In his talk, entitled ‘New Research Agendas for Low Carbon Cities’, Dr. Steffen Lehmann will talk about his current research in future proofing cities in the Asia-Pacific and the work of his research institute, the sd+b Centre.

Steffen will explore the notion of the ‘zero waste city’, which extends the concept of the sustainable city to include optimising all urban material flows. The aim is 100 per cent resource recovery and re-use of building components and materials. To achieve it, cities need to be re-engineered with material flows in mind to become more sustainable and resilient. This includes a transition phase of reduced, decoupled consumption, e.g. using products and buildings for longer, and producing more durable buildings that take advantage of prefabrication, modularity, adaptability and durability. Modular prefabricated wood construction systems are an obvious solution: engineered timber systems can sequester and store CO2. He will discuss cross-laminated timber (CLT, or cross-lam) panels form the basis of low-carbon, engineered construction systems using solid wood panels that can be used to build residential infill developments of 10 stories or higher. Since timber is the only material that has the capacity to store carbon in large quantities over a long period of time, solid wood panel construction offers the opportunity to turn buildings into ‘carbon sinks’. Thus the historically negative environmental impact of urban development and construction can be turned around with engineered timber construction systems on brownfield sites.

**Dr. Steffen Lehmann** is Chair and Professor of Sustainable Design in the School of Art, Architecture & Design and Director of the Research Centre for Sustainable Design and Behaviour (sd+b Centre) at the University of South Australia, in Adelaide, Australia.

He is currently a IURD Visiting Scholar at the University of California at Berkeley, in the College of Environmental Design. Steffen is an architect, author and urbanist. He studied in the 1980s at the Architectural Association in London, and completed a Ph.D. in Architecture at the TU-Berlin.