

Haibo Feng PMP, LEED AP

Lecturer, School of Engineering, University of British Columbia, BC Canada

Co-founder, Grand Ocean Consulting Ltd. BC Canada

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EARNED DEGREES

Doctor of Philosophy | Civil Engineering

The University of British Columbia, Kelowna, BC

2016-2020*

Dissertation title: EPD and wellness based life cycle assessment of residential buildings for greener urban city development

Supervisor: Dr. Kasun Hewage & Rehan Sadiq, School of Engineering, The University of British Columbia

**Planning to submit doctoral dissertation on Jan. 2020, am expecting to defend on May 2020*

Master of Applied Science | Civil Engineering

The University of British Columbia, Kelowna, BC

2011-2013

Dissertation title : Lifecycle based energy assessment of green roofs and walls

Supervisor : Dr Kasun Hewage, School of Engineering, The University of British Columbia

B.Sc. Engineering | Civil Engineering

Wuhan University of Science and Technology

2004-2008

PROFESSIONAL QUALIFICATIONS

Project Management Professional (PMP)

Issued June 2015 (Credential ID #1822476)

Leadership in Energy and Environmental Design (LEED AP)

Issued April 2014 (Credential ID #10920020)

Energy Advisor

Issued 2019 (Natural Resources Canada Housing Division)

Engineer-in-training

California Board (NCEES ID #1626289)

Master Certified Tutor, Level III

College of Reading and Learning Association, the University of British Columbia

RESEARCH EXPERIENCE

Research Associate

The University of British Columbia, Kelowna, BC

2016-2020*

Research Areas: Smart cities, Sustainable infrastructure, Green buildings, Life cycle thinking

- Developed a EPD-BIM based whole building life cycle assessment for residential buildings in urban neighbourhood
- Worked as the coordinator in three university-industry research partnerships on developing sustainable communities
- Worked as a consultant to improve energy efficiency of municipal buildings in BC
- Prepared reports and publications, and presented findings in international conferences
- Worked as the coordinator for UBC Life Cycle Management Laboratory in preparing grant proposals to government and private sector institutions
- Projects involved at the University of British Columbia

Project title	Project type	Period
FortisBC-UBCO Collaborative Research Project: Smart Energy Chair	Mitacs Accelerate project ¹	2019
Micro Carbon Capture and Utilization: A Canadian Solution for Low Carbon Heating with Natural Gas	Natural Sciences and Engineering Research Council of Canada - Collaborative Research and Development Grant (NSERC CRD)	2018/2019
UBCO-FortisBC collaborative research partnership: Rehabilitation options analysis for dewatering systems in power generation facilities	Mitacs Accelerate project ¹	2017/2018
Sustainable Water-Energy Nexus for Urban Neighborhood Development	Natural Sciences and Engineering Research Council of Canada - Collaborative Research and Development Grant (NSERC CRD)	2016/2017
Energy Performance Improvement of Multi-Unit Residential Buildings in British Columbia	Research grant funded by Pacific Institute for Climate Solutions	2016/2017
Eco-efficiency Assessment Framework for Small Off-grid Renewable Energy Systems	Natural Sciences and Engineering Research Council of Canada – Engage Grant	2017
Risk Management of Disinfection Byproducts and Lifecycle Assessment for a Model Aquatic Centre	UBC-industry collaboration project	2016

¹ Mitacs is a national, not-for-profit organization that builds partnerships that support industrial and social innovation in Canada. Mitacs works with universities, companies, and both federal and provincial governments, to develop programs in R&D management, skill development, and international research training.

Visiting Scholar

ETH Zurich – Chair of Sustainable Construction, Switzerland

Jan. 2018-Jun. 2018

- Collaborated with ETH Zurich, University of São Paulo and Swiss government to develop a simplified LCA method for the Brazilian industry.
- Developed research interest with professors in ETH Zurich regarding the smart cities, life cycle assessment, green materials and 3D printing technology.
- Collaborated with peer researchers regarding green buildings, BIM applications, and life cycle assessment with co-authored journal articles.

Academic Guest

University of São Paulo, Brazil

Nov. 2018-Nov. 2018

- Conducted life cycle assessment workshop between University of São Paulo and construction experts in São Paulo and presented simplified assessment methods based on primary data.

- Visited civil engineering labs and explored the possible collaboration opportunities with peer researchers regarding green buildings, smart city developments, and life cycle assessment.
- Collaborated with peer researchers from Institute for Technological Research (IPT) regarding the industry of sustainability in construction and completed a draft journal article of applying sustainability into medium-economy countries.

Visiting Scholar

Southeast University, Nanjing China

Jul. 2018-Aug. 2018

- Developed collaboration projects with professors in Southeast University regarding sustainable neighbourhood, smart cities, P2P and 3D printing
- Reviewed and edited research papers regarding the structure and language issues before publishing.
- Visited 3D printing and BIM labs and worked with visiting professors from National University of Singapore regarding researches in life cycle assessment of digital printing.

TEACHING EXPERIENCE

Seasonal Lecturer

The University of British Columbia, Kelowna, BC

2018-2019

Subject: ENGR 303: *Engineering Project Management*

Sept. 2018 – Dec. 2018

56 lecture hours, 160 students

Subject: APSC 248: *Engineering Analysis III*

May. 2019 – Aug. 2019

42 lecture hours, 40 students

Subject: ENGR 433: Construction Engineering and Management (guest lecturer)

2016-2019

6 lecture hours (LEED rating system and Green building), 120 students

- Planned lessons and class activities, led discussion sections, graded papers and exams
- Designed course material, assignments and exams
- Conducted group and one-to-one mentoring sessions

Teaching Assistant

The University of British Columbia, Kelowna, BC

2016-2018

Subjects : ENGR 303 : Engineering Project Management

2016 & 2017

ENGR 305 : Engineering Economic Analysis

2014 & 2015

ENGR 431 : Infrastructure Management

2015 & 2016

ENGR 433 : Construction Engineering and Management

2016 & 2018

ENGR 413 : Law and Ethics for Engineers

2019

RELEVANT PROFESSIONAL EXPERIENCE

Co-founder | GrandOcean Consulting Ltd., Vancouver

2016 - Current

Key responsibilities: Green Building Consulting, *Project management, sales development, contract management*

- Maintained overall responsibility and accountability to over 10 private clients for complex environmental and sustainability related services.
- Provided professional project management services to private land subdivision and development projects in terms of development permits and building permits application, construction and financial management.
- Performed intensive and continuous evaluations of single and multiple residential buildings using smart building systems and other tools to achieve building step code or LEED standards.

Engineering Designer | Aplin&Martin Consultants Ltd., Vancouver

2013 -2016

Key responsibilities: Technical analysis, Project reports, *Project coordination*, *Quality control*,

- Detailed design and coordination with Architects for over ten Vancouver high-rise residential buildings to achieve LEED certification requirements.
- Prepared detailed design drawings for municipal engineering projects involving roads, storm and sanitary sewers, catchment maps, watermains, stormsewer detention systems and related topics.
- Attend regular site meeting with owner(s), architects, contractors, developers, product manufactures, and any other relevant parties to discuss progress.

Civil Engineer | Al Jazera Consultants/Turner International., Kuwait City

2008 -2011

Key responsibilities: *Project coordination*, *Project panning*, *Stakeholder management*, *Quality control*

- Prepared general plans, grading plans, profiles, detail drawings and composite utility plans for the 8000m² shopping mall at Al-Hamra Tower.
- Managed installation of reinforced concrete structures and steel structures for a 900m² fritted-glass skylight.
- Monitored and assisted in the implementation of project quality, identified and resolved field technical issues.
- Coordinated between subcontractors and site engineers to execute design alternation and on-site exploration.

JOURNAL ARTICLES

Journal Articles Published/Accepted

- **Feng, H.**, Liyanage, D. R., Karunathilake, H., Sadiq, R., & Hewage, K. (2019). BIM-based life cycle environmental performance assessment of single-family houses: Renovation and reconstruction strategies for aging building stock in British Columbia. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2019.119543>.
- He, P., **Feng, H.**, Hu, G., Hewage, K., Ahari, G., Wang, C., and Sadiq, R., (2019). Life cycle cost analysis for recycling high-tech minerals from waste mobile phones in China. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2019.119498>.
- Hu, G., **Feng, H.**, He, P., Li, J., Hewage, K., and Sadiq, R., (2019). Comparative life-cycle assessment of traditional and emerging oily sludge treatment approaches. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2019.119594>.
- Li, D., Li, X., **Feng, H.**, Wang, Y., and Fan, S. (2019). ISM-based relationship among critical factors that affect the choice of prefabricated concrete buildings in China. *International Journal of Construction Mangement*, DOI: 10.1080/15623599.2019.1675306.
- Zhu, S., Li, D., **Feng, H.**, Gu. T., and Zhu J. (2019). AHP-TOPSIS-Based Evaluation of the Relative Performance of Multiple Neighborhood Renewal Projects: A Case Study in Nanjing, China. *Sustainability* 11(17):4545.
- Zhu, S., Li, D., and **Feng, H.**, (2019). Is smart city resilient? Evidence from China. *Sustainable Cities and Society*, 50:101636.
- Zhang, F., Li, D., Ahrentzen, S., and **Feng, H.**, (2019). Exploring the inner relationship among neighborhood environmental factors affecting quality of life of older adults based on SLR-ISM method. *Journal of housing and the built environment*, ISSN 1566-4910.
- **Feng, H.** and Hewage, K., (2014). Energy saving performance of green vegetation in LEED Certified buildings. *Energy and Buildings*, 75:281-289.
- **Feng, H.** and Hewage, K., (2014). Lifecycle assessment of living walls: air purification and energy Performance. *Journal of Cleaner Production*, 69:91-99.

Journal Articles under Review

- **Feng, H.**, Hewage, K., and Sadiq, R., (2019). Environmental product declaration for a whole-building life cycle assessment: A review. *Journal of Building Engineering*. JOBE-2019-1398.
- **Feng, H.**, Hewage, K., and Sadiq, R., (2019). A methodological framework for EPD-based whole-building life cycle assessment with Building Information Modelling. *Building and Environment*. BAE-D-19-00407.
- **Feng, H.**, Silva F., Habert G., and Vanderley J. (2019). Streamlined LCA tools for building materials with an Input-output approach. *International Journal of Life Cycle Assessment*. JLCA-D-19-00247.
- Silva F., Reis D., Lisbeth Y., Pessoto L., **Feng H.**, Pacca S., Lasvaux S., Habert G., and Vanderley J. (2019). Streamlining life cycle assessment for construction products: Focus on foreground environmental aspects. *International Journal of Life Cycle Assessment*. JLCA-D-18-00303R1.

BOOK CHAPTERS

- **Feng, H.** and Hewage, K. (2016), Nature based strategies for urban and building sustainability. Vertical greening systems, Green roofs, and Green streets. Butterworth-Heinemann Publishing. ISBN: 9780128121504.

REFEREED CONFERENCE ARTICLES

- **Feng, H.**, Hewage, K., and Sadiq, R. (2019), Life cycle environmental and cost analysis for single family houses with different renovation strategies. ISIE conference, July 7-11, 2019. Beijing, China.
- **Feng, H.**, Hewage, K., and Sadiq, R. (2018), Comparative Analysis of Environmental Product Declarations on Building softwoods under different Product Category Rules. NHICE 01 – 1st International Conference on New Horizons in Green Civil Engineering, April 25-27, 2018. Victoria, BC.
- **Feng, H.** and Hewage, K. (2013), Energy performance of living walls in commercial buildings. 4th Construction Specialty Conference, Canadian Society for Civil Engineering, May 29-June 1, 2013. Montreal, Quebec.
- **Feng, H.** and Hewage, K. (2013), Lifecycle Assessment of Green Vegetation: Energy Performance on the Materials of Green Roofs and Living Walls. Annual Conference on Civil Engineering and Engineering, July 6-9, 2013. Beijing, China.

POSTER PRESENTATIONS

- **Feng, H.**, Hewage, K., and Sadiq, R. (2019), Is it better to renovate an old house or rebuild it? International Symposium for sustainable systems and technology, June 25-28, 2019. Portland, Oregon. (Best poster presentation award)
- **Feng, H.** and Hewage, K. (2012), Lifecycle Assessment of green vegetation: Cost Effectiveness Analysis (CEA) of green roof and living wall systems. 2nd International Conference on Civil Engineering and Materials, Hongkong. (Poster presentation)

INVITED PRESENTATIONS

- **Feng, H.**, Hewage, K., and Sadiq, R. (2019), BIM based life cycle assessment for aging single family houses – renovation and reconstruction strategies, International Symposium for Sustainable Construction Management, Southeast University, NanJing, China. July 1-7, 2019.

- **Feng, H.** and Perera, P. (2019), Green building and building energy simulation software HOT2000 demonstration, Green Building Simulation workshop, the University of British Columbia, Canada. September 19, 2019.
- **Feng, H.** and Habert, G. (2018), The status of green building and life cycle assessment developments in Canadian construction industry, Sustainable Construction Workshop, University of São Paulo, Brazil. November 20-23, 2018.
- **Feng, H.** and Habert, G. (2018), Foreground and background analysis of life cycle assessment database with input-output database, Chair of Sustainable Construction, ETH Zurich, Switzerland. May 25, 2018.
- **Feng, H.**, Ruparathna R., Hewage K.N., Karunathilake H., Chippi Shrestha, G.K. (2017), Sustainable Water-Energy Nexus for Urban Neighborhood Development (UND), Green development workshop, District of Peachland, BC, Canada. May 24, 2017.
- **Feng, H.**, Hewage K.N., Sadiq R. (2016), Improving Eco-Efficiency of Public Buildings with Asset Management, A presentation to the senior management, Regional District of Okanagan-Similkameen, BC, September 19, 2016.

TECHNICAL REPORTS

- Silva F., **Feng H.**, Reis D., Lisbeth Y., Pacca S., Lasvaux S., Habert G., and Vanderley J. (2019). Simplified life cycle assessment for fast and reliable environmental assessment in medium-economy countries, Universität St.Gallen, Switzerland. January 2019.
- **Feng, H.** and Habert, G. (2018), Life cycle database analysis for construction materials: foreground and background allocation, A report submitted to Chair of Sustainable Construction, ETH Zurich, Switzerland. May 2018.
- Silva F., Reis D., Lisbeth Y., **Feng H.**, Pacca S., Lasvaux S., Habert G., and Vanderley J. (2018). Simplified life cycle assessment for fast and reliable environmental assessment of building materials. University of São Paulo, Brazil.
- Sadiq R., Culver K., Hewage K.N., Idris A., Hickey, R., Li E., Dobrstein C., Dyck R., Rahman N., **Feng, H.**, AlHashmi M., Kumar V., Sekhon S., (2016). Investigating the Impacts of Urban Densities on City of Kelowna's GHG Emissions, A report submitted to City of Kelowna, December 2016.
- Sadiq R., Hewage K.N., **Feng, H.**, Ruparathna R. (2016), Energy efficiency retrofits for Penticton City Hall Building, A report submitted to City of Penticton and Fortis BC., September 2016.
- **Feng, H.** and Butler, T. (2013), Feasibility analysis of the green wall installation on BC residential buildings from a designer's perspective. Okanagan Sustainability Institute, Kelowna, BC.
- **Feng, H.** and Kayfish, S. Michels, C. (2012), Lab wastes purification performance of green vegetation – case study for UBC Okanagan campus. Kelowna, BC.

ACADEMIC AWARDS AND HONOURS

- Postgraduate Scholarship from National Sciences and Engineering Research Council of Canada (NSERC) from May 2017-May 2020
- ISSST conference best poster presentation June 2019
- ETH Zurich excellence scholarship for international research 2018
- UBC University Graduate Scholarship 2016-2019
- Go Global Self-Directed Research Abroad award 2017
- Canadian Graduate Scholarships - Michael Smith Foreign Study Supplements 2017
- Best Oral Presentation Award for ACCEE 2013 Conference
- UBC University Graduate Scholarship 2012-2013

- UBC International Partial Tuition Scholarship 2011 & 2012
- China National Scholarship 2007-2008

PROFESSIONAL AFFILIATIONS

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|---|-------------------------|
| ▪ Member in California Board for Professional Engineers (EIT) | Nov. 2015 till present |
| ▪ Member in Project Management Institute (PMP) | July 2015 till present |
| ▪ Member in US Green Building Council (LEED AP) | Jul. 2014 till present |
| ▪ Member in Association of Consulting Engineering Companies | Sept. 2013 till present |
| ▪ Member in Canadian Society of Civil Engineers | Sept. 2010 till present |
| ▪ Member in American Society of Civil Engineers | Sept. 2011 till present |

OTHER RELEVANT ACTIVITIES

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| ▪ Reviewer | 2016-2019 |
| ▪ Journal of Cleaner Production (Elsevier) – 4 articles | |
| ▪ Sustainable Cities and Society (Elsevier) – 1 article | |
| ▪ Resources, Conservation & Recycling (Elsevier) – 1 article | |
| ▪ Urban Climate (Elsevier) – 1 article | |
| ▪ ISSST abstracts | |
| ▪ Graduate Student Representative for UBC VP Research Search Committee | 2017 |
| ▪ Volunteer of Habitat for Humanity at Kelowna BC | 2012 till now |
| ▪ Project manager for the Life Cycle Management Laboratory at UBC | 2016-2019 |
| ▪ President of Kelowna Chinese Student and Scholar Association | 2017-2019 |
| ▪ Graduate Student Representative for School of Engineering, UBC | 2012-2013 |
| ▪ Coordinator for 2-week Dam Safety and Risk Management Workshop | 2013-2014 |