

Our File No. F07-033
August 13, 2007

Strata Plan LMS 1866 – The Electra
c/o Facilitech Property Management Ltd.
1110 Howe Street
Vancouver, B.C. V6Z 1R2
(Email: bob@facilitech.ca)

Attention: Mr. Bob Adams

Dear Sir:

Re: The Electra – Strata Plan LMS 1866 – 989 Nelson St., Vancouver, B.C.
- Proposal for Professional Building Envelope Engineering Services

Thank you for your request dated August 10, 2007 to provide Professional Building Envelope Engineering Services in accordance with the Building Envelope Condition Survey presented at the Strata council meeting on July 31, 2007. The following is our proposal:

1.0 Window Leakage Investigation and Repairs:

Window leak investigation and repairs at suites 411, 507, 610, 814, 915, 1101, 1613, and 2001: We recommend a more detailed investigation using our AAMA nozzle or water penetration testing utilizing our spray-rack testing equipment in accordance with ASTM E1105-00, in order to induce simulated weather conditions similar to the one-in-ten-year event, conditions which should be met by the window glazing and wall systems at The Electra. The test apparatus should reveal the failure mode and also suggest the item in need of repair. Our testing is described as follows.

- 1.1 We would review the window manufacturer's signed and sealed shop drawings. Windows should meet the appropriate standards set out by the Vancouver Building By-Law and specifically CAN/CSA A440-05 and ASTM E1105-00.
- 1.2 We recommend window testing of the constructed glazing in the form of negative pressure testing, in conformance with ASTM Standard 1195E-00 and in accordance with CAN/CSA – A440-05, and A440.1.
- 1.3 **For most standard window configurations our field technicians can site assemble a plexiglass test chamber and provide all test apparatus included in our test fee at \$2,000/test.**

Based on the results of the testing at the suites in question, we would recommend maintenance to those window systems at the affected suites. We expect that the repairs will be localized to the affected suites, rather than systemic to the whole building, since water leaks have been reported at only suites 411, 507, 610, 814, 915, 1101, 1613, and 2001. This is a total of eight locations which, at a building of this size, after 12 years of services, would not be considered to be an aberration.

Based on our testing we would recommend repairs as necessary. Our fees for performing the window testing at the eight suites in question and formulating repair recommendations will be \$16,000 plus disbursements and GST. Coordination with the owners of the suites will be required. We would engage the appropriate repair contractors to execute the necessary repairs.

2.0 Concrete Repairs:

The roof perimeter is decorated with cantilevered concrete flying beams, extending beyond the roof edge by approximately 8'. During our investigation we noted that these decorative concrete beams are deteriorated and in need of repair. The prominent and most dangerous aspect of the deterioration is that water has ingressed into cracks in the concrete and is causing the concrete to spall or drop off from the 22nd level of this building onto the ground or street below. As this is a life-safety issue, it is imperative that this should be addressed without delay.

Our services to repair these conditions would include writing specifications and performing tender services during a tender period in which approximately three pre-qualified bidding contractors would be invited to submit pricing to complete these repairs. Although the method of the repairs will be clearly defined in our specification, the exact quantity of the repairs will be undefined, since determination of the extent of the repairs will be dependent upon accessing each area of the fly beams and identifying the extent of the repair areas. Access to the fly beams is best from a swing stage which will be erected to complete the work. Spratt Emanuel Engineering Ltd. would identify repair areas at each swing stage set-up and authorize the contractor to proceed with the appropriate repairs. There would be a large cost plus component to this work, whereby the contractor, on the basis of fixed labour rates and a fixed mark-up, would invoice monthly and progressively for this repair work. Repairs would consist of removing any loose concrete and applying anti-oxidant coatings to the reinforcing steel, followed by concrete patches applied with epoxy or additional mechanical fittings. Prior to moving the swing stage to the next set-up, Spratt Emanuel Engineering Ltd. would review the contractor's work and records of material and man hours expended on each set-up. The concrete spandrels have exhibited damages on the bottoms, sides, fronts, and top. We emphasize that although this architectural element is largely decorative in nature, the consequences of neglecting a high level of maintenance could be substantial liabilities to life-safety at ground level due to falling concrete.

Our fees for the concrete repairs would consist of \$2,000 for specification and tender services followed by contract administration and quality assurance services at hourly rates plus disbursements and GST not to exceed 13% of construction value.

3.0 Mosaic Tile Repair:

Spratt Emanuel Engineering Ltd. has assessed that the mosaic tile at The Electra, as well as being a dominant architectural theme element, is experiencing efflorescence, deterioration, and delamination at several locations. Our services in conjunction with the repairs would consist of defining the work areas, writing specifications for the repairs, tending the repairs to a maximum of three pre-qualified repair contractors, and completing quality assurance and contract review services throughout the repair contract. Our fees for the specification and tender portion of this work would be \$2,000. Our quality assurance and contract



management fees throughout the repair period would be charged at hourly rates plus disbursements not to exceed 13% of repair contract value.

4.0 Caulking and Re-Coating:

Spratt Emanuel Engineering Ltd. would provide specification and tender services for a caulking and re-coating contract, including miscellaneous painting items for the entire building. Spratt Emanuel Engineering Ltd. would provide specification and tender services as well as quality assurance throughout the repairs including reviews of the work, reports to the owners, and reviews of the contractors' requests for payments (project contract administration) all at hourly rates plus disbursements plus GST, not to exceed an upset price of 13% of contract value.

Further information pertaining to this proposal is as follows:

5.0 BACKGROUND OF OUR FIRM

- 5.1 Building envelope consulting (Building Science) is the major activity of our Firm. We have provided services to a wide variety of clients, including architectural firms, developers, resident owners, Strata Councils, Municipalities, Provincial and Federal Governments, Hospital Boards, School Boards, Airports, **YVR, BC Cancer Research Centre, and Olympic facilities.**
- 5.2 Enclosed please find the following information with respect to our company:
 - Scope of Services
 - Principal Fields of Specialization
 - Curriculum Vitae of Mark W. Emanuel, P. Eng.
 - Curriculum Vitae of Stephen Greenaway, B.Eng. E.I.T.
 - Curriculum Vitae of Richard Osborne, B.Eng., E.I.T.
 - Certificate of Professional Errors and Omissions Liability Insurance
 - Schedule of Fees

6.0 FEES QUOTED FOR THE ABOVE WORK:

- 6.1 Fees for the above work have been calculated based upon average weather conditions, reasonably competent sub-trades, and appropriate co-ordination between the general contractor and the sub-trades.
- 6.2 Our fees are estimated as follows:

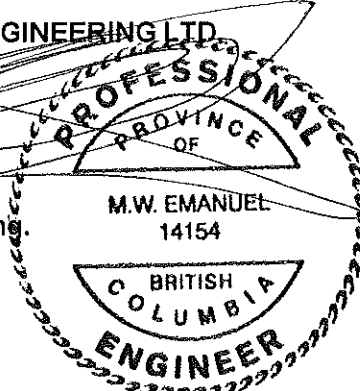
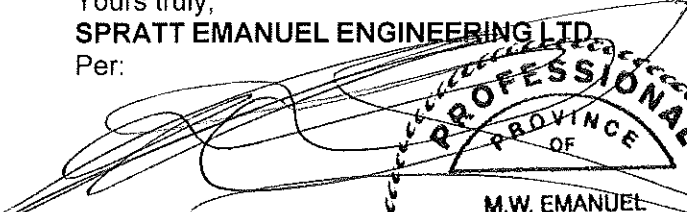


1.0	Window Leakage Testing and Repairs: (8 suites)	\$16,000
2.0	Concrete Repair Specifications and Tender:	\$2,000
3.0	Mosaic Tile Repair Specification and Tender:	\$2,000
4.0	Caulking and Re-Coating Specification and Tender:	\$2,000
5.0	Construction Services (of all above items) Contract Administration, Quality Assurance and Professional Engineering Services	13% of construction value

- 6.3 Hourly rates would be charged to a maximum and all fees would be invoiced monthly, based upon our Schedule of Fees attached.
- 6.4 Disbursements will include a 15% surcharge. Disbursements typically consist of vehicle mileage, digital photography costs, required rental equipment, consumables and printing.
- 6.5 GST is extra to the above fees.

Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,
SPRATT EMANUEL ENGINEERING LTD.
Per:



Mark W. Emanuel, P.Eng.
President

MWE/tb/encls.



SPRATT EMANUEL ENGINEERING LTD.
CONSULTING PROFESSIONAL ENGINEERS
SCOPE OF SERVICES

1.0 INTRODUCTION

- 1.1 Mark W. Emanuel, P.Eng., formed SPRATT EMANUEL ENGINEERING LTD. in 2001 to provide Building Science Engineering expertise as our primary focus and to continue to provide materials engineering consulting.
- 1.2 SPRATT EMANUEL ENGINEERING LTD. provides professional expertise to Architects, Engineers, Owners, Municipalities, schools, airports, hospitals and Olympic facilities in the fields of Building Science Engineering and construction materials
- 1.3 The company is currently operating with approximately 25 personnel made up of Professional Engineers, technologists, and administrative and support staff.
- 1.4 We retain a complement of experts in the construction and engineering fields and provide consulting services to our clients, which include building design and assessment, forensic investigation, materials engineering and expert witness for litigation purposes.
- 1.5 Our offices are located in Vancouver, British Columbia and we currently provide consulting services in Alberta, British Columbia and the western United States.

2.0 CONSULTING SERVICES

- 2.1 Our experienced staff of Engineers and Technologists provide:
 - **Building Science Services** – Building Envelope Remediation - Building envelope condition surveys, and building envelope analysis, all aspects of building envelope design, inspection, quality assurance and project management services for building restoration, parkade restoration, roofing and water proofing.
 - **Building Science Services** – New Buildings – Design review, design recommendations, quality assurance services for foundation waterproofing, roofs and wall systems. We provide complete “Environmental Separation” review services, including water proofing and heat loss review.
 - **Feasibility Reports** - New products, materials and processes.



2.0 CONSULTING SERVICES - Continued

- **Building Assessment and Evaluation** – Structural integrity, mechanical systems and equipment, exterior maintenance requirements, load tests, concrete coring, concrete condition analysis, deflection measurements, instrumentation, building envelope review, roofing review, heat loss and insulation review.
- **Forensic Engineering** – Analysis of building and structure failures.
- **Specification Writing** – All construction divisions for new building projects, restoration projects and maintenance projects. Project specific Maintenance and Operation Manuals.
- **Concrete Design** – Concrete mix designs, Architectural Concrete and special finishes.
- **Pavement Evaluation and Design** - Airports, container ports, roads, log sorts, slabs on grade, plate bearing tests, compaction control.
- **Evaluation of Architectural and Engineering Materials** - statistical analysis of results and reports.
- **Expert Witness Provisions of for Litigation.**
- **Fall Protection Systems** - Design, testing and certification of roof anchors and fall protection equipment used to service building exteriors.

3.0 FIELD SERVICES

- 3.1 Full Project Management services.
- 3.2 Full observer services on all or any of the construction phases (architectural, structural, civil.) Quality assurance reporting.
- 3.3 Materials Testing - Asphalt, concrete, reinforcing bar, structural steel, masonry, stucco, roofing and waterproofing.
- 3.4 Plant review: Review material fabrication at point of manufacture. Quality assurance reporting.



4.0 LABORATORY SERVICES

- 4.1 Testing of asphalt, concrete, cement, aggregates, admixtures, grouts, shotcrete, fibrecrete, mortar, stucco, EIFS, reinforcing bar, waterproof membranes and coatings.
- 4.2 Microscopy - failure analyses, scanning electron, stereo and mono (including photography).

This company is a member of the Better Business Bureau and supports business self-regulation efforts by resolving legitimate customer complaints, adhering to sound advertising guidelines and abiding by the BBB Code of Ethics.



PRINCIPAL FIELDS OF SPECIALIZATION

1. **NEW BUILDINGS**
 - Building Science Engineering
 - Specifications
 - Design Review Services
 - Quality Assurance Services
 - Testing of Assemblies and Materials
 - Energy Audits
 - Maintenance Manuals
 - LEEDS Design
 - Building Envelope Professional Services

2. **BUILDING REMEDIATIONS**
 - Re-roofing
 - Building Envelope Renewals - recladdings
 - Specifications
 - Tender Services
 - Project Management
 - Quality Assurance
 - Testing of Assemblies and Materials
 - Coordinating Professional Services
 - Maintenance Manuals
 - Energy Audits

3. **EXISTING BUILDINGS, EVALUATION OF**
 - Roof and Membranes
 - Waterproof Systems
 - Testing and Reports
 - Mechanical systems
 - Acoustical Systems
 - Building Envelopes
 - Pre-purchase Inspections

4. **SPECIFICATIONS AND INSPECTIONS**
 - Concrete (all areas)
 - Roofing and Re-roofing
 - Paint
 - Asphalt Paving
 - Masonry Construction
 - Stucco
 - Sealants
 - Waterproofing Systems
 - Building Envelopes
 - Heat and Cooling Systems



PRINCIPAL FIELDS OF SPECIALIZATION Cont'd.

5. **CONCRETE**
 - Formwork Design and Certification
 - Mix Designs, including coloured concrete
 - Architectural Concrete
 - Ferrocement Structures
 - Precast concrete - Mix Designs, Prestressed, Cellular, Lightweight

6. **MATERIALS EVALUATION**
 - Concrete testing, including cylinders
 - Concrete maturity measurements
 - Aggregates

7. **PAVEMENT EVALUATION & DESIGN**
 - Concrete Paving
 - Asphalt Paving
 - Roller Compacted Concrete Paving
 - Full Inspection & Testing
 - Formwork
 - Excavations

8. **FAILURES AND COLLAPSE INVESTIGATIONS**
 - Bridge Failures
 - Structural Failures
 - Roofs, Walls, Floors
 - Formwork
 - Excavations

9. **LITIGATION**
 - Expert Witnesses for Court
 - Accidents/ Collapses
 - Leaky Condos

10. **PROFESSIONAL ASSURANCE**
 - Provide Letters of Professional Assurance as required

11. **FIREPROOFING**
 - Inspection of installations and Certification



CURRICULUM VITAE OF MARK WILLIAM EMANUEL

UNIVERSITY EDUCATION

- Queen's University, Bachelor of Science (Civil Engineering)

PROFESSIONAL REGISTRATIONS

- Association of Professional Engineers of B.C., P.Eng.
- Association of Professional Engineers of Alberta, P.Eng.

OTHER MEMBERSHIPS

- British Columbia Construction Roundtable (BCCR)
- American Concrete Institute (ACI), Director
- Glazing Contractors Association (GCA)
- British Columbia Building Envelope Council (BCBEC)
- Masonry Institute of Canada (MIC)
- Roofing Consultants Institute (RCI)
- Building Envelope Research Committee (BERC)
- **Association of Professional Engineers & Geoscientists of B.C. - Building Envelope Committee**
- Association of Professional Engineers and Geoscientists of B.C. - Building Code Revision Sub-committee.
- Association of Professional Engineers & Geoscientists of B.C. – Professional Practice Review Committee

EXPERIENCE

1999 to present

Spratt Emanuel Engineering Ltd.

President

- Building Science Services, specializing in building envelope consulting and building restoration project management services. Building envelope consultant to **Calgary OLYMPIC SPEED SKATING OVAL, BC Cancer Research Centre, Vancouver, and YVR, 2007 City of Vancouver Heritage Award Winner.**
- Services Include:
 - a) Building envelope failure investigation and assessment
 - b) Building Envelope Remediation, project management
 - c) Building Envelope Design
 - d) Construction Specification Writing
 - e) Testing and analysis of windows, window walls and curtain walls
 - f) Exterior Insulation Finishing Systems (EIFS) Engineering
 - g) Roofing investigation, remediation and project management,
 - h) Structural restorations
 - i) Concrete design
 - j) Parkade restorations
 - k) Energy audits
 - l) Litigation services



CURRICULUM VITAE OF MARK WILLIAM EMANUEL - Continued

1988 to October 1998

April Developments Ltd., Vancouver

President, Principal

- Performed all duties related to development and construction of building projects from concept to completion. Starting with land assembly to design, engineering, financing, general contracting, and marketing. Projects include residential and commercial properties.
- Design accomplishments include incorporating Airtight Drywall, development and implementation of insulated concrete form system from 1990, advanced soundproofing techniques, development of rain-screen wall cladding systems, developed Vancouver's first residential geothermal heating and cooling building as well as BC Hydro test buildings.
- **Awards include two Georgies and two Vancouver Heritage Awards.**

1984 - 1987

Reinforced Earth, Vancouver

Assistant Regional Manager

- Design, supply, and construction startup services for a patented retaining wall systems used in highway infrastructure projects for:
 - Coquihalla Highway, phases 1, 2, and 3, Hope to Kamloops and Peachland
 - Sea to Sky Highway 99, Vancouver to Whistler, bridges and retaining walls
 - **Vancouver ALRT – Original Expo Line 1986 - bridges**

1981 to 1983

Thurber Consultants, Vancouver

Junior Geotechnical Engineer

- Tumbler Ridge Access Road, B.C.; Drilling and helicopter drilling
- Cinola Mine, Queen Charlotte Islands, B.C. Gold Mine
- Alaska Highway Reconstruction, B.C. and Yukon
- Hat Creek Project, B.C. Hydro, B.C.; gravel reconnaissance and drilling
- Athabaska Tar Sands gravel reconnaissance, Alberta
- Beaufort Sea Oil, NWT, testing artificial islands with advanced equipment
- **Vancouver ALRT – Maintenance Yard Development**

1980

Gulf Oil Canada, Calgary

Design Engineer

- Motorist Marketing Systems – Design, Tender, Project Manager

1979

Klohn Leonoff Consultants, Calgary

Geotechnical Engineer

- Lethbridge Northern Irrigation Works Repair

CURRICULUM VITAE OF STEPHEN GREENAWAY

UNIVERSITY EDUCATION

- Carleton University, Bachelor of Engineering (Civil)

EXPERIENCE

2005 to present:

Spratt Emanuel Engineering Ltd., Vancouver, B.C.

Project Engineer – Building Science and Concrete Technology

2005

Structural Designer

BPR-Bechtel Ltd., Timmins, ON

- Provide structural engineering support at Noranda-Falconbridge's Kidd Creek Metallurgical Site.
 - Liaising with Kidd Creek engineers and planners.
 - Reviewing existing structures and assessing their condition.
 - Designing new or replacement structures where needed.
 - Meeting deadlines and maintaining project budgets.

2002-2004

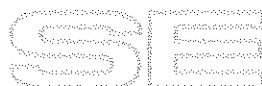
Structural Designer

Adjeleain Allen Rubeli Ltd., Ottawa, ON

- Analysis, design, and detailing of concrete and steel structures, with emphasis on concrete. Responsibilities ranged from specific tasks to day-to-day design-build management.
 - Coventry Road Conference Centre
 - Minto Place Tower 4 Design
 - CHEO Research II Addition
 - PWGSC 1600 Star Top Road, Office Building.

TRAINING AND CERTIFICATION

- Fall Protection Training, 2005
- WHMIS Certification, 2005
- Respirator Training, 2005
- Crane and Hoist Certification, 2000
- Confined Spaces Training, 1998



CURRICULUM VITAE OF RICHARD OSBORNE

UNIVERSITY EDUCATION

- Concordia University, Bachelor of Engineering (Mechanical, 2001)

PROFESSIONAL REGISTRATIONS

- Association of Professional Engineers of B.C., E.I.T.

OTHER MEMBERSHIPS

- American Concrete Institute (ACI)
- British Columbia Building Envelope Council (BCBEC)

AWARDS

- National Science and Engineering Research Council of Canada (NSERC): Awarded an undergraduate student research award (USRA)
- Magil Construction Ltd: Awarded scholarship
- Concordia University / Department of Building Engineering: Awarded scholarship

EXPERIENCE

2006 to present

Spratt Emanuel Engineering Ltd.
Intermediate Engineer

- Building Science Services, specializing in building envelope consulting and building restoration project management services.
- Services Include:
 - a) Building envelope failure investigation and assessment
 - b) Building Envelope Remediation, project management
 - c) Building Envelope Design
 - d) Construction Specification Writing
 - e) Testing and analysis of windows, window walls and curtain walls
 - f) Exterior Insulation Finishing Systems (EIFS) Engineering
 - g) Roofing investigation, remediation and project management,
 - h) Parkade restorations
 - i) Energy audits
 - j) Litigation services

2004-2006

Self-Employed as:
Design/Build General Contractor of Residential Work in Montreal, Quebec.

2002-2003

Employed as Estimator / Draftsman / Superintendent for a General Contractor of Residential Works in Montreal, Quebec.



June 1, 2007

SCHEDULE OF FEES

EXECUTIVE CHIEF ENGINEER	\$250 per hour
CHIEF ENGINEER	\$200 per hour
SENIOR PROJECT MANAGER	\$180 per hour
SENIOR ENGINEER	\$160 per hour
PROJECT ENGINEER	\$140 per hour
SENIOR PROJECT CONSULTANT	\$130 per hour
PROJECT CONSULTANT	\$120 per hour
SENIOR TECHNICIAN	\$ 100 per hour
INTERMEDIATE TECHNICIAN	\$ 90 per hour
JUNIOR TECHNICIAN	\$ 80 per hour
CLERICAL	\$ 60 per hour
DISBURSEMENTS — MILEAGE	\$.65 per km.
DISBURSEMENTS — OTHER	At Cost Plus 15%

GST will be added to our hourly rates and disbursements





Vancouver Suite 1600, 1111 West Georgia Street, Vancouver, B.C. Canada V6E 4G2 Telephone: (604) 682-4211 Facsimile: (604) 682-3520

Certificate Holder: To Whom It May Concern

Description: Evidence of Insurance

Name of Insured: Spratt Emanuel Engineering Ltd

This is to certify that the policies of insurance listed in the attached Certificate have been issued to the insured named above for the policy period indicated, notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain. The insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies. Limits shown may have been reduced by paid claims/expenses.

Schedule of Insurance

Type of Insurance	Company and Policy Number	Policy Dates	Limit of Liability/Amount
Practice Professional Liability (Claims Made)	Underwriters at Lloyds as arranged through BMS Harris & Dixon Policy No. NP066235/20	Effective: April 1/2007 Expiry: April 1/2008	\$ 1,000,000 Limit of Liability Per Claim \$ 1,000,000 Aggregate Limit

These statements have been made in good faith and are a summary of the insurance cover in force (which is subject to the full terms and conditions of the policy). We accept no responsibility whatsoever for any inadvertent or negligent act, error or omission on our part in preparing these statements or for any loss, damage or expense thereby occasioned to any recipient of this certificate.

Jardine Lloyd Thompson Canada Inc.

Dated March 30, 2007/

Per _____

Terms and Conditions

This certificate is issued for convenience only. All of the terms and conditions of the Policies referred to are contained in the original document which are not modified or amended by this Certificate. With respect to Liability Insurance Coverages, where an Aggregate limit applies, the Certificate Holder is advised that the limit shown may apply to products/completed operations or projects other than shown in this certificate and the limit may be reduced by Claims/Expenses Paid.