

Our File No.: P4382-18
June 8, 2018

2348 Yukon Street
Vancouver, BC
Canada V5Y 3T6
Phone 604 872-1211
Fax 604 872-1274
see@telus.net

Strata Plan LMS 280 – Chateau Comox
c/o Southview Property Management
110 – 7580 River Road
Richmond, B.C. V6X 1X6
(Email: kevingreen@telus.net)

Attention: Mr. Kevin Greene

Dear Sir:

Re: Strata Plan LMS 280 – Chateau Comox
1272 Comox Street, Vancouver, B.C.
– Professional Building Envelope Engineering Services
– Visual Building Envelope Condition Survey

Thank you for your June 4, 2018 request for a proposal to provide a Visual Building Envelope Condition Survey. Spratt Emanuel Engineering Ltd. (SEE) has performed previous remediation services at this building and has several reference files: S07-262, S08-273, S10-367, S12-416, and S13-435. We are not concerned with the rainscreen portions of the building which were completed approximately 10 years ago, although we would perform a visual review of those areas. The repair at those areas has a 50 year life cycle and as we approach the 10 year interval it would be wise to review the condition of the caulking and coatings, but we do not expect to find anything more than minor deterioration at this point in time. We would concentrate our review on the other areas of the building. We suggest that this review should include Bosun chair drops at this time so that our reviewers can get very close to the wall surfaces and determine what work is required, if any. The following is our proposal:

1.0 BUILDING DESCRIPTION

Building Address	1272 Comox Street, Vancouver, B.C.
Owner	Strata Plan LMS 280
Building Type	Mid-Rise Strata-Titled Apartments
Principal Occupancy	Residential
Date of Construction	1992
Applicable Building Codes	Vancouver Building Bylaw, 1991
Type of Construction	Non-Combustible Cast-In-Place Concrete
Sprinklered	Yes
Lot Size	Approximately 100'x120'
Window Type	Double glazed, Aluminum framed
Number of Storeys	9
Number of Suites	21
Parking	2-level underground

2.0 BACKGROUND OF OUR FIRM:

- 2.1 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, City of Vancouver Heritage Award Winner, 2007, 2009, 2011 and 2015.**
- 2.2 Enclosed please find the following information with respect to our company:
 - Scope of Services
 - Principal Fields of Specialization
 - List of Building Envelope Clients
 - List Building Envelope Projects
 - Curriculum Vitae of Mark W. Emanuel, P.Eng., Principal
 - Curriculum Vitae of John Drinkwater, P.Eng.
 - Schedule of Fees
 - Certificate of Professional Errors and Omissions Insurance

3.0 SCOPE OF WORK:

3.1 VISUAL REVIEW AND ASSESSMENT

- 3.1.1 The building components to be assessed in this visual report will include the following: metal panel cladding and face-sealed concrete, exterior sealants, waterproofing membranes, and details associated with cladding, windows, vents, and penetrations through claddings, intersections with windows.
- 3.1.2 Condition of Windows
- 3.1.3 Visual Condition of Structure
- 3.1.4 Condition of Flashings
- 3.1.5 Condition of Roofing

3.2 VISUAL BUILDING CONDITION ASSESSMENT

- 3.2.1 Determine and describe in our report the whole building envelope and specific elements and assemblies. Provide in the report photographs of the project components. This information will include overall project photographs and specific photographs of building details with descriptive captions and recommendations for maintenance or repair by the Owners.



3.3 INVESTIGATIVE TECHNIQUES

- 3.3.1 The Visual Building Condition Assessment will include, but not necessarily be limited to the following items: Exterior wall surfaces, windows, flashings, sealants, and roofing.
- 3.3.2 Review of the exterior the building will be by means of Bosun's chair. A minimum of 8 drops will be completed.

4.0 FEES:

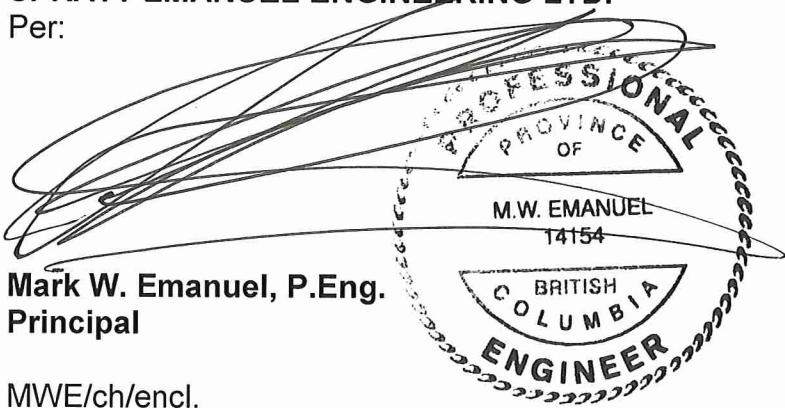
- 4.1 Our fee for the Visual Building Envelope Condition Assessment would be \$8,800 at hourly rates plus disbursements plus GST.
- 4.2 Disbursements would be extra and include a 15% surcharge. Disbursements would consist of vehicle mileage, photographic reproduction, and rental equipment. Disbursements for this project are estimated at \$200.
- 4.3 Hourly rates would be charged to a maximum and all fees would be invoiced monthly, based upon our Schedule of Fees attached.
- 4.4 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.
Principal

MWE/ch/encl.

SE

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, building 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 and British Columbia.

2.0 CONSULTING SERVICES

- 2.1 Our experienced staff of Engineers and Technologists provide:

- **Building Science Services** – Building Envelope Remediation - Building envelope condition surveys, 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, heat loss review and energy modelling.
- **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, parking structure review, 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.
- **Expert Witness for Litigation of Building Science issues.**
- **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.

4.0 LABORATORY SERVICES

- 4.1 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
- Building Envelope Professional Services
- Specifications
- Design Review Services
- Quality Assurance Services
- Testing of Assemblies and Materials
- Energy Audits
- Maintenance Manuals
- LEED® Design
- "Certified Passive House Design" Professionals

2. **BUILDING REMEDIATIONS**

- Re-Roofing
- Building Envelope Renewals - Re-Claddings
- 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
- Parkade Structures and Waterproofing
- Building Envelopes
- Pre-Purchase Inspections

4. **DEPRECIATION REPORTS/ CONTINGENCY RESERVE FUND STUDIES**

- Our reports will meet the requirements of the "Depreciation Report" required by Section 94 of the BC Strata Property Act, December 13, 2011

5. **CONCRETE**

- Formwork Design and Certification
- Mix Designs, including Coloured Concrete
- Architectural Concrete
- Precast Concrete - Mix Designs



6. **SPECIFICATIONS AND INSPECTIONS**

- Concrete
- Roofing and Re-Roofing
- Paint
- Asphalt Paving
- Masonry Construction
- Stucco
- Sealants
- Waterproofing Systems
- Building Envelopes
- Parkade Structures and Waterproofing
- Heat and Cooling Systems

7. **FAILURES AND COLLAPSE INVESTIGATIONS**

- Structural Failures
- Roofs, Walls, Floors
- Formwork
- Excavations

8. **LITIGATION**

- Expert Witnesses for Building Science Issues
- Accidents/ Collapses
- Expert Witness for Building Envelope Failures

9. **PROFESSIONAL ASSURANCE**

- Provide Letters of Professional Assurance as required

10. **FIREPROOFING**

- Inspection of Installations and Certification



BUILDING ENVELOPE CLIENTS

1. AA Property Management Ltd.
2. Adera Group of Companies
3. Airey Group
4. Ameresco
5. Aquilini Developments and Construction Ltd.
6. AWM Alliance
7. B.C. Housing Management Commission
8. BC Hydro
9. Blue Sky Properties
10. Boffo Construction Group
11. Bonnis Development Corp.
12. Bosa Development Corp.
13. Bosa Properties Inc.
14. Bradner Homes Ltd.
15. C.M.H.C. – Vancouver Land Management
16. Campustar Enterprises
17. Canbrit Development Ltd.
18. Concert Properties Ltd.
19. Embassy Bosa
20. G. Wilson Construction Co. Ltd.
21. Ledingham McAllister Group
22. Liberty Homes
23. Mainstreet Equity Corp.
24. Marcon Construction Ltd.
25. North Vancouver Recreation Commission
26. Omicron
27. Polygon Homes
28. Strand Development
29. Townline Homes
30. Tridecca Development
31. UBC Properties Trust
32. Westbank Projects Corp.



BUILDING SCIENCE

1 OUR FIRM'S EXPERIENCE

- 1.1 We have been providing specialized consulting services in Building Science since 1964. Mark W. Emanuel is the President.
- 1.2 We have provided, for most projects, review of designs, assistance in developing appropriate details; we have reviewed specifications.
- 1.3 On most projects we provide field reviews to check quality of installations of building cladding, waterproofing systems, glazing, etc.
- 1.4 We also have investigated building envelope failures in a variety of projects, ranging from single residences, through to multi-storey high rises.
- 1.5 We were founding members of the British Columbia Building Envelope Council.

2 Partial Project List

- 2.1 1001 Chamberlain Drive, North Vancouver, B.C.
- 2.2 1063 Southgate, Victoria, B.C.
- 2.3 1121 Oscar Street, Vancouver, B.C.
- 2.4 121 East 12th Street, North Vancouver, B.C.
- 2.5 1220 West 6th Avenue, Vancouver, BC
- 2.6 1238 Burrard St., Vancouver, B.C.
- 2.7 1318 Thurlow Street, Vancouver, B.C.
- 2.8 1326 West 17th Ave., Vancouver, B.C.
- 2.9 13557 - 55A Ave., Surrey, B.C.
- 2.10 1420 Terry Avenue, Seattle, WA. USA
- 2.11 1471 Bramwell Road, Vancouver, B.C.
- 2.12 1540 West 2nd Ave., Vancouver, B.C.
- 2.13 15441 Royal Avenue, White Road, B.C.
- 2.14 1691 Harwood Street, Vancouver, B.C. (1320 - 1324 Bidwell)
- 2.15 1864 West 57th Ave., Vancouver, B.C.
- 2.16 1976 West 12th Ave., Vancouver, B.C.
- 2.17 20433, 20443, 20453 53rd Avenue, Langley, B.C.
- 2.18 2102 West 38th Avenue, Vancouver, B.C.
- 2.19 2201 Pine Street, Vancouver, B.C.
- 2.20 2288 Pine Street, Vancouver, B.C.
- 2.21 2310 Trent Street, Victoria, BC
- 2.22 24917 - 122nd Avenue, Maple Ridge, B.C.
- 2.23 3588 Crowley Drive, Collingwood 7D Hi-rise, Vancouver, B.C.
- 2.24 3671 West Point Grey Road, Vancouver, B.C.
- 2.25 3688 Marine Drive, West Vancouver, B.C.
- 2.26 4181 Norfolk Street, Burnaby, B.C.
- 2.27 5395 Nanaimo Street, Vancouver, B.C.
- 2.28 5733 Cambie Street, Vancouver, B.C.
- 2.29 7151/61/71 - 121st Street, Surrey, B.C.
- 2.30 7312 Magnolia Terrace, Burnaby, B.C.
- 2.31 761 Westcot Place, West Vancouver, B.C.
- 2.32 771 Great Northern Way, 360 Pacific, Vancouver, B.C.
- 2.33 7760 Scott Road, Surrey, B.C.



Partial Project List Cont'd

- 2.34 777 West 7th Ave., Vancouver, B.C.
- 2.35 820-880 Prince Rupert Blvd., Prince Rupert, B.C.
- 2.36 999 Carnarvon Street, New Westminster, B.C.
- 2.37 Audain Art Museum, Blackcomb Way, Whistler, B.C.
- 2.38 Aspen Court, Aspen Road, Comox, B.C.
- 2.39 Bishop on the Park, 2285 Welcher Ave., Port Coquitlam, B.C.
- 2.40 Bouthot Residence, 123 Laval Street, Coquitlam, B.C.
- 2.41 Carisbrooke, 5630 Edgewater Lane, Nanaimo, B.C.
- 2.42 Carmel Place III, 120 East 2nd Street, North Vancouver, B.C.
- 2.43 Charles Square Housing Co-op, 1555 Charles Street, Vancouver, B.C.
- 2.44 Emerald Place, 8280 Westminster Hwy., Richmond
- 2.45 Emerald Park Place, 5183 Melbourne St., 3588 Vaness Ave.,
3583 Crowley Drive, Vancouver, B.C.
- 2.46 Fraser Highway & 160th Street, Surrey, B.C.
- 2.47 Heather Court, 730 West 7th Ave., Vancouver, B.C.
- 2.48 Heather Point, 312 Millbank, Vancouver, B.C.
- 2.49 Henley Park, 2250 West 3rd Ave., Vancouver, B.C.
- 2.50 Inglewood Care Center, 725 Inglewood Ave., West Vancouver, B.C.
- 2.51 Jeffrey Simon's Residence, 3509 West 11th Ave., Vancouver, B.C.
- 2.52 Kaburda Residence, 15054 Victoria Ave., White Rock, B.C.
- 2.53 Kingswood Terrace, 9151 No. 5 Rd., Richmond, B.C.
- 2.54 La Baguette Et L'Echalote, 1680 Johnston Street, Vancouver, B.C.
- 2.55 Lakeside Terrace, 1189 Westwood Street, Coquitlam, B.C.
- 2.56 Oak Place, West 8th Avenue & Oak Street, Vancouver, BC
- 2.57 Queens Court, 3455 Ascot Street, Vancouver, B.C.
- 2.58 Queensborough Middle School, 225 Lawrence St., New Westminster, B.C.
- 2.59 Shorewinds, 315 Renfrew Street, Vancouver, B.C.
- 2.60 Sitka Housing Cooperative, 1550 Woodland Drive, Vancouver, B.C.
- 2.61 Springfield, 16031 & 16071 - 82nd Ave., Surrey, B.C.
- 2.62 Stirling Classic, 2435/37 Welcher Ave., Port Coquitlam, B.C.
- 2.63 Tala Vera 2688 and 2698 Watson St, Vancouver, B.C.
- 2.64 Vancouver International Airport, Domestic Terminal Building
- 2.65 Vancouver International Airport, Link Building
- 2.66 Victoria Landing, 619 Victoria Street, Kamloops, B.C.
- 2.67 Wedgewood Point Estates, 2829 Arbutus Road, Victoria, B.C.

CURRICULUM VITAE OF MARK WILLIAM EMANUEL

UNIVERSITY EDUCATION

- Queen's University, Bachelor of Science (Civil Engineering), 1979

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

SPRATT EMANUEL ENGINEERING LTD.

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
- Site C Dam Project, Peace River B.C. Hydro; Design research
- Athabasca Oil Sands gravel reconnaissance, Alberta
- Beaufort Sea Oil, NWT, testing artificial islands with advanced equipment
- **Vancouver ALRT – Maintenance Yard Construction**

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 JOHN DRINKWATER **UNIVERSITY EDUCATION**

- **University of British Columbia, Bachelor of Applied Science (Mechanical, 2009)**

PROFESSIONAL REGISTRATION

- Association of Professional Engineers and Geoscientists of B.C., P.Eng.

EXPERIENCE

2013 – Present

Manager of Depreciation Studies

Project Consultant – Building Science

Mechanical Engineering Specialist

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

- a) Depreciation Reports/Contingency Reserve Fund Studies
- 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
- k) Building envelope failure investigation assessment

2012 – 2013

Restoration Engineer

GEA Aerofreeze Ltd.

- Lead the engineering for all freezer remediation and modification projects.
- Made pre-quotation site visits to establish scope of work and feasibility.

2010 – 2013

Design Engineer and CAD Administrator

GEA Aerofreeze Ltd.

- Transformed sales specifications into detailed CAD drawings.
- Completed long-lead ordering.
- Managed all technical and design questions related to projects.

2009 – 2010

Equipment Designer

4-4-0 Services, Ltd.

- Matched design requirements with standard components.
- Maintained a disciplined self-directed work schedule.

2008

Junior Engineer

Spratt Emanuel Engineering Ltd.

- Performed window tests and building condition surveys.
- Delivered clear and concise reports for review and presentation to clients.
- Managed remediation projects and provided Quality Assurance Reports.

TRAINING AND CERTIFICATION

- SPRAT Rope Access Training – Level 1 Technician, 2015



June 1, 2018

SCHEDULE OF FEES

CHIEF ENGINEER	\$250 per hour
SENIOR ENGINEER	\$180 per hour
PROJECT ENGINEER	\$160 per hour
PROJECT CONSULTANT	\$150 per hour
INTERMEDIATE TECHNICIAN	\$ 110 per hour
CLERICAL	\$ 70 per hour
DISBURSEMENTS — MILEAGE	\$.70 per km.
DISBURSEMENTS — OTHER	At Cost Plus 15%

GST will be added to our hourly rates and disbursements



200 - 1177 West Hastings Street Vancouver, BC V6E 2K3
T. (604) 669-9600 | 1 (866) 669-9602 | F. (604) 683-9316

**CERTIFICATE OF INSURANCE
NO. 1**

THIS IS TO CERTIFY TO: Whom It May Concern

that the following described policy(ies) or cover note(s) in force at this date have been effected to cover as shown below:

NAMED INSURED: Spratt Emanuel Engineering Ltd.

ADDRESS: 2348 Yukon Street
Vancouver, BC V5Y 3T6

Description of operations and/or activities and/or locations and/or vehicles to which this certificate applies:

Engineering Firm

TYPE	INSURER	POLICY NO.	POLICY PERIOD from (mm/dd/yyyy) to (mm/dd/yyyy)	LIMIT OF INSURANCE
Professional Liability Insurance	Effectuated with certain Lloyd's Underwriters under Agreement No. B0713GLOPR1801586	B0713GLOPR1801586/00107	04-01-2018 To 04-01-2019	\$2,000,000 Each and Every Claim \$2,000,000 Aggregate Limit

Additional Information:

For the purposes of the Insurance Companies Act (Canada), this document was issued in the course of Lloyd's Underwriters' insurance business in Canada.

This certificate is issued as a matter of information only and is subject to all the limitations, exclusions and conditions of the above-listed policies as they now exist or may hereafter be endorsed.

Should one of the above-noted policies be cancelled before the expiry date shown, notice of cancellation will be delivered in accordance with the policy provisions.

Limits shown above may be reduced by Claims or Expenses paid.

THIS POLICY CONTAINS A CLAUSE(S) WHICH MAY LIMIT THE AMOUNT PAYABLE.

Every action or proceeding against an insurer for the recovery of insurance money payable under the contract is absolutely barred unless commenced within the time set out in the Insurance Act.

BFL CANADA Insurance Services Inc.

Signed in Vancouver this 15th day of March 2018

Per:

Authorized Representative