

Upendra RAJAPAKSHA

PhD (Arch) *Qld*, M.Sc (Arch), BSc (BEnv.), AIA(SL)

Chartered Architect

Senior Lecturer in Architecture AND Architectural Science



Senior Lecturer in Architecture (Grade I)

University of Moratuwa (RIBA Accredited), Sri Lanka since 2004 to date

Former Head

Department of Architecture, University of Moratuwa, Sri Lanka (2017-2021)

Associate Editor

Architectural Science Journal, Taylor & Francis UK and The University of Sydney Australia

Private e mail rajapaksha_upendra@yahoo.com - Work e mail upendra@uom.lk

EDUCATION. AWARDS AND SCHOLARSHIPS

PhD (Architecture) Queensland -from the University of Queensland, Australia 2004

(Specialization – Low energy architecture-energy sustainability of buildings)

PhD Thesis Title: An exploration of courtyards for passive climate modification in non-domestic buildings in moderate climates of Southeast Queensland in Australia

Master of Science (Architecture) Degree of University of Moratuwa, Sri Lanka 1990 – an equivalent to RIBA Part II

Received a Highly Commended Passes for Dissertation and Comprehensive Design Project

Bachelor of Science (Built Environment) Degree of University of Moratuwa 1988

Academic awards and scholarships

Award of Excellence 2018 in recognition of the outstanding research performances for the three years ending 31st December 2018, University of Moratuwa, Sri Lanka

Award of Excellence 2016 in recognition of the outstanding research performances for the three years ending 31st December 2015, University of Moratuwa, Sri Lanka

Award of Excellence 2014 in recognition of the outstanding research performances for the three years ending 31st December 2012, University of Moratuwa, Sri Lanka

Research Award 2012 on merit for Best Researcher awarded by Sri Lanka Institute of Architects (SLIA) at the Annual Sessions of SLIA in 2012

“University of Queensland International Postgraduate Research Scholarship” (UQIPRS) of the University of Queensland, May 1999 - March 2003

“International Postgraduate Research Scholarship” (IPRS) of Department of Education, Training and Youth Affairs of the Australian Government, from May 1999 - March 2003

“Dr. Justin Samarasekara Award” of University of Moratuwa for the best Dissertation, which received a *Highly Commended Pass* at M.Sc (Architecture) Examination

Highly Commended Pass for the Comprehensive Design Project (CDP) which has been presented for Master of Science (Architecture) Examination of University of Moratuwa

Professional awards

Award in appreciation of the valuable service rendered by designing the first eco-friendly Officers' Mess of the Sri Lanka Army for the use of heroic officers of the Ranaviru Apparels from the Commander of Army Lt Gen RMD Ratnayake 2013 (**Plaque**)

Professional qualifications

AIA (SL)

- Associate Member of Sri Lanka Institute of Architects since 1991 to date (Active)

RIBA

- Overseas Member of Royal Institute of British Architects, (in 1999)

RAIA

- Corporate Member, Royal Australian Institute of Architects, (in 2000)

Chartered Architect

- Architects Registration Board of Sri Lanka Institute of Architects, Registration Number CA 98107 since 1992 to date – *license to practice in Sri Lanka* (Active)

ACADEMIC TEACHING and ADMINISTRATION

Senior lecturer in architecture since 2004 to date

Department of Architecture, University of Moratuwa

Full time Duties performed:

As a Studio Master/Year Coordinator

- Setting, writing and running Design Thesis Projects offered as major courses in the academic years (Levels) mentioned below**. Conducting One to-One tutoring sessions with other studio masters, interim reviews, demonstration critiques and final critique sessions with both internal and visiting staff, are some of the key duties perform
- Co-supervision of students' studio work of other Courses written and introduced by other Studio Masters/Year Coordinators
- Coordinating Portfolio examinations at the end for each academic Level as a collective key duty with other Co-Year Coordinators and moderating marks with an invited external moderator
- Pioneered in Introducing climate response, in particular energy sustainability concerns, into design studios for the first time at Moratuwa in 2014. Manipulating architectural design interventions at FOUR sketch design stages i.e. *microclimate, plan form, sectional form and envelope* are taught to be more effective and timeless way of addressing *heat stress* on buildings in tropics (and retaining heat in cold winters as well) in order to reduce the demand for energy during operation thus in the production of architecture at net-Zero.

**** Respective academic Levels and Studios conducted on full time with other Level Co-Coordinators are:**

Bachelor of Architecture Honors Degree Level Five (Design Thesis) 2021-2022
Currently in progress with Design Theses on society, climate & urbanity and philosophical bias in design

Bachelor of Architecture Honors Degree Level Four (2014, 2015, 2016 and 2017)
Design tutoring in studios on society, technology, typology and physical contexts

Bachelor of Architecture Honors Degree Level Two (2007-2008, 2009, 2011, 2012 and 2013)
Design tutoring in space, technology, scale, proportion and identity

Master of Science (Architecture) Degree Year One (2005, 2006 and 2007)
Design tutoring on philosophical bias, personality of users, higher purpose, abstraction, production etc

Note: University of Moratuwa conducts a 5-year Bachelor of Architecture Honors program which is an amalgamated version of three -year Bachelor of Science (Built Environment) + two-year Master of Science (Architecture) conducted previously. 5-year B Arch Hons program has RIBA Part II accreditation since its inception in 2005. Author of this Resume prepared the documents for the Program Change Notification for RIBA accreditation in 2009.

Following is a regular teaching practice that is taking place in the Department:

Level 1 introduces students to the idea of **Critical Thinking** for the first time in their undergraduate education. Students will learn to question ‘why’ of a phenomenon than to merely know ‘what’ that phenomenon is. Subsequently they will learn to explore ‘how’ it comes to be what it is. In this way, the basis of Design inquiry and conception will be inculcated in the students, and this learning will continue throughout the course of their 5 years of study in different levels.

Level 2 Semester 1 offers the students the idea of **Space** in relation to people and diverse environments. Semester II will be on the exploration of **Technology** in spatial diversity and architecture. In this way, Critical Thinking and Design conceptualization learned in level 1 will be applied into moderately complex and conceivable architectural designs.

Level 3 offers students the platform to experiment **responsive architecture** and **innovations** in technology across various urban, social, climatic and environmental contexts. Students will respond to a multitude of issues/ concerns in a holistic approach to Design, and learn to provide an appropriate solution in terms of a contextually responsive and technically/structurally well-resolved architectural design.

There will be a monitored internship of 6 months for students to work under a chartered architect practice after completing Semester I of Level 3

Level 4 is the year that offers learning outcomes to achieve **Competency** based on one or two design schemes throughout the year. Some theory modules will directly be integrated into the Design module as assignments or part of the Design. This year also offers students the opportunity to select their major among the streams ‘*Profession*’, ‘*Environment*’, ‘*Technology*’ and ‘*Society*’ and achieve technological competency in one or two streams (this practice may be changed with CR)

Level 5 will be a year that students can explore research based and research led visionary ideas addressing national and/ or global challenges. Selection of a “*major*” in Level 4 would be a stepping stone for the students to discover or formulate their research bias. The comprehensive design project, in which culminates each student’s learning throughout the 5 years will commence as a

research based inquiry. The students will formulate their own Design Thesis (Ref **MP & VSN**), within the broad spectrum of architectural design.

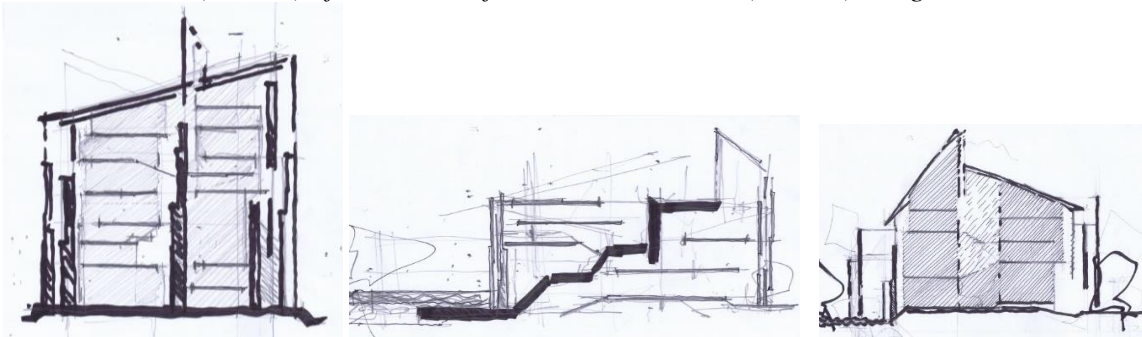
(●MP & VSN – Milinda Pathiraja 2017 and Vidura Sri Nammuni 2006)

(Revisions are now being made to the above practice with curriculum revision – for example, up to Level 4, the Program directs towards a GENERALIST approach to teaching architecture. The next Level (5) is an opportunity to have a PLUS, a specific direction or a philosophical bias to be identified and explored by the students, based on their skills, likes and preferences etc)

Module/Elective Coordinator/Lecturer

Teaching following Theory Modules and Elective

- Module “**Climate & Comfort**” for Bachelor of Architecture Honors Level One since 2005 to 2016
- Module “**Heat Transfer and Solar Geometry**” for Bachelor of Architecture Honors Level Two since 2005 to date (2022)
- Elective “**Low Energy Architecture (LEA)**” for Bachelor of Architecture Honors Level Four since 2008 to date (2022). ***Designed and introduced this Elective to the Level 4 (Year 4) of Bachelor of Architecture Hons (Part II) Program in 2008***



This theory based elective (LEA) is taught in Studio with ongoing Demonstration Design Project at Level 4. Learning outcomes aim at providing design skills for theory integrated design interventions in three dimensional forms (both plan and sectional forms) of buildings. The three sectional images shown above encapsulate the building-climate interplay in addressing heat stress in warming climates. Students have the option to explore the essence of these forms in their work

*The Elective sets a mapping of design interventions in early design stage. Microclimatic enhancement, plan form and sectional form manipulation and envelope characteristics for innovations in **climate craft** are opportunities to address climate emergencies - as compared to conventional practice based on engineered systems, technologies and material component in isolation.*

This Elective was offered to visiting Master students from Munster University during 2013-2018

Supervisor

PhD and M Phil Research in architecture: recent works are:

“PhD - A parametric approach to optimize solar access for energy efficiency in high rise residential buildings in dense urban tropics” by Nadeeka Jayawera 2022

“M Phil - diversified façade architecture for optimizing airflow responsiveness in tall residential buildings in tropics by Supun Rodrigo” 2021

“M Phil – Appraising a relationship between morphology and energy index of office buildings in tropics, A case of urban building stock in Colombo City” by Waruni Jayasinghe 2021

Supervisor

M.Sc.(Arch) Dissertations in Academic years from 2004 to 2007/2008 for selected groups of students

Areas of research; Passive Design, Urban Microclimates, Retrofitting non-domestic buildings for energy efficiency

Supervisor

M Sc (Architecture) Comprehensive Design Project in academic years from 2004 to 2007/2008 for selected student groups

Supervisor

Bachelor of Architecture Honors Dissertations of selected student groups – from Academic Years 2009 to 2011 and from 2013 to date (2022)

Areas of Research – Architecture at net-zero, Environmentally Sustainable Design, Energy minimizing strategies in large existing buildings, environmental retrofitting, and building thermal performance, carbon neutral buildings and thermal comfort

Supervisor

Bachelor of Architecture Hons Comprehensive Design Projects (now called as Design Thesis from 2020 onwards) from 2009 to 2011 and 2013 to date (2022) for selected groups of students

Part time duties

Resource person

Conducted workshops on dissertation supervision – “**Research Methodologies**” August 2011 for research higher degree students

Visiting staff

Department of Transport and Logistics Management, Faculty of Engineering, UOM
Teaching Module “Facilities Design” for Level Two students of Transport and Logistic Management during 2010- 2013

External Examiner

Master of Science in Construction Management Final Viva Voce Examination, Department of Building Economics, Academic Years 2012 - 2017

Chairman

Progress Review Panel of M Phil/PhD research candidate from Department of Civil Engineering, University of Moratuwa , 2014 -2016

Head, Department of Architecture (2017-2021)

Key Duties: *On top of the regular administrative and academic role as the Head, initiated and nearing completion (with a team of academic staff●) a major curriculum revision to the Five-Year full time B Arch Hons program (an equivalent to PART II RIBA). New curriculum is set with a sea of changes to design studio pedagogic models that can direct students to research and empathize on a wide variety of current global issues and emergencies beyond an immediate brief for a building. Revision is aimed at increasing the credit allocation and work load for Design Courses to 50% of the total credit earning of 150. The revision further aims at integrating theory subjects into student centered Design Courses in studio environments with One-to-One teaching.*

●**other members involved** (Prasad Botejue, Susira Udalamatta, Janaka Dharmasena, Neehsa Silva and Kalpanee Jayatilake)

Secured an equipment grant of Rs. 20 m from the World Bank to set up a model making lab and a digital auditorium

Secured academic contacts with high profile examiners/moderators from overseas

Director

Faculty of Architecture Research Unit (FARU) from March, 2015 to 2017 (Three Years)

Key duties: Designed the themes of the conferences and proceedings, managed the peer review process, edited the proceedings, conducted and chaired three international conferences over three years from 2015 to 2017. Invited Keynotes speakers: Prof. Richard Hyde Australia and Prof Fergus Nicol in 2013 and 2014 respectively AND Prof Jurgen Riechardt Germany, Prof. Marc Aurel Schenable New Zealand in 2015, Prof. Koen Steemers Cambridge UK in 2016 and Prof. Sue Roaf UK in 2017

Coordinator

RIBA/CAA Re-validation visit in March 2009 to Department of Architecture, University of Moratuwa in Sri Lanka

Key Duties: Coordinated the entire re-validation process between the university and RIBA and drafted the re-validation document with other staff. Administered the entire process with other staff in organizing student work portfolios, preparing mapping documents and site visit.

Director

Quality Assurance Cell of the Faculty of Architecture, University of Moratuwa Since 2008 to 2012 and 2013-2016 (Six years)

Key Duties: Coordinated the quality assurance process of all FOUR degree programs of the Faculty and organized required workshops for the staff

Member

Board of Higher Degrees, Faculty of Architecture, 2009- 2015

Proposal Reviewer

AHEAD (Accelerating Higher Education Expansion and development) Program, Ministry of Higher Education and Cultural Affairs **2018** and **2019** AND QAA (Quality Assurance and Accreditation Project for Improving Relevance and Quality of Undergraduate Education (IRQUE), Ministry of Education, Sri Lanka 2007/2008

Proposal writer

Subject review report of Bachelor of Architecture Hons five-year Program of the University of Moratuwa for the World Bank funded project on Improving Relevance and Quality of Undergraduate Education in Sri Lanka of the Ministry of Education 2006

Member

Committee to evaluate a patent application by an academic from Department of Civil Engineering, University of Moratuwa, May 2015

International collaborations

Local Coordinator & Resource Person

“Triloka 2007 and 2008”, The Global Design Studio with student participation from Munster University in Germany, RV Collage in India and University of Moratuwa in Sri Lanka

External Examiner for PhD thesis examinations

1. University of Hong Kong, PhD Thesis submitted by Wajishani O Gamage (Title: *Human factors of differently ventilated office buildings*) in March 2016 via Skype

2. Hindustan University, School of Architecture, Chennai 603 103, for the PhD Thesis submitted by RV Nagarajan (Title: *The role of landscape architecture in and around hospital premises in Chennai as an aid to medical treatment*), 2015

Coordinator and Resource Person

3. Co-Founder and Coordinator of Staff-Student exchange program with Munster School of Architecture (MSA) Munster University of Applied Sciences Germany since 2006 to date (2022).
4. Resource Person for elective, “*Climate Responsive Architecture*”, for Master Students of MSA Germany – Prof. Jurgen Reichardt: Principal Coordinator. Conducted online in 2021

Guest Editor

5. *Archnet-IJAR* <http://www.archnet-ijar.net> - Special Section of regular issue of International Journal of Architectural Research: Archnet-IJAR (*indexed in SCOPUS-Elsevier, Avery, EBSCORE and Web of Science Core Collection of Clarivate Analytics*) for extended papers from FARU Proceedings, University of Moratuwa 2017, Volume (12)- Issue (2)- July 2018

REASERCH GRANTS | FELLOWSHIPS
Local and International

Post-Doctoral Research Fellow

Faculty of Architecture, Design and Planning, The University of Sydney, Australia from June 2009 to December 2010 (during sabbatical)

Worked in Australian Research Council (ARC) Grant-LP0669628

(Principal Investigator – Professor Richard Hyde)

Title: *Exploring synergies with innovative Green technologies for Advanced Renovation: Redefining a Bioclimatic approach for Multi-residential and office buildings in warmer climates*

Duties performed:

- *Literature review on retrofit options, energy behaviors of high rise office buildings and Climate change predictions*
- *Co-Investigator on thermal performance of a critical case*
- *Literature review on evidence based research*
- *Writing a Chapter on Solution sets for retrofitting commercial high rise buildings for a Handbook listed below*
- *Organizing and getting approval for a proposal prepared for a handbook from a UK Publisher under the guidance of Principal Investigator*
- *Co-Authored two conference papers for ASA (Architectural Science Association) Conferences*
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University Research Grants

SRC/ND/2017/01 – Research Title: “*Performance indicators for climate responsive residential condominiums in warm humid Sri Lanka for low energy consumption*”

Rs 4.2 million-Completed in 2021 producing One PhD, One M Phil several research publications

SRC/ST/2021/05 – Research Title: “*Investigating a nexus between landscape design and spread of COVID 19: special reference to microclimatic parameters in urban outdoor public spaces*” Rs: 500,000-Completed in 2021 producing several research publications

SRC/ST/2009/02 – Research title; “*An environmental diagnosis of thermal behavior of existing buildings of University of Moratuwa – retrofitting buildings*” - completed 2010

SRC/ST/2009/05 – Research title; “*Relevance of procurement procedures in selecting consultants and quality of architecture of such buildings*” – completed 2010

National Research Grants

Received National Research Council (NRC) Grant (109-13) in 2013

Objectives: *Developing an-evidence based practice framework for near carbon neutral buildings in warm humid climates and establishing a Low Energy Architecture Research Laboratory (LEARL) in the Department of Architecture, UOM*

Value Rupees 4.5 Millions – research completed and report given with publications – Completed
Produced One M Phil and several research publications

Overseas Travel Grants

Recipient -National Science Foundation (Sri Lanka) Travel Grant, 2015 to make an oral presentation of a refereed paper at the 31st International Conference on Passive and low Energy architecture, in September 9-11, Bologna, Italy

Research Assistant 2003

Center for Sustainable Design, The University of Queensland, Australia

Title of the research: Environmental Diagnostic Study for All Hallow’s school, Brisbane, Australia

Doctoral Research Candidate (Research Scholar)

From May 24th 1998 to December 18th 1998 and from April 26th 2000 May 2003

Department of Architecture, The University of Queensland, Australia

Research: “An exploration of courtyards for indoor climate modification and thermal comfort in non-domestic buildings in moderate climates in southeast Queensland

Doctoral research (remote status from the University of Queensland)

Department of Environmental Science, Nagoya Institute of Technology, Japan from December 19th 1998 to April 06th 2000

REASERCH PUBLICATIONS |
Refereed journal and conference papers (Selected)

Google Scholar Profile (272 Citations March 2022)

<https://scholar.google.com/citations?user=PoikWKsAAAAJ&hl=en>

Upendra Rajapaksha, 2022, Mapping bio-climatic interventions for resilience in buildings to address indoor overheating in warming climates, (*A forthcoming journal paper*)

Nadeeka Jayaweera, **Upendra Rajapaksha** and Inoka Manthilake (2021), A parametric approach to optimize solar access for energy efficiency in high-rise residential buildings in dense urban tropics, Solar Energy, Elsevier Publication 220 (2021) 187-203

Maheshika Ekanayake, Nisansala sandamalee, **Upendra Rajapaksha**, 2021, “Lessons from the distribution pattern of urban parks and factors that contribute to control COVID-19 outbreak in neighborhood design”, SLAAS/SLIA Conference on From innovation to Impact 2021, Organized by Sri Lanka Association for the Advancement of science(SLAAS) and sri Lanka Inventors Commission (SLIC), Dec 08, 2021, Colombo

Asiri Lakshan, **Upendra Rajapaksha**, 2021 “Architects’ understanding on spatial quality and operational energy dimension in buildings”, SLAAS/SLIA Conference on From innovation to Impact, Organized by Sri Lanka Association for the Advancement of science (SLAAS) and Sri Lanka Inventors Commission (SLIC), Dec 08, 2021, Colombo

Rajapaksha Upendra, 2020, Environmental heat stress on indoor environment in shallow, deep and covered atrium plan form office buildings in tropics, *Climate* 8 (2), 36, 2020, MDPI Academic Open Access Publishing <http://doi.org/10.3390/cli8020036>

Rajapaksha. Upendra, 2019, Heat Stress Pattern in Conditioned Office Buildings with Shallow Plan Forms in Metropolitan Colombo, *Buildings* 2019, 9(2), 35; MDPI Academic Open Access <https://doi.org/10.3390/buildings9020035>

Rodrigo. S and **Upendra Rajapaksha**, 2018, Diversified façade architecture for optimizing air flow in tall residential buildings in tropics: a field investigation based on a literature review, in P. Rajagopalan and M.M Andamon [eds.], *Engaging Architectural Science: Meeting the Challenges of Higher Density: 52nd International Conference of the Architectural Science Association 2018*, pp.407–415. ©2018, Nov 28-Dec 01, The Architectural Science Association and RMIT University, Australia

Madhuranga. T.R.I and **Upendra Rajapaksha**, 2018, IMPACT OF SURFACE COVER AND SURROUNDING AREA ON MICROCLIMATE OF URBAN WETLAND PARK, NUGEGODA, in Samarawickrama, Sumanthri, et al (eds), 2018, “Sustainability for people - envisaging multi disciplinary solution”: Proceedings of the 11th International Conference of Faculty of Architecture Research Unit (FARU), University of Moratuwa, Sri Lanka, December 08, 2018 Galle pp. 123–131. ©

Upendra Rajapaksha, 2018, Heat Stress Pattern of Air-Conditioned Buildings with Shallow Plan Forms and Single Skin Facades: Colombo as a Case Study, in Edward Ng, Square Fong, Chao Ren [eds], VOLUME 1, 34th International Conference on Passive and Low Energy Architecture (PLEA), “Smart and Healthy Within the Two-Degree Limit”, pp: 275-280, The Chinese University of Hong Kong, Hong Kong, China

Kalani Dissanayake and **Upendra Rajapaksha**, 2017, Daylight in urban design for relieving agitation in psychiatric patients: a case study from Sri Lanka, in proceedings of the 3rd annual international conference on urban planning and poverty development, in Singapore Nov 12-14

Semasinghe. K and **Upendra Rajapaksha**, 2017, Intervention to control cooling energy of west facing buildings: simulations from Colombo, Sri Lanka, in *Rajapaksha U [ed] Design that cares – approaches to creating sustainable and meaningful environments*”, Proceedings of the 10th International research conference of Faculty of architecture Research unit (FARU), Volume I, University of Moratuwa, Sri Lanka, 9-10, December, Wadduwa, Blue Waters Hotel, pp 61-73

Pathiranage. N.M.Y & **Upendra Rajapaksha**, 2017 “Microclimatic Diversities” Around Urban High Rise Building Forms in the Context of Bio Climatic Design: A Case of Colombo, in *Rajapaksha U [ed] Design that cares – approaches to creating sustainable and meaningful environments*”, Proceedings of the 10th International research conference of Faculty of architecture Research unit (FARU), Volume II, University of Moratuwa, Sri Lanka, 9-10, December, Wadduwa, Blue Waters Hotel, pp 210-222

Muthunayake D.P.S. and **Upendra Rajapaksha**, 2017, A diversity of thermal comfort levels and behavioral adaptations of occupants in naturally ventilated houses in different climatic zones in Sri Lanka in *Rajapaksha U [ed] Design that cares – approaches to creating sustainable and meaningful environments*”, Proceedings of the 10th International research conference of Faculty of architecture Research unit (FARU), Volume II, University of Moratuwa, Sri Lanka, 9-10, December, Wadduwa, Blue Waters Hotel, pp 38-50

Amarathunga, A.A.N.D and **Upendra Rajapaksha**, 2016, A critical review on high-rise buildings in the context of bio-climatic design, a case of vertical diversity in tropical Colombo, in *Rajapaksha. U [ed] Building the future – sustainable and resilient built environments*, Proceedings of 9th FARU international research conference, 9th-10th Sept, Colombo, pp 425-437

Rajapaksha. A and **Upendra Rajapaksha**, 2016, The visual perception of occupants on daylight: Emphasis on the diversity of luminance ambience due to architecture & effect of glare in office environments, in *Rajapaksha. U [ed] Building the future – sustainable and resilient built environments*, Proceedings of 9th FARU international research conference, 9th-10th September, Colombo, pp 413-425

Jayathilake. K and Upendra Rajapaksha, 2016, Interactive architecture and contextual adaptability: issues of energy sustainability in contemporary tall office buildings in Colombo, in *Rajapaksha. U [ed] Building the future – sustainable and resilient built environments*, Proceedings of 9th FARU international research conference, 9th-10th September, Colombo, pp 354-366

Upendra Rajapaksha, Rupasinghe Himalshi and Rajapaksha Indrika, 2015, RESOLVED DUALITY: External double skin envelopes for energy sustainability of office buildings in the tropics, accepted for 31st International conference of Passive and Low energy Architecture (PLEA) conference to be held in September 9-11, Bologna, Italy

Upendra Rajapaksha, , Rodrigo Supun and Rajapaksha, Indrika, 2015, A critique on on-going retrofit approaches to existing high mass historic building forms with heat sink capacity, R.H. Crawford and A. Stephan (eds.), *Living and Learning: Research for a Better Built Environment: 49th International Conference of the Architectural Science Association 2015*, ©2015, The Architectural Science Association December 2-4

Vimukthi. Manula and **Upendra Rajapaksha.**, 2015, “Spatio-visual patterns in respect to visual experience; an exploration of architecture of Geoffrey Bawa”: in Rajapaksha. U (Ed), Making built environments responsive, Proceedings of the eighth international research conference of FARU- Faculty of Architecture Research Unit of University of Moratuwa, December 11-12, Colombo ISBN 978-955-9027-53-9, pp.357-368

Rajapaksha. I, Jayasinghe. Waruni and **Upendra Rajapaksha**. 2015, “Mapping a nexus between urban built form and energy intensity : case of office building stock in Colombo unicipal Council of Sri Lanka”, in Rajapaksha. U (Ed), Making built environments responsive, Proceedings of the eighth international research conference of FARU- Faculty of Architecture Research Unit of University of Moratuwa, December 11-12, Colombo ISBN 978-955-9027-53-9 pp;281-292

Upendra Rajapaksha, Gunasekara Anuththara, Rajapaksha Indrika and Hyde Richard 2014, Developing a conceptual model for passive cooling in buildings in the tropics: a study of Maritime Museum, Galle, in F. Madeo and F. Novi (eds.), **Across: Architectural Research through to Practice: 48th International Conference of the Architectural Science Association 2014**, pp. 581-592 © 2014, The Architectural Science ISBN 978-0-9923835-1-0

Rajapaksha. Malthi, **Upendra Rajapaksha.** and Rajapaksha. Indrika 2013, Thermal mass for passive cooling in warm humid climates, a case of Galle Fort, in Proceedings of Aurell Marc (ed), 47th International Conference of Architectural Science Association, Chinese University of Hong Kong November 14-16

Richard Hyde, **Upendra Rajapaksha. Indrika** Rajapaksha, Marc O Raini and Flavia. S, 2012, A design framework for achieving net-zero carbon emission commercial buildings, Proceeding of 46th ASA Conference, Griffith University, Australia November

Upendra Rajapaksha, and Hyde, R, 2012, “Barriers to and opportunities for advanced passive cooling in sub tropical climates; a case study from Australia”, p 49-60, Architectural Science Review Journal, The University of Sydney, Taylor and Francis, UK, Vol. 55, Issue 1, January 2012, (EBSCO Host, Avery Index)

Upendra Rajapaksha and Gamage. W, 2010, Existing non-domestic building stock in Sri Lanka, the problem of indoor overheating and environmental retrofitting, ICTAAD Journal, Vol. V111, pp; 14-22

Upendra Rajapaksha, Rajapaksha. I and Hyde. R, 2011, Towards an evidence based model for retrofitting – mapping thermal load profiles and solution sets for carbon neutral status in existing buildings, 45th ANZAScA Conference, USYD, Australia, September 14,

Upendra Rajapaksha, Rajapaksha. I and Hyde. R, 2010, Developing a methodology for retrofitting commercial high rise buildings in warming climates, in Proceedings of 44th ANZAScA Conference, November, Unitech Institute, New Zealand

Rajapaksha. I, **Upendra Rajapaksha** and Hyde. R, 2010, Predictive modeling for retrofitting, a critical case appraisal of an existing high rise office building in Brisbane, in Proceedings of 44th ANZAScA Conference, November, Unitech Institute, New Zealand

Hyde. R, Rajapaksha. I, Nathan Groenhout, Francis Barram, **Upendra Rajapaksha,** Cristina Candido and Shariarh. A, 2009, Bioclimatic retrofitting for commercial high rise buildings, Proceedings of 43rd ANZAScA Conference, November, University of Tasmania, Australia

Upendra Rajapaksha, and Hyde R, 2005, “Sustainable by passive architecture, using courtyards in non domestic buildings in moderate climates”, in Action for Sustainability, *Proceedings of The 2005 World Sustainable Building Conference, (SB05Tokyo)* 27th to 29th September 2005, Tokyo, Japan, pp. 979-986

Upendra Rajapaksha. and Richard Hyde., 2002 “Passive modification of air temperature for thermal comfort in a courtyard building in Queensland”, in Levin. H (ed), Indoor Air 2002, Proceedings of the 9th International Conference on Indoor Air Quality and Climate, Monterey, California, June 30-July 5 2002, Vol. 2, pp: 860-866

Upendra Rajapaksha. and Richard Hyde. 2002 “Courtyard as a climate modification strategy for thermal comfort in moderate climate of Queensland”, in Gaber, M. et al (eds.), Design with the environment, Proceedings of the 19th Passive and Low Energy Architecture Conference, Toulouse, France, July 22-24 2002, Vol. 1, pp:637-643

Upendra Rajapaksha, U and Richard Hyde 2001 “The potential of the tropical courtyard concept for cooling in multi storey buildings”, in Pereira, F.O.R et al (eds.), Renewable Energy for a Sustainable Development of the Built Environment, Proceedings of the 18th Passive and Low Energy Architecture Conference, Florianopolis, Brazil, November 7-9 2001, Vol. 1, pp: 153-154

Book Chapters authored and conference proceedings edited

Upendra Rajapaksha, 2018, In Tune with Nature: A Low Energy Office Building in Tropical Colombo. In: Cheshmehzangi A., Butters C. (eds) Designing Cooler Cities. Palgrave Series in Asia and Pacific Studies, Palgrave Macmillan, Singapore, PP 37-50

Upendra Rajapaksha, 2017, (Editor) “Design that cares – approaches to creating sustainable and meaningful environments”, Proceedings of the 10th International research conference of Faculty of architecture Research unit (FARU), University of Moratuwa, Sri Lanka, 9-10, December, Wadduwa, Blue Waters Hotel

Upendra Rajapaksha, 2016, (Editor) “Building the future – sustainable and resilient built environments”, Proceedings of the 9th International research conference of Faculty of architecture Research unit (FARU), University of Moratuwa, Sri Lanka, 9-10, Sept, Colombo, Mt Lavinia Hotel

Upendra Rajapaksha, 2015, (Editor) “Making built environments responsive”, Proceedings of the 8th International research conference of Faculty of architecture Research unit (FARU), University of Moratuwa, Sri Lanka, December 11-12, Colombo Taj Samudra

Upendra Rajapaksha, 2013, Design solution sets for retrofit, Chapter 2.3, in Richard Hyde (Ed), Sustainable retrofitting for commercial high rise buildings in warming climates, Taylor and Francis. UK

Upendra Rajapaksha, 2008, “Courtyards and external rooms”, in Hyde, R. (ed.) Bioclimatic Housing; Innovative Designs for Warm Climates, Part III, Chapter 9, Earth Scan UK & USA, pp. 327-332

Rajapaksha, I and **Upendra Rajapaksha**, 2008, “Bandaragama House, Colombo, Sri Lanka”, in Hyde, R. (ed.) Bioclimatic Housing; Innovative Designs for Warm Climates, Part I, Chapter 2, Earth Scan UK & USA, pp. 102-111

Handbooks

Upendra Rajapaksha and *Jayaweera. N*, 2018, Condominium development in Sri Lanka: Current status and recommendation, Publisher: Department of Architecture, University of Moratuwa, Sri Lanka ISBN: 978-955-9027-69-0

Non-refereed papers/reports/presentations

Upendra Rajapaksha 2010, Buildings in the context of climate change, designer’s involvement, Annual symposium on building research to face future chalanges, National Building Research Organization of Sri Lanka, November 02, 2010, Watrers Edge Colombo pp. 108-112

Upendra Rajapaksha, 2007, Climate efficient design variables for courthouses, in Prof. J. Reichardt (ed), Triloka 2007, International academic Cooperation Project, Proceedings of Symposium held in Colombo. published by msa Muenster University, Germany

Richard Hyde, Indrika Rajapaksha, **Upendra Rajapaksha** and Joice Law, 2003, Environmental Diagnostic Study for All Hallow's School, Brisbane, Australia, Research paper for Centre for Sustainable Design, The University of Queensland

Hyde. RA and **Rajapaksha. U, 1999**, "ABEC Building Case Study: University of the Sunshine Coast, Queensland", Case study, Centre for Sustainable Design, The University of Queensland, Australia for Australian Building Energy Council, Web site www.abec.com.au

Rajapaksha. U, "The traditional house and its ratio between inner and outer spaces" a paper presented at the second Research Colloquia of Aboriginal Environments Research Centre at the University of Queensland in November 1999, Web site <http://www.aboriginalenvironments.com>

Reviewer for research papers in journals/conferences/Proposal reviewer

Proposal Reviewer

Proposals submitted for Development Oriented Research (DOR-HEMS) grants under AHEAD (Accelerating Higher Education Expansion and Development) operation 2018 Broad Study Area Humanities /Agriculture/Technology

Proposal Reviewer

Proposals submitted for Development Oriented Research (DOR 1-STEM) grants under AHEAD (Accelerating Higher Education Expansion and Development) operation 2019 *Broad Study Area Environmental science/Engineering*

Paper reviewer since 2015 to date

Architectural Science Review (ASR) Journal, published by Taylor and Francis UK, (SCHOLARONE- THOMSON REUTERS) and indexed in EBSCO Host, Avery, since 2015 to date

Paper reviewer

34thInternational Research Conference on Passive and Low Energy Architecture (PLEA), Proceedings (*edited by Edward Ng, Square Fong and Chao Ren*), the Chinese University of Hong Kong, December 10-12, 2018

Paper Reviewer

International Journal of Disaster Resilience in the Built Environment – a SCOPUS Emerging Source Citation Index Emerald Publishing (Special issue from FARU 2017 papers)

Paper Reviewer

Reviewer for Built Environment Project and Asset Management, Emerald Publication, SCHOLARONE- THOMSON REUTERS, August 2017

Paper Reviewer

32ndInternational Conference on Passive and Low Energy Architecture (PLEA), Proceedings (*edited by – Pablo La Roche and Marc Shiller*), July 11-13, 2016, Los Angelis, USA

INVITED PRESENTATIONS – NATIONAL CONFERENCES/ACADEMIC SESSIONS

Plenary Speaker

Rajapaksha. U, 2018, 11thInternational Research Conference of General Sir John Kothalawala Defence University Sri Lanka, Session on Architecture, Theme "*Energy poverty of our luxurious buildings*" on September 13, 2018, Rathmalana

Keynote Speaker/Chief Guest

Rajapaksha. U, 2018, Student Forum of NSBM Green Campus on June 04, 2018, Theme of the presentation: *Measuring energy sustainability of buildings*"

Resource Person/Presenter 2017

Rajapaksha. U, 2017, "*Measuring Green*" Technical Session organized by Urban Development Authority on making government and semi government buildings green, to mark the 3rd anniversary

of the election of the President of Sri Lanka at the BMICH for officials from UDA, MCs and other statutory bodies on January 09, 2017

Resource Person/Presenter 2016

Rajapaksha. U, 2016, “*Architecture for zero emission*”, A joint International Seminar on *Green Architecture* organized by SLIA (Sri Lanka Institute of Architects) and ARCASIA – Architects Regional Council Asia – Seminar – July 13, 2016, in *Kingburrey Hotel, Colombo*

Resource Person/Presenter

Rajapaksha.U,2015, “*Energy sustainability of buildings-making building operation near carbon neutral*” at a full day seminar on Green Technology organized by the University Grants Commission (UGC) at its Auditorium, August 08, 2015

Resource Person/Presenter

Rajapaksha. U, 2014, “*Sustainability of buildings – making buildings low emission*”, Special CPD for staff of Holcim Sri Lanka and other invitees at its Head Office in Colombo 3 on August 18, 2014

Resource Person/Presenter

Rajapaksha. U, 2014, “*A thermal landscape for low energy architecture*, Special CPD for staff of Central Engineering Consultancy Bureau at CECB Head Office in Colombo on August 18, 2014

Resource Person/Presenter

Rajapaksha. U, 2014, “*Towards near zero emission building practices*”, invited paper presented at the Annual Sessions (Public Seminar 1) of Society of Structural Engineers Association in Sri Lanka, at Cinnamon Grand Hotel in Colombo, **May 20, 2014**

Resource Person/Presenter

Rajapaksha. U, 2014, “*Green architecture and buildings with green systems*”, A CPD program of Sri Lanka Association for the Advancement of Science (SLAAS) on Sustainable Buildings on **May 19, 2014**

Resource Person/Presenter

Rajapaksha. U, 2014, Designing for low energy non-domestic buildings in Sri Lankan context, invited paper presented at the Continuous Professional Development program of the Central Engineering Consultancy Bureau, in Colombo, July 23, 2014

Resource Person/Presenter

Rajapaksha. U, 2012, Mapping architecture towards near carbon neutrality in building operation, Invited paper at the CPD (Continuous Professional Development) Program of Sri Lanka Institute of Architects Session 2012-2013, May 25, 2012

Resource Person/Presenter

Rajapaksha. U, 2011, Bioclimatic and hybrid design for energy sustainability of buildings, Invited paper presented at the 25th Annual Sessions of Organization of Professional associations, Sri Lanka, September 30, 2011 at OPA Auditorium

Rajapaksha. U, 2009, “Sustainable design – future proof buildings/architecture”, GREEN BUILDINGS, Academic Session of Section **D** of Sri Lanka Association for the Advancement of Sciences (SLAAS), December, 2009,

Interviews with NEWS PAPERS/MAGZINES

TAKE THE HEAT OFF – Eliminating heat holds the key to luxury living, an interview with LIVING a celebration of life magazine, October 2018

“*Healthy Homes*”, an interview with Sunday Observer, The Associated Newspapers of Ceylon Limited, April 19, 2006 pp24

A few research is in progress aiming at publishing a textbook. Three works are listed below:

A textbook

“Towards architecture at net-zero in warming climates”, A textbook to be completed during sabbatical leave. The publication will discuss fundamentals in building-climate interplay, focusing on indoor comfort, energy sustainability in building operation and mapping a set of solutions of design interventions with diverse potentials of design crafts in microclimatic enhancement, plan form and sectional form manipulation and envelope material response with night ventilation and thermal mass. Theoretical solutions will aim at producing architecture for human comfort free of emissions during operational stage. Chapter on simulation is focused in justifying design solutions for architecture at net-zero founded on a discourse using a diverse set of sketch proposals for three dimensional forms.

A field investigation

Diversity of heat gain control through envelope solutions in tropical urban buildings

Thermal performance of building envelopes i.e. the sectional geometry, solid to void ratio, orientation, degree of exposure to radiation and material content is being investigated and recorded. The study is currently focused on to contemporary multi storey buildings in homogeneous urban precincts in Colombo Metropolitan Area. Climatic behaviors of identified urban precincts are also being investigated.

A theoretical analysis

Courtyard typology – climate responsiveness of sectional geometry and plan enclosure of courtyard buildings in warm climates.

Overall goals, to which this research is directed, are to identify a classification of geometry and enclosure in respect to climate response, to discuss the obstacles involved in the interpretation of courtyards for minimizing indoor overheating in present buildings and contexts, and to provide the means to justify the applicability of courtyards in the contemporary practice

PROFESSIONAL EXPERIENCE

(i). Sri Lanka Institute of Architects

Member, Board of Architectural Education (BAE) of Sri Lanka Institute of Architects (SLIA), Session 2018-19, 2019-2020, 2020-21

Invited Speaker/Convener, *Continuous Professional Development Event 2 Session 2019/20, Sustainable Building Design Certification, on Aug 16, 2019 at Auditorium SLIA*

Invited Speaker, *National Conference of SLIA February 19 2021 e conference*

Invited speaker/ CPD Event 1 Session 2020/21 on How Social Justice can be brought to the production of space in the City, e – CDP Event on 23rd September 2020

Member, Educational Standards Committee, Board of Architectural Education (BAE) of Sri Lanka Institute of Architects, Session 2019-2020

Member, Board of Architectural Education (BAE) of Sri Lanka Institute of Architects, Session 2018-2019

Member, Ad-hoc Committee appointed by Chairman, Board of Architectural Education on SLIA Part I, II and III Curriculum Evaluation, 2018

Member, Board of Architectural Education (BAE) of Sri Lanka Institute of Architects, Session 2017-2021 (*from October 2017 to May 2021*)

Member, “Visiting Accreditation Board” of Sri Lanka Institute of Architects to City School of Architecture (RIBA Accredited), Colombo, March 09,2016

Issue Editor, 2015

Sri Lanka Architect Journal, Official Journal of Sri Lanka Institute of Architects, 2015 April-June Issue – Theme- *Biophilic hypothesis*

Issue Editor 2014

Sri Lanka Architect Journal, Official Journal of Sri Lanka Institute of Architects, 2014 Jan-March Issue – Theme- *Myths of green architecture*

Resource Person/Presenter

“Green Architecture”, Continuing Professional Development Program (CPD) for members of Sri Lanka Institute of Architects, at HNB Towers, May 25, 2012

Theme: *Imagining energy sustainability of building operation and carbon neutrality*

Secretary

“Educational Standards Committee” of Board of Architectural Education of Sri Lanka Institute of Architects 2009/2010

Council Member

Sri Lanka Institute of Architects, Session 1994/1995 and 1995/1996

Member/Issue editor

Board of Architectural Publication, Sri Lanka Institute of Architects, Sessions 1991/1992, 1992/1993, 1994.1995 and 1995/1996

Member

Board of Professional Affairs, Sri Lanka Institute of Architects, Sessions 1994/1995 and 1995/1996

Member and Convener

Committee of Design and Colour Awards, SLIA Session 1995/1996

Secretary

Exploratory Visiting Board of SLIA to Colombo School of Architecture (CSA) for accreditation by Sri Lanka Institute of Architect – *CSA is a RIBA accredited school*

(ii). Other Government, professional and academic Organizations

Session Chair

11thInternational Research Conference of General Sir John Kothalawala Defense University Sri Lanka, Session on “Architecture”, on September 13, 2018, Colombo

Member

Consultative Committee 2016-2017, appointed to prepare the code of guidelines and green building rating systems for buildings prepared by the Urban Development authority for “*Sri Lanka Next – a Blue Green Era*”

Member

Committee appointed to investigate the consultancy payments of Defense Headquarters Complex construction project, Akuregoda, by Ministry of Defense, 2016

Member

“University Academic Expert Committee on Environment” appointed by the President of Democratic Socialist Republic of Sri Lanka **2015-2016**

Panelist

Nugasewana, a live TV program of Sri Lanka Rupavahini, *A discussion focused on energy, global warming and architecture, Date October 28, 2015*

Member

Workshop to formulate National Policy for climate change organized by Institute of Policy Studies (IPS), Sri Lanka, 2013

Convener and Principal organizer

Convened and conducted three workshops on developing Master Plans for universities in Sri Lanka for Vice Chancellors and Maintenance Engineers – In association with University Grants Commission Sri Lanka in 2009-2010

Invited Participant

Workshop to formulate design and construction standards Sri Lanka, by Institute of Construction Training and Development (ICTAAD), 2012

Member,

Technical Evaluation Committee of Ministry of Higher education for the selection of consultants to Southeastern University Development 2008

Member

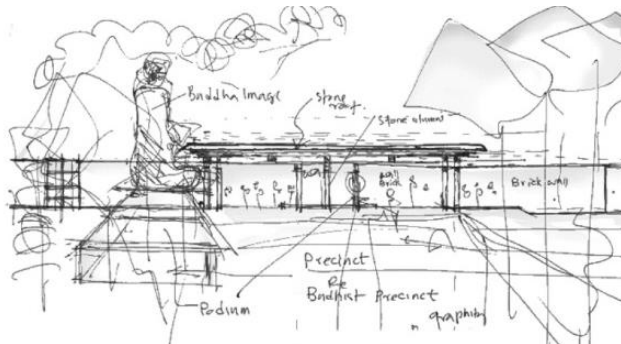
“National Advisory Council on Construction” representing the University system in Sri Lanka 2007-2010

Member

Project Evaluation Committee, University Grants Commission, Sri Lanka 2008 – 2010

Member

Committee to formulate guidelines for an award scheme for environmental performance of non-domestic buildings, Ministry of Environment and Natural Resources 2008



DESIGN/PRACTICE PORTFOLIO

Recently completed works

Upendra Rajapaksha and Partners – Chartered Architects
32, Nandimitra Place, Colombo 06 +94773466346

As a practitioner, A number of residential and non-domestic building during the past 18 years since 2004. Most of them are built and occupied.

REFER THE PERSONAL PAGE FOR DETAILS

Participant

International Design Competition to select the architect for Queensland Gallery of Modern Art, In Brisbane, Australia, Competition held in 2002

International design competition to design Jaffna Cultural Centre, Sri Lanka- shortlisted for the first round



End of design/practice portfolio of Upendra Rajapaksh