http://www.directionsmag.com/entry/the-london-olympics-2012-a-success-story-in-sustainable-infrastructure/364275 accessed 30/1/15

The London Olympics 2012 - A Success Story in Sustainable Infrastructure Development; Looking Beyond the Games

By Joe Francica

Sir John Armitt, CBE, chairman of National Express and the former chairman of London's Olympic Delivery Authority (ODA) for the 2012 Games provided detailed insights on how this type of massive infrastructure project was conceived and developed. Sir John admitted to surprise when London was awarded the Games of the 30th Olympiad. He was more certain that Paris would receive the bid. However dreams turned quickly into reality as the planning and building processes had to be started.

From the outset, Sir John said that the entire project had a number of key objectives. The first was that it was to be the "greenest" games ever which was an enormous challenge considering the site of the new Queen Victoria Park was highly contaminated. The second was that the ODA had to look beyond the games to determine how the venues were to be utilized in a manner where there would be certain return on investment.

Figure 1: Photo of Sir John Armitt and the "temporary" Olympic basketball arena

To establish a "green" and cost effective event, the ODA realized these guidelines:

- 75 pence of every £1 would be spent on long term regeneration of area
- 50% of the construction materials delivered to Olympic Park were carried by rail or water
- 90% of the demolition materials from the site were reclaimed for re-use or recycling
- 100% of the timber came from sustainable sources (list of approved sources for timber was provided to contractors before construction)
- 40% potable water reduction

Much discussion by the ODA went into determining how to use existing facilities within London or how each newly constructed venue would be used when the Games concluded. Sir John provided these examples:

- The Equestrian site was the existing Greenwich park. The park was transformed for games and reconstructed afterward.
- The Greenwich arena or O2, built for the millennium was used for Olympics gymnastics just across from main Olympic park.

- The main Olympic Stadium presented a difficult business case for building it. So, they built a 25,000 seat stadium and the plan was to add on a temporary structure for an additional 50,000 seats . But things changed when politics intervened and is now successfully run as a football stadium for a local team.
- The Aquatic Center began as an 18,000 seat facility but looking beyond the games most major swimming meets don't draw more than 4,000 people so this venue had to designed with flexiblity; the facility now holds only 3500.
- The water polo and basketball (see Figure 1 above) venues were completely temporary structures and no longer exist.
- Biking is popular in the UK so the velodrome was designed as a permanent building. It remains one of the most popular buildings with spectators and is in continual use for all major biking events.

Many other significant factors were at play:

- Power generation
  - The main power plant was capable of utilizing both natural gas and biomass although there is some concern whether there will be much future call for biomass
  - Wind turbines were ruled out because of the nature of sustainability in an urban area
  - In hindsight they would have used more solar energy
- Transport and security were two big concerns leading up to games.
  - £600 Million were invested in improving light rail system and increased existing capacity by 50%
  - Special Olympic lanes for roads were designed.
  - £25 Million were spent on an advertising campaign just for managing traffic. Londoners were polity encouraged to "go on vacation" or work from home.
  - The London Underground they carries 400 Million passengers at peak; nearly 1/2 million more people were accommodated during the Olypmpics
- Employment
  - Creating jobs and training was a very large challenge
  - Economic development in an area that was blighted was a key goal
  - Over 40000 people worked on Olympic park and village during "Big Build" part of the project.
- Health and Safety

    - The entire project for the Olympiad was built without a fatal accident.
    - The construction site had an on-site medical center
    - 70 Million hours were worked
    - Everyone who worked on the construction site was given a free health check up before working on project leading to the identification of some individuals with health and nutrition risk factors; consequently free breakfasts were offered to support a healthy work environment.

So these were only a few of the challenges of a major infrastructure project. Sir John articulated several success factors:

- Cross party political support. During the lifespan of the project the UK had three prime ministers and two different London mayors.
- A fixed deadline. There's nothing better than a fixed deadline," said Sir John.
- A sensible budget. Sir John said that this allowed them to make bolder decisions. If you have a skinner budget, you risk skinny success.
- Rigorous approach to program control and change management
- Strong assurance and risk management