Figure 3: Accessibility to a large park by population density in Portland
Image Credit: Guoping Huang

A Biophilic Cities Index

By Dr. Guoping Huang

In 2017, 238 cities in North America joined a highly competitive bid to host the online retail giant Amazon's second headquarters. National media all turned their spotlight on this Amazon HQ2 project, ranking participating cities by their economic vitality, livability, affordability, and other factors. This is not new. Since the dawn of globalization of the world economy, research institutions, think tanks, and government agencies have developed hundreds of indices or index systems to evaluate cities' performance in various aspects. What is interesting is how the emphasis of these indices has shifted from urban economy to urban environment over the last three decades. For example, the well-known Globalization and

World Cities Research Network (GaWC) Index developed in the 1980s focused on financial and economic activities in global cities. But when global talents started to move as freely as capital, quality of living became the new focus of many indices. The popular Mercer's Quality of Living Index has been heavily used by large companies to deploy human resources globally since that era. In recent years, there has been a growth of environment-related indices published by both private and public organizations emphasizing the important role of cities in global sustainability. As a result, many cities have set detailed agendas to become green cities or eco-cities.

These indices are not only tools

to compare and rank cities, but also important instruments to encourage cities to examine themselves and find ways to improve operations. Today, with the growing interest among city managers to promote biophilia in cities, a quantitative city index focusing on some related aspects could be very useful.

This new Biophilic City Index is structured to evaluate human-nature relationships in cities in a hierarchy of three different levels. Similar to Maslow's hierarchy of human social needs in which higher level needs are achieved only when foundational needs are first met, the hierarchical structure of the Biophilic City Index reflects human beings' multi-level interactions with natural systems. At the bottom, this index

examines the quality of natural services that provide basic living environments, such as clean water and air, and vegetation abundance. At the second level, it examines if existing natural components are part of a sustainable ecosystem that co-exists with the city. Here, the spatial composition and structure of natural components, such as core size and connectivity are studied using theories and methods from landscape ecology. Finally, at the top level, the index examines the accessibility and service areas of natural spaces as indicators of human-nature interactions.

Because each city is located in its unique environmental

setting, the Biophilic City Index is not designed to rank cities directly. However, some components in the Index, such as accessibility, could be used to draw comparisons across different cities. Most importantly, this Index will help cities examine their planning practices and find ways to improve the human-nature relationship, helping cities become more biophilic.

For more details about the Index, please read the full research article Indexing the Human-Nature Relationship in Cities.

Resources:

Globalization and World Cities Research Network. http://www.lboro.ac.uk/gawc/index.html.

Huang, Guoping (2017). Indexing the Human-Nature Relationship in Cities. Upland Journal of Urban Planning, Landscape & Environmental Design 2(2): 25-35. http://dx.doi.org/10.6092/2531-9906/5255.

Quality of Living City Rankings. Mercer. https://mobilityexchange.mercer.com/Insights/quality-of-living-rankings.

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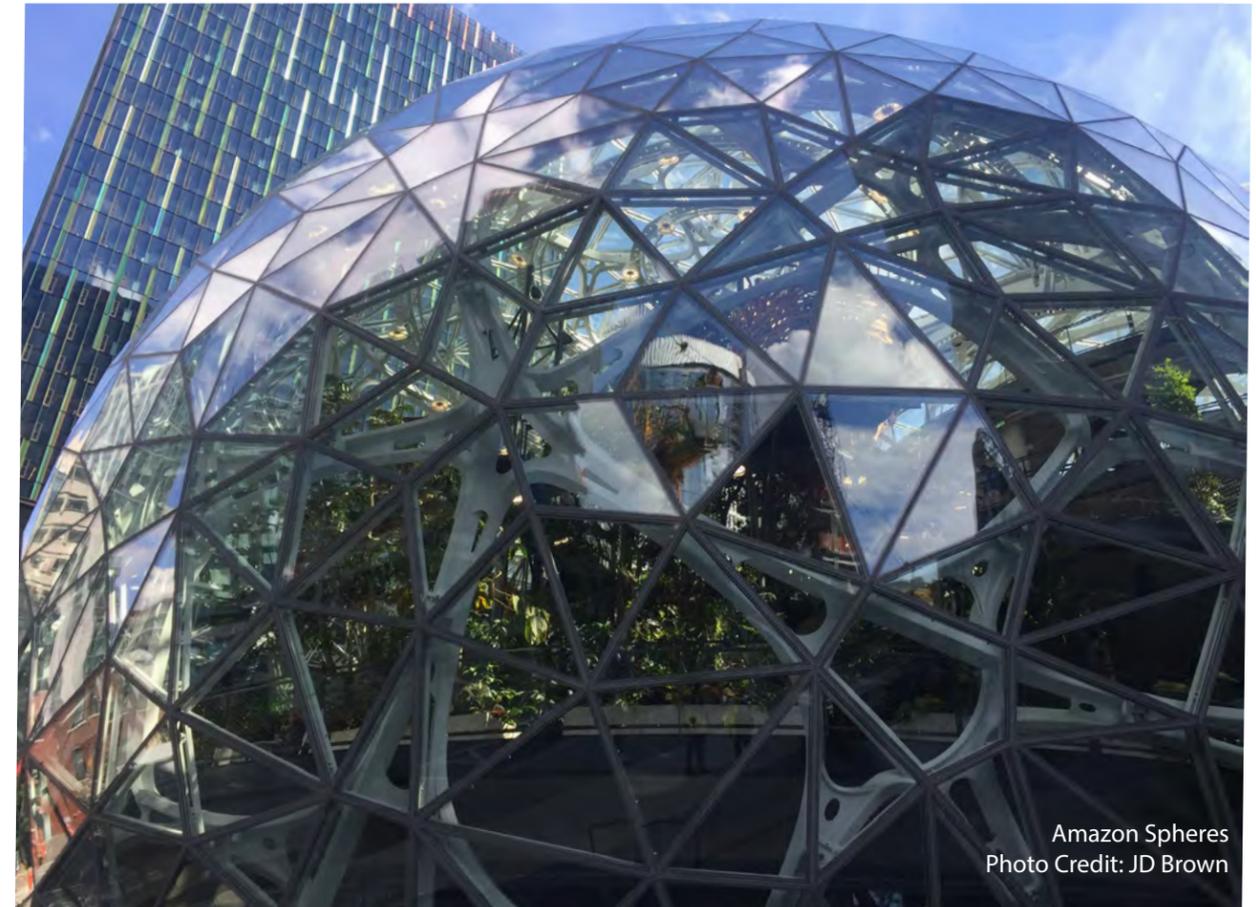
Amazon Spheres
Photo Credit: JD Brown