

CURRICULUM VITAE

OF EGODAGE NAYANTHARA DHARSHANAJALI DE SILVA



CONTACT INFORMATION

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EDUCATION / PROFESSIONAL QUALIFICATIONS

Education:

- PhD, University of Moratuwa, Sri Lanka. (2012)
Thesis title: *Risk Analysis in Maintainability of Buildings Under Tropical Conditions*
- M.Sc. Building, National University of Singapore, Singapore. (2001)
Thesis title: *Allocation of Contingency and its Management for Construction Costs in Singapore: A Probabilistic Approach Using an Artificial Neural Network*
- B.Sc. Engineering (Honours)(Civil Engineering), University of Moratuwa, Sri Lanka. (1996)

Professional:

- Chartered Engineer, Member of Institution of Engineers Sri Lanka (2012 -Membership Number: M-5717)
- Fellow and Council Member of Institute of Facilities Management Sri Lanka (2014-Membership No: 3)

CURRENT POSITION

Senior Lecturer Dept. of Building Economics, Faculty of Architecture,
University of Moratuwa

PREVIOUS POSITIONS

Trainee Engineer Lanka Hydraulic Institute (1996-1997)
Research Assistant National University of Singapore, Singapore (1997-1999)
Research Fellow National University of Singapore, Singapore (2000-2003)

TEACHING AND ADMINISTRATIVE WORK

Teaching: Undergraduate (Current):

- BE2410: Maintenance Management I for second year undergraduates of B.Sc. in Facilities Management degree programme (2015 to date)
- BE3404: Maintenance Management II for third year undergraduates of B.Sc. in Facilities Management degree programme (2016 to date)
- BE3404: Maintenance Management (old syllabus) for third year undergraduates of B.Sc. in Facilities Management degree programme (2008-2009, 2011-2016)
- BE 3102: Building Surveying for third year undergraduates of B.Sc. in Quantity Surveying and B.Sc. in Facilities Management degree programmes (2008-2009, 2012 to date)
- BE 4410: Risk Management for fourth year undergraduates of B.Sc. in Facilities Management degree programme (2012 to date)
- BE4XXX: Research Methodology fourth year undergraduates of B.Sc. Quantity Surveying (Honours) and B.Sc. Facilities Management (Honours) degree programmes (2013 to date)

- BE4420: Facilities II *for fourth year undergraduates of B.Sc. in Facilities Management degree programme (2017 to date)*

Teaching: Undergraduate (previous years):

- BE 2502: FM Project Study II *for second year undergraduates of B.Sc. in Facilities Management degree programme (2012 to 2015)*
- BE 3502: FM Project Study III *for third year undergraduates of B.Sc. in Facilities Management degree programme (2013 to 2016)*
- BE 4502: FM Project Study IV *for fourth year undergraduates of B.Sc. in Facilities Management degree programme (2014 to 2016)*
- BE326: Civil Engineering Construction *for third year undergraduates of B.Sc. in Quantity Surveying programme (2005-2007)*
- BE324: Building Design and Construction II *for third year undergraduates of B.Sc. in Quantity Surveying programme (2005-2007)*
- QSCE221: Building Science (old syllabus) *for second year undergraduates of B.Sc. in Quantity Surveying programme (2007-2009)*
- QSCC223: Civil Engineering Construction I *for second year undergraduates of B.Sc. in Quantity Surveying programme (2005-2007)*
- BE2102: Building Materials *for second year undergraduates of B.Sc. in Quantity Surveying and B.Sc. in Facilities Management degree programmes (2007-2009)*

Teaching: Postgraduate (Current):

- AU6090: Management of Projects and Facilities *for M.Sc. in Urban Design programme*
- BE5504: Introduction to Facilities Management *for M.Sc. in Occupational Safety and Health Management programme*
- BE5507: Occupational Safety and Health in Workplace Planning *for M.Sc. in Occupational Safety and Health Management programme*
- BE5513: Risk Management *for M.Sc. in Occupational Safety and Health Management programme*
- BE5515: Project Study *for M.Sc. in Occupational Safety and Health Management programme*
- BE6516: Research Methodology *for M.Sc. in Occupational Safety and Health Management programme*

Research Interests:

- Safety and health: safety in construction industry, fire safety, behavioral safety, safe accessibility
- Facilities management, FM future trends, maintainability of buildings, relational value networks
- Green maintainability, Green FM, Smart Buildings
- Construction industry performance

Research Grants:

- SRC grant for short term (one year) research - Relationally Integrated Value Networks (RIVANS) for Total Asset Management (TAM)
- SRC grant for short term (one year) research - Efficient Framework for Occupational Accidents Recording in Construction Sector

Admin:

- Director Quality Assurance – Faculty of Architecture (2016 March- to date)
- Chairperson- Curriculum and Evaluation Committee –Faculty of Architecture, University of Moratuwa (2007-2009, 2012- 2016)
- Faculty Representative – Senate Curriculum and Evaluation Committee (2016 – 2018)
- Programme Coordinator - M.Sc./PG Dip. in Occupational Safety and Health Management degree programme (2013 to date)
- Undergraduate Coordinator - B.Sc. Facilities Management (Honours) degree programme –(2006-2009, 2012 to date)

External Positions/Service:

- CIDA appointed committee member for development of “Guidelines for C&D waste management”
- Institute of Facilities Management, Sri Lanka (IFMSL) representative for Standing committee of Engineering and Architecture, University Grants Commission (from 2016 November to date)
- Advisor & Mentor and Council Member– Institute of Facilities Management, Sri Lanka
- Resource person for NIE (National Institute of Education) –
 - contribute a book chapter on Occupational Safety and Health for Student Handbook of Bio Technology subject, GCE Advanced Level
 - conduct lectures for teacher training programmes
- Resource person for Diploma programme on OSH conducted by CIDA (Construction Industry Development Authority)
- Resource person for Safety awareness programmes conducted by Industrial Safety Division, Department of Labour

PUBLICATIONS

Book Chapters

1. Book chapter on Occupational Safety and Health for Student Handbook of Bio Technology subject, GCE Advanced Level, 2015, 1st Edition, Department of Publication, Ministry of Education, Sri Lanka

International (Refereed) Journal Papers:

2. De Silva, N. Rathnayake, U. and Kulasekara, K.M.U.B. (2018) Under-reporting of Construction Accidents in Sri Lanka, accepted for *Journal of Engineering, Design and Technology*, 16(6), pp.850-868.
3. Kumaraswamy, M., De Silva, N. and Madusanka, N. Empowering Collaborative Total Asset Management and Inspiring Innovations through RIVANS, accepted for the Special Issue: ‘Accelerating innovation for smart construction’ of *Infrastructure Asset Management*
4. De Silva, N. Weerasinghe, N., Madusanka, N. and Kumaraswamy, M. (2018) Enablers of Relational Integrated Value Networks (RIVANS) for Total Facilities Management (TFM), submitted to *Journal of Financial Management of Property and Construction*, accepted for 23(2), pp.
5. De Silva, N., Samanmali I.M.R. and De Silva, H.L. (2017) Managing Occupational Stress of Professionals in Large Construction Projects submitted to *Journal of Engineering, Design and Technology*, 15(4), pp. 488-504.
6. De Silva, N. Weerasinghe, N., Madusanka, N. and Kumaraswamy, M. (2017) Relationally Integrated Value Networks (RIVANS) for Total Facilities Management (TFM), *Built Environment Project and Asset Management*, Special Issue on “Securing client’s objectives throughout construction project life cycles”, 7(3), pp. 313-329.
7. Nazeer Fathima Sabrina and De Silva, N. (2016) TBPE scoring framework for tropical buildings, *Built Environment Project and Asset Management*, 6(2), pp. 174-186.
8. De Silva, N., Ranasinghe, M., De Silva, C.R. (2016) Risk Analysis in Maintainability of High-Rise Buildings under Tropical Conditions Using Ensemble Neural Network, *Facilities*, 34(1/2), pp.2-27.

9. De Silva, N., Sampath, D.B.D and De Silva, C.R. (2015) “Maintainability of Condominiums Constructed for Low-Income Families in Sri Lanka”, *Built-environment: Sri Lanka*, 11(2), pp. 25-39.
10. De Silva, N., Darmicka, R. and Fernando, E. (2014) Impact of foreign workforce on productivity in foreign-funded infrastructure projects, *Journal of Financial Management of Property and Construction*, 19(2), pp.168 – 183.
11. De Silva, N., Ranasinghe, M., De Silva, C.R. (2013) “Use of ANNs in Complex Risk Analysis Applications”, *Built Environment Project and Asset Management*,” 3(1), pp. 123 – 140.
12. De Silva, N. and Ranasinghe, M. and De Silva, C.R. (2012) “Risk Factors Affecting to Building Maintenance under Tropical Conditions,” *Journal of Financial Management of Property and Construction*, 17(3), pp. 235-253.
13. De Silva, N. and Wimalaratne, P.L.I. (2012) “OSH management framework for workers at construction sites in Sri Lanka,” *Engineering, Construction and Architectural Management*, 19 (4), pp.
14. De Silva, N. (2011) “Promoting the facilities management profession in the project development phase of high-rise buildings in Sri Lanka”, *Built Environment-Sri Lanka*, 9-10(No 1-2), pp. 37-44.
15. De Silva, N. and Ranasinghe, M. (2010) “Maintainability of reinforced concrete flat roofs in Sri Lanka”, *Structural Survey*, 28(4), pp. 314 – 329.
16. De Silva, N. and Ranasinghe, M. (2010) “Maintainability risks of condominiums in Sri Lanka,” *Journal of Financial Management of Property and Construction*, 15(1), pp. 41-60.
17. De Silva N. and Vithana S.B.K.H (2008) “Use of PC elements for waste minimization in Sri Lankan construction industry”, *Structural Survey*, 26(3), pp. 188-198.
18. De Silva N., Ranasinghe M. and Rameezdeen R. (2008) “Maintainability risk factors of flat roofs in multi-storey buildings in Sri Lanka”, *Engineer, Journal of the Institution of Engineers, Sri Lanka*, XXXXI(4), pp.22-31.
19. Chew, M.Y.L., De Silva, N., Tan P.P. and Das, S. (2006) “Grading of risk parameters for façade maintainability”, *International Journal on Architectural Science*, 7(3), pp. 77-87.
20. De Silva N., Dulaimi M. F., Ling F. Y. Y. and Ofori G. (2004) “Improving the maintainability of buildings in Singapore,” *Building Research & Information*, 39(10), pp.1243-1251.
21. Chew M.Y.L. and De Silva N. (2004) “Factorial method for performance assessment of building façades,” *Journal of Construction Engineering and Management*, 130(4), pp.525-533.
22. Chew M.Y.L., De Siva N. and Tan S.S. (2004) “Maintainability of wet areas of non-residential buildings,” *Structural Survey*, 22 (1), pp.39-52.
23. Chew M.Y.L. and De Silva N. and Tan S.S. (2004) “A neural network approach to assessing building façade maintainability in the tropics,” *Construction Management and Economics*, 22(6), pp.581-594.
24. Chew M.Y.L., De Silva N. and Tan S.S. (2004) “Artificial neural network approach for grading of maintainability in wet areas of high-rise buildings,” *Architectural Science Review*, 47(1), pp.27-42.
25. Chew M.Y.L. and De Silva N. (2003) “Maintainability problems of wet areas in high-rise residential buildings,” *Building Research and Information*, 31(1), 60-69.
26. Chew M.Y.L. and De Silva N. (2003) “Benchmarks to minimize water leakages in basements”, *Structural Survey*, 21(4), pp.131-145.

27. Dulaimi M. F., Ling F. Y. Y., Ofori G., and De Silva N. (2002) "Enhancing integration and innovation in construction," *Building Research and Information*, 30(4), pp.237-247.
28. Chew M.Y.L. and De Silva N. (2002) "Factors affecting water-tightness in wet area of high-rise residential buildings," *Architectural Science Review*, 45(4), pp.375-383.

Local Magazine/Conference (Non-Refereed) Papers:

29. De Silva, N. (2017) Safety and Health in Construction Industry, *Construction Today*, 1(1), pp. 80-82, Ceylon Institute of Builders.
30. Rathnayake, U., De Silva, N. and Nawarathna, A. (2014) "Under-Reporting of Construction Accidents in Sri Lanka", FARU Journal, 06 (01), pp. 80-87, 2014. ISSN: 2012 6301
31. Weerasinghe, R. P. N. P. and De Silva. N. (2014) "Potential Brokerages in Relationally Integrated Value Networks (RIVANS) for Total Facilities Management: Literature Findings", FARU Journal, 06 (01), pp. 167-177. ISSN: 2012 6301
32. De Silva, N. and Ranasinghe, M. (2011) "Use of ANN in Risk Analysis" proceeding of the 17th Annual Research Symposium: Engineering Research Unit, 22nd December 2011, University of Moratuwa, Sri Lanka, pp. 230-232.
33. De Silva N. and Kumara, K.A.C.B. (2010) "Efficiency of condominium management modes in Sri Lanka" presented at Faculty of Architecture Research Unit (FARU) symposium 2009,
34. De Silva, N., Rathnayake, KGDP and Abeynayake, M. (2009) "Health and safety issues at construction sites in Sri Lanka" presented at Faculty of Architecture Research Unit (FARU) symposium 2008,
35. De Silva, N. (2008) "Maintainability of buildings", presented at Faculty of Architecture Research Unit (FARU) symposium 2007.

Under Review

36. Karunaratene, T. and De Silva, N. Demand-Side Energy Retrofit Potential in Existing Office Buildings, submitted for Special Issue on '*Built Environment Sustainability: What's New and What's Next?*' of *Built Environment Project and Asset Management*
37. Manjula, N.H.C., De Silva, N. and De Silva C.R. An ANN model to predict unsafe behaviour of construction workers, submitted for *International Journal of Construction Management*

International (Refereed) Conference Papers:

38. Mapa, M.M.I.S., De Silva, N. and De Silva, C.R. (2018) How smart the city of Colombo in Sri Lanka: Analysis using modern buildings, presented at ICCPP 2018: Sixth International Conference on Cities, People and Places, 5th – 6th October 2018, Colombo - Sri Lanka.
39. Liyanage, K.L.A.K.T. and De Silva, N. (2018) Zero Landfill Framework for Apparel Industry Solid Waste, *Proceedings of The 7th World Construction Symposium: Built Asset Sustainability: Re thinking Design, Construction and Operations*, pp. 603-612, 29th June – 1st July 2018, Colombo, Sri Lanka.
40. Kankanamge, S., De Silva, N. and De Silva, C.R. (2017) District cooling systems for mega projects in Sri Lanka, presented at ICCPP 2017: Fifth International Conference on Cities, People and Places, 20th - 21st October 2017, Colombo - Sri Lanka.
41. Fathima, M.R., Adikari, A.M.N.M. and De Silva, N. (2017) Fire Safety in Residential Apartment Buildings for Low Income Residents in Sri Lanka, *Proceedings of The 6th World Construction*

- Symposium: What's New and What's Next in the Built Environment Sustainability Agenda?*, pp. 219-225, June 30th-July 1st 2017, Colombo, Sri Lanka.
42. Manjula, N.H.C. and De Silva, N. (2017) Predicting Unsafe Behaviour of Construction Workers, *Proceedings of The 6th World Construction Symposium: What's New and What's Next in the Built Environment Sustainability Agenda?*, pp. 326-336, June 30th-July 1st 2017, Colombo, Sri Lanka.
 43. Karunaratne, T.L.W. and De Silva, N. (2017) Use of Energy Retrofits to Reduce the Energy Demand of Existing Office Buildings, *Proceedings of The 6th World Construction Symposium: What's New and What's Next in the Built Environment Sustainability Agenda?*, pp. 476-484, June 30th-July 1st 2017, Colombo, Sri Lanka.
 44. Denipitiya H.W.S.N, De Silva, N. and Soorige S.D.A. (2016) A strategic approach to ensure process safety in apparel manufacturing industry using TPM, *Proceedings of The 5th World Construction Symposium 2016: Greening Environment, Eco Innovations & Entrepreneurship*, 29-31 July 2016, Colombo, Sri Lanka.
 45. Samanmali, R. and De Silva, N. (2016) Managing occupational stress of professionals in large construction projects in Sri Lanka, *Proceedings of The 5th World Construction Symposium 2016: Greening Environment, Eco Innovations & Entrepreneurship*, 29-31 July 2016, Colombo, Sri Lanka.
 46. Somarathna K.K.G.P and De Silva, N. (2016) Risk associated with facilities management outsourcing and its impact on service performance, *Proceedings of The 5th World Construction Symposium 2016: Greening Environment, Eco Innovations & Entrepreneurship*, 29-31 July 2016, Colombo, Sri Lanka
 47. Madhusanka H.W.N and De Silva, N. (2015) "Developing a customer satisfaction assessment model for the Immigration and Emigration service in Sri Lanka", *Proceedings of 4th World Construction Symposium 2015: Sustainability and Development in Built Environment*, 12th-14th June 2015, Colombo, Sri Lanka.
 48. De Silva, N.K.A.T.O. Ranadewa, Kumaraswamy, M. and Ranasinghe, M. (2014) "Better values and characteristics in relationally integrated value networks to enhance total asset management", *Proceedings of CIOB World Construction Symposium 2014*, June 20th-22th, 2014, Colombo, Sri Lanka
 49. Nazeer Fathima Sabrina and De Silva, N. (2014) "Developing a TBPE scoring framework for assessing total building performance", *Proceedings of CIOB World Construction Symposium 2014*, June 20th-22th, 2014, Colombo, Sri Lanka (Received best paper award by Emerald Group Publishing Limited, Built Environment Project and Asset Management)
 50. Chathuranga, D.A.K., De Silva, N., Dahanayake, K.W.D.K.C. and Ranasinghe, M. (2014) "Impact of aesthetic appearance to facilitate corporate business objectives in organisations", *Proceedings of CIOB World Construction Symposium 2014*, June 20th-22th, 2014, Colombo, Sri Lanka
 51. Manjula, N.H.C. and De Silva, N. (2014) "Factors affecting safety behaviours of construction workers", *Proceedings of CIOB World Construction Symposium 2014*, June 20th-22th, 2014, Colombo, Sri Lanka
 52. Rajapakshe, I. and De Silva, N. (2014) "Contracting approach for improving performance of infrastructure development projects", *Proceedings of CIOB World Construction Symposium 2014*, June 20th-22th, 2014, Colombo, Sri Lanka

53. De Silva, N. and Nawarathna, R.A.G. (2014) "Reporting procedure of construction accidents in Sri Lanka", CIOB World Construction Symposium 2014, June 20th-22th, 2014, Colombo, Sri Lanka.
54. Manjula, N.H.C. and De Silva N., (2013) 'A Study on the Factors Affecting Construction Workers' Safety Behaviours', FARU International Research Symposium, 13-14th December, 2013, Hambantota, Sri Lanka.
55. Manjula, N.H.C. and De Silva, N. (2013) "Strengthening the Safety Culture for Organizational Sustainability," CIOB Second World Construction Conference 2013, 14-15th June, 2013, Colombo, Sri Lanka.
56. Fernando, S., De Silva, N. and Dhanayake, K. (2013) "Developing a Maintenance Strategy Plan to Improve Energy Efficiency of HVAC System," CIOB Second World Construction Conference 2013, 14-15th June 2013, Colombo, Sri Lanka.
57. Weerapperuma, C., De Silva, N., Kumaraswamy, M. and Ranasinghe, M. (2013) "Relationally Integrated Value Networks for Sustainable Procurement," CIOB Second World Construction Conference 2013, 14-15th June 2013, Colombo, Sri Lanka.
58. Siriwardana, M.R., De Silva, N. and Nawarathna, R.A.G. (2013) "Impact of Maintenance Management Procedures on Energy Efficiency of Chillers," CIOB Second World Construction Conference 2013, 14-15th June 2013, Colombo, Sri Lanka.
59. De Silva, N., Ranasinghe, M., De Silva, C.R. (2012) "Maintainability Approach for Lean Maintenance", CIOB World Construction Conference 2012, June 28th-30th, 2012, Colombo, Sri Lanka.
60. De Silva, N., Ranasinghe, M., De Silva, C.R. and Thurairajah, N. (2012) "Architecture of Ensemble Neural Networks for Risk Analysis", ASC 48th Annual International Conference held in conjunction with the CIB Workgroup 89 - April 11-14, 2012 at Birmingham City University, England.
61. Wiratunga, I.V.H. and De Silva, N. (2010) "A concept of weather window (WW) in managing the rain risks in construction projects of Sri Lanka", *International Research Conference on Sustainability in Built Environment*, 18th-19th June 2010, Colombo, Sri Lanka, pp. 266-272.
62. De Silva N., Rajakaruna, R. W. D. W. C. A. B. and Bandara K. A. T. N. (2008), "Challenges faced by the construction industry in Sri Lanka," *CIB W89: International Conference in Building Education and Research, Sri Lanka*, Sri Lanka 11 - 15th February 2008, pp. 158-169.
63. Chew M.Y.L., Das S., De Silva N. and Yee F. F. (2008), "Grading maintainability parameters for sanitary-plumbing system for high-rise residential buildings," *CIB W89: International Conference in Building Education and Research, Sri Lanka*, Sri Lanka 11 - 15th February 2008, pp. 887-900.
64. Chew M.Y.L., De Silva N. and Tan S.S. (2003) "Designing for maintainability," *2nd International Symposium on Building Pathology, Durability and Rehabilitation*, Lisboa, Portugal.
65. De Silva N, De Silva C., Leong C., and Ranasinghe M, (2003) "RBF model for contingency allocation to construction project costs," *CIB International Symposium on Knowledge Construction*, Singapore.
66. Chew M.Y.L., De Silva N. and Tan P.P. (2003), "Maintainability of facades in the tropics," *Conference for Facade Design and Procurement, Center for Window and Cladding Technology*, University of Bath, UK.
67. Chew M.Y.L., De Silva N., Tan S.S. (2003) "Maintainability of buildings in the tropics," *CIB International Workshop on Management of Durability in the Building Process*, Politecnico di Milano, Italy.

68. Dulaimi M.F., Ling F.Y.Y, Ofori G., and De Silva N. (2001), “Building a world class construction industry in Singapore,” *Proceedings of CIB Building Congress*, Wellington, New Zealand.

Research Awards

1. CIOB Best Paper Award for the paper titled ‘Use of demand-side energy retrofits to reduce the energy demand of existing office buildings’ at the 6th World Construction symposium, Colombo, Sri Lanka awarded by CIOB-Sri Lanka, 2017
2. Outstanding Research Personnel Award of the University of Moratuwa- 2016/2017 – *Distinction category*
3. Outstanding Research Personnel Award of the University of Moratuwa- 2015/2016
4. Outstanding Research Personnel Award of the University of Moratuwa- 2014/2015 – *Distinction category*
5. Highly Commended Paper Award by Emerald Group Publishing Limited Literati Network, BEPAM Journal for the paper titled “Use of ANNs in a Complex Risk Analysis Applications”, 2014
6. BEPAM Best Paper Award for the paper titled ‘Developing a TBPE scoring framework for Assessing Total Building Performance’ at the 3rd World Construction symposium, Colombo, Sri Lanka awarded by Emerald Group Publishing Limited, 2014

Conduct/organize Guest lectures, Workshops Seminars etc.,

1. Conduct a lecture on “Occupational Safety and Health” for school teachers, at the workshop of “A/L Bio-systems Technology” organized by the National Institute of Education – May 2015.
2. Conduct a lecture on “Safety during Maintenance” for students of German Tech as a session of the Safety day programme 2014 organized by the Industrial Safety division, Department of Labour – October 2014
3. Conduct a lecture on “Safe Accessibility for Maintenance” for Army Officers as a session of the Safety day programme 2014 organized by the Industrial Safety division, Department of Labour – October 2014
4. Conduct a workshop on “Introduction of Academic Workload Reporting Form” software tool for staff of Department of Building Economics- January 2014
5. Conduct a workshop on “Workload Calculation” for Faculty of Architecture – September 2013

Other Responsibilities

1. CIDA appointed member for the working group of developing a guideline for C&D waste
2. Design a maintenance management system for Prison: Kalutara
3. Develop a facilities management plan for a high tech facility