

7. Energy & Carbon

HIGHLY COMMENDED

Olympic Park: Structure, Bridges and Highways

Client: Olympic Development Authority | Designers: Atkins (North Park) and Arup (South Park) | Construction: Skanska (North Park) and BAM Nuttall (South Park) | Artist: Martin Richman | Lighting: Atkins/Arup
Bridges Architect: Allies and Morrison

DESCRIPTION: The London 2012 Games saw the transformation of a 2.5-square-km site of previously mixed use, industrial land in east London, much of it heavily contaminated. The structures, bridges and highways construction works for North Park, South Park and Wetland Bridges provided the backbone to the vital infrastructure. The 2012 Olympic Park includes 20 km of roads, 13 footbridges, some with temporary sections, 11 km of retaining walls, seven highway bridges and six underpasses. The design and construction of the structures, bridges and highways was a vital component of the pre-Games construction logistics, essential for Games operations and a key part of future legacy use of the Olympic Park. The ODA lighting strategy set high-level requirements for energy performance in design and reducing carbon emissions during operation. There is a combined heat, cooling and power plant on the site, which provides power to the site with a biomass boiler and gas-fired boiler.



ACHIEVEMENTS: 50% carbon reduction from concept to final design of the underpass U01. 9% carbon reduction in the loop road redesign; 26% carbon reduction as a result of the bridge optimisation through material selection and a reduction in the number of bridges. 90% carbon reduction of the kerb selection. Direct carbon dioxide (CO₂) emissions have been reduced by 50% and cost savings of 12% achieved.

JUDGES' QUOTE: *The Project Team have demonstrated very clearly how consideration of the embodied energy and carbon management of materials should be incorporated into project decision making. They have provided an approach that all can follow in the future.*

