by Justinian Popa

All distances to London are measured to a statue of King Charles I, which stands in a traffic circle at the edge of Trafalgar Square. For many years, people would risk their lives crossing several lanes of London’s busiest traffic to see the statue and obtain a strategic view of the surroundings. Today, the pedestrian-traffic conflict has largely evaporated, and the use of Trafalgar Square has grown 16-fold, thanks to a recent redesign by Foster + Partners that applied a tool called Space Syntax.

Space Syntax emerged in the 1970s, driven by the research of Bill Hillier and his colleagues at the Bartlett School of the University College London (UCL). By examining the relationship between different spaces and traffic, pedestrian, financial, and other flows, they discovered that accurate predictions could be made about how those flows would respond to changes in the spaces. Focusing on the user experience, rather than more conventional architectural concerns with materiality, researchers asked how people’s visual field and line of sight were connected to their navigational choices, how “active frontages”—the spaces energized by building entrances—were related to crime and safety, and how the location of different uses in a city were connected to its “movement economy” (Space Syntax 2009). They found correlations between activity and the configuration of space as well as its position in the network of surrounding spaces.

While people have operated on this principle for millennia—whether urban denizens in search of vitality, merchants seeking customers, or criminals hunting prey—Hiller and his colleagues at UCL developed the Space Syntax software to demonstrate this principle with a computer algorithm. Gauging where movement and flow are at their peak, Space Syntax can identify the best location for a use from among dozens of options within days. For urban planning purposes, Space Syntax can be applied for the purposes of increasing economic variation, reducing crime, and improving urban navigability. Within buildings, it can be applied to organizing office space for maximum communication between employees. As Hillier maintains, “I think by understanding this we can begin to understand how land-use patterns develop, densities, and even what we call the ‘urban buzz’ …. This is because by shaping movement the structure of the network sets in motion what I call a ‘city-creating process’ by which collections of building become living cities” (Hillier 2011b).

Recognizing this potential, Hillier established the consulting firm of Space Syntax Ltd to serve as a conduit between the continuing research of UCL’s Space Syntax Laboratory and the industrial world of architecture and planning. Unlike many academic spin-offs, this relationship is two-way, with almost half of the London office of Space Syntax Ltd staffed by UCL students.
eager to test out new ideas on real-world projects. Hillier has also developed a number of new “theoretical ideas and methodological techniques” from the insights gained during private projects that “feed back into the academic research programme” and has contributed to building a community that holds biennial conferences and publishes numerous papers on their research (Space Syntax 2009).

Since its inception, Space Syntax Ltd has expanded its purview, developing methods for valuing how spatial design affects the social and economic landscape, integrating support for geographical information systems software, and applying these tools to fields as diverse as archaeology, geography, transport, and anthropology. Reflecting on the contribution of Space Syntax, Hillier remarks, “We have to utilize the inevitable self-organization potential of cities … The art of urban design, as I firmly believe it to be, does rest on the foundation of the science of space… it’s not a science that tells you what to do, it’s a science that tells you what you’re doing” (Hillier 2011a).

References

