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**SPORT** **LIFE**  
**FORUM**  
*For Impact & Sustainability*



# Sustainability and Resilience in Sport Constructions and Facilities

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# Sustainability and Resilience



## Challenges of the 21st century that will shape a new role for Urban Planning.

### Environmentally sustainable urbanization requires:

- Greenhouse gas emissions are reduced and serious climate change mitigation and adaptation actions are implemented;
- Urban sprawl is minimized and compact cities served by public transport are developed;
- Non-renewable resources are sensibly used and conserved and renewable resources are not depleted and need to be used;
- The energy used and the waste produced per unit of output or consumption is reduced;
- The waste produced is recycled or disposed of in ways that do not damage the wider environment;
- The ecological footprint of towns and cities is reduced.

# Sustainability and Resilience

## Challenges of the 21st century that will shape a new role for Urban Planning.

### A resilient Cities requires:

- Strategies and plans that concern with mitigating, reducing and even preventing the disasters and Crisis impacts;
- Characterized by its capacity to withstand or absorb the impact of hazard through resistance or adaptation;
- Enabling it to maintain certain basic functions and structures during a crisis and to recover.

# Sustainability and Resilience



## Challenges of the 21st century that will shape a new role for Urban Planning.

### The Sustainable Development Goals:

- Blueprint to achieve a better and more sustainable future for all.
- They address the global challenges we face, including those related to:
  - Poverty, inequality, climate, environmental degradation, prosperity, and peace and justice.
- The Goals interconnect and in order to leave no one behind.

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Source: United Nations (<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>)

**Sustainable Development + Resilience = Strong and Better Future**

# Sustainability, Resilience and Sport

## Sport Constructions need to be sustainable and resilient

### Sport Constructions and Facilities integrated to the environment:

- **Early planning** of sports activities that integrate **environmental issues** is a fundamental principle;
- Must go through to **evaluate the need** to promote or not a particular event;
- Distribution of responsibilities within the framework of a plan of action to be followed from the beginning.
- **All valencies** related to the management of an infrastructure or to the promotion of an event must assume **environmental commitments**;
- Should be a transversal and non-sectorial dimension, called to act only in relation to some aspects.

# Sustainability, Resilience and Sport

## Sport Constructions need to be sustainable and resilient

### Sport Constructions and Facilities integrated to the environment:

- It is very important, if possible, to conduct a **life cycle analysis** to minimize the **materials and techniques** used, in particular involving the **construction of infrastructures**.

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## Key aspects in the sustainable approach of an event or sports infrastructure

- *ENVIRONMENTAL IMPACT*
- *TRANSPORT*
- *BIODIVERSITY*
- *ACQUISITION*
- *WATER*
- *SOCIAL INCLUSION*
- *ENERGY*
- *WASTE*
- *HEALTHY LIFE*

# Sustainability, Resilience and Sport



## **Sport Constructions** need to be sustainable and resilient

### Environmental impact must be considered in the constructions of sport facilities

- Materials that can partly result from the recycling of construction and demolition waste Durability
- Materials with higher or lower emissions associated with its generation
- Location
- Adequate water consumption (decrease)
- Type and amount of energy expended (renewable resources)
- Choice of the equipment



# Sustainability, Resilience and Sport

**Even a large facility or temporary facility needs to be sustainable and resilient**



Olympic Park - Sydney



# Sustainability, Resilience and Sport



**Even a large facility or temporary facility needs to be sustainable and resilient**

From the United States to China, through France, Germany, Finland or Greece, there are numerous examples of Olympic facilities that have been laundered or simply demolished, after having cost millions.

# Sustainability, Resilience and Sport

Even a large facility or temporary facility needs to be sustainable and resilient

Abandoned Olympic facilities in ruins



Olympic Park – Pequin 2008



Olympic Park - Athens 2004



# Sustainability, Resilience and Sport

**Even a large facility or temporary facility needs to be sustainable and resilient**

Build sports and Olympic facilities even after the activities, continue to operate, whether for sporting purposes or for other purposes.



Olympic Park – Sydney 2000



Olympic Park – Rio de Janeiro 2016



# Sustainability, Resilience and Sport

**Even a large facility or temporary facility needs to be sustainable and resilient**

Build sports and Olympic facilities even after the activities, continue to operate, whether for sporting purposes or for other purposes.



Olympic Park – Sydney 2000

- This is a model of how to use an Olympic complex after the Games
- The area has been transformed into a center that combines sport, business, culture and education

# Sustainability, Resilience and Sport

Even a large facility or temporary facility needs to be sustainable and resilient



- This project as Sydney as a example of a Olympic complex after the Games.



# Sustainability, Resilience and Sport

Even a large facility or temporary facility needs to be sustainable and resilient



- The project is transform the area into a center that combines sport, business, residential, green parks, culture and education.

Olympic Park – Rio de Janeiro 2030

# Sustainability, Resilience and Sport

Even a large facility or temporary facility needs to be sustainable and resilient

Even with a long-term project, it is difficult to implement the legacy



Olympic Park – Rio de Janeiro after the games



# Sustainability, Resilience and Sport

**Even a large facility or temporary facility needs to be sustainable and resilient**

**Some of the most relevant areas of the mission will be:**

- Definition of the modern and 'green' stages;
- Access and transportation around the stadium area;
- Hotels and temporary accommodation;
- Sustainability and large events;
- TI and specialized technology for sports;
- Education of tourism professionals and volunteers.

# Sustainability, Resilience and Sport

**Even a large facility or temporary facility needs to be sustainable and resilient**

**Some solutions to be able to have sustainable and resilient facilities:**

- Nomadic architecture - which is nothing more than a construction by modules that can be dismantled and transformed, a kind of giant lego;
- Reusing waste materials - shipping container as a building structure;
- Sustainable materials;
- Use of renewable energy;
- Other use after sports activities

# COC's headquarters Project

**A facility that is built based on sustainability and resilience solutions**

## **The “Comité olímpico Cabo Verdiano” headquarters**

A green building that can use materials that come in many forms, for example; recycled, reused, renewable or locally sourced materials.

- First material for the architectural proposal of the headquarters are the shipping containers
  - Reusing a shipping container as a building structure save a lot of energy
  - A good example, as they can save on construction waste, time and money during the process.

# COC's headquarters Project

A facility that is built based on sustainability and resilience solutions

## The “Comité olímpico Cabo Verdiano” headquarters



Thinking about the energy efficiency of the headquarters project, we are proposing to have:

- Photovoltaic panels for own production of electric energy.
- A method that it is an example of a roof garden, but that is based on cover some parts of the containers whit earth or soil that can be used to effectively control the thermal comfort of a container.

This solution of energy efficiency can be perfect for hot countries like Cabo Verde.

# Sustainability, Resilience and Sport



**If everyone starts thinking about actions of resilience and sustainability, we can achieve a better future for our planet.**

Adalgisa Teixeira Correia