

- 7) El-Shazly, A. "On the 'Pitteway' Graph of Roundabout Cairo since 1867," *Proceedings of the The 2<sup>nd</sup> International Conference on Conservation of Architectural Heritage, International Experts for Research Enrichment and Knowledge Exchange (IEREK)*, Luxor, 5-8 February 2018 (Final Acceptance for publication in *Resourceedings "International Journal on Proceedings of Science and Technology,"* IEREK Press, ISSN: 2357-0849)

Using the pitteway network of voronoi convex hull with integral syntax and graph algorithms sieves one layer of empirical analysis towards innovative spatial structure in progressive methodology. The pilot application on historical roundabout Cairo for conservation retrieves conceptual dimensions beyond the visual media. The essence of royal structure determines 'Abdin' ruling palace to have the pitteway's shortest universal distance with the top-tier integrative symmetry of the generative layout, in addition to the cyclic triangulation that extends to the 'Tahrir' pole for optimized Hamiltonian and Eulerian graph properties in maximal spatial control. Despite the filtration process at the interface with the irregular old town through the 'Ezbekieh' generators of dissolved integrity and control syntax with a restricted pitteway cycle from networking on the layout level, the central 'Abdin' triangle maintains the global network in direct connectivity with 'Ezbekieh' pole to become of around average universal distance. Meanwhile, the exclusive pitteway structure of bridge-graph at the crossing two poles of Cairo Citadel and Cairo Station fixes the Hamiltonian vista from the top-topography of extruded Citadel landmark of visual overwhelm on the city level up to the complex railway services of relaxed connectivity, which compensates their least syntactic structure and longest universal distance. Therefore, the logic of pitteway graph defines the symbolic structure of royal power over the global system of roundabout space in conjunction with the 'Tahrir' pole of Nile bridging towards infinity, while rationalizing the structure of other poles to filter old from new Cairo without sacrificing the comprehensive layout connectivity.