

Practice to be assessed and included in the Guidelines

Number/code: OM/E6

Title: REUSABLE TEMPORARY STRUCTURES IN STEEL

Guidelines section:

<input type="checkbox"/>	Governance	<input checked="" type="checkbox"/>	Operational management		
		<input type="checkbox"/>	<i>Context of the event</i>	<input type="checkbox"/>	<i>Procurement</i>
		<input checked="" type="checkbox"/>	<i>Event</i>	<input type="checkbox"/>	<i>Mobility and logistics</i>
		<input type="checkbox"/>	<i>Stadium management</i>	<input type="checkbox"/>	

Description:

Large sport events usually use a large amount of temporary structures and installations, such as tents, containers, barriers, stands, that are built within and aside venues for operational needs. Smart design choices allow efficient use of existing materials, including modular structures, to reduce the amount of customised manufacture.

These temporary facilities include tents for catering and medical aid, restaurant and sanitary facilities, media centres and offices, terraces and stands. Temporary facilities are always very important, since most activities – such as catering, shows, games and exhibitions – take place in the area surrounding the actual sporting event. Even a complete sports facility can be erected as a temporary construction. Low-waste and resource-saving construction methods are therefore of particular importance in this area

Examples:

- 1) Rio 2016’s headquarters, head offices were a temporary modular structure whose expansion follows the head count growth, allowing to reduce underutilised space and eliminate unnecessary materials and energy use. Preassembled steel structures arrived ready to use on-site and came together through a simple mechanism of assembly consisting of slots. With this method, construction work was three times faster than usual, with minimal disposal of rubble. Up to 80 per cent of the modular material shall be reused in future installations.
- 2) 2006 World Cup: the TV presenter studios, the substructure of the 48 studios was built as a frame, and the studios themselves were erected as a superstructure in a modular system. Individual elements were suitable for reuse, which would not have been possible with conventional studios. For example, walls and roofs comprised sandwich elements from container construction, which could be reused after the World Cup.

Environmental benefits:

Hosting the Olympic Games can leave a city full of largely useless athletic facilities with negative environmental impacts. Retrofitting, reusing or repurposing Olympic venues are all possibilities to secure their legacy and make them sustainable.

The environmental benefits of this practice are connected with increasing reusability of structures and minimization of waste from construction of temporary structures.

Economic benefits:

Economic benefits are connected with reusing structures for other events or cultural centres.

For example, the 2016 Rio Olympic Games buildings were designed in a way as to be more easily dismantled and used for other purposes after the end of the Games: thanks to the “nomadic architecture,” some of the modular components of the venues can be taken apart and rebuilt into schools and community centers. For example, the Handball venue, called Future Arena, was taken apart after the Olympics and rebuilt into four elementary schools, each for 500 students; the Aquatic Stadium was designed to be dismantled and reassembled as two community pools; the 300-acre Olympic Park, which housed a total of nine venues, were turned into public parks and private development. All of this result in evident socio-economic benefits.

With specific regard to prefabricated steel structures for temporary locations, there are additional considerations to be made: the price of steel continues to soar according to financial and economic forecasts. For instance, during the pandemic period in 2020 the price of rolled steel jumped up at 215%. Before that period the price was between 500\$ - 800\$ until it came to 1.850\$¹. Reusing structures in steel represents therefore an important opportunity of saving money for new structures made of steel.

Applicability and replicability potential

Applicability and replicability potential are high.

Source

[IOC RIO 2016](#)

[WORLD TABLE TENNIS CHAMPIONSHIPS 2006](#) (p. 77)

¹ <https://fortune.com/2021/07/08/steel-prices-2021-going-up-bubble/>