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Presentation title:	**Net Positive Energy Designs**	

A large percentage of most countries" energy demand goes to power its buildings. Urbanization will only increase building constructions and in-turn cause an increase in energy demand. Designing buildings, which are self-sustained, is therefore logical and very important. A building that can satisfy its own energy demand by generating the energy it requires is called a Net Zero Energy Building and one that can generate more energy than its needs is a Net Positive Energy Building. Net Positive Designs can help feed energy to the grid thus acting as a mini power plant inside the city. Designing such buildings need innovations in engineering design and architectural approach. The aim is to first reduce the energy demand of the building to the minimum; and then generate that energy at the building. Some of the concepts that can be used are: Using innovative materials for walls, slabs, roofs etc., selecting high performance glazing based on a balance achieved between U-value, SHGC, and VLT, enhanced day-lighting, free air-conditioning, natural ventilation, effective sensors, CFD simulations, an intelligent demand control strategy etc. The key though is to combine such strategies in the right proportions to achieve a workable solution.

CV:	

Dr. Iyengar is a High Performance Building Designer who believes in the philosophy "An Integrated & Sustainable Approach to the Design of the Built Environment."

He is an academic scholar and a university topper in Mechanical Engineering from BMSCE, Bangalore. He holds a Gold Medal in Sustainability from the National University of Singapore where he accomplished his Masters of Science. He was the only Indian who was a part of an elite world panel of researchers at ETH, Zurich and The Future Cities Laboratory from where he pursued his Doctorate of Science in Sustainability and Zero Emission Design. He has published more than 20 research papers in top international journals and international conferences in USA, UK, India, Singapore, Switzerland, Philippines, Australia, and Czech Republic etc. He has collaborated with ETH Zurich, NUS Singapore, Concordia University Canada, University of California Berkeley, USA and Princeton University, USA on various research projects.

His company Services Consultants LLP is involved in MEP design, sustainable design & Zero Energy building projects. Many of his projects have won global awards. He is currently designing various 5 star hotels, luxury apartments, commercial offices and hospitals and commercial offices across South Asia, South East Asia and India. He was the chairperson for the conference session on Sustainability and Green Buildings – Construction, Design and Material during the 10th Healthy Buildings Conference in Brisbane, Australia. He has been nominated by ASHRAE – an international organization from the USA to be its Global New Face since 2012. He is the head of their Youth wing YEA for Asia. He has published 2 books titled 'Decentralized Approach to High Performance Building Design in tropics' in Germany by SVH Verlag and 'Asia's Cities: Necessity, Challenges and Solutions for Going Smart' in USA by Springer. He is an adjunct professor at Bhartiya Vidyapeeth University, Pune; BMS college of engineering, Bangalore and La Salle University, Manila Phillipines. He is the youngest ASHRAE DL in the world and is a part of the Conferences and Expositions Committee in ASHRAE. He is also a Sustainable Technologies expert partner with United Nations Environmental Program (UNEP) in their Climate and Clean Air Coalition Initiative.