This presentation seeks to explore into the urgent and critical transition towards achieving net-zero carbon emissions within the construction industry, addressing escalating global concerns about climate change. Focused on a holistic lifecycle approach, the lecture navigates through strategies spanning the entire lifespan of a building - from initial design and construction to operational efficiency and dismantling at the end of the lifecycle.

The lecture presents key findings from a series of research projects conducted by Dr Niluka Domingo in the aforementioned theme. The core themes revolve around the critical role in effectively addressing and mitigating carbon emissions at every stage of a building’s existence. These include sustainable design and construction practices, innovative approaches to materials selection, end-of-lifecycle options, and the necessity of collaborative efforts among industry stakeholders in instigating a profound shift towards sustainability.

Attendees will gain insights into net-zero carbon applications throughout the building lifecycle, facilitating the industry’s transition towards a more sustainable future. By presenting actionable strategies, cutting-edge technologies, and successful case studies, this lecture concludes with a series of recommendations for the construction industry’s urgent and indispensable transition towards a greener, more sustainable future.

Dr Niluka Domingo is a senior lecturer at the School of Built Environment at Massey University in New Zealand, with a background encompassing both industry and academia. She is a leading researcher in sustainable construction with an extensive academic career. Dr Domingo holds a PhD in Construction Management from Loughborough University, UK, a BSc (Hons) in Quantity Surveying, and is a member of the New Zealand Institute of Quantity Surveying (MNZIQS). She also serves as one of the coordinators on CIB task group TG 124 Net Zero carbon building design and construction and is the current research lead at the School of Built Environment, Massey University. Dr Niluka has been at the forefront of active research for the past fifteen years, concentrating on key areas such as zero carbon initiatives, construction waste minimisation, circular economy practices, and sustainable construction methodologies.