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water, we need to figure out how energy flows through infrastructural systems across scales from building, block, neighborhood, city and region. Based on the panarchy theory, is there a focal scale that can be used for bridging scale below and above? For example, is the energy performance measure of an urban block system an effective spatial scale, say the focal scale, for linking our understanding of the energy performance at the finer-scale building and the broader-scale urban energy systems? It is still unclear how local finer-scale patterns of energy flows in building would aggregate to create a larger-scale impact to pattern of energy performance at the coarser-scale of an entire city. In fact, the formation of intensity of urban heat island effect is a much more complex phenomenon jointly controlled by factors including climate, topography, land cover and urban space structure [3].

A high performance city design contains the question of extreme complexity that needs a research strategy. The panarchy proposition might provide a way out. Facing complexity problem in the couple urban and natural systems like this, an urban ecosystem, it should not be understood at one scale only. If it is hard to measure complexity of the entire urban system, the strategy of research design is maybe to identify the focal scale that is manageable in analysis, and then to explore its relationship to the scales from above and below and their interactions and dynamics.

To answer these questions, more empirical research and modeling in cross-scale urban systems are needed in the areas of energy