

## Sustainable Urban Transportation Infrastructure-A Design Approach

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### Summary

**Keywords:****1. Introduction**

Cities today are caught in a tug-of-war between the conflicting needs of unprecedented urban population densities and the requirements of industry for the efficient movement of goods and services to and from urban areas. To make life in urban areas sustainable and liveable, the space between and within public infrastructure needs to be treated with the respect of a limited resource and reclaimed to make cities habitable at a human scale, to allow alternate forms of transportation to flourish and, as such, to provide opportunities for reducing our carbon footprint.

This paper attempts to bring forward the opportunities inherent in the sustainability-related requirements and considerations associated with the design of urban transportation infrastructure. For example, the requirement to have elements of traditional transportation facilities accessible as public space, by people-powered transport and public transportation adds layers of complexity to urban transportation projects that result in a better designed environment which allows movement in an urban context with significantly reduced carbon footprints. Another sustainability-related constraint is the need to conserve existing facilities for their historical and social value. This provides the opportunity to significantly improve the value of a project by considering the history of a site and incorporating existing infrastructure into new facilities rather than demolishing them. In addition, ideas relating to the interaction of the infrastructure with a human scale can be used to convert 'infrastructure' space into 'human' space. As such viewsapes and experiential aspects can be integrated with traditional transportation infrastructure to add to the walkability and livability of an urban area.

Addressing the need for urban sustainability provides the opportunity to weave a new kind of infrastructure into the existing urban fabric by considering the many additional aspects that need to be dealt with in a contested urban environment. This paper examines the connection between sustainability and design of infrastructure and gives some examples of projects that have capitalized on the opportunities presented by sustainability and have attempted to develop a new and exciting approach to infrastructure design.