

Improving infrastructure sustainability in suburban and urban areas: is porous asphalt the right answer? And how



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Abstract

The goal of this paper is to investigate transportation infrastructure sustainability from a wider standpoint. A sustainable transportation infrastructure can be defined as a safe, efficient, economic, environmentally friendly infrastructure meeting the needs of presentday users without compromising those of future generations. This concept involves environmental, economic and societal aspects. In more detail, as for a road, a sustainable infrastructure or pavement must comply with environmental, economic and social requirements. Unfortunately, even if a definition of a sustainable pavement for urban or suburban areas can be easily proposed, the proposal of practical strategies to really pursue sustainability goals is sometimes disregarded in favour of emphatic announces of not well defined sustainable solutions. In the light of the above facts, the sustainability of a transportation infrastructure based on the actual environmental, social and economic characteristics is discussed in this paper. Once the main factors which can influence infrastructure sustainability are assessed, an analysis is performed in order to set out practical strategies for pursuing the main objective. Finally an experimental investigation is designed and carried out in order to assess porous asphalt value in terms of pavement sustainability. The tests carried out are promising about the possibility of achieving suitable levels of overall performance. Practical applications and perspectives in rehabilitation, maintenance, and research are outlined. Keywords: rehabilitation, porous European mixes (PEM), reclaimed asphalt pavement (RAP), recycling, surface performance.

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Sustainability. Advocacy. Events. What can porous asphalt do? Porous asphalt pavements are of great interest to site planners and public-works departments. With the proper design and installation, porous asphalt can provide cost-effective, attractive pavements with a life span of more than twenty years, and at the same time provide storm-water management systems that promote infiltration, improve water quality, and many times eliminate the need for a detention basin. How does porous asphalt affect water quality? There has been limited sampling data on the porous pavement systems, although the available data indicate a very high removal rate for total suspended solids, metals, and oil and grease. Are there other environmental benefits? The Sustainable Urban Infrastructure Guidelines and Policies encapsulates all of the innovative techniques we have been them on afor daily basis. are incredibly thankful to elements all who shared experiences on bicycling in Chicago employing years andWe expands to incorporate new in our their work thoughts to further and create a sustainable infrastructure for ourus. residents, businesses and visitors. The purpose of the Sustainable Urban Infrastructure Guidelines was to establish with an agency and city-wide approach for integrating environmental performance goals into infrastructure design. goals for streets and urban infrastructure. PRIORITIES + POLICIES. Before: asphalt alley.

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