WORKSHOP 2

MERCon 2023
MORATUWA ENGINEERING RESEARCH CONFERENCE

Environmental Life cyle Assessment of buildings using Building-SAT- A cradle to grave sustainability assessment

Building-SAT

Climate change and rapid urbanization with growing population have prompted an emerging interest on construction industries to include more sustainable practices. To accomplish a net-zero carbon building stock in 2050, direct and indirect building CO_2 release needs to be assessed and quantified. Thus, the assessment of global warming potential of buildings, through life cycle assessment, taking into account both the processes and materials, to promote the use of more sustainable construction materials and processes is timely.

Scope: Different techniques associated with sustainability assessment of built environments will be discussed through lectures and interactive activities. An introduction to the life cycle assessment of built environment will be given. Building-SAT, the locally developed whole building sustainability tool will be introduced (http://building-sat.com/). Also the methodology for estimate the operational energy using a energy modelling software will be shared as a hands on session. Finally, there will be a hands-on session to use Building-SAT tool to assess the Global Warming Potential (GWP) of a simple building. Further a discussion of case studies and real-world examples of successful LCA implementation in the building sector will be presented.

Resource persons

Prof. Shiromi Karunaratne

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Target audience

Practicing engineers, Architects, academics, undergraduate and post graduate students.

Expected outcomes

The participants will be able to use Building-SAT tool to estimate the GWP of buildings.

Key objectives

To identify the principles, methodologies, and tools used in building LCA

Apply Building-SAT tool to conduct a whole building life cycle assessment of a chosen building to quantify Global Warming Potential in $kgCO_2$ - eq / m^2 / year.

Estimating building operational energy using an open source energy modelling software

Explore strategies for minimizing environmental impacts and improving the sustainability performance of buildings.

To Identify opportunities for integrating LCA into the decision-making processes of construction projects.

Scan for Registration

50 Participants Only | **11th November** 9.00 AM to 1.00 PM | Conducted in Hybrid format