within the classroom.

The Contractor shall, at a minimum, design the Modular Classrooms in accordance with this Section 4.10.3.3 for each Building System indicated below to ensure that all classrooms have the following acoustical characteristics:

(a) quiet background noise levels due to the operation of heating, ventilation and air conditioning (HVAC) and plumbing systems;

(b) low reverberation;

(c) adequate noise isolation between a classroom and adjacent classrooms, washrooms, corridors and mechanical rooms;

(d) adequate structural isolation between a classroom and adjacent classrooms, washrooms, corridors; and

(e) adequate noise isolation from outdoor noise sources such as vehicular traffic or aircraft.

4.10.3.3.2 Mechanical/HVAC Background Noise

The Contractor shall design the Modular Classrooms to ensure that background noise due to operation of HVAC system shall not exceed RC30 (N) for classrooms and RC40 (N) for corridors.

The Contractor shall design the Modular Classrooms such that background HVAC noise criterion in the classrooms shall be achieved at all locations where a student or teacher's desk could potentially be located. This may be 1 m or less from noise generating equipment or ventilation grilles. Background HVAC noise shall have a neutral spectrum devoid of tones, low frequency rumble, hiss or other distracting characteristics.

The Contractor shall design the Modular Classrooms to ensure that all supply and drainage piping is isolated from the structure to minimize the transfer of waterflow noise caused by the operation of faucets, etc.

4.10.3.3.3 Vibration Isolation

The Contractor shall design the Modular Classrooms to include vibration isolation for all appropriate mechanical equipment to prevent transmission of discernable vibration into the classroom.

4.10.3.3.4 Grilles and Diffusers

The Contractor shall design the Modular Classrooms to include grilles and diffusers that have a catalog Noise Criteria ("**NC**") rating of NC 18 or less for a single diffuser.

4.10.3.3.5 Reverberation Control

The Contractor shall design the Modular Classrooms to ensure that classrooms (unoccupied) shall have a maximum Reverberation Time of 0.6 seconds averaged over the one third octave bands with mid frequencies of 500 Hz, 1000 Hz and 2000 Hz. Acceptable reverberation can typically be achieved by providing a suspended acoustic ceiling or other acoustic ceiling finish with a minimum Noise Reduction Coefficient - NRC 0.60 throughout the classroom.

4.10.3.3.6 Noise Isolation

The Contractor shall design the Modular Classrooms to include a minimum Noise Isolation Class ("**NIC**") of Classroom/Classroom of NIC 45.

The Contractor shall design the Modular Classrooms to minimize sound flanking or structural bridging so that the maximum potential noise isolation capability of the construction is realized. The Contractor shall design the Modular Classrooms such that wall, floor and ceiling assemblies around the classrooms will achieve a Sound Transmission Class ("**STC**") rating that is five points higher than the required NIC rating.

The Contractor shall design the Modular Classrooms such that noise isolation between the classrooms and mechanical rooms is adequate to meet the HVAC background noise requirements. A mechanical room envelope design with a rating of NIC 50 will accommodate most mechanical systems but may not be adequate in all circumstances.

In the Detailed Designs, the Contractor shall provide structural discontinuity between the classrooms and adjoining spaces to prevent impact noises from creating a distraction in the classrooms. Typical activities such as walking in corridors, locker doors closing, etc. shall not exceed a maximum noise level of 40 dBA inside a classroom.

4.10.3.3.7 Exterior Noise Isolation

Noise isolation requirements for the building envelope of the Modular Classrooms vary considerably depending on the location of the Modular Classroom. In the Detailed Designs, the Contractor shall include a building envelope that will reduce the outdoor noise sufficiently to meet the indoor Mechanical/HVAC Background Noise criterion in Section 4.10.3.3.2. A building envelope with STC 40 and operable windows is acceptable for a suburban location that is not adjacent to a major arterial road or airport.

4.10.3.4 Building Envelope

4.10.3.4.1 General

The Contractor shall design the Modular Classrooms with a building envelope that enhances and is integrated with the other Building Elements and Building Systems that provide the thermal, visual and acoustic comfort that enable and support the learning environment, without compromising durability or maintenance. In the Detailed Designs, the Contractor shall include a building envelope that reduces the total life cycle cost of owning, operating and maintaining by integrating and optimizing insulation levels, glazing, shading and air leakage control. The Contractor shall design building envelope assemblies that separate spaces that require differing environmental conditions by controlling the flow of air, moisture, and energy.

The Contractor in its design of the materials used in the building envelope shall utilize materials suitable for the environmental conditions to which each will be exposed. The Detailed Designs for the materials used in the building envelope shall provide a service life consistent with accessibility for maintenance of building components and planned life of the Modular Classrooms. Refer to Minimum Material Requirements.

In the Detailed Designs for the building envelope, the Contractor shall utilize rain screen principles to ensure that natural elements of water, snow, and ice shed safely from exterior surfaces and are not trapped in the assembly causing deterioration or staining of finishes and provide an effective air barrier to function as a vapour barrier. The Contractor shall design the air barrier such that it is continuous at all transitions between different construction assemblies of each Modular Classroom unit (floor to wall, roof to wall, window to wall, door to wall, door opening to door opening). In the Detailed Designs for the building envelope, the Contractor shall incorporate air tightness of the air barrier such that leakage of the overall air barrier system does not exceed the values set out in the *Alberta Building Code 2006*, Table A-5.4.1.2, Recommended Maximum Air Leakage Rates, when the building envelope is subjected to a differential pressure of 75 Pa when pressurized by a blower door, as demonstrated by blower door test conducted in accordance with ANSI/ASTM-779-99.

In the Detailed Designs for the building envelope, the Contractor shall provide a means of maintaining the continuity of the air barrier and minimum insulation R-values to match wall, roof and floor minimums between adjoining Modular Classrooms at door openings or at corridors, between Modular Classrooms and other construction (corridor or Core Structure) at the openings. The plane of the air seal must be accessible. The Detailed Designs must ensure that the air sealing component’s adhesive and structural capacity is not exceeded due to movement of the structural elements. Movement could be caused by structural or wind loading, hygro-thermal (moisture transfer) movement, and movement due to transportation.

In the Detailed Designs for the building envelope, the Contractor must prevent condensation from forming on or within the construction assemblies, at transitions between different construction assemblies (floor to wall, roof to wall, window to wall), and at door connections between two adjoining Modular Classrooms or a Modular Classroom and other construction (corridor or Core Structure). In the Detailed Designs for the building envelope, the Contractor shall provide thermal resistance ratings to levels based on life cycle costing for walls, roofs, and floor assemblies. Effective RSI values to be determined as per the methods set out in Appendix C of the *Model National Energy Code of Canada for Buildings 1997*.

4.10.3.4.2 Roofs

The Contractor shall design the roof of the Modular Classrooms to have a minimum slope to drain of 1:50 for field of roof. The slope shall be provided in the design of the Modular Classrooms. Use of sloped insulation shall be kept to a minimum. The Contractor shall design a fully adhered roofing system with proven performance in Alberta climates. The Contractor shall design the roof drainage system to prevent water from draining over the wall cladding system. The Contractor shall consider a design which will minimize damage to roof due to freezing of standing water or from vandalism. In the Detailed Designs, the Contractor shall include an engineer designed and approved personnel fall restraint system at the roof level. The Contractor shall design the minimum thermal resistance for the roof assembly, including thermal bridging, to be RSI 4.4 m^2*°C/W or better.

4.10.3.4.3 Walls

The Contractor shall design the cladding system to resist impact loads and to reduce the effects of vandalism. The Contractor shall design the cladding system to be easily painted to allow matching of colours to other sections of the Core Structure at the School Site. The Contractor shall design the cladding support system to accommodate, at a minimum, both a cement board cladding application and a metal siding application. The Contractor shall design minimum overall thermal resistance of the walls, including thermal bridging, to be RSI 2.6 m^2*°C/W or better.

4.10.3.4.4 Floor Structure

The Contractor shall design the minimum thermal resistance for the floor assembly, including thermal bridging, to be RSI 3.5 m^2*°C/W or better.

4.10.3.4.5 Windows

The Contractor shall provide a total of three operable windows per classroom (refer to Appendix “A”). The Contractor shall design the window assemblies to prevent condensation from forming on the glass surface or on frames with the interior conditions

as required and a 2.5% January design temperature. The Contractor shall design the window assemblies as pressure equalized, rain screen systems that drain to the exterior. The Detailed Designs shall have the main mass of the aluminum frame to the interior of the thermal break. The Contractor shall design window assembly installations to have an air seal tie-in to the wall air barrier. The Contractor shall design the anchorage for the windows so that it does not interfere with the tie-in of the air seal. The Contractor shall design window or window-wall assemblies to accept security screens. The Detailed Designs shall utilize overall window assemblies that have minimum thermal resistance of RSI 0.45 m^2*°C/W (maximum U 2.2 W/m^2* C). Skylights or other forms of sloped glazing are not allowed, but alternate combinations of end-wall windows and overhead glazing such as light pipes or vertically-glazed clerestories will be considered.

4.10.3.4.6 Doors

The Contractor shall design the doors to be hollow metal with ½ vision lite and to ensure barrier-free access. The Contractor shall design the mechanical room door and frame to meet the acoustical requirements of Section 4.10.3.3 (Acoustics).

4.10.3.5 Indoor Air Quality

4.10.3.5.1 General

The Contractor shall design the Modular Classrooms for elimination and control of materials that have the potential to off-gas and control of potential pollutants, together with careful natural and mechanical ventilation system design.

4.10.3.5.2 Ventilation Air

The Detailed Designs for ventilation air for the Modular Classrooms shall meet the following requirements for achieving LEED™ Silver Certification:

(a) Indoor Environmental Quality Prerequisite 1, Minimum IAQ Performance, for each classroom; and

(b) Indoor Environmental Quality Prerequisite 2, Environmental Tobacco Smoke ("**ETS**") Control: prohibit smoking in the Modular Classrooms while they are under construction in the factory.

The Contractor shall design the ventilation system for an average of 25 students per classroom. The Contractor shall ensure that the minimum outside air flow rate to every occupied space in the Modular Classrooms shall meet the requirements of the most current ASHRAE Standard 62. Regardless of the proposed heating and ventilation system, the Contractor shall include equipment to allow full outside air economizer cycle for "free cooling" when outside air temperatures permit. The Contractor shall design to

provide heat recovery on exhaust air.

4.10.3.5.3 Control of Off-Gassing

The Contractor shall, in the Detailed Designs, incorporate materials that are LEED™ Silver Certification compatible. The elimination of materials that may off-gas or contain potential environmental pollutants is required. If the use of materials that may off-gas or contain potential environmental pollutants is required, then the use of such materials should be minimized. Meeting the applicable LEED™ criteria together with a carefully designed natural and mechanical ventilation system by the Contractor will provide an acceptable design.

4.10.3.5.4 Indoor Chemical and Pollutant Source Control

The Contractor, in the Detailed Designs, shall minimize exposure of the School Building occupants to potentially hazardous particulates and chemical pollutants.

4.10.3.6 Visual Comfort

4.10.3.6.1 General

The Contractor shall design the Modular Classrooms to deliver a high-performance visual environment. While specific requirements are detailed later in this Section, the Contractor shall employ the following general strategies for achieving visual comfort:

(a) integrating natural and electric lighting with appropriate design and control;

(b) balancing quantity and quality of light by avoiding excessively high light levels and by designing appropriate strategies for individual rooms or room use areas; and

(c) controlling or eliminating glare.

4.10.3.6.2 Daylighting & Views

Daylighting is the controlled admission of natural light into a space. The Contractor shall, in the Detailed Designs, implement daylighting that reduces energy usage for electric lighting and provides occupants a connection between indoor spaces and the outdoors. The Contractor shall design for diffuse, uniform daylight throughout the classroom. The Contractor shall consider bringing in light from overhead through the use of light pipes or vertical clerestory glazing. The Contractor shall design to avoid direct beam sunlight and avoid glare by considering control and filtering design strategies such as interior shades, louvers, blinds, exterior overhangs or light shelves.

4.10.3.7 Lighting

4.10.3.7.1 Electric Lighting - Interior

The Contractor shall design the lighting systems to meet the latest IESNA recommended practices for school lighting. Specifically, refer to IES RP3 – *Guide for Educational Facilities Lighting*. The Contractor shall design to provide a maintained lighting illuminance range of 380 - 450 lux average at a work plane height of 760 mm, while ensuring average maintained illuminance does not exceed 500 lux or less than 400 lux. The Contractor shall design illuminance ratios (maximum: minimum) not to exceed 3:1.

The Detailed Designs shall include recessed light fixtures or direct/indirect luminaires, where ceiling heights permit, with electronic ballasts and T8 or T5 lamps with a minimum Colour Rendering Index of 80, Correlated Colour Temperature of 3500K. The Contractor shall design the lighting system so that installed power density for lighting is not more than 10 watts/m^2.

4.10.3.7.2 Electric Lighting - Lighting Controls

The Contractor shall design the Modular Classrooms so that classroom lighting can be controlled in a minimum of three segments, one along the window wall to compensate for daylighting and two perpendicular to the window wall one of which controls the area at the electronic whiteboard and one for the remainder of the room. The Contractor shall design the classroom lighting controls employing low voltage relays, to be controlled by either the Core Structure's low voltage lighting control system, where applicable, or be controlled by occupancy sensor connected to and programmed by the Modular Classroom's BMCS panel.

4.10.3.7.3 Exit Lighting and Signage

In the Detailed Designs, the Contractor shall include exit lighting and signage to meet *Alberta Building Code 2006* requirements. The Detailed Designs for exit signs shall use LED lamps and be supplied with backup power.

4.10.3.8 Electrical Other

4.10.3.8.1 Power / Communication Conduit or Wall Channel Space

The Contractor shall design a vertical raceway from 300 mm above finished floor to ceiling space in external walls every 1220 mm O.C., with minimum cross section of 75 mm X 150 mm, to run convenience power or communications wiring from plenum space to receptacles.

4.10.3.8.2 Power Service

The Contractor shall design a distribution panel for each classroom with sufficient capacity to handle all lighting, convenience power and mechanical loads with ten percent (10%) spare capacity. The panel is to be located in the Modular Classroom mechanical room. The Contractor shall design appropriate service conductors to the Modular Classroom connection point in the corridor ceiling chase area.

4.10.3.8.3 Convenience Power

The designs shall include ten receptacles, on five circuits, for computer workstations, maximum two workstations per circuit. Refer to Appendix "A" for additional requirements.

4.10.3.8.4 Communications

The Contractor shall design a combination voice and data outlet at the teacher's desk. The Contractor shall ensure that the provision of data outlets shall be made to each computer workstation. The Contractor shall design an overhead-paging outlet in each classroom and corridor. The Contractor shall design an outlet for an intercom station in each classroom. The Contractor shall design one data outlet in the classroom ceiling suitable for a wireless network transmitter. The Contractor shall design a junction box to connect the communication outlets in the classroom and corridors with an empty conduit for connection to the Core Structure. The Contractor shall design so as to ensure that all of the above elements described in the Section will be supplied with a conduit in the wall stubbed to ceiling space. Refer to Section 4.9.7.6.3.4 (Voice and Data System, Cable, Conduits and Raceways) for cabling requirements.

4.10.3.8.5 Fire Alarm

The Contractor shall design fire alarm devices compatible with the Core Structure fire alarm system. The Contractor shall design fire alarm devices that allow for both audible and visual signals.

4.10.3.9 Thermal Comfort

4.10.3.9.1 General

The Contractor shall design the Modular Classrooms for thermal comfort to enhance energy conservation, student attention spans and productivity. Refer to Appendix "F" for additional requirements.

4.10.3.9.2 Design Capacity

In the Detailed Designs of the Modular Classrooms, the Contractor shall include the design capacity to maintain the following conditions in the space, based on the worst case winter design conditions in the *Alberta Building Code 2006*, and provide capacity in the system to restore the classroom from the setback temperature prior to the occupied hour start time.

(a) Heating:

- occupied hours: 22°C, with humidity at a minimum of 15% RH during heating mode; and
- unoccupied hours: 18°C during heating mode;

(b) Cooling:

- Mechanical cooling for the Modular Classrooms will not be provided. The Detailed Designs shall allow free air cooling as outdoor temperatures permit; and
- The Detailed Designs for Modular Classrooms shall provide that the furnace will be equipped with an evaporator coil and line sets installed to accommodate future air conditioning. Condensor units are not required to be provided by the Contractor.

4.10.3.9.3 Thermal Environmental Conditions During Occupied Hours

The Contractor shall design the Modular Classrooms so as to ensure that the following design condition temperatures are not exceeded:

(a) the temperature fluctuation shall not exceed ±1°C from setpoint during the heating mode;

(b) the horizontal temperature gradient between 300 mm and 3000 mm from the exterior wall, at desk height shall not exceed 2°C;

(c) the vertical temperature gradient between 200 mm and 1700 mm above the floor at any point more than 300 mm from the exterior wall shall not exceed 2°C;

(d) the air velocity shall not exceed 0.15 m/s (30 ft./min.) within the occupied

zone; and

(e) the supply air change rate for the classroom shall not be less than indicated for classrooms in Table 2.7-1 of Alberta Infrastructure and Transportation's *Standards and Guidelines for School Facilities (August 2007)*.

4.10.3.10 HVAC / Mechanical / Controls

4.10.3.10.1 General

The Contractor shall ensure that the HVAC design responds to the loads imposed by the Modular Classroom's building envelope, internal loads and ventilation loads in an integrated fashion to achieve good thermal comfort, superior indoor air quality and to avoid excessive energy use.

The Contractor shall design high-performance controls to fully realize the thermal comfort, indoor air quality and reduced operating cost objectives in a high-performance Modular Classroom.

While specific design criteria are detailed later in this Section 4.10.3.10, the Contractor shall incorporate the following general strategies for achieving high-performance HVAC:

(a) using high efficiency equipment, particularly equipment with high efficiency at part load;

(b) appropriate sizing, avoiding oversizing; and

(c) controls that respond to load and condition changes and that are easy to re-program when operational and functional needs change.

4.10.3.10.2 Heating and Ventilation Air

For each Modular Classroom, the Contractor shall design a dedicated HVAC unit that shall be located indoors, factory assembled and packaged as a complete unit and be accessible for ease of maintenance.

For the furnace that is supplied, the Contractor shall design controls to include all hardwired safeties, bonnet temperature activated fan switch and heating/cooling fan speed interlocks.

The Contractor shall ensure the HVAC unit meets the following minimum performance and design criteria:

(a) 90% efficient natural gas furnace;

(b) exhaust air heat recovery must operate continuously during occupied times with minimum outdoor air and exhaust air capacities of 210 L/s (450 cfm);

(c) multi-speed supply air fan with high efficiency motor;

(d) humidifier to meet the specified operating sequences;

(e) a DX cooling coil and line sets consisting of two semi-flexible insulated copper lines that are designed to connect the coil to a future outdoor condenser;

(f) supply air filter with an efficiency rating of MERV 13 (30% dust spot) for air systems with a capacity greater than 283 L/s (600 cfm);

(g) two stage gas valve or fully modulating gas valve with a 3:1 turndown ratio;

(h) supply air temperatures less than 12°C (55°F) shall not be permitted;

(i) modulating economizer to allow the use of 100% outside air for space cooling; and

(j) noise levels to meet specified acoustic requirements.

The Contractor shall ensure the ductwork system meets or exceeds the following minimum performance and design criteria:

(k) supply air into the classroom is primarily through ceiling diffusers;

(l) supply air is distributed so as to have some air wash over the windows;

(m) fully conceal all ductwork within the suspended ceiling space;

(n) return air from the classroom is through either a sidewall or ceiling grille;

(o) supply air and return air ducting is acoustically treated as required to meet specified acoustic requirements; and

(p) motorized and insulated relief damper with ducting, gooseneck, grille and other related components to relieve outdoor air from the classroom during economizer cycles.

4.10.3.10.3 Mechanical – Water and Plumbing

For each Modular Classroom, the Contractor shall design for the following elements of a simple domestic water system for the installation of a sink as indicated in the Core School Designs or at the discretion of the Province, and to allow the potential to use condensing furnaces:

(a) 12 mm domestic hot and cold water lines running from the Core Structure and run in a heated space within the Modular Classroom;

(b) a grey water sump of sufficient capacity, 40 litres minimum;

(c) stubbed in drain lines plumbed to the grey water sump to allow for potential mechanical furnace condensate line and future sink; and

(d) a sump drain pump, with integral level control, and discharge line, run in a heated space within the Modular Classroom, and able to be connected to Core Structure sewage system.

4.10.3.10.4 Control System

The Contractor shall design an electronic control panel or Remote Control Unit ("**RCU**") to control HVAC unit occupied/unoccupied run times, room temperatures, ventilation quantities and heat recovery performance and to perform data logging and remote access. The Contractor shall design control system hardware to be BACnet compliant and shall be connected to and programmed by the BMCS. The Contractor shall design sensors, devices, controllers, school interface terminal strip, programming and documentation manuals as required to meet the Alberta Infrastructure's *Guideline for Relocatable Classroom Controls, (January 2009)* attached in Appendix "F".

4.10.3.11 Durability

4.10.3.11.1 General

The Contractor shall design the Modular Classrooms to have a design service life of 50 years, in the Long category of Table 2, Design Service Life, of CSA Standard S478-95 (R2001).

4.10.3.12 LEED™ Criteria and Certification Requirements for Modular Classrooms

4.10.3.12.1 LEED™ General

In all cases, the LEED™ credits for the Modular Classrooms that are to be pursued must

be consistent with those being pursued for the Core Structure, including the mandatory points setout in Section 4.8.2. Each School, including the Modular Classrooms required in order to achieve School Availability, as a whole will be evaluated for LEED™ Silver Certification.

4.10.3.13 Acceptance Testing of Modular Classrooms

The Contractor shall build one complete Modular Classroom in the factory to function as a prototype unit that will be used to test and verify the performance of the Modular Classrooms and which will be close enough to the final design in function that it will be installed at a School once prototype testing is complete.

The Contractor shall carry out the necessary modifications to the prototype unit to ensure compliance with the LEED™ Silver Certification requirements, this Section 4.10, and other technical requirements set out in this Schedule 18 generally, and with the results of the following tests specifically, before proceeding with the manufacture of any other Modular Classrooms.

The Contractor shall perform blower-door testing for air tightness of the completed prototype unit's building envelope and submit results to the Province. The Contractor shall make arrangements to allow for the Province to witness this test.

The Contractor shall perform testing of acoustic performance of the completed prototype unit including for reverberation, sound isolation, impact isolation and background noise. The Contractor shall make arrangements to allow for the Province to witness these tests.

The Contractor shall modify the prototype unit in order to apply the performance of the prototype unit to subsequent production Modular Classrooms, and deliver the prototype unit as part of the total number of Modular Classrooms required under the DBFM Agreement.

4.10.3.14 Modular Classroom Record Documents

For each School the Contractor shall provide to the Province three hard copies and one electronic copy of the following documents with each type of Modular Classroom:

(a) fabrication drawings stamped and signed by the architect or engineer of record;

(b) inspection reports to demonstrate compliance monitoring services have been provided as required by the *Safety Codes Act* (Alberta);

(c) appropriate letters of compliance and regulatory schedules from the manufacturer and registered architect or engineer of record;

(d) HVAC commissioning report and air balance report;

(e) manufacturers' brochures and specifications on all Building Equipment provided in each Modular Classroom;

(f) installation manual that details the steps required to place, level and carry out final assembly of the Modular Classrooms at the School Sites;

(g) signed LEED™ letter templates and supporting documentation for the mandatory credits detailed in the LEED™ criteria and LEED™ optional credits that the Contractor is pursuing; and

(h) supporting documentation for "LEED™ Letter Templates", as detailed in the LEED™ Letter Template itself and Documentation Guidance sections of LEED™ Canada – NC 2009 Reference Guide.

4.11 CONSTRUCTION OF SCHOOLS

4.11.1 General Construction Requirements

The Contractor is responsible for the supply of all management, professional and technical services, supervision services, construction quality control and quality assurance services, labour, materials and equipment for performing all of the duties and obligations for carrying out the Project.

The Contractor shall ensure that the construction of the Schools conforms to the Project Requirements, the Contractor's Designs and the Detailed Designs.

All construction is to reflect a high degree of workmanship and all materials incorporated into the Schools shall be new and free of defects.

Changes to the Contractor's Designs and the Detailed Designs prior to School Availability shall be submitted for review by the Province as required under section 5.5 of the DBFM Agreement, Schedule 5 (Design and Plan Certification Process and Review Procedure) and Section 3.2.

Any changes initiated by the Province to the Project Requirements set out in Section 4 will be subject to the Change Order requirements set out in Schedule 1 (Change Orders) to the DBFM Agreement.

The Contractor shall supervise and direct the Project competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to carry out the Project in accordance with the DBFM Agreement. The Contractor shall be solely responsible for:

(a) the means, methods, techniques, sequences and procedures of the Project

and for coordinating all Project activities; and

(b) the design, erection, operation, maintenance and removal of temporary structural and other temporary facilities and the design and execution of construction methods required in their use.

The Contractor shall employ a competent superintendent, and other necessary and qualified personnel, who shall be in attendance at each School Site while the Project is progressing.

4.11.2 Electrical and Mechanical

During the installation of the electrical and mechanical systems at a School, the Contractor shall comply with the basic electrical requirements and the basic mechanical requirements set out in Appendix "E".

4.11.3 Representatives

Further to the requirements of section 20.1 of the DBFM Agreement, the Contractor shall appoint a representative for each School ("**Contractor Construction Representatives**"), and shall notify the Province of such appointment not less than 10 Business Days before any construction work is commenced at a School Site. The Contractor Construction Representatives shall be the persons responsible for all communications with the Province regarding the construction of the Schools. The Province shall appoint one or more persons to serve as project representatives in connection with the oversight of the Contractor's construction activities at the School Sites ("**Provincial Construction Representatives**"), and shall notify the Contractor of such appointments within 10 Business Days of receipt of the Contractor's notice of appointment. The Provincial Construction Representatives shall be the persons responsible for all communications with the Contractor Construction Representatives regarding the construction of the Schools. The Contractor Construction Representatives and the Provincial Construction Representatives may appoint alternatives to serve in addition to, or temporarily in their place, or may delegate some of the functions of such representatives.

The Contractor shall not rely upon any acts, omissions, requirements or directions of the Provincial Construction Representatives or any other person whatsoever as authority for any departure from the terms of the DBFM Agreement.

4.11.4 Construction Completion Work

4.11.4.1 Before Occupancy

Once School Availability has been achieved but before occupancy of a School by students, the Contractor shall coordinate its work required to achieve Construction

Completion with the work of the School Board so as to allow the School Board to complete fitting of School Board Supplied Furniture and Equipment prior to occupancy of each School by the students. The Contractor must cooperate with the School Boards, coordinate its work with that of the School Board and do all things necessary, including stopping its Construction Completion work, to ensure that the School Boards' work is not delayed or interfered with.

4.11.4.2 After Occupancy

Once the School is occupied by staff and students, the Contractor's right to access a School and a School Site to carry out Construction Completion work will be subject to the consent of the School Representative, acting reasonably, taking into account the following considerations:

(a) the Contractor may carry out Construction Completion work during the School Day in unoccupied areas of a School, provided that the nature of the work does not interfere with the health or safety of the staff or students, and does not create undue noise or interference with the Educational Activities being carried out in that School; and

(b) the Contractor may carry out Construction Completion work Outside the School Day in unoccupied areas of a School or After Hours, provided that the nature of the work does not interfere with the health or safety of the users of that School.

The Contractor and its subcontractors must strictly comply with all access and security protocols set out in Section 5.4 and with Schedule 16 (Safety Requirements).

4.11.5 Construction Meetings

The Contractor Construction Representatives shall schedule and coordinate the following meetings with the Provincial Construction Representatives for each School and for the entire Project, if required:

(a) monthly LEED™ program meetings;

(b) bi-weekly construction progress meetings; and

(c) weekly commissioning and start-up progress meetings.

The purpose of these meetings is to review personnel assignments, responsibilities, administrative and procedural requirements and to obtain updates on LEED™ Silver Certification, construction and commissioning progress at each School. The Contractor

Construction Representatives shall also coordinate location, attendees and agenda with the Provincial Construction Representatives.

4.11.6 Construction Schedules and Submittals

The Contractor shall provide to the Province the following schedules and updates for each School:

(a) Construction Progress Schedule

By the 25th day of each month the Contractor shall provide a design and construction progress schedule for the next month for each School;

(b) Monthly Construction Progress Report

By the 25th day of each month the Contractor shall provide a written construction progress report for the previous month for each School Site;

(c) Submittals Schedule

Provide and update monthly by the 15th day of each month a schedule of shop drawings which are to be submitted in the next month by the Contractor for each School;

(d) Modular Classroom Delivery Schedule

Provide and update monthly by the 20th day of each month a Modular Classroom delivery schedule for each School;

(e) Building Equipment Delivery and Installation Schedule

Provide and update monthly by the 15th day of each month, a Building Equipment delivery and installation schedule for each School including a tabulated summary of all major Building Equipment required to be installed at each School; and

(f) Commissioning and Startup Schedule

Provide and update periodically, a schedule outlining the commissioning and startup activities for each School.

4.11.6.1 Payment Adjustments

If the Contractor fails to deliver to the Province any of the schedules indicated in this Section 4.11.6 within the time specified, a Payment Adjustment of $1,500 per day or

partial day will be assessed for each undelivered schedule until such schedule is delivered to the Province.

4.11.7 Applicable Laws, Standards and Guidelines and Authorizations

Subject to the last paragraph of section 4.7 of the DBFM Agreement, in all aspects of the Project, the Contractor shall comply with all applicable laws, Authorizations, Standards and Guidelines, Good Industry Practice and manufacturers' guidelines and requirements for installation.

4.11.8 Temporary Facilities and Controls

4.11.8.1 Temporary Facilities and Barriers

The Contractor shall be responsible for design and safety of all temporary facilities used by the Contractor to complete the Project. Temporary facilities of such nature that engineering proficiency is required for their design to ensure safety during construction shall be designed by a professional engineer retained by or in the employ of the Contractor. Before the temporary structure is used, the person responsible for the design or his representative shall inspect the structure and issue a certificate stating that it has been constructed according to design.

The Contractor shall also supply, erect and maintain all temporary construction barricades, sidewalk sheds, catch platforms, and accessories as required by the relevant Municipality or other applicable laws.

4.11.8.2 Temporary Utilities for Construction

The Contractor shall, at its own cost, provide and maintain all temporary utilities required during construction including sanitary facilities, water supply, temporary light and power, temporary heating, telephone, temporary sewers and dewatering until each School has achieved School Availability.

4.11.9 Site Requirements

4.11.9.1 General

Certain of the Exterior Improvements will be constructed on the Municipal Lands within the School Sites as shown in Schedule 12 (School Sites) and the Site Layouts. This Section 4.11.9 shall apply to all lands within the School Site.

4.11.9.2 Municipality and Utility Interfacing

The Contractor shall coordinate and interface its construction activities with

infrastructure owned and operated by the relevant Municipality and the applicable utility. The Contractor must understand all requirements of the relevant Municipality and utility.

In constructing the Exterior Improvements for the Schools on the Municipal Lands, the Contractor shall be responsible, at its own cost, for:

(a) any modification, relocation and re-connection of all the utility services, including water, sanitary sewer, storm sewer, natural gas, electrical power;

(b) any modifications or relocations of existing street lighting, communication lines, bus stops and fire hydrants; and

(c) repairs or replacement of existing roads, curbs, gutters, sidewalks and portions thereof,

that is required to accommodate the new access points to the School Sites.

The Contractor shall also be responsible for making good all damage caused to existing roads, curbs, gutters and sideways arising as a result of the Contractor carrying out the Project at the School Site.

Where the Contractor fails to make good any damage it causes to existing roads, curbs, gutters and sidewalks, the Province may elect to make the repairs it deems necessary and the Contractor shall be responsible for the Province's actual cost in making the repairs, plus an administration fee of 25% as liquidated damages. These costs shall be deducted from Payments made to the Contractor.

4.11.9.3 Construction Equipment and Machinery

The Contractor shall confine construction machinery and equipment, the storage of products, and the operations of workers to the School Site identified in the Site Layouts and shall not unreasonably clutter the School Sites with materials, construction machinery or equipment.

4.11.9.4 Protection of the Public and Fire Safety

The Contractor shall ensure that at all times prior to School Availability each School Site shall comply with requirements of the *Alberta Building Code 2006*, Part 8.

4.11.9.5 Access to the School Sites

The Contractor shall only enter the School Sites through collector roadways and not local residential roadways or fields, unless otherwise approved by the relevant Municipality. In addition, the Contractor shall comply with any access requirements set out by the

Development Permit for each School Site and all relevant municipal bylaws and regulations. If the Contractor fails to comply with this requirement, it shall immediately repair at its own cost all damage caused to any streets, sidewalks, or lands adjacent to the School Sites by the unauthorized access to the School Sites. Where the Contractor fails to immediately commence and diligently complete the repair of any damage it causes to streets, sidewalks or lands adjacent to the School Sites, the Province may elect to make the repairs it deems necessary and the Contractor shall be responsible for the Province's actual cost in making the repairs, plus an administration fee of 25% as liquidated damages. These costs shall be deducted from Payments made to the Contractor.

4.11.9.6 Site Cleanliness

At all times prior to School Availability, the Contractor shall keep the School Sites free from accumulations of waste materials or rubbish.

Prior to School Availability, the Contractor shall remove from the School Sites all temporary facilities, along with all construction tools, surplus material, equipment, mock-ups and similar items and shall complete a final cleaning of the Schools and the School Sites.

4.11.9.7 Waste Disposal Requirements

The Contractor shall comply with all applicable laws and requirements pertaining to the recycling and disposal of waste materials and Hazardous Substances which the Contractor or its subcontractors are responsible for or those materials and Hazardous Substances which the Contractor or its subcontractors have brought onto the School Sites. All such items must be regularly removed prior to School Availability and finally removed from a School Site as a condition to achieving School Availability.

4.11.9.8 Cleaning Sidewalks

Municipal bylaws require, in part, that all snow, ice, dirt, debris or other obstruction, formed or deposited on any public sidewalk adjoining a property shall be cleared away and removed by owner/occupant within the prescribed time when such snow, ice, dirt or other obstruction was formed or deposited thereon. For the purposes of this requirement, Contractor shall be deemed to be owner/occupant of a School Site prior to School Availability, and shall be responsible for cleaning all sidewalks as stipulated above.

4.11.9.9 Cleaning Streets

The Contractor shall ensure that all dirt, debris or other obstructions, formed or deposited on any public street adjoining a School Site shall be cleared away and removed in accordance with Municipal requirements.

4.11.9.10 Construction Signage

The Contractor shall include temporary on-site warning, traffic directing, and other information signs as required by applicable laws.

4.11.9.11 Fencing and Security

To ensure public safety, at all times prior to School Availability for a School, the Contractor shall fence-off the construction area for each School Site and shall ensure that appropriate security is in place.

4.11.9.12 Notice of Failure to Perform

The Province will provide written notice if the Contractor has defaulted in the performance of any of its obligations as required in this Section 4.11.9. The Contractor shall rectify all such defaults within two days from receipt of such notice.

4.11.9.13 Payment Adjustments

If the Contractor has failed to rectify any default of its obligations under this Section 4.11.9 within the time specified in Section 4.11.9.12, then in addition to any other remedies the Province may have under Section 4.11.9, Payment Adjustments of $1,500 per day or partial day will be assessed for each default identified in the notice provided under Section 4.11.9.12 until such defaults have been rectified.

4.11.10 Utility Service Connections

In this Section 4.11.10, "**Utility**" means a public or private utility company. The Contractor shall be responsible for applying, paying, processing and connection of School Site service lines to Utility's lines and sources located in the street or boulevard adjacent to the School Site, regardless of whether the required work is performed by Contractor's own forces, subcontractors or by a Utility. The Contractor shall coordinate all service connections work and shall make all necessary arrangements with, comply with requirements of, and cooperate fully with each Utility and the relevant Municipality.

Upon School Availability being achieved, the Contractor shall ensure all accounts are in good standing and shall arrange for the transfer of the Utility service and account to the relevant School Board.

4.11.11 Project Records

4.11.11.1 Project Record Documents

The Contractor shall prepare all Project Record documents in accordance with the

requirements of the *Standards for Consultant Deliverables, (February 2009)* publication and shall utilize the set project title blocks that were available in the ASAP III RFP electronic document room and which the Contractor hereby acknowledges as having received.

Prior to School Availability for each School, the following documents are to be designated and retained for the Province as project record documents for each School:

(a) three hard copies and one electronic copy (AutoCAD and PDF) of all the design documentation described in Section 4.7;

(b) three hard copies and one electronic copy (AutoCAD and PDF) sets of "as built" drawings of a School and each Building System; and

(c) three hard copies and one electronic copy (PDF) of the documents required under Section 4.10.3.14 (Modular Classroom Record Documents).

4.11.11.2 Operation and Maintenance Data and Manuals

Prior to School Availability for each School, the Contractor shall submit three hard copies and one electronic copy ("**PDF**") of completed, Contractor prepared, operation and maintenance data manuals for all Building Equipment, Building Systems, materials and finishes of each School ("**Operation and Maintenance Manuals**").

Except for the Modular Classroom record documents stipulated in Section 4.10.3.14 and the electrical and mechanical Operation and Maintenance Manuals, the Operation and Maintenance Manuals for all Building Equipment shall include but not be limited to:

(a) installation instructions, including manufacturers' printed instructions;

(b) operating instructions, including manufacturers' printed instructions;

(c) Building Equipment identification comprised of the name plate information for each piece of Building Equipment;

(d) maintenance instructions, including manufacturers' printed instructions;

(e) manufacturers' recommended spare parts for the Building Equipment;

(f) suppliers and subcontractors list with contact information;

(g) tag directory identifying tag number and Building Equipment description and location;

(h) shop drawings list;

(i) final reviewed shop drawings;

(j) manufacturers' product data for Building Equipment, systems, materials and finishes; and

(k) certifications and inspection reports prepared by any Governmental Authority and testing agency.

The electrical and mechanical systems Operation and Maintenance Manuals shall meet the requirements set out in Appendix "H".

4.12 COMMISSIONING AND STARTUP

The Contractor shall commission and startup all Building Equipment and Building Systems for each School in accordance with its QMS and Commissioning and Startup Plan set out in Schedule 4 (Contractor's Management Systems and Plans).

The commissioning and startup work, shall include, but not be limited to the following:

(a) testing: perform tests to confirm compliance with the Technical Requirements and take corrective action as necessary;

(b) adjusting: perform adjustments to ensure proper, efficient and safe operation in accordance with the Technical Requirements; and

(c) balancing: perform balancing to ensure that the various parts of a Building System are in a proper state of equilibrium.

If required by applicable laws boilers installed in a School must comply with and be inspected by the *Alberta Boiler Safety Association*. The Contractor must have a QMS program for such Building Equipment registered and acceptable to the *Alberta Boiler Safety Association.*

All other Building Systems and Building Equipment, if required by applicable laws, shall be inspected and certified by the appropriate Governmental Authority, with the inspection certificates provided to the Province.

The Contractor shall give the Province not less than five days notice of the commencement of its commissioning and startup activities for a School, and shall further provide the Province with not less than five days notice of any testing, retesting and startup procedure to allow the Province the opportunity to witness such tests or procedures.

The Contractor shall also provide to the Province, prior to School Availability:

(d) copies of all tests results and reports derived from the commissioning and startup procedures and copies of test certificates;

(e) all Operation and Maintenance Manuals required under Section 4.11.11.2; and

(f) all required Authorizations, including but not limited to an occupancy permit, for each School.

4.13 ORIENTATION SEMINARS

Within 60 days of achieving School Availability, the Contractor shall conduct for the Province and the appropriate School Board employees an orientation seminar with respect to the operations of the School's Building Equipment and Building Systems. The orientation seminar shall include an overview of the Contractor's maintenance process.

The Contractor shall provide the Province with not less than 21 days notice of the date or dates for the applicable orientation seminars.

SECTION 5 - MAINTENANCE AND RENEWAL REQUIREMENTS FOR SCHOOLS

5. MAINTENANCE AND RENEWAL REQUIREMENTS FOR SCHOOLS

This Section 5 sets out the M&R Requirements applicable to the Schools.

5.1 RESPONSIBILITY FOR M&R

5.1.1 General

The Contractor is responsible for the supply of all management, supervision, professional and technical services, quality control and assurance, labour, materials and equipment for performing all of the duties and obligations necessary to perform the M&R during the School M&R Period and the M&R Period. The Contractor is responsible to pay any licensing or certification fees that may be required by any Governmental Authority for the operation of any Building Equipment. The performance requirements set out in the Technical Requirements represent the expected quality of the Schools that the Contractor shall maintain during the School M&R Period and the M&R Period. The Contractor shall carry out the program of planned routine maintenance and preventative maintenance specified in the Maintenance Plan to ensure the Schools meet the performance requirements set out in the Technical Requirements during the School M&R Period and the M&R Period. The Contractor shall monitor and assess the condition of the Schools and ensure compliance with the performance requirements throughout the School M&R Period and the M&R Period. In addition to planned routine and preventative maintenance, the Contractor shall provide maintenance and repair of the Schools, as contemplated in Section 5.12, to respond to requests for repairs or maintenance required at the Schools.

Where performance standards are not specified in the M&R Requirements, the Contractor is expected to perform the M&R in accordance with Good Industry Practice, all applicable laws and the relevant Standards and Guidelines.

All M&R together with any monitoring, inspecting and certifying shall be carried out in accordance with these M&R Requirements, all applicable laws, Authorizations and relevant Standards and Guidelines.

5.1.2 Materials and Workmanship

The Contractor shall ensure that all materials, and all repairs, replacements and renewals carried out by the Contractor as part of its M&R obligations under this Section 5 shall, unless otherwise specified herein, be of the same quality as the standards and criteria set out in the Technical Requirements and the Detailed Designs, taking into account advancements in materials development and Good Industry Practice at the time of replacement or renewal. Where parts, systems or components need to be replaced, they shall be replaced with new parts, systems or components. No used or reconditioned parts, systems or components shall be used without the prior written consent of the Province.

5.1.3 M&R Waste Disposal Requirements

At all times during the School M&R Period and the M&R Period, the Contractor shall keep each School free from accumulations of those waste materials, recyclable materials or rubbish related to the Contractor's performance of the M&R.

The Contractor shall comply with all applicable laws and requirements pertaining to the recycling and disposal of waste materials and Hazardous Substances which the Contractor or its subcontractors are responsible for or those materials and Hazardous Substances which the Contractor or its subcontractors have brought into the School for the purposes of carrying out the M&R. The Contractor shall regularly remove all such items from a School during the School M&R Period and the M&R Period.

5.1.3.1 Notice of Failure to Perform

The Province will provide written notice if the Contractor has defaulted in the performance of any of its obligations as required in this Section 5.1.3. The Contractor shall rectify all such defaults within one Business Day from receipt of such notice.

5.1.3.2 Payment Adjustments

If the Contractor has failed to rectify any default of its obligations under this Section 5.1.3 within the time specified in Section 5.1.3.1, then Payment Adjustments of $300 per day or partial day will be assessed for each default identified in the notice provided under Section 5.1.3.1 until such defaults have been rectified.

5.1.4 "As-built" Drawings and Operation and Maintenance Manuals

All "as-built" drawings and Operation and Maintenance Manuals shall be updated, as required, to reflect the M&R activities of the Contractor and any Modifications that change the physical dimensions or characteristics of the Schools, or change the Building Systems or Building Equipment in the Schools. The maximum time for completing and providing such updated "as-built" drawings and updated Operation and Maintenance Manuals to the Province shall be two months after completion of the repair, M&R activity or Modification.

5.1.4.1 Payment Adjustments

If the updated "as-built" drawings and updated Operation and Maintenance Manuals are not provided to the Province within the time stipulated, a Payment Adjustment of $2,000 per month or any partial month for each revised set of "as-built" drawings or set of revised Operation and Maintenance Manuals will be assessed until the revised set of "as-built" drawings or the revised set of Operation and Maintenance Manuals are delivered to the Province.

5.1.5 Provincial Responsibilities for School Operations

Excluded from the Contractor's M&R obligations are the Province's responsibilities to provide custodial services, boiler monitoring, maintenance, repair and renewal of the School Board Supplied Furniture and Equipment and the ICT wiring, equipment and systems, and to provide occupant support services. The specific obligations of the Province in connection with each or these items are as follows:

5.1.5.1 Custodial Services and Boiler Monitoring

The Province shall ensure that custodial services, including providing qualified staff to carry out these services, for the Schools as listed in Appendix "I" to this Schedule 18 are performed. The Province shall ensure that the custodial services and boiler monitoring will be performed at the minimum frequencies set out in Appendix "I". The Province shall ensure that only environmentally friendly products on the manufacturers' recommended list of cleaning and maintenance products for the Building Equipment, Building Elements, Building Systems or Exterior Improvements are used in the provision of the custodial services at the Schools.

The Contractor shall ensure that it is familiar with the scope of the custodial services to be performed by the School Boards when carrying out the M&R required under this Section 5.

5.1.5.2 School Board Supplied Furniture and Equipment Maintenance and Renewal

The Province shall be responsible for the maintenance, repair and renewal of all School Board Supplied Furniture and Equipment. The Contractor is responsible for the maintenance, repair and renewal of all millwork, furniture, Building Equipment and Building Systems supplied and installed by the Contractor as detailed in Section 4. For clarity, the Contractor is responsible for the maintenance and renewal of the fire alarm system, security system and the BMCS.

5.1.5.3 ICT Wiring and Cabling Maintenance and Renewal

The Province shall be responsible for the maintenance, repair and renewal of all ICT wiring and cabling. The ICT wiring and cabling for which the Province is responsible includes only voice and data wire and cable.

5.1.5.4 Occupant Support

The Province shall arrange for providing all occupant support services that are necessary and incidental to the Educational Activities, Educational Support Activities, Adhoc School Use, Community Use or Acceptable Third Party Use carried out at the Schools. Occupant support services include, but are not limited to, arranging for seating, bleachers, the gymnasium stage or desks, moving furniture, supplying teaching aids and equipment and providing any other occupant requested service not within the Contractor's M&R

obligations.

5.1.6 M &R Representatives

Further to section 20.1 of the DBFM Agreement, the Contractor shall appoint a representative for each School ("**Contractor M&R Representatives**"), and shall notify the Province of such appointment not less than 10 Business Days before any M&R is commenced at a School.

The Contractor M&R Representatives shall be the persons responsible for all communications with the Province regarding the M&R carried out at the Schools. The Province shall appoint one or more persons to serve as representatives in connection with the oversight of the Contractor's M&R activities at the Schools ("**Provincial M&R Representatives**"), and shall notify the Contractor of such appointments within 10 Business Days of receipt of the Contractor's notice of appointment. The Provincial M&R Representatives shall be the persons responsible for all communications with the Contractor M&R Representatives regarding the M&R for the Schools.

The Contractor M&R Representatives and the Provincial M&R Representatives may appoint alternatives to serve in addition to, or temporarily in their place, or may delegate some of the functions of such representatives.

The Contractor shall not rely upon any acts, omissions, requirements or directions of the Provincial M&R Representatives or any other person whatsoever as authority for any departure from the terms of the DBFM Agreement.

5.2 SCHOOL USE

5.2.1 Types of Use

During the School Year, each School shall be used and occupied by the School Boards and the relevant Municipality for Educational Activities, Educational Support Activities Community Use, Adhoc School Use and Acceptable Third Party Use.

5.2.2 Notification of Use

5.2.2.1 School Use

On or before September 1 of each School Year during the School M&R Period and the M&R Period and thereafter updated from time to time, the Province will notify the Contractor of the School Holidays and Examination Periods for each School. The Contractor shall carry out its M&R obligations during the School Year in accordance with these schedules and at the times contemplated in Section 5.3.

5.2.2.2 Scheduled Community Use and Acceptable Third Party Use

On or before September 1, and updated on or before January 7 and June 1, of each School

Year during the School M&R Period and the M&R Period, the Province shall notify the Contractor in writing of scheduled Community Use and any Acceptable Third Party Use for each School for the ensuing period, as the case may be, together with nature of the use, the Areas of the School that will be used and the dates and times planned for such Community Use or Acceptable Third Party Use. If the scheduled Community Use or Acceptable Third Party Use, nature of the use, or the dates and times planned for scheduled Community Use or Acceptable Third Party Use changes for any School during the School Year, upon being made aware of such changes the Province shall promptly notify the Contractor of the changes. The Contractor shall accommodate scheduled Community Use and Acceptable Third Party Use in the performance of its M&R obligations, unless otherwise approved by the Province.

5.2.2.3 Unscheduled Community Use

Unscheduled Community Use of a School may also occur during the School Year. In each case, as soon as the Province is made aware of any unscheduled Community Use, the Province will immediately notify the Contractor of such unscheduled Community Use.

5.2.2.4 Adhoc School Use

For Adhoc School Use of a School, the Province will provide the Contractor with reasonable notice of the times and days of any Adhoc School Use (which shall not be less than 72 hours) together with the nature of the use and the Areas of the School that will be used.

5.3 M&R SCHEDULING

5.3.1 M&R Scheduling

5.3.1.1 General

In accordance with the schedules provided by the Province pursuant to Section 5.2.2 above, after School Availability at a School, the Contractor may only carry out its M&R obligations in respect of that School as follows:

(a) emergency maintenance and repairs may be undertaken by the Contractor, upon notice to the Province and the School Representative, at any time during the School Day, including Examination Periods, Outside the School Day and After Hours, in the affected Area of the School, whether occupied or not, provided that in doing so the Contractor does not compromise the health and safety of students and staff at that School; and

(b) all other maintenance and repairs may be undertaken by the Contractor during the School Day (except during Examination Periods), Outside the School Day or After Hours in unoccupied Areas of the School only; provided that in doing so the Contractor does not disrupt any Educational Activities, Educational

Support Activities, Adhoc School Use, Community Use or Acceptable Third Party Use carried out in occupied Areas of the School or compromise the health and safety of students and staff or other users of that School.

5.3.1.2 Unscheduled Use of School and Scheduled M&R Work

If the Contractor has scheduled M&R work at a School and:

(a) the Contractor is subsequently notified of unscheduled Community Use to take place:

(i) in the Area of the School in which the Contractor's planned M&R was to occur; and

(ii) during the period set for the planned M&R work,

then the Contractor will be required to accommodate such unscheduled Community Use in the performance of its M&R obligations unless otherwise approved by the Province provided that the Contractor was given 72 hour's prior notice of the conflict between the unscheduled Community Use and the scheduled M&R work; or

(b) the Contractor is subsequently notified of Adhoc School Use to take place:

(i) in the Area of the School in which the Contractor's planned M&R was to occur; and

(ii) during the period set for the planned M&R work,

then the Province will require the School Board to use all reasonable efforts to have the Adhoc School Use relocated to another Area of such School. If such relocation is not reasonably possible, the Contractor shall be required to accommodate such Adhoc School Use provided that the Contractor was given 72 hour's prior notice of the conflict between the Adhoc School Use and the scheduled M&R work.

The Contractor must provide the Province and the School Representative for each School with a monthly schedule of planned M&R activities to be carried out at each School. The Contractor must confirm all planned M&R activities prior to arrival at the School as set out in section 6.4(b) of the Tri-Party Agreements.

5.4 SECURITY CLEARANCE AND SCHOOL ACCESS PROTOCOL

5.4.1 Security Clearances

The Contractor, at its own cost, shall ensure that all individuals that will be performing M&R at the Schools, not less than 15 Business Days prior to the first time such individuals are to attend at a School to perform the M&R:

(a) have obtained from the appropriate ministry of the Province, a *Child Intervention Record Check*, or its replacement, in writing, indicating that such individuals have not had any reports or complaints of inappropriate behavior with children or any restraining orders; and

(b) have obtained from a local law enforcement authority a certificate stating that no criminal record exists for such individuals; or

(c) if a criminal record does exist, have obtained the express written permission of the School Board to attend at the School to perform the M&R; and

(d) have executed a consent form as required by FOIP authorizing the disclosure of the above personal information to the Province and the applicable School Board.

(collectively "**Cleared Persons**").

The Contractor shall submit to the Province any information obtained under (a) to (d) above not less than 12 Business Days prior to such individuals attending at the Schools to perform the M&R. The Province's or the applicable School Board's refusal to grant access to any individual on account of a criminal record or unsatisfactory *Child Intervention Record Check* shall not relieve the Contractor of any of its obligations under the DBFM Agreement. The Contractor is solely responsible for any consequences, including additional costs or delays, arising from a refusal by the Province or the School Boards to grant access to the Schools.

Unless the Province or School Board provides otherwise in writing, the Contractor shall ensure that all individuals that will be performing any work associated with any Change Orders during the M&R Period shall be Cleared Persons, as defined above. The Contractor shall co-ordinate with the School Board and the Province to provide evidence that all such individuals are Cleared Persons as the School Board or Province may require.

In accordance with its Security Clearance Process set out in Schedule 4 (Contractor's Management Systems and Plans), the Contractor shall promptly advise the Province and the School Representatives of any individual who, subsequent to his/her commencement of M&R at a School, or subsequent to his/her commencement of work at a School further to a Change Order, becomes subject to a criminal record or child welfare complaint.

5.4.2 Access Requirements

Except in the case of Emergency Failures and other emergencies, not less than five Business Days prior to the Contractor or any person that will be carrying out M&R at the School attending at the School, the Contractor will provide the Province and the relevant

School Representative with a list of the names of all Cleared Persons approved by the Province and the School Boards that will be attending at the School to perform M&R.

The Contractor shall ensure that all Cleared Persons performing M&R at a School during the School Day and Outside the School Day shall:

(a) report to that School's administration office before commencing any M&R at the School;

(b) present picture identification including name and employer's name;

(c) be clean and neat of appearance and appropriately attired for a school setting;

(d) sign any visitor registry required by the School;

(e) indicate the nature of the M&R to be performed, location at the School where the M&R will be performed and the expected duration of the work; and

(f) sign out prior to leaving the School.

5.4.3 Conduct of Cleared Persons

In addition to the requirements set out in Sections 5.4.1 and 5.4.2, the Contractor shall ensure that Cleared Persons who are at a School to perform M&R comply with any School Board or School policies relating to the conduct of staff and security clearance matters. It shall be the Contractor's responsibility to obtain such policies from the School Representatives prior to attending at the Schools.

5.4.4 Payment Adjustments

If the Contractor fails to comply with any requirement referenced in Section 5.4.1 a Payment Adjustment of $4,000 per incident shall be assessed.

5.5 LIAISON WITH SCHOOL BOARDS

In order to facilitate day-to-day communications between the Contractor and each School Board during the School M&R Period and the M&R Period, each School Board in accordance with its respective Tri-Party Agreement, will appoint a School Representative.

The Contractor M&R Representatives shall be the persons responsible for all communications with the School Representatives regarding the day-to-day performance of M&R at a School, complaints, Help Desk requests, any Failures occurring at the School, and the performance of the responsibilities of the Province set out in Section 5.1.5 above. Provided that such communications do not purport to amend or alter any obligations of the Contractor or the Province under the DBFM Agreement, the Contractor

shall be entitled to rely upon the communications of the School Representatives regarding the day-to-day performance of the M&R at the applicable Schools, complaints, status of repairs, Help Desk requests, any Failures occurring at the School, and the performance of the responsibilities of the Province set out in Section 5.1.5 above.

In the event of a dispute arising between a Contractor M&R Representative and a School Representative, the matter shall be resolved in accordance with section 9 of the Tri-Party Agreements.

5.6 COLLABORATION

In accordance with the Collaboration Plan, the Contractor shall schedule regular collaboration meetings for each School with the Province and the relevant School Representative to discuss all matters relating to the requirements of this Section 5 and the Tri-Party Agreements.

5.7 HELP DESK

5.7.1 Help Desk Requirements

The Contractor shall develop, install, operate, manage and maintain a communication system to receive, record, action and monitor calls and notifications of Failures, and any non-compliance with this Section 5 in relation to the Schools (the "**Help Desk**"). The Contractor shall ensure the Help Desk output logs and reports are available in real time "read only" format to the Province and the School Representatives.

The Contractor shall ensure the Help Desk operates 24 hours per day each calendar day of the year and shall make provisions for backup Help Desk services. The Contractor shall ensure the Help Desk provides the day-to-day notification interface between the Province, the School Representatives, the Contractor and any of its subcontractors in relation to the following matters:

(a) all inquiries and repair requests;

(b) the notification of Building Performance Failures, Service Failures and Accessibility Failures and complaints or compliments from any persons relating to the Contractor's M&R performance;

(c) monitoring of alarms and security systems;

(d) notification of accidents or emergencies requiring assistance of the Contractor;

(e) requests for information relating to the operation of the Help Desk; and

(f) update of progress regarding the rectification of any Building Performance Failures, Service Failures or Accessibility Failures.

The Contractor shall ensure the Help Desk maintains a daily electronic log of all Help Desk requests and calls reporting Building Performance Failures, Service Failures and Accessibility Failures and requests for repairs. The Contractor shall ensure the Help Desk

records into the electronic log all relevant details, including, but not limited to, the following information:

(g) Help Desk operator's name;
(h) requester's name;
(i) date and time;
(j) affected School and location within the School;
(k) repair or correction required;
(l) Service Failure, Building Performance Failure and/or Accessibility Failure;
(m) Building Performance Failure Category (Emergency, Urgent or Routine);
(n) response time;
(o) unique request reference identifier;
(p) subcontractor and contact name to which the request was passed;
(q) date and time request was passed to the relevant subcontractor;
(r) action taken and by whom;
(s) Service Failure rectification time and the applicable Repair Period for Building Performance Failures and repair requests; and
(t) Accessibility Failure duration.

All Failures shall be reported to the Help Desk by the Province as soon as possible after the Province becomes aware of the Failure. If the Failure is identified through monitoring, inspecting or testing by the Contractor or its subcontractors or is reported to the Contractor M&R Representative by the Province or the School Boards, the Contractor M&R Representative shall promptly report such Failure to the Help Desk.

The Contractor shall ensure the Help Desk is the central repository and database for information concerning the Schools, and for the operational work orders system.

The Contractor shall not delete or alter any details recorded by the Help Desk unless approved in writing in advance by Province and the following information is recorded:

(u) the exact nature and impact of the alteration or deletion;
(v) the reason for the alteration or deletion; and
(w) the name of the person who authorized the alteration or deletion.

The Contractor shall ensure the Help Desk provides emergency incident support by raising alarms, reporting events to internal and external authorities and logging details of emergencies.

5.7.2 Performance Requirements

The Contractor shall ensure the Help Desk meets the following performance requirements during the School M&R Period and the M&R Period:

(a) all repair requests or reports of Building Performance Failures, Service Failures and Accessibility Failures shall be logged by the Help Desk regardless of the time of day such request or report of a Building Performance Failure, Service Failure or Accessibility Failure occurs;

(b) Help Desk calls shall be answered 95% of the time on or before the 5th ring; and

(c) access to Help Desk records and logs shall be provided as requested by the Province, upon two hours notice.

5.7.3 Monitoring for Compliance

For each month following the first calendar month of the M&R Period, the Contractor shall promptly, and in any event no later than five Business Days before the end of the month, provide the Province a summary of all Help Desk calls received for the previous calendar month in sufficient detail to determine compliance with the requirements of Section 5.7.2(a) and (b).

5.7.4 Payment Adjustments

If the Contractor fails to:

(a) in respect of a summary provided under Section 5.7.3, log all repair requests or reports of Building Performance Failures, Service Failures and Accessibility Failures regardless of time of day such request or report of a Building Performance Failure, Service Failure or Accessibility Failure occurs, a Payment Adjustment of $1,000 per failure will be assessed;

(b) in respect of a summary provided under Section 5.7.3, answer 95% of the calls received on or before the 5th ring, a Payment Adjustment of $700 will be assessed;

(c) in respect of a summary provided under Section 5.7.3, provide the summary within the time stipulated, a Payment Adjustment of $500 per day or partial day will be assessed until delivered; or

(d) provide access to Help Desk records and logs as requested, upon two hours notice, a Payment Adjustment of $500 per failure will be assessed.

5.8 PERFORMANCE MONITORING AND REPORTS

5.8.1 Performance Monitoring Program

The Contractor shall have in place a "Performance Monitoring Program" ("**PMP**") for all aspects of the M&R. Processes forming part of the PMP shall be included in the QMS. The PMP will outline the actions the Contractor shall undertake to ensure the M&R Requirements are being met. The PMP will be an additional electronic system that permits the Province and the School Boards, through "read-only" access, to determine if the Schools are being maintained in accordance with the M&R Requirements. The PMP shall include, but not be limited to, the following types of monitoring methods:

(a) records of communications by the Contractor, the Province or the School Representative with the Help Desk or the Contractor M&R Representative;

(b) records of all Failures and the status or rectification of such Failures; and

(c) self-monitoring by the Contractor.

5.8.2 Reports

The Contactor shall provide the following reports:

(a) Monthly Summary Report

The Contractor shall prepare a monthly report comprised of a summary for all Schools, with a separate report for each School, outlining all circumstances known to the Contractor that trigger, or if continued, may trigger a Payment Adjustment and any other events, developments or circumstances material to the Contractor's performance of the M&R Requirements. The Contractor shall deliver the monthly summary report to the Province five Business Days following the last day of the month during the School M&R Period and the M&R Period;

(b) Monthly Incident Listing

The Contractor shall prepare a monthly listing for each School of all Help Desk repair requests made and all Building Performance Failures, Service Failures and Accessibility Failures occurring during the previous month, the Repair Period or Amended Repair Period for each Building Performance Failure or rectification period for any Service Failure and date of rectification of each Building Performance Failure or Service Failure. The Contractor shall deliver the monthly incident listing to the applicable School Board and the Province at least five Business Days prior to the first Business Day of each month during the School M&R Period

and the M&R Period;

(c) Monthly Planned Maintenance and Renewal Schedules

Based upon the annual planned routine and preventative maintenance and repair schedule and renewal schedule provided by the Contractor under 5.8.2(d), the Contractor shall detail the monthly planned routine and preventative maintenance and repair schedule and renewal schedule for each School for the ensuing month and shall submit the monthly planned maintenance and renewal schedule to the Province and the applicable School Board no later than the first Business Day of each month during the School M&R Period and the M&R Period; and

(d) Annual Planned Maintenance and Renewal Schedule

The Contractor shall prepare the annual planned routine and preventative maintenance schedule and annual renewal schedule for each School and shall detail the planned M&R for the ensuing year and shall submit the annual planned maintenance and renewal schedule to the Province no later than October 1 in each year during the School M&R Period and the M&R Period.

5.8.2.1 Payment Adjustments

If the Contractor fails to:

(a) provide the report required by Sections 5.8.2(a), (b) and (c), as the case may be, within the time stipulated, a Payment Adjustment of $600 per day or partial day per report shall be applied for each undelivered report until received; or

(b) provide the report required by Section 5.8.2(d) within the times stipulated, a Payment Adjustment of $1000 per day or partial day per report shall be applied for each undelivered report until received.

5.9 SCHOOL ACCESSIBILITY

5.9.1 Contractor's Obligation

In respect of each School, the Contractor shall ensure that each School Building and each Area is Accessible at all times during the School Year, from the day that School Availability is achieved until the end of the Term.

5.9.2 Area Inaccessibility

Where the Province determines an Area does not meet all of the Accessibility Criteria

then, subject to Section 5.9.3 below, that Area will be determined to be Inaccessible.

5.9.3 Inaccessible but Used

If an Area is Inaccessible, the Province may, in its sole discretion, determine that the Area may still be used for Educational Activities, Educational Support Activities, Adhoc School Use, Community Use or Acceptable Third Party Use such decision being based upon the Province being satisfied that the health and safety of the students, staff or other persons will not be jeopardized if the Inaccessible Area is used.

If the Province determines that the Area may still be used for Educational Activities, Educational Support Activities, Adhoc School Use, Community Use or Acceptable Third Party Use then the Area shall be declared by the Province to be Inaccessible but Used. The Province shall make this determination at the time the Contractor attends at the affected School to rectify the Accessibility Failure and shall immediately notify the Help Desk of this determination.

If the Province fails to make the determination that an Area is Inaccessible but Used, but the Area is subsequently used for Educational Activities, Educational Support Activities, Adhoc School Use, Community Use or Acceptable Third Party Use, then the Area shall be deemed to be Inaccessible but Used commencing from the time the Area is used.

5.9.4 School Building Inaccessibility

A School Building will be declared Inaccessible by the Province when:

(a) for any day, the aggregate square meters of the Instructional Areas in a School Building which are Inaccessible or Inaccessible but Used within the School Building exceeds 35% of the aggregate square meters of all Instructional Areas within the relevant School Building; or

(b) for any day, either:

i. the female washrooms at a School Building which are Inaccessible or Inaccessible but Used within a School Building exceeds 65% of the aggregate number of all female washrooms within the relevant School Building, or

ii. the male washrooms at a School Building which are Inaccessible or Inaccessible but Used within a School Building exceeds 65% of the aggregate number of all male washrooms within the relevant School Building.

5.9.5 Province's Right to Assess Payment Adjustments for Accessibility Failures

In all circumstances where an Area is determined to be or the School Building is declared

to be Inaccessible or is determined or deemed to be Inaccessible but Used, then subject to Section 5.9.7, the Province may apply the appropriate Payment Adjustments set out in Sections 5.9.6.1, 5.9.6.2 and 5.9.6.3.

5.9.6 Payment Adjustments

5.9.6.1 Inaccessible Areas

Where an Area is Inaccessible then, subject to Section 5.9.7, the Payment Adjustments set out in this Section 5.9.6.1 shall apply to each such Area that is Inaccessible from the time the Help Desk is notified of the Accessibility Failure pursuant to Section 5.9.8.1 until the Accessibility Failure is either permanently rectified or temporary measures or protections are installed and the Area that is Inaccessible is declared Accessible pursuant to Section 5.9.8.2.

Table 5.9.6.1: Area Inaccessibility Payment Adjustments

Areas	**Payment Adjustment**			
	Payment Adjustment Period			
	Monday to Friday (Excluding Examination Periods and School Holidays)	**Examination Periods**	**School Holidays**	
			Occupied	**Unoccupied**
Instructional Areas	$2,000 per day or partial day for each Instructional Area	$3,000 per day or partial day for each Instructional Area	$1,000 per day or partial day for each Instructional Area	$500 per day or partial day for each Instructional Area
Multipurpose Rooms	$2,000 per day or partial day for each Multipurpose Room	$3,000 per day or partial day for each Multipurpose Room	$1,000 per day or partial day for each Multipur-pose Room	$500 per day or partial day for each Multipur-pose Room
Administration area and offices	$1,000 per day or partial day for each such area	$1,000 per day or partial day for each such area	$500 per day or partial day for each such area	$250 per day or partial day for each such area
Library	$1,000 per day or partial day	$1,000 per day or partial day	$1,000 per day or partial day	$500 per day or partial day
Custodial/janitor office	$1,000 per day or partial day	$1,000 per day or partial day	$1,000 per day or partial day	$1,000 per day or partial day

Areas	Payment Adjustment			
	Payment Adjustment Period			
	Monday to Friday (Excluding Examination Periods and School Holidays)	**Examination Periods**	**School Holidays**	
			Occupied	**Unoccupied**
Common areas such as student gathering areas and hallways	$3,000 per day or partial day for each such area	$3,000 per day or partial day for each such area	$1,500 per day or partial day for each such area	$750 per day or partial day for each such area
Washrooms, change / locker rooms	$2,000 per day or partial day for each such area	$2,000 per day or partial day for each such area	$1,000 per day or partial day for each such area	$500 per day or partial day for each such area
Gymnasium	$4,000 per day or partial day	$4,000 per day or partial day	$4,000 per day or partial day	$1,000 per day or partial day
Storage rooms	$1,000 per day or partial day for each such area	$1,000 per day or partial day for each such area	$500 per day or partial day for each such area	$250 per day or partial day for each such area

Where an Accessibility Failure starts during one Payment Adjustment Period and continues into any other Payment Adjustment Period, the Payment Adjustment applicable for each and every Payment Adjustment Period shall be assessed until that Accessibility Failure is rectified.

5.9.6.2 Inaccessible but Used

Where an Area is Inaccessible but Used, subject to Section 5.9.7, the Payment Adjustments set out in this Section 5.9.6.2 shall apply to each such Area that is Inaccessible but Used from the time the Help Desk is notified of the Accessibility Failure pursuant to Section 5.9.8.1 until the Accessibility Failure is either permanently rectified or temporary measures or protections are installed and the Area that is Inaccessible but Used is declared Accessible pursuant to Section 5.9.8.2.

The Payment Adjustments that will be applied are as follows:

Table 5.9.6.2: Area Inaccessible but Used Payment Adjustments

Areas	**Payment Adjustments**			
	Payment Adjustment Period			
	Monday to Friday (Excluding Examination Periods and School Holidays)	**Examination Periods**	**School Holidays**	
			Occupied	**Unoccupied**
Instructional Areas	$1,000 per day or partial day for each Instructional Area	$2,000 per day or partial day for each Instructional Area	$500 per day or partial day for each Instructional Area	$250 per day or partial day for each Instructional Area
Multipurpose Rooms	$1,000 per day or partial day for each Multipurpose Room	$2,000 per day or partial day for each Multipurpose Room	$500 per day or partial day for each Multipurpose Room	$250 per day or partial day for each Multipurpose Room
Administration area and offices	$500 per day or partial day for each such area	$500 per day or partial day for each such area	$300 per day or partial day for each such area	$200 per day or partial day for each such area
Library	$500 per day or partial day	$500 per day or partial day	$500 per day or partial day	$300 per day or partial day
Custodial/janitor office	$500 per day or partial day	$500 per day or partial day	$300 per day or partial day	$200 per day or partial day
Common areas such as student gathering areas and hallways	$1,500 per day or partial day for each such area	$1,500 per day or partial day for each such area	$800 per day or partial day for each such area	$500 per day or partial day for each such area
Washrooms, change / locker rooms	$1,000 per day or partial day for each such area	$1,000 per day or partial day for each such area	$500 per day or partial day for each such area	$300 per day or partial day for each such area
Gymnasium	$2,000 per day or partial day	$2,000 per day or partial day	$2,000 per day or partial day	$1,000 per day or partial day
Storage rooms	$500 per day or partial day for each such area	$500 per day or partial day for each such area	$300 per day or partial day for each such area	$200 per day or partial day for each such area

Where an Accessibility Failure starts during one Payment Adjustment Period and continues into any another Payment Adjustment Period, the Payment Adjustment applicable for each and every Payment Adjustment Period shall be assessed until that

Accessibility Failure is rectified.

5.9.6.3 School Building Inaccessibility

Where a School Building is declared Inaccessible then, subject to Section 5.9.7, a Payment Adjustment for the Accessibility Failure for such School Building will be assessed commencing from the time the Inaccessibility of such School Building is declared by the Province until the Accessibility Failure is permanently repaired or temporary measures or protections are installed and such School Building is declared Accessible pursuant to Section 5.9.8.2. The Payment Adjustment that will be assessed for Inaccessibility of a School Building shall be as follows:

Table 5.9.6.3: School Building Inaccessibility Payment Adjustments

Payment Adjustments and Payment Adjustment Periods			
Monday to Friday Day (Excluding Examination Periods and School Holidays)	**Examination Periods**	**School Holidays**	
		Occupied	**Unoccupied**
$20,000 per day or partial day	$30,000 per day or partial day	$10,000 per day or partial day	$5,000 per day or partial day

Where a School Building Accessibility Failure starts during one Payment Adjustment Period and continues into any another Payment Adjustment Period, the Payment Adjustment applicable for each and every Payment Adjustment Period shall be assessed until that School Building Accessibility Failure is rectified.

5.9.7 No Payment Adjustments for an Accessibility Failure

For the purposes of this Section 5.9.7, an Area or a School Building described as "**Inaccessible**" or the term "**Inaccessibility**" shall include references to Inaccessible but Used Areas.

5.9.7.1 First 30 Days Following School Availability

Only to the extent that a School achieves School Availability on or prior to the Total Availability Target Date, the Payment Adjustments for an Accessibility Failure as specified in Section 5.9.6.1, 5.9.6.2 or 5.9.6.3 will not be applied in respect of any Inaccessible Area or the Inaccessible School Building of such School for the first 30 days following School Availability of that particular School. Thereafter Payment Adjustments for any and all Accessibility Failures will apply with respect to that School.

5.9.7.2 Specific Circumstances in which No Payment Adjustments for an Accessibility Failure will be Applied

The Payment Adjustments for an Accessibility Failure specified in Section 5.9.6.1,

5.9.6.2 or 5.9.6.3 will not be applied in respect of an Inaccessible Area or the Inaccessible School Building if, and to the extent that it has been demonstrated to the reasonable satisfaction of the Province that the relevant Inaccessibility is a direct result of:

(a) a Change Order Directive or Change Order Confirmation issued by the Province that requires an Area or a School Building to be Inaccessible in order to carry out the terms of the Change Order and is documented in the Change Order Directive or Change Order Confirmation, provided that to the extent reasonably possible the Contractor carries out the Change Order After Hours or during a School Holiday when the School is unoccupied and provided further that the Contractor completes the Change Order within the time stipulated;

(b) planned M&R activities approved by the Province which require an Area or a School Building to be Inaccessible for the period of the planned M&R activities, provided that such planned M&R activities occur After Hours or during a School Holiday when the School is unoccupied and provided further that the planned M&R activities are completed within the time stipulated by the Contractor;

(c) the Province's performance or non-performance of its obligations under the DBFM Agreement;

(d) a Damage Event to an Area or to a School Building provided that to the extent reasonably possible the Contractor carries out the repairs After Hours or during a School Holiday when the School is unoccupied and provided further that the Contractor is taking all reasonable steps to complete the repairs in accordance with the Repair Period or Amended Repair Period;

(e) any Building Performance Failure arising at a School, the damage from which the Contractor is required to insure pursuant to Schedule 11 (Insurance Requirements) of the DBFM Agreement, but which arises, and without being caused by the negligence of the Contractor or those for whom the Contractor is legally responsible, directly from:

(i) damage caused by the Province or a School Board or their respective agents or contractors (except the Contractor), or tenants or licensees of a School Board, or those for whom the Province or a School Board is respectively legally responsible;

(ii) damage caused by any third party (excluding the Contractor, its agents, contractors and subcontractors and any persons for whom they are legally responsible); or

(iii) damage caused by any fire, explosion, lightning, storm, tempest,

floods, bursting or overflowing of water tanks, pipes or apparatus, or earthquakes which occur due to an act of God,

provided that to the extent reasonably possible the Contractor carries out the repairs After Hours or during a School Holiday when the School is unoccupied and provided further that the Contractor is taking all reasonable steps to complete the repairs within the Repair Period or Amended Repair Period; or

(f) a Utility Failure, provided that the Contractor meets its obligation to supply emergency power in accordance with the Technical Requirements and to ensure the safety of the occupants of the School which may arise as a result of the Utility Failure, and provided further that having regard to the circumstances the Contractor is taking all reasonable steps to minimize the duration and extent of the Inaccessibility attributable to the Utility Failure.

5.9.8 Procedure on Inaccessibility

5.9.8.1 Notice of Inaccessibility

(a) Where the Province considers that an Area or the School Building is or may be Inaccessible, the Province shall immediately notify the Help Desk of the Accessibility Failure and provide information regarding:

(i) the affected Area or the School Building;
(ii) the issue believed to be causing or contributing to the Area or the School Building being Inaccessible;
(iii) the timing or estimated timing of the issue believed to be causing or contributing to the cause of the Area or the School Building becoming Inaccessible; and
(iv) details of the Accessibility Criteria that are not being met.

(b) The Province may notify the Contractor M&R Representative or any subcontractor of the Contractor that an Area or a School Building is or may be Inaccessible, provided however that the Province shall also notify the Help Desk of the Accessibility Failure and provide similar information as set out in (a) above.

(c) Where the Contractor M&R Representative or any subcontractor of the Contractor considers that an Area or a School Building is or may be Inaccessible, the Contractor M&R Representative or any subcontractor of the Contractor shall immediately notify the Province and the Help Desk of the Accessibility and provide similar information as set out in (a) above.

(d) Upon receipt of the Province's notification of Inaccessibility to the Help Desk the Contractor shall attend at the affected School within the Response Time required

for an Emergency Failure to determine:

(i) whether an Inaccessibility has arisen;
(ii) the cause of the Inaccessibility (to the extent the Contractor can make this determination using all reasonable efforts);
(iii) the Repair Period applicable to the Inaccessibility and whether the repairs can be completed within the stipulated Repair Period;
(iv) any Proposed Repair Period; and
(v) whether any of the provisions of Section 5.9.7 are applicable in respect of the relevant Inaccessibility;

(e) Where the Contractor and the Province disagree on

(i) whether an incident of Inaccessibility has arisen;

(ii) the cause of the Inaccessibility;

(iii) the relevant Repair Period or the Proposed Repair Period; or

(iv) whether any of the provisions of Section 5.9.7 are applicable in respect of the relevant Inaccessibility;

then the Contractor may refer the matter to the Dispute Resolution Procedure.

(f) Regardless of whether the Province and the Contractor agree on the matters referred to in Section 5.9.8.1(d), the Contractor shall commence the necessary repairs to rectify the Inaccessibility within the applicable Repair Period for the Building Performance Failure believed to be causing or contributing to the Area or the School Building to be Inaccessible. The Contractor shall provide to the Province and the applicable School Representative on a daily basis a progress update regarding the repairs being undertaken in the affected Area or School Building to rectify the Inaccessibility until the Inaccessibility is rectified.

5.9.8.2 Cessation of Inaccessibility

(a) The Contractor shall immediately notify the Help Desk when it believes that permanent repairs have been completed and that the affected Area or School Building is Accessible.

(b) The Help Desk shall thereafter promptly notify the Province and the School Representative that the Contractor believes that the permanent repairs have been completed and that the relevant Inaccessibility has been rectified.

(c) The Province shall be entitled to inspect the affected Area or School Building where such Inaccessibility has been permanently repaired and must carry out such inspection within 24 hours of receiving notice from the Help Desk that the Inaccessibility has been rectified.

(d) If the Province agrees that the permanent repairs are complete and the Inaccessibility has been rectified, they shall immediately notify the Help Desk.

(e) If the Province does not agree that the permanent repairs are complete, it shall promptly notify the Contractor of same and that the Accessibility Failure has not been rectified. The Contractor may refer the matter to the Dispute Resolution Procedure.

5.9.9 Payment Adjustments for Failure to Repair Building Performance Failures Causing Inaccessibility

In addition to the Payment Adjustments set out in Section 5.9.6, unless excluded under Section 5.9.7, if temporary measures or protection or permanent repairs for the Building Performance Failure believed to be causing or contributing to the Area or the School Building to be Inaccessible are not completed within the Repair Period or Amended Repair Period, then the Payment Adjustments applicable to the Building Performance Failures set out in Section 5.12 shall apply.

All Building Performance Failures that cause or contribute to the cause of an Accessibility Failure shall be deemed to be Emergency Failures with the Repair Period for rectification of such Accessibility Failure being the Emergency Failure Repair Period for the applicable Building Performance Failure. Where the damage relates to a number of Building Elements, Building Systems or Building Equipment, the longest of the stipulated Repair Periods shall apply.

5.9.10 Cap on Accessibility Payment Adjustments

If collectively the Areas declared Inaccessible, including but not limited to the Areas declared Inaccessible but Used, in a School Building exceeds the thresholds of Inaccessibility for a School Building set out in Section 5.9.4 above, then the Payment Adjustments set out in Section 5.9.6.3 shall apply.

5.10 DECORATING OR UNAUTHORIZED MODIFICATIONS TO SCHOOLS

5.10.1 General

Pursuant to the Tri-Party Agreements, the School Boards may not carry out any Modifications to the School Buildings. School Boards may request the Province to proceed with a Modification, but such request is subject to the consent of the Province. If the Province consents to a School Board's proposed Modification, such Modification may only proceed in accordance with section 7.3 of the DBFM Agreement.

The Tri-Party Agreements further provide that neither a School Board nor its employees, tenants or licensees will undertake any Decorating of the School Buildings that would result in the affected Building Element no longer meeting the Technical Requirements or would result in a material increase in the Contractor's cost of carrying out the M&R.

5.10.2 Contractor's Rights

(a) If any Decorating or any unauthorized Modification to a School Building is carried out by School staff, upon becoming aware of same, the Contractor shall promptly inspect such Decorating or unauthorized Modification to determine:

(i) if the Decorating results in the Technical Requirements no longer being met for the affected Building Element or results in a material increase in the Contractor's cost of carrying out the M&R;

(ii) if the unauthorized Modification carried out meets the Technical Requirements but nonetheless results in a material increase in the Contractor's cost of carrying out the M&R as a result of the unauthorized Modification; or

(iii) if the unauthorized Modification carried out does not meet the Technical Requirements.

(b) Upon completion of its inspection, the Contractor shall immediately notify the Province of its determination.

(c) If the Contractor determines that repairs or a replacement are required, the Province shall promptly attend at the School to assess the Decorating or unauthorized Modification in relation to the Technical Requirements. If the Province agrees with the Contractor, the Contractor shall carry out such repairs or replacement as if requested under a Change Order Directive pursuant to Schedule 1 (Change Orders), and shall invoice the Province for such repairs or replacement in an amount to which the Contractor would be entitled if the repairs or replacement were completed under a Change Order Directive governed by Schedule 1. If the Province disagrees with the Contractor, the repairs or replacement shall be postponed, and the matter shall be resolved by the Province and the Contractor through the Dispute Resolution Procedure.

(d) If the Contractor determines that the Decorating does not impact the Technical Requirements for the affected Building Element and does not materially increase the Contractor's cost of carrying out the M&R or that the unauthorized Modification meets the Technical Requirements and does not materially increase the Contractor's cost of carrying out the M&R, the Contractor shall carry out all M&R required for the affected Building Element or the unauthorized Modification and shall ensure that the affected Building Element or the unauthorized Modification meet the Handback Requirements.

5.11 PROCEDURE RESPECTING BUILDING PERFORMANCE FAILURES

5.11.1 Building Performance Failure Categories

Unless otherwise provided herein, all Building Performance Failures occurring at a School will be categorized into Building Performance Failure Categories, as follows:

Building Performance Failure Category	Description
Emergency Failure	Any Building Performance Failure that: (i) is creating an imminent danger to a Building Element, Building System, Exterior Improvement or any part thereof; or (ii) imperils the health and safety of the users of the School, is expressly deemed to be an Emergency Failure. Any Accessibility Failure is expressly deemed to be an Emergency Failure.
Urgent Failure	Any Building Performance Failure that: (i) impacts the operational function of a Building Element, Building System, Exterior Improvement or any part thereof, or the Educational Activities carried out at the School; or (ii) that may develop into an Emergency Failure if not promptly repaired, is expressly deemed to be an Urgent Failure.
Routine Failure	Any Building Performance Failure affecting the user's enjoyment of the School or otherwise of an administrative or routine nature.

The Province shall, acting reasonably, make the initial determination of the Building Performance Failure Category for a particular Building Performance Failure arising at a School. Where the Province makes the determination of the Building Performance

Failure Category and the Contractor disagrees with such determination, the Contractor may refer the matter to the Dispute Resolution Procedure.

5.11.2 Response Times

The Contractor shall respond to requests to the Help Desk regarding any Building Performance Failure by attending at the site of the Building Performance Failure to assess the nature of the Building Performance Failure and to begin where reasonably possible the repair of the Building Performance Failure within the following response times ("**Response Times**"):

Failure	Response Time
Emergency Failures	Immediately but in any event not later than 2 hours from the Province's notification to the Help Desk
Urgent Failures	Not later than 24 hours from the Province's notification to the Help Desk
Routine Failures	Not later than 7 days from the Province's notification to the Help Desk

Except where the Contractor is prevented by an order or direction of police or fire authorities, if the Contractor fails to attend at the site of the Building Performance Failure to assess the nature of the Building Performance Failure and to begin where reasonably possible the repair of the Building Performance Failure within the Response Times indicated in this Section 5.11.2, a Payment Adjustment will be assessed for each such failure to respond as follows:

Response Time	Payment Adjustment
Emergency Failure	$3,000 per occurrence
Urgent Failure	$2,000 per occurrence
Routine Failure	$1,000 per occurrence

5.11.3 Emergency Response Failures

5.11.3.1 Notification of Emergency Failure

Where an Emergency Failure occurs at a School, the Province shall promptly notify the Help Desk of such Emergency Failure. The Help Desk shall immediately confirm with the Province that the Contractor or its subcontractor will attend the affected School within two hours to attend to the Emergency Failure.

5.11.3.2 Contractor's Failure to Respond

If:

(a) the Help Desk does not answer to the Emergency Failure call;

(b) the Help Desk cannot confirm that the Contractor or its subcontractor is en route to the affected School for arrival within the Response Time for Emergency Failures; or

(c) the Contractor or its subcontractor do not arrive at the affected School within the Response time for Emergency Failures,

then, where in the opinion of the Province further serious and substantial damage to the affected School will occur if immediate action is not taken, the Province or its designate may take whatever steps it deems necessary to prevent further loss or damage to the affected School.

5.11.3.3 Consequences to Contractor

Where the Province has taken steps pursuant to Section 5.11.3.2 to prevent further loss or damage to a School, whether in the nature of temporary measures or protection or permanent repairs, the Contractor shall be responsible for all costs incurred by the Province in connection therewith, plus an administration fee of 10% as liquidated damages. These costs shall be deducted from Payments made to the Contractor.

If permanent repairs have been completed by the Province, the Contractor shall be responsible for the M&R associated with such permanent repairs and shall be obligated to ensure that the repaired Area, Building Equipment, Building Element or Building System meets the Handback Requirements at the end of the Term. For the purposes of section 16.6 of the DBFM Agreement, the actions of the Province under this Section 5.11.3 do not constitute a Relief Event.

5.11.4 Procedure re: Cause of Building Performance Failure

(a) Within the applicable Response Time, the Contractor shall attend at a School suffering the Building Performance Failure and shall as soon as practicable, but in any event within 2 hours after arriving at the School, notify the Province of the Contractor's initial assessment, acting reasonably, of the cause of the Building Performance Failure.

(b) Where the Contractor assesses the Building Performance Failure to be the result of a Damage Event, then the Contractor shall immediately notify the Province. Upon such notification Province shall promptly, but in any event within two hours attend at the affected School to view and inspect the cause of the Building Performance Failure.

(c) Where the Province agrees that the Building Performance Failure results from a Damage Event then:

(i) the Province shall issue, in writing, an Amended Repair Period for the Building Performance Failure extending the Repair Period for the period

required for the determining the cause of the Building Performance Failure, and if requested by the Province under section 3.1(b) of Schedule 1 (Change Orders), the period required for preparing, evaluating and awarding invitational tenders or competitive tenders in connection with the required repairs;

(ii) the Contractor shall proceed as if the repairs necessitated by the Building Performance Failure were requested by the Province under a Change Order Directive pursuant to Schedule 1 (Change Orders); and

(iii) the Contractor shall complete the repairs within the Amended Repair Period.

(d) Where the Province disagrees with the Contractor's assessment that the Building Performance Failure is the result of a Damage Event then:

(i) the Contractor shall proceed to repair the Building Performance Failure within the stipulated Repair Period and in accordance the Technical Requirements;

(ii) if the Contractor refers the matter to the Dispute Resolution Procedure and the dispute is resolved in the Contractor's favour such that the Building Performance Failure is determined to be the result of a Damage Event, the Province shall pay the Contractor's invoice in an amount to which the Contractor would be entitled as if the repairs were requested by the Province under a Change Order Directive pursuant to Schedule 1 (Change Orders); and

(iii) if the Contractor does not refer the matter to the Dispute Resolution Procedure or if the Contractor does refer the matter to the Dispute Resolution Procedure and the dispute is resolved in the Province's favour, the Contractor will not be entitled to any payment from the Province for the Contractor's costs associated with performing such repairs.

(e) Where the Building Performance Failure is assessed by the Contractor to be within the scope contemplated in section 11.8(b) of the DBFM Agreement, then the Contractor shall proceed to repair the Building Performance Failure within the stipulated Repair Period and in accordance the Technical Requirements.

(f) The Payment Adjustments for a Building Performance Failure will not be applied if, and to the extent it has been demonstrated to the reasonable satisfaction of the Province that, the relevant Building Performance Failure is a direct result of a Utility Failure, provided that the Contractor meets its obligations to supply emergency power in accordance with the Technical Requirements and to ensure the safety of the occupants of the School which may arise as a result of the Utility Failure, and further provided that the Contractor shall proceed to repair the

Building Performance Failure within the specified Repair Period and in accordance with the Technical Requirements where the beginning of the applicable Repair Period is deemed to commence at the time the Utility Failure is rectified.

5.11.5 Adjustment of Repair Period

Where the Contractor is of the opinion, acting reasonably, that the Repair Period for the Building Performance Failure is not sufficient to complete the required repairs the Contractor shall, not longer than one Business Day after responding to the Building Performance Failure, propose to the Province a reasonable extension to the Repair Period ("**Proposed Repair Period**") that in the Contractor's opinion is sufficient to complete the temporary measures or protection and the permanent repairs in given circumstances.

If the Province agrees with the Proposed Repair Period, then the Province shall issue, in writing, an Amended Repair Period to reflect the repair time set out in the Proposed Repair Period. If the Province acting reasonably, does not agree with the Proposed Repair Period, then the Province may at the Province's option:

(a) deny any extension to the Repair Period, in which case the Repair Period stipulated in Section 5.12 for the Building Performance Failure shall apply; or

(b) determine its own extension to the Repair Period, in which case such proposed extension shall be issued by the Province, in writing, as the Amended Repair Period.

Where the Contractor disagrees with the determination of the Province pursuant to this Section 5.11.5, the Contractor shall immediately commence the required repairs and use all reasonable efforts to complete the permanent repairs in accordance with the Repair Period or Amended Repair Period. The Contractor may refer the matter to the Dispute Resolution Procedure. The Repair Period or Amended Repair Period determined pursuant to the Dispute Resolution Procedure shall apply for the purposes of Payment Adjustments.

5.11.6 Multiple Building Performance Failures

Where multiple Building Performance Failures arise from a single event, the Payment Adjustments for each Building Performance Failure affecting a School will be assessed as set out in Section 5.12.

5.11.7 Application of Emergency Failure Payment Adjustments

(a) If the Emergency Failure has been temporarily protected before the end of the Repair Period for temporary protection or measures and the Emergency Failure has been permanently repaired before the end of the Repair Period for permanent

repairs, then no Payment Adjustment for the Emergency Failure shall apply.

(b) If the Emergency Failure has been temporarily protected before the end of the Repair Period for temporary protection or measures but the Emergency Failure has not been permanently repaired by the end of the Repair Period for permanent repairs, then Payment Adjustments will apply from the expiry of the Repair Period for permanent repairs until the permanent repairs are completed.

(c) If the Emergency Failure has not been temporarily protected by the end of the Repair Period for temporary protection or measures but the Emergency Failure has been permanently repaired by the end of the Repair Period for permanent repairs, then Payment Adjustments shall apply from the expiry of the Repair Period for temporary protection or measures until the expiry of the Repair Period for permanent Repairs.

(d) If the Emergency Failure has not been temporarily protected by the end of the Repair Period for temporary protection or measures and the Emergency Failure has not been permanently repaired by the end of the Repair Period for permanent repairs, then Payment Adjustments shall apply from the expiry of the Repair Period for temporary protection or measures until the permanent repairs are completed.

5.11.8 Monitoring for Compliance

In addition to any specified requirements contained herein, the Contractor shall regularly monitor the condition and evaluate the need for maintenance or repair of each School in accordance with the program of planned routine or preventative maintenance documented in the Maintenance Plan. In addition, the Contractor shall conduct inspections and testing at each School, and the Building Elements, Building Systems and Building Equipment contained in each School as required by applicable laws, Authorizations and Standards and Guidelines.

In addition to the Contractor's obligation to monitor, inspect and carryout testing at the Schools, the Province shall be entitled, as contemplated by and in accordance with section 14.4 of the DBFM, to monitor, inspect and carry out its own tests of the Schools, the Building Systems, Building Elements and Building Equipment to verify that the performance requirements for the Schools set out in the Technical Requirements are being satisfied.

5.12 PERFORMANCE REQUIREMENTS FOR A SCHOOL

In respect of each School, the Contractor shall perform the M&R at the School in accordance with the performance requirements set out in this Section 5.12 from the day that School Availability is achieved to the end of the Term.

5.12.1 Building Envelope

This Section 5.12.1 refers to all the elements of a building envelope, which include without limitation, roof systems, walls, doors, and windows.

5.12.1.1 Roof Systems

A roof is the system of interacting components and materials designed to weatherproof and insulate the top surface of each School Building including without limitation all structural components, roof fabric, flashings, copings, vents, drains, stacks, parapets and other penetrations. In addition, the roof system includes eaves and fascia.

5.12.1.1.1 Maintenance Requirements

The Contractor shall properly maintain the roof system of each School Building to ensure that the roof system:

(a) meets the Accessibility Criteria applicable to the roof system;

(b) functions and operates safely and performs in accordance with the Technical Requirements, Contractor's Designs and the Detailed Designs;

(c) meets all applicable laws and Authorizations; and

(d) meets the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the roof system of each School Building to ensure that:

(e) the roof is weather tight with continuity of membrane and sealant;

(f) the roof is structurally sound, with a uniform and even surface;

(g) the roof is free of defects affecting performance or safety;

(h) coverage is continuous and complete across entire surface of the roof of the School Building;

(i) the roof is free of leaks, damp penetration, spalling, noticeable sagging, decay, cracks, rust, corrosion, damage, distortion or displacement and mould;

(j) all parts of the roof system are tightly fastened and structurally sound;

(k) eaves and fascia are structurally sound and secure;

(l) roof drainage is free flowing and performs in accordance with the Contractor's Designs and the Detailed Designs;

(m) drains and vents are free of debris and obstruction;

(n) water is dispersed from the roof in accordance with the Technical Requirements, Contractor's Designs and the Detailed Designs;

(o) the insulation is intact, dry and performing in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs; and

(p) any other performance requirement set out in the Technical Requirements is being met.

Except in the case where an Accessibility Failure arises, where an inspection determines that the roof system on a School Building is in need of maintenance or repairs, such required maintenance and repairs are deemed to be an Urgent Failure.

The Contractor shall regularly inspect roof systems in accordance with the Maintenance Plan. Thermographic scans (and cut samples, if necessary) to confirm that the roof system of each School Building is weather tight shall be undertaken by the Contractor on or before the anniversary date of School Availability in the 20th year following School Availability of a School and thereafter every five years. The Contractor shall provide all inspection and testing results to the Province within 10 Business Days of the inspection or test.

All repairs and renewals of the roof system shall meet the Technical Requirements and the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.1.1.2 Payment Adjustments

If the Contractor fails to deliver the inspection and test results within the time specified in Section 5.12.1.1.1, a Payment Adjustment of $2,000 per day or partial day per School shall be assessed until the inspection and test results are received by the Province.

5.12.1.1.3 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that a roof system deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than five days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.1.1.4 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.1.1.3 above, then Payment Adjustments will be assessed for each Failure, as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.1.2 Exterior Walls and Foundations

Exterior walls and foundations include without limitation all structural components, claddings, cappings, exhaust and supply vents, chimney stacks and flues, drainage systems, soffits, other penetrations and attachments, such as landings, ramps, stairwells, fire exits, steps, porches, decks, walkways, entrances, safety barriers (bollards), walkways and insulation.

5.12.1.2.1 Maintenance Requirements

The Contractor shall properly maintain the exterior walls and foundations of each School Building to ensure that the exterior walls and foundations:

(a) function and operate safely and perform in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the exterior walls and foundation of each School Building to ensure that:

(d) the foundation is structurally sound, and free of defects affecting performance of the foundation or safety;

(e) there is no subsistence or differential settlement of the foundation;

(f) the exterior walls and foundation are weather tight with continuity of material across the entire surface;

(g) the exterior walls, attachments and the foundation are free from hazardous materials, cracks, deflections, rust, corrosion, damage, distortion or displacement;

(h) the exterior walls are free from leaks and dampness penetration and mould;

(i) the exterior walls are uniform in colour and pattern;

(j) all structural components of the exterior walls are structurally sound and securely fastened;

(k) all joints and penetrations to the exterior walls and foundations are properly sealed, weather tight and performing in accordance with the Contractor's Designs, the Detailed Designs and Technical Requirements;

(l) chimney stacks and flues are structurally sound and secure and the flue is free from blockages and excess soot;

(m) drainage systems are free flowing, with no blockages;

(n) exhaust and supply vents are free of any blockages; and

(o) attachments to the exterior walls and foundations, described in Section 5.12.1.2 above, shall be structurally sound, securely fastened and functioning in accordance with the Technical Requirements and the Detailed Designs.

The Contractor shall regularly inspect all exterior walls in accordance with the Contractor's Maintenance Plan. All repairs and renewals of the exterior walls and foundation performed by the Contractor shall meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, and all applicable laws and the relevant Standards and Guidelines.

5.12.1.2.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the exterior walls and foundation deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than four hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than five days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.1.2.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.1.2.2 above, then Payment Adjustments will be assessed for each Failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.1.3 Exterior Doors

Exterior doors includes without limitation all entrances to the School Buildings, including

steel, aluminum or wood doors and frames, overhead and coiling doors, automatic entrances, door tracks and jambs, air vents, other ventilation outlets, glass, kick plates and finishes, as well as all door hardware components, including without limitation, hinges, locks, catches, door closers and handles, weather stripping, electronic hardware parts and strikes and all overhead door opening equipment, controls and wiring.

5.12.1.3.1 Maintenance Requirements

The Contractor shall properly maintain the exterior doors of each School Building to ensure that the exterior doors:

(a) function and operate safely and perform in accordance with the Technical Requirements, the Contactor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the exterior doors of each School Building to ensure that:

(d) the exterior doors are weather tight;

(e) the exterior doors are free of defects affecting performance, safety and security;

(f) the exterior doors are intact, properly fitted, open and close freely without scraping or binding and latch securely and seal tightly when closed;

(g) door finishes are uniform in colour and free from peeling, scratches, chips or other similar damage, subject to Reasonable Wear and Tear;

(h) door tracks, doorjambs and all door hardware items including hinges, locks, closers, catches and handles are securely fastened and operate without binding, rubbing or catching in any way;

(i) air vents, grilles and other ventilation outlets are not blocked;

(j) exterior door glass is complete and free of cracks, chips or other damage;

(k) all hardware and other attachments are fastened securely with no loose or missing parts and glass and, where applicable, are free of cracks or broken pieces; and

(l) the exterior doors are secure, with the door security system fully operational at all times.

Any damage to an exterior door that prevents a School Building from being secured is deemed to be Emergency Failure.

The Contractor shall regularly inspect all exterior doors in accordance with the

Maintenance Plan. The Contractor shall perform all repairs and renewals of the exterior doors to meet the Technical Requirements, the Contactor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.1.3.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the exterior door deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than one day, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.1.3.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.1.3.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School

will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.1.4 Exterior Windows

Exterior windows include without limitation standard and specialized windows, curtain wall windows and entrance windows including glazing, seals, frames, tracks, ledges and finishes as well as motorized window blinds supplied by the Contractor under Section 4.

5.12.1.4.1 Maintenance Requirements

The Contractor shall properly maintain the exterior windows of each School Building to ensure that the exterior windows:

(a) function and operate safely and perform in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the exterior windows of each School Building to ensure that:

(d) the exterior windows operate to manufacturers' specifications;

(e) the exterior windows are safe and are free of defects affecting performance and security;

(f) the exterior windows are intact and properly fitted and sealed;

(g) the exterior windows are weather tight and free of condensation;

(h) the exterior windows, frames, tracks and ledges are securely fastened and free from cracks, breaks, thermal seal failures or other impairments;

(i) all movable components operate freely and easily with no loose or missing parts;

(j) where applicable, exterior windows open and close without binding; and

(k) exterior windows and components are uniform in colour and free from corroded or cracked finishes or cracked, broken or twisted frames.

The Contractor shall maintain the motorized window blinds to ensure they:

(l) are complete and securely fixed;

(m) are free of noticeable sagging;

(n) are properly fitted providing complete coverage;

(o) open and close properly;

(p) meet the manufacturer's performance requirements; and

(q) are free from tears, holes or other similar damage, subject to Reasonable Wear and Tear.

Any exterior window that is broken (beyond cracking or chipping) shall be deemed to be an Emergency Failure.

The Contractor shall regularly inspect all exterior windows and motorized window blinds in accordance with the Maintenance Plan. The Contractor shall perform all repairs and renewals of the exterior windows and motorized window blinds to meet the Technical Requirements, the Contactor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.1.4.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the exterior windows or motorized window blinds deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than three days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.1.4.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.1.4.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.2 Building Interior

The building interior includes without limitation ceilings, walls, floors and floor coverings, fixtures and fittings, doors, windows and finishes.

5.12.2.1 Ceilings

Ceilings include all ceiling materials and components, including without limitation, acoustic tile, gypsum board or metal linear ceiling surfaces and all structural support frames and components.

5.12.2.1.1 Maintenance Requirements

The Contractor shall properly maintain the ceilings in each School Building to ensure that the ceilings:

(a) function and operate safely and perform in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the ceilings in each School Building to ensure that:

(d) the ceilings are intact, properly fitted and sealed, and are structurally

sound and secure;

(e) the ceilings are complete and level, with a uniform and even surface;

(f) ceiling joints are flush with no loose, missing or broken pieces or components;

(g) the ceilings have no noticeable cracks, damaged finishes, deflections, water marks, staining or damp surfaces;

(h) the ceilings are free from mould, asbestos and other hazardous materials;

(i) the ceilings are uniform in colour and pattern with finishes continuous over the surface; and

(j) the ceilings are free of any impairment which would pose a safety hazard.

Except in the case of an Accessibility Failure, any failure of a ceiling to meet the performance criteria set out in this Section 5.12.2.1.1 subsection (h) above shall be deemed to be an Urgent Failure. Any failure of a ceiling to meet the performance criteria set out in Section 5.12.2.1.1 subsection (j) above shall be deemed to be an Emergency Failure.

The Contractor shall regularly inspect all ceilings in accordance with the Contractor's Maintenance Plan. The Contractor shall perform all repairs and renewals of the ceilings to meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.2.1.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the ceiling deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than three days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is

practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.2.1.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.2.1.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.2.2 Interior Walls and Partitions

Interior walls and partitions include without limitation all interior walls, partitions, components and finishes and all supporting elements.

5.12.2.2.1 Maintenance Requirements

The Contractor shall properly maintain the interior walls and partitions in each School Building to ensure that the interior walls and partitions:

(a) function and operate safely and perform in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the interior walls and partitions in each School Building to ensure that:

(d) the interior walls are structurally sound and safe;

(e) the interior walls are adequately protected, uniform and have an even surface;

(f) the interior walls are free from asbestos and other hazardous materials;

(g) the interior walls and partitions have continuity of material across its entire surface;

(h) the interior walls and partitions are free from cracks, deflections, damage, distortion or displacement;

(i) the interior walls and partitions are free from dampness and mould;

(j) finishes and coverings are complete, uniform in colour and pattern and are free from peeling, rips, tears or discolouration, subject to Reasonable Wear and Tear;

(k) ventilation penetrations are not blocked;

(l) the interior wall tiling and backsplashes are water tight and free of chipping or lifting; and

(m) the interior wall penetrations, including ventilation grills, are securely fastened.

Except in the case of an Accessibility Failure, any failure of an interior wall to meet the requirements of this Section 5.12.2.2.1 subsections (f) and (i) shall be deemed to be an Urgent Failure.

The Contractor shall regularly inspect all interior walls and partitions in accordance with the Maintenance Plan. The Contractor shall perform all repairs and renewals of the interior walls and partitions to meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.2.2.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the interior wall deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the

Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than three days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.2.2.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.2.2.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.2.3 Floors

Floors include but are not limited to hard floors including ceramic tile, terrazzo, concrete and wood flooring, resilient flooring, recessed entry mats and all soft or carpeted floors.

5.12.2.3.1 Maintenance Requirements

The Contractor shall properly maintain the floors in each School Building to ensure that the floors:

(a) function and operate safely and perform in accordance with the Technical

Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the floors in each School Building to ensure that:

(d) the floors are structurally sound, intact and properly fitted;

(e) the floors are fully supported at all bearing points;

(f) the floors are water tight with no damp spots;

(g) the floors have no subsidence or differential settlement;

(h) the floors and support systems are free of holes, tears, scoring, cracks, breaks, uneven surfaces, heaving or other impairments;

(i) the floors do not creak or squeak;

(j) floor coverings are to be fully adhered to the floor, do not pose any tripping or other safety hazard and are uniform in colour and pattern, subject to Reasonable Wear and Tear;

(k) flooring does not bubble, blister or stretch;

(l) there is no lifting, tears or cracking at joints or corners;

(m) repairs, patches and replacements shall match the colour and pattern of existing floor coverings;

(n) recessed entry mat frames are properly fitted with no tripping hazards or loose parts; and

(o) recessed entry mats are functioning as intended, without material deterioration or wearing.

In addition, the Contractor shall maintain the gymnasium floors:

(p) to ensure that the floors are safe for their intended use;

(q) the finish is intact and complete with minimal scratches, marks, scuffs, chips or other similar damage, subject to Reasonable Wear and Tear;

(r) the lines are clearly visible and intact; and

(s) to ensure that floor sockets for athletic equipment, such as posts and nets, are secure, safe and functional.

The Contractor shall regularly inspect all floors and floor coverings in accordance with the Maintenance Plan. The Contractor shall perform all repairs and renewals of the floors and floor coverings to meet the Technical Requirements, the Contractor's Designs, the

Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.2.3.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the floor deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than three days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.2.3.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.2.3.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $700 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $400 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.2.4 Fixtures, Fittings, Millwork and Equipment

Fixtures, fittings, millwork and equipment include without limitation all fixed in place millwork, as shown on the Core School Designs, such as overhead cabinets, cupboards, counters, laboratory cabinets, classroom storage cabinets, book cases as well as the doors, drawers and shelving and related hardware, bathroom, toilet and change / locker room partitions, lockers and benches. Millwork not shown in the Core School Designs is not part of the Contractor's obligations under Schedule 18. Fixtures, fittings, millwork and equipment also include moldings, trim and interior signage provided by the Contractor. Also included is the specific Building Equipment indicated herein such as dust collectors, fume hoods, kiln vents and stove vents, permanently fastened gymnasium divider curtains, the gymnasium stage lighting and the gymnasium equipment referred to in Section 11 66 23 (Gymnasium Equipment) of the Minimum Material Requirements.

5.12.2.4.1 Maintenance Requirements

The Contractor shall properly maintain the fixtures, fittings, millwork and equipment in each School Building to ensure that the fixtures, fittings, millwork and equipment:

(a) function and operate safely and perform in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the fixtures, fittings, millwork and equipment in each School Building to ensure that:

(d) fixtures, fittings and millwork are intact with no missing or damaged parts;

(e) equipment is fully operational, with no missing or damaged parts;

(f) fixtures, fittings, millwork and equipment are properly secured, fastened and fitted;

(g) all finishes and countertop surfaces are firmly attached and free from discolouration or broken pieces;

(h) cabinet doors and drawers open and close freely;

(i) cabinet hardware operates smoothly with no missing parts;

(j) washroom and change / locker room partitions, doors and lockers are securely fastened;

(k) washroom and change / locker room partition, door and locker finishes are

free from peeling and uniform in colour;

(l) washroom and change / locker room doors and locker doors swing freely, closing and locking without binding;

(m) equipment performs to manufacturers' specifications;

(n) interior signage provided by the Contractor is legible and securely fastened in place; and

(o) minimum repair or replacement size is one matching length, sheet or single component.

Equipment that is not fully operational and the failure of washroom cubicle doors or locker doors to close and lock shall be deemed to be Urgent Failures.

The Contractor shall regularly inspect the fixtures, fittings, millwork and equipment in accordance with the Maintenance Plan. Equipment shall be maintained in accordance with manufacturers' guidelines. The Contractor shall perform all repairs and renewals of the fixtures, fittings, millwork and equipment to meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.2.4.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the fixtures, fittings, millwork and equipment deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than five days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.2.4.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.2.4.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.2.5 Interior Doors

Interior doors include hollow metal, steel and solid or hollow wood core doors, and all associated hardware and components such as door frames, tracks and jambs, hinges, locks, catches, closers, handles and glass, where applicable.

5.12.2.5.1 Maintenance Requirements

The Contractor shall properly maintain the interior doors of each School Building to ensure that the interior doors:

(a) function and operate safely and performs in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the interior doors of each School Building to ensure that:

(d) the interior doors are free of defects affecting performance, safety and security;

(e) the interior doors are intact, properly fitted, open and close freely, without scraping or binding and shall latch securely when closed;

(f) door finishes are uniform in colour and free from peeling, scratches, chips or other similar damage, subject to Reasonable Wear and Tear;

(g) door tracks, doorjambs and all door hardware items including hinges, locks, closers, catches and handles are securely fastened and operate without making noise or binding, rubbing or catching in any way;

(h) air vents, grilles and other ventilation outlets are not blocked;

(i) interior door glass is complete and free of cracks, chips or other damage;

(j) all hardware and other attachments are fastened securely with no loose or missing parts and glass and, where applicable, are free of cracks or broken pieces; and

(k) minimum repair or replacement size is one matching length, sheet or single component.

The Contractor shall regularly inspect all interior doors in accordance with the Maintenance Plan. The Contractor shall perform all repairs and renewals of the interior doors to meet the Technical Requirements, the Contractor's Designs and the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.2.5.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the interior door deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than three days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.2.5.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.2.5.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $700 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $400 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.2.6 Interior Windows

Interior windows include without limitation standard and specialized windows, interior wall windows and entrance windows including all frames, tracks, coverings and ledges that form part of the interior window.

5.12.2.6.1 Maintenance Requirements

The Contractor shall properly maintain the interior windows of each School Building to ensure that the interior windows:

(a) function and operate safely and performs in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the interior windows of each School Building to ensure that:

(d) the interior windows operate to manufacturers' specifications;

(e) the interior windows are safe and are free of defects affecting performance;

(f) the interior windows are intact and properly fitted and sealed;

(g) the interior windows, frames, tracks and ledges are securely fastened and free from cracks, breaks, missing parts, broken parts or other impairments;

(h) all movable components, where applicable, are secure and operate freely and easily with no loose or missing parts; and

(i) the interior windows and components are safe and in good operating condition with no broken or cracked glass or other missing or broken parts.

The Contractor shall regularly inspect all interior windows of each School in accordance with the Maintenance Plan. The Contractor shall perform all repairs and renewals of the interior windows shall meet the Technical Requirements, the Contractor's Designs and the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.2.6.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the interior windows deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than three days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the

Routine Failure.

5.12.2.6.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.2.6.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $700 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $400 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.3 Building Systems

Building systems include without limitation the plumbing system, heating and ventilation system and air conditioning, electrical system, communication system, fire prevention equipment, fire alarm system and elevators.

5.12.3.1 Plumbing System

The plumbing system includes, but is not limited to:

(a) domestic hot and cold water service including piping system, hot water heater, recirculation pumps and piping and branch piping, non-freeze hose bibbs, supply and drainage lines;

(b) sanitary sewer including piping, traps or interceptors, drainage lines; and

(c) plumbing fixtures including toilets, urinals, flush valves, faucets, sinks, non-refrigerated drinking fountains, shower fixtures.

5.12.3.1.1 Maintenance Requirements

The Contractor shall properly maintain the plumbing system in each School Building to ensure that the plumbing system:

(a) meets the Accessibility Criteria applicable to plumbing systems;

(b) functions and operates safely and performs in accordance with the

Technical Requirements, the Contractor's Designs and the Detailed Designs;

(c) meets all applicable laws and Authorizations; and

(d) meets the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the plumbing system in each School Building to ensure that:

(e) a constant supply of hot and cold water is produced for sinks, toilets and urinals on demand;

(f) domestic hot water must be generated for distribution at a minimum of 55°C;

(g) piping insulation is intact and free from dampness or deterioration to ensure no heat loss;

(h) piping and the parts and components thereof are securely fastened;

(i) piping and the parts and components thereof are free of all drips or leaks;

(j) taps, valves and other related parts and fittings function and operate in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(k) all fixtures, including toilets, urinals, sinks and drinking fountains, are securely fastened, free of all drips or leaks, with all moving parts including taps, flush valves, drain stoppers and water fountains operating freely and easily;

(l) all sanitary sewer pipes, drainage traps and interceptors are free flowing and unblocked;

(m) the sanitary sewer system provides safe conveyance of sewage or waste to the disposal system and contains the odours produced; and

(n) the plumbing system operates with minimal noise and prevents the transmission of discernable vibration into Instructional Areas.

Any failure of a plumbing system to meet the performance criteria set out in this Section 5.12.3.1.1 subsections (e), (l) and (m) above shall be deemed to be an Emergency Failure.

The Contractor shall regularly inspect the plumbing system at each School in accordance with the Maintenance Plan. The Contractor shall perform all repairs and renewals of the plumbing system to meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.3.1.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete

permanent repairs within the following timelines from the time that the plumbing system deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than three days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.3.1.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.3.1.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $3,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.3.2 Heating and Ventilation System and Air Conditioning

The heating and ventilation system includes all equipment and components relating to such system including but not limited to boilers, compressors, furnaces, pumps, motors, controls, duct work, vents, mixing boxes and dampers relating to the delivery of heat, ventilation, air and humidity to each School Building. The air conditioning includes all air conditioning equipment required for high heat areas as described in Section 4.9.7.3.3 (Cooling Systems).

The heating and ventilation system also includes the BMCS.

5.12.3.2.1 Maintenance Requirements

The Contractor shall properly maintain the heating and ventilation system and the air conditioning in each School Building to ensure that the heating and ventilation system and the air conditioning at each School:

(a) meets the Accessibility Criteria applicable to heating and ventilation systems and the air conditioning;

(b) functions and operates safely and performs in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(c) meets all applicable laws and Authorizations; and

(d) meets the Handback Requirements at the end of the Term.

In addition, the Contractor shall maintain the heating and ventilation system in each School Building to ensure that:

(e) the heating and ventilation system operates to prevent the transmission of discernable vibration into Instructional Areas;

(f) all equipment, parts and components are securely fastened and functioning according to the Contractor's Designs, the Detailed Designs and the Technical Requirements to ensure energy efficiency;

(g) the heating and ventilation system meet the performance requirements set out in Section 4.9.1.3(c) to (h), Section 4.9.7.3 and Section 4.10.3.9.3(a) to (e);

(h) humidity is maintained such that it meets the performance requirements set out in Section 4.9.1.3(a), Section 4.9.7.3.4 and Section 4.10.3.9.2(a);

(i) all duct work and controls functions without air leakage;

(j) piping and equipment operates with no missing parts;

(k) piping and equipment is free of leaks, rust or corrosion;

(l) where applicable, insulation is intact and free of damage or holes;

(m) filtration media is maintained and replaced as necessary to maintain indoor air quality and the efficient operation of the heating and ventilation system;

(n) the BMCS is maintained to ensure optimum operation of the heating and ventilation system and electrical system, including:

(j) resetting the air and heating water supply temperatures;
(ii) resetting the humidity from outside air; and
(iii) controlling the lighting and car plugs;

(o) the BMCS operates in accordance with the Contractor's Designs and the Detailed Designs and initiates the appropriate alarms as required.

Any failure of the BMCS to initiate appropriate alarms shall be deemed to be an Emergency Failure.

Any temperature fluctuation of the heating and ventilation system which exceeds ±5°C of the set point shall be deemed to be an Emergency Failure.

The Contractor shall regularly inspect, test, verify and calibrate the heating and ventilation system, air conditioning and BMCS at each School in accordance with the Maintenance Plan. The Contractor shall perform all repairs and renewals of the heating and ventilation system, air conditioning and BMCS to meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.3.2.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the heating and ventilation system and air conditioning deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than one day, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.3.2.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.3.2.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $3,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.3.3 Electrical System

The electrical system includes interior lighting, exterior lighting and the components described as "Electrical – Other" below in Section 5.12.3.3.2.

5.12.3.3.1 Interior and Exterior Lighting

Interior and exterior lighting includes without limitation all light fixtures, lamps, tubes, luminaires, ballasts, room lighting controls, light poles and emergency and exit lighting.

5.12.3.3.1.1 Maintenance Requirements

The Contractor shall properly maintain the interior and exterior lighting in each School Building to ensure that the interior and exterior lighting in each School:

(a) meets the Accessibility Criteria applicable to interior and exterior lighting;

(b) functions and operates safely and performs in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(c) meets all applicable laws and Authorizations; and

(d) meets the Handback Requirements at the end of the Term.

The Contractor shall maintain the interior lighting in each School Building to ensure that:

(e) interior lighting is fully functional and safe;

(f) interior lighting meets the lux levels set out in Section 4.9.7.6 and Section 4.10.3.7.1;

(g) flickering or burned out lamps or tubes are replaced;

(h) lamps and tubes operate with no sign of visual deterioration;

(i) interior light fixtures are kept securely fastened and free from tarnishing, cracks, chips, peeling or other similar damage;

(j) all shades, light switches and controls are free of cracks, breakage, chips or similar damage;

(k) lighting controls operate in accordance with manufacturers' performance specifications and in accordance with the Contractor's Designs and the Detailed Designs;

(l) emergency and exit lighting is kept fully charged and operational at all times;

(m) emergency and exit lighting meets the requirements of the *Canadian Electrical Code*, and the *Alberta Building Code 2006*;

(n) all other interior lighting parts and components meet CSA Standards; and

(o) interior lighting does not create a fire hazard.

Any failure of the interior lighting to meet the performance criteria set out in this Section 5.12.3.3.1.1 subsections (e) or (o) shall be deemed to be an Emergency Failure.

In addition, the Contractor shall maintain the exterior lighting in each School Building to ensure that:

(p) exterior lighting is fully functional and safe;

(q) exterior lamps and tubes are replaced when flickering or burned out;

(r) exterior light fixtures and poles are maintained in good operating condition;

(s) exterior light fixtures are kept clean and in good repair with no visible corrosion, peeling or discolouration;

(t) exterior light fixtures have no missing or broken parts;

(u) exterior light fixtures and poles are structurally sound and operate safely;

(v) exterior light poles shall be maintained plumb within 10 mm in 1 meter;

(w) exterior light covers shall be secure and free from cracks, broken or missing parts or discolouration; and

(x) exterior lighting does not create a fire hazard.

Any failure of the exterior lighting to meet the performance criteria set out in this Section 5.12.3.3.1.1 subsection (x) shall be deemed to be an Emergency Failure.

The Contractor shall regularly inspect and test the interior and exterior lighting in accordance with the Maintenance Plan. The Contractor shall perform all repairs and renewals of interior and exterior lighting shall meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.3.3.2 Electrical – Other

"Electrical – Other" includes without limitation the electrical distribution system, transformers, switchgear, switchboards and panelboards, electrical distribution panels and controls, feeders, circuit breakers, electrical outlets and receptacles, car plugs and posts, conduit, raceway and wiring. "Electrical – Other" also includes the emergency lighting system.

5.12.3.3.2.1 Maintenance Requirements

The Contractor shall properly maintain the components of "Electrical – Other" in each School Building to ensure that the components of "Electrical – Other":

(a) meets the Accessibility Criteria applicable to the components of "Electrical – Other";

(b) functions and operates safely and performs in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(c) meets all applicable laws and Authorizations; and

(d) meets the Handback Requirements at the end of the Term.

The Contractor shall maintain the components of "Electrical – Other" in each School Building to ensure that:

(e) the power distribution system constantly supplies power to the School;

(f) the power distribution system provides a safe and sufficient power supply in accordance with the Technical Requirements;

(g) the power distribution system functions as designed, without undue noise or vibration;

(h) the main distribution system equipment and components is fully operational and free of defects that affect proper operation of the system;

(i) all raceways, conduit, boxes, wiring, fittings, fixtures, controls and safety devices are fully operational in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(j) all raceways, conduit, boxes, wiring, fittings, fixtures, controls and safety devices are securely fastened to their intended point of anchorage and labeled;

(k) all electrical outlets and receptacles shall be operational with no broken, missing or loose parts;

(l) all car plug posts are operating in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(m) all car plug posts are free from damage, peeling finishes or corrosion and shall be free of missing, broken of loose parts; and

(n) the emergency lighting system is operational and functioning in accordance with applicable laws, the Contractor's Designs and the Detailed Designs.

Any failure of a power distribution system to meet the requirements of this Section 5.12.3.3.2.1 subsections (e) and (f) or the failure of an emergency lighting system to meet the requirements of this Section 5.12.3.3.2.1 subsection (n) shall be deemed to be an Emergency Failure.

The components of "Electrical – Other" at each School shall be regularly inspected and tested in accordance with the Maintenance Plan. All repairs and renewals of the components of "Electrical – Other" shall meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.3.3.3 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that any electrical system deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any

Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than five days, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

(d) Lighting levels that fall below the minimum requirements set out in Technical Requirements in any Area and any lamps or tubes within an Instructional Area and any security lighting lamps or tubes in a School which are burned out or flickering must be replaced by the Contractor within one day after notification. All other lamps or tubes that are burned out shall be replaced by the Contractor not later than five days after notification.

5.12.3.3.4 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.3.3.3 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed;

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per School

will be assessed until the permanent repairs are completed; and

(d) for lux levels repairs or tube and lamp replacements that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per school will be assessed until the permanent repairs are completed.

5.12.3.4 Communications Systems

Communication systems include the security system, master clock system, parking controls as well as all ICT conduit and raceways required to be provided by Contractor pursuant to Section 4.

5.12.3.4.1 Maintenance Requirements

The Contractor shall properly maintain the communication systems in each School Building to ensure that the communication systems:

(a) meet the Accessibility Criteria applicable to a particular communication system;

(b) function and operate safely and perform in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(c) meet all applicable laws and Authorizations; and

(d) meet the Handback Requirements at the end of the Term.

The Contractor shall maintain the communication systems in each School Building to ensure that:

(e) the security system, master clock system and the secondary clock system operate and perform in accordance with the manufacturers' performance specifications and recommendations, and the Technical Requirements;

(f) the security system, master clock system and the secondary clock system shall meet the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(g) the security system is fully operational and initiates alarms in accordance with the Technical Requirements; and

(h) ICT conduit and raceways shall be intact and securely fastened at all times.

Any failure of a security system to meet the performance requirements set out in this Section 5.12.3.4.1 subsection (g) shall be deemed to be an Emergency Failure.

The Contractor shall regularly inspect and test the security system and master clock system at each School in accordance with the Maintenance Plan. The Contractor shall

perform all repairs and renewals of any communication system to meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.3.4.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the communications systems deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than one day, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.3.4.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.3.4.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School

will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $500 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.3.5 Fire Prevention Equipment and Fire Alarm System

Fire prevention equipment includes all fire safety systems and equipment, such as fire sprinklers, standpipe and hose networks, and fire extinguishers (including carbon dioxide, wet chemical, dry chemical, clean agent and foam extinguishers).

The fire alarm system includes, without limitation, the fire alarm system control panel, heat and smoke detectors, pull stations, alarms, anunciators and all associated wiring and equipment.

5.12.3.5.1 Maintenance Requirements

The Contractor shall properly maintain the fire prevention equipment and fire alarm system in each School Building to ensure that the fire prevention equipment and fire alarm system:

(a) meet the Accessibility Criteria applicable to the fire prevention equipment and the fire alarm system;

(b) function and operate safely and perform in accordance with the Technical Requirements, the Contractor's Designs, and the Detailed Designs;

(c) meet all applicable laws and Authorizations; and

(d) meet the Handback Requirements at the end of the Term.

The Contractor shall maintain the fire prevention equipment and fire alarm system in each School Building to ensure that:

(e) the fire prevention equipment and fire alarm system are fully functional and operating as designed;

(f) fire prevention equipment and fire alarm system are maintained, repaired and updated, as required, to ensure it is in compliance with the Technical Requirements and all applicable laws;

(g) sprinkler systems and components shall be free of leaks and damage, with all parts functioning and operational in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(h) where any fire prevention equipment or component of the fire alarm system requires replacement, the Contractor shall replace such equipment with equipment of an equivalent or higher standard than the existing

equipment or component; and

(i) fire extinguishers and other fire fighting equipment are maintained in accordance with the relevant Standards and Guidelines (i.e. CSA Standards).

Any failure of the fire prevention equipment or fire alarm system to meet the performance requirements set out in this Section 5.12.3.5.1 subsection (e) shall be deemed to be an Emergency Failure. Any failure of a fire protection equipment or fire alarm system to comply with applicable laws or Authorizations shall be deemed to be an Emergency Failure.

Suitable systems and procedures must be established and maintained by the Contractor to ensure that all fire prevention equipment is examined and tested, with the records of all such tests and the dates thereof prepared in an accurate and sufficiently detailed manner. The Contractor shall ensure that the fire protection equipment and fire alarm system at each School is regularly monitored in accordance with the Maintenance Plan and tested in accordance with all applicable laws and Authorizations.

5.12.3.5.2 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the fire prevention equipment and fire alarm system deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within two hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within two hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than four hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than four hours, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than five days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 30 days after notification of the Routine Failure.

5.12.3.5.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.3.5.2 above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $4,000 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $2,000 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.3.6 Building Elevators

Building elevators include but are not limited to the elevator cab, cabling, telephone, indicator lights, call buttons, door openers, controllers, pit drains, and all parts and components thereof.

5.12.3.6.1 Maintenance Requirements

The Contractor shall properly maintain the building elevator in each School Building to ensure that the building elevator:

(a) functions and operates safely and performs in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meets all applicable laws and Authorizations; and

(c) meets the Handback Requirements at the end of the Term.

The Contractor shall maintain the building elevator in each School Building to ensure that:

(d) the building elevator is operational and available for use;

(e) the building elevator maintains a speed of 0.50 meters per second;

(f) the elevator car moves smoothly;

(g) the elevator car levels properly at each floor, without tripping hazards;

(h) the doors opening smoothly without binding;

(i) all elevator safety devices function properly;

(j) all parts and components, including but not limited to, indicator lights, call buttons, emergency telephone, door openers and controllers operate in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs; and

(k) the elevator door and passenger compartment finishes must be free from peeling or discolouration and, where applicable, paneling must be securely fastened.

Any failure of the building elevator to meet the performance requirement set out in this Section 5.12.3.6.1 subsections (d) or (e) shall be deemed to be an Emergency Failure.

The Contractor shall ensure that the building elevator is regularly maintained by qualified personnel. The Contractor shall ensure that the building elevator shall be inspected annually in accordance with applicable laws and Authorizations.

5.12.3.6.2 Occupant Release Requirements

The Contractor shall immediately respond to all elevator alarms or telephone calls from a building elevator and immediately initiate the required action to release occupants.

In the event of failure in the operation of the building elevator, elevator occupants must be released from the elevator as soon as practicable but in any event no later than one hour from notification.

5.12.3.6.3 Repair Periods

The Contractor shall complete temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the building elevator deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but

in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than one day, at which time permanent repairs shall be completed.

(b) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 5 days after notification of the Routine Failure.

5.12.3.6.4 Payment Adjustments

(a) If the Contractor fails to release the occupants of a building elevator which has failed to operate within the time stipulated in Section 5.12.3.6.2 above, a Payment Adjustment will be assessed for each such failure at $750 for every half-hour of delay per School.

(b) If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.3.6.3 above, then Payment Adjustments will be assessed for each failure, as follows:

(i) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $4,000 per day or partial day per School will be assessed in accordance with Section 5.11.7; and

(ii) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $1,000 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.4 Exterior Improvements

5.12.4.1 Snow and Ice Removal and Control

5.12.4.1.1 Maintenance Requirements

The Contractor shall maintain pedestrian and vehicular traffic areas (other than sidewalks at a School and the main School Building entrance area), including Municipal sidewalks at each School Site, by keeping such areas free of snow and ice through:

(a) plowing, sanding and salting (including the application of other ice-melt products);

(b) removal of snow and ice from these areas (other than sidewalks on a School Site and the main School Building entrance area); and

(c) locating snow piles at a School Site away from vehicular and pedestrian access and travel points to ensure the safety and proper visibility for pedestrians and vehicles at such School Site;

as more fully described in the Maintenance Plan.

The Contractor is responsible, at its own cost, for repairing all damage to paved surfaces, sidewalks, landscaping and fixtures arising as a result of its snow and ice removal activities as soon as weather permits but with temporary protection and measures put in place immediately.

5.12.4.1.2 Repair Periods

The Contractor shall complete all snow and ice removal obligations at each School within the following timelines:

(a) Municipal sidewalks

(i) Snow accumulations of greater than 10 centimeters in any 24 hour period shall be removed by 07:00 hours the day following the cessation of the snowfall;
(ii) Ice conditions shall be managed (sanding, salting, etc) by 07:00 hours on each day; and
(iii) Snow accumulations of less than 10 centimeters in any 24 hour period shall be removed as required by applicable laws.

(b) Transportation Drop-Off Areas and Parking Areas

(i) Snow accumulations of greater than 15 centimetres in any 24 hour period shall be removed by 07:00 hours on the day following the cessation of the snowfall;
(ii) Ice conditions shall be managed (sanding, salting, etc) by 07:00 hours on each day; and
(iii) Snow accumulations of less than 15 centimetres in any 24 hour period shall be removed within five days following the cessation of the snowfall.

5.12.4.1.3 Payment Adjustments

If the Contractor fails to meet the snow and ice removal obligations within the Repair Period stipulated in Section 5.12.4.1.2 above, then Payment Adjustments for each failure will be assessed as follows:

(a) for snow and ice removal under Sections 5.12.4.1.2 subsections (a)(i), (a)(ii), (b)(i) and (b)(ii), a Payment Adjustment of $100 per hour or partial

hour of delay per School shall be assessed until the removal has been completed; and

(b) for snow removal under Sections 5.12.4.1.2 subsections (a)(iii) and (b)(iii), a Payment Adjustment of $300 per day or partial day per School shall be assessed until the removal has been completed.

5.12.4.2 Exterior Improvements (excluding Landscaped Areas)

5.12.4.2.1 Maintenance Requirements

The Contractor shall properly maintain the Exterior Improvements (excluding landscaped areas) at each School to ensure that the Exterior Improvements (excluding landscaped areas):

(a) meet the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

The Contractor shall maintain the Exterior Improvements (excluding landscaped areas) at each School to ensure that:

(d) concrete, asphalt or other hard surface materials have no uneven surfaces, tripping hazards, spalling, holes, damaged or broken curbs and are free of potholes, open cracks, and sinking;

(e) concrete, asphalt and other hard surface materials are safe, sound, smooth, even and continuous, with minimal patching;

(f) curbs and edgings are sound, with no chips, cracks, breaks;

(g) all areas drain as set out in the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(h) the drainage system, including all gutters and drains, are kept clean and unblocked and function in accordance with the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(i) all roadway, lane and parking lot lines are clear and complete;

(j) barrier-free access is maintained, where applicable;

(k) exterior signs including informational, directional and parking signs are legible, free from rust, corrosion, peeling or fading, with all posts maintained plumb;

(l) exterior structures including but not limited to flagpoles, fencing, railings, bicycle racks and exterior wall signage are safe, sound, secure, operational

and free from rust, corrosion, peeling or fading;

(m) flagpoles are maintained plumb; and

(n) permanently fastened fixtures are maintained in a safe condition, securely fastened and free from rust, corrosion or peeling.

The Contractor shall regularly monitor and inspect the Exterior Improvements (excluding landscaped areas) in accordance with the Maintenance Plan. The Contractor shall perform all repairs and renewals of any Exterior Improvement (excluding landscaped areas) to meet the Technical Requirements, the Contractor's Designs, the Detailed Designs, all applicable laws and the relevant Standards and Guidelines.

5.12.4.2.2 Repair Periods

The Contractor shall install temporary protection and measures or shall complete permanent repairs within the following timelines from the time that the Exterior Improvements (excluding Landscaped Areas) deficiency or impaired condition is reported to the Help Desk:

(a) Emergency Failures

The Contractor shall attend the affected School and respond to any Emergency Failure immediately but in any event no later than two hours from the time of notification. The Contractor shall permanently repair such Emergency Failures within four hours of the Contractor's arrival at the affected School. If the Contractor cannot complete permanent repairs within four hours of the Contractor's arrival at the affected School, the Contractor shall make temporary protection and measures immediately but in any event not later than six hours from notification of the Emergency Failure. Temporary protection and measures may not be in place for more than one day, at which time permanent repairs shall be completed.

(b) Urgent Failures

The Contractor shall permanently repair Urgent Repairs as soon as is practicable but in any event not later than 10 days after notification of the Urgent Failure.

(c) Routine Failures

The Contractor shall permanently repair Routine Failures as soon as practicable but in any event not later than 60 days after notification of the Routine Failure.

5.12.4.2.3 Payment Adjustments

If the Contractor fails to install the temporary protection and measures or to make permanent repairs, as applicable, within the Repair Period indicated in Section 5.12.4.2.2

above, then Payment Adjustments will be assessed for each failure as follows:

(a) for Emergency Failures that are not temporarily protected or permanently repaired, as applicable, within the Repair Period, a Payment Adjustment of $500 per day or partial day per School will be assessed in accordance with Section 5.11.7;

(b) for Urgent Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $300 per day or partial day per School will be assessed until the permanent repairs are completed; and

(c) for Routine Failures that are not permanently repaired within the Repair Period, a Payment Adjustment of $100 per day or partial day per School will be assessed until the permanent repairs are completed.

5.12.4.3 Landscaped Areas

The landscaped areas include all grass, trees, shrubs and other decorative plants at each School.

5.12.4.3.1 Maintenance Requirements:

The Contractor shall properly maintain the landscaped areas at each School to ensure that the landscaped areas:

(a) meet the Technical Requirements, the Contractor's Designs and the Detailed Designs;

(b) meet all applicable laws and Authorizations; and

(c) meet the Handback Requirements at the end of the Term.

The Contractor shall maintain the landscaped areas at each School to ensure that:

(d) the landscaped areas reasonably weed free and are in a healthy growing condition, with edges neatly trimmed;

(e) trees and shrubs are regularly pruned and fertilized, with dead growth removed;

(f) dead or diseased trees or shrubs are promptly removed and replaced, as required;

(g) tree and shrub growth does not interfere with walkways and does not cause a safety hazard or become unsightly;

(h) mulch or other ground cover is in place with uniform and complete coverage;

(i) all landscaped areas drain as required in the Contractor's Designs and the Detailed Designs;

(j) edging is completed once per month;

(k) grass height is maintained between 60 and 75 mm;

(l) fertilizer is applied a minimum of three times per year or as further required to maintain healthy growth; and

(m) aerating is done annually.

The Contractor shall monitor the landscaped areas in accordance with the Contractor's Maintenance Plan. All replacement shrubs, trees or decorative plants shall meet the Technical Requirements and relevant Authorizations.

5.12.4.3.2 Repair Periods

The Contractor shall correct or repair the landscaped area deficiencies within the following timelines from the time that deficiency is reported to the Help Desk:

(a) deficiencies that pose a safety hazard to School staff, students or the public shall be permanently repaired within one day. If permanent repairs cannot be completed within one day, temporary protection or measures shall be made immediately but in any event no later than one day from notification. Temporary protection and measures shall not be in place for more than seven days at which time permanent repairs shall be completed;

(b) deficiencies pertaining to grass length, weed control, dead or diseased growth, shall be corrected within seven days; and

(c) deficiencies pertaining to dead or diseased shrub or tree replacements, failure to fertilize or aerate shall be corrected within 30 days.

5.12.4.3.3 Payment Adjustments

If the Contractor fails to make the temporary protection and measures, permanent corrections or corrections within the Repair Periods indicated in Section 5.12.4.3.2 above, then a Payment Adjustment of $300 per day or partial day per School will be assessed for each failure until the permanent repairs or corrections are completed.

5.12.5 Graffiti Removal

5.12.5.1 General

In this Section 5.12.5, "**Graffiti**" means any images, figures, symbols, lettering or other markings scratched, scrawled, painted or otherwise marked in any manner anywhere in or on any School that are vulgar, gang related, sexually offensive, or offensively names an individual, contains swear words or other offensive slurs or any other markings, images, symbols or lettering on any School that are not part of the normal finish of that School's surfaces.

Notwithstanding any other provision in the DBFM Agreement or this Schedule 18 (Technical Requirements), the Contractor is not required to remove Graffiti unless and until the Province calls the Help Desk to request such removal. The Province may at any time request the removal of specific Graffiti in which case Section 5.12.5.2 shall apply. In respect of each School, not more than once every three years after School Availability for that School, the Province may request the general cleanup and removal of all Graffiti at that School in which case Section 5.12.5.3 shall apply.

5.12.5.2 Specific Graffiti Removal

Upon notification to the Help Desk requesting specific Graffiti removal, the Contractor shall:

(a) immediately, but in any event within 24 hours of notification, remove the specified Graffiti from the interior or exterior of the affected School or any Exterior Improvements. If the Contractor fails to remove the Graffiti within such Repair Period, a Payment Adjustment of $1000 per day per School will be assessed until the Graffiti is removed; and

(b) if the removal of the Graffiti damages the finish to the Building Element or Exterior Improvement, the damaged finish will be repaired or replaced within 60 days from the date of the removal of the Graffiti. If the Contractor fails to repair or replace the damaged finish within such Repair Period, a Payment Adjustment of $500 per day per School will be assessed until the damaged finish is repaired or replaced.

5.12.5.3 General Graffiti Removal

Upon notification to the Help Desk requesting general Graffiti removal, the Contractor shall:

(a) within 14 days of the Help Desk notification, provide the Province with a workplan outlining the nature and extent of the work to be carried out and the proposed dates, times and duration during a School Holiday that such work will be carried out. The Province shall approve the dates proposed for such work or propose alternate dates; and

(b) during the period agreed upon, carry out the general cleanup and removal of Graffiti from the interior or exterior of the affected School and any Exterior Improvements and the repair of any damaged finishes. If the Contractor fails to remove the Graffiti and repair any damaged finishes within this period, a Payment Adjustment of $1000 per day per School will be assessed until the Graffiti is removed and the finishes are repaired.

5.12.6 Repeat Failures

5.12.6.1 Building Performance Failures

Where two or more Building Performance Failures (whether consecutive or not) occur at the same School in any rolling six month period during the School M&R Period and M&R Period in relation to the same type of Building Performance Failure, then:

(a) on the second Building Performance Failure in that six month period, the Payment Adjustment for the second Building Performance Failure will equal the Original Payment Adjustment for the Building Performance Failure multiplied by two; and

(b) on the third, and any subsequent, Building Performance Failure in that six month period, the Payment Adjustment for the third, or subsequent, Building Performance Failure will equal the Original Payment Adjustment for the Building Performance Failure multiplied by four.

5.12.6.2 Service Failures

Where two or more Service Failures (whether consecutive or not) occur in any rolling six month period during the School M&R Period and M&R Period in relation to the same type of Service Failure, then:

(a) on the second Service Failure in that six month period, the Payment Adjustment for the second Service Failure will equal the Original Payment Adjustment for the Service Failure multiplied by two; and

(b) on the third, and any subsequent, Service Failure in that six month period, the Payment Adjustment for the third, or subsequent, Service Failure will equal the Original Payment Adjustment for the Service Failure multiplied by four.

5.12.6.3 Accessibility Failures (other than School Building)

Where two or more Accessibility Failures other than to the School Building (whether consecutive or not) occur at the same School in any rolling six month period during the School M&R Period and M&R Period in relation to the same type of Building Performance Failure, then:

(a) on the second Accessibility Failure in that six month period, the Payment Adjustment for the second Accessibility Failure will equal the Original Payment Adjustment for the Accessibility Failure multiplied by two; and

(b) on the third, and any subsequent, Accessibility Failure in that six month period, the Payment Adjustment for the third, or subsequent, Accessibility

Failure will equal the Original Payment Adjustment for the Accessibility Failure multiplied by four.

5.12.6.4 Accessibility Failures – School Building

Where there are two or more occurrences (whether consecutive or not) of the same School Building being declared Inaccessible pursuant to Section 5.9.4 in any rolling six month period during the School M&R Period and M&R Period, then:

(a) on the second Accessibility Failure of such School Building in that six month period the Payment Adjustment for the second Accessibility Failure of such School Building will equal the Original Payment Adjustment for the Accessibility Failure of such School Building multiplied by two; and

(b) the third, and any subsequent, Accessibility Failure of such School Building in that six month period shall be a potential Termination Event for the purposes of and having the consequences set out in section 16.8(l) of the DBFM Agreement.

The Province shall notify the Contractor after the first and second occurrence of noncompliance with the School Building Accessibility performance requirement in any rolling six month period.

5.12.7 Reporting Failures

A "**Reporting Failure**" means a failure by the Contractor to record or to correctly record an Accessibility Failure Payment Adjustment, a Service Failure Payment Adjustment, a Building Performance Failure Payment Adjustment, a Repeat Failure Payment Adjustment or a Reporting Failure Payment Adjustment in respect of an event which should have given rise to an Accessibility Failure Payment Adjustment, a Service Failure Payment Adjustment, a Building Performance Failure Payment Adjustment, a Repeat Failure Payment Adjustment or a Reporting Failure Payment Adjustment, if it had been correctly reported.

5.12.7.1 Payment Adjustment

Any error or omission, including a failure to report an Accessibility Failure Payment Adjustment, a Service Failure Payment Adjustment, a Building Performance Failure Payment Adjustment, a Repeat Failure Payment Adjustment or a Reporting Failure Payment Adjustment, in the information to be provided by the Contractor under section 9.3 of the DBFM Agreement shall result in a Payment Adjustment as calculated below.

In any month in the School M&R Period and the M&R Period that a Reporting Failure is identified (regardless of when it occurred), the Contractor must:

(a) where an Accessibility Failure Payment Adjustment, a Service Failure

Payment Adjustment, a Building Performance Failure Payment Adjustment, a Repeat Failure Payment Adjustment or a Reporting Failure Payment Adjustment is not reported, record the relevant Payment Adjustment;

(b) where a Reporting Failure, an Accessibility Failure Payment Adjustment, a Service Failure Payment Adjustment, a Building Performance Failure Payment Adjustment, a Repeat Failure Payment Adjustment or a Reporting Failure Payment Adjustment was incorrectly calculated, record the correction to be included; and

(c) on the third, and any subsequent, Reporting Failure in any 12 month period, record a Reporting Failure Payment Adjustment of a sum equal to 50% of the relevant Payment Adjustments referred to in (a) and (b) above.

5.12.8 Energy and Water Management

The Contractor shall prepare an annual Energy and Water Consumption Report measured against the Base Consumption, including by energy type and time-phased by month for each School. The Energy and Water Consumption Reports shall be provided to the Province on or before the first School Day in September during the School M&R Period and the M&R Period.

5.12.8.1 Payment Adjustment

If the Contractor fails to provide an Energy and Water Consumption Report for each School within the time stipulated, a Payment Adjustment of $600/day or partial day for each undelivered Energy and Water Consumption Report shall be applied until received.

SECTION 6 – HANDBACK ON EXPIRY REQUIREMENTS

6. HANDBACK ON EXPIRY REQUIREMENTS

This Section 6 sets out the Handback on Expiry Requirements applicable to the Schools.

6.1 General

Not earlier than 365 days and not later than 90 days prior to the end of the Term, the Contractor shall perform and deliver all of the requirements as detailed in the Handback on Expiry Plan set out in Schedule 4 (Contractor's Management Systems and Plans) for each School.

6.1.1 Payment Adjustments

If the Contractor fails to perform the Handback on Expiry Requirements for each School within the time stipulated, a Payment Adjustment of $3,000 per day for each School shall be assessed until the Handback on Expiry Requirements for a School are completed.

SECTION 7 - HANDBACK REQUIREMENTS

7. HANDBACK REQUIREMENTS

This Section 7 sets out the Handback Requirements applicable to the Schools.

7.1 Handback Requirements

At the end of Term, the Contractor shall hand back the Schools to the Province in a condition that meets or exceeds the following requirements:

(a) the School Buildings meet all of the Accessibility Criteria;

(b) the Schools fully comply with all applicable laws and Authorizations;

(c) each Building Element, Building System, all Building Equipment and the Exterior Improvements at a School shall be in good condition and operating order, excluding Reasonable Wear and Tear, and, if applicable, shall not have any structural faults or defects; and

(d) each Building Element, Building System, all Building Equipment and the Exterior Improvements at a School shall perform in accordance with performance specifications and standards set out in the Technical Requirements, the Contractor's Designs, and the Detailed Designs subject to Reasonable Wear and Tear.

SCHEDULE 18 (TECHNICAL REQUIREMENTS)

APPENDICES A-M

SEE SEPARATE ATTACHMENTS