



Safe and
sustainable road
surfaces

Vondelingenviaduct - Rotterdam

Client: Gemeentelijk Havenbedrijf Rotterdam (Port Authority of Rotterdam)
Surface area: 10,000 m²
Location: Vondelingenviaduct at Hoogvliet Rotterdam, The Netherlands
Project completed: 2004

In the autumn of 2003, through the agency of the Port Authority of Rotterdam, Ooms started the installation of approximately 10,000 m² Road Energy Systems® on the Vondelingenviaduct in the Vondelingenweg (along the motorway A15) at Hoogvliet Rotterdam.

The primary aim of the application of Road Energy Systems® in this project is to improve the traffic safety mainly in winter (by de-icing). Road Energy Systems® reduces temperature fluctuations in the surface layer, as a result of which the asphalt will be more durable. Besides this, the system reduces rutting by cooling in summer and delays cracking by heating the surface layer in winter. This heating also prevents snow and ice formation (especially sticking on the surface) on the viaduct in winter.

In summer, the water heated up in the asphalt solar collector, flows throughout the pipes to the heat 'source' (storage) in an aquifer (an underground water bearing sandy layer), where the energy generated by the viaduct is stored. In winter the water is pumped up from the heat



source to the surface to warm up the asphalt. After using the energy from the water, it is injected into the 'cold source'. From this source the water flows to the surface layer again for cooling in summer. The surplus of the obtained sustainable energy will be used to heat and cool the industrial buildings and/or houses to be developed in the direct neighborhood of the viaduct.

The pavement cross-section consists of a 35 mm thick polymer modified Sealoflex® SMA surface course, a 50 mm Road Energy Systems® special asphalt mixture type B and on average 50 mm polymer modified Sealoflex® binder course.

