ABSTRACT

The potential of infrastructure systems for performing the additional function of shaping architectural and urban form and helping ecology of the city is largely unrealized. The planners and designers have most often been charged with hiding, screening and mitigating infrastructure. The interrelationships between ecological and landscape urbanist approaches and engineering practice in planning, design and delivery of transportation corridors, i.e. urban highways are studied in the current research in order to find out how and to what degree these can be integrated in planning, design, construction, and operation process and help the project sustainability and multiple functions. Novel approaches to road infrastructure development indicate a shift in values from a traditional engineering approach and instead adopting an urban design and landscape approach to the development of road and related transport infrastructure. This approach helps the sustainability of these projects in the urban context. In order to determine the values of urban built infrastructure, specifically movement corridors, at the scale of an urban project, a case study is conducted on EastLink, a large scale infrastructural transportation project in Melbourne, Australia, to present a framework for observing and mapping actual design and delivery process. The case study is done using Infrastructure Sustainability (IS) rating scheme developed by the Australian Green Infrastructure Council (AGIC), recently renamed to Infrastructure Sustainability Council of Australia (ISCA). As a result, the research presents an approach for urban infrastructural projects based on the sustainable development principles and provides an argument for assisting planner, designers, and builders of urban infrastructure to enhance them from an ecological and urban perspective in interaction with other urban land uses for multiple functions at regional and local scales. The results of investigating the influence of large scale infrastructural projects on the ecology of cities, and their interrelationships with ecological concepts and methods can be used by built environment professions to present new planning and design frameworks. Considering the complexities of infrastructure projects, built environment professions including landscape architecture can help in the process of integrating landscape ecology and urbanism approaches in transportation corridors design and delivery.