

**Buildings sustainability assessment: rating and labelling systems**

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Since many years we're talking about sustainable development and sustainability: several conferences and congresses have been done in order to find out the best way to achieve better future living conditions, both in developed and undeveloped countries.

Within the building field there are many messages of great interest towards sustainability, as building construction and operation is one of the most irreversible processes of environmental change. This interest is proved by the growing attention paid to subjects that have as aim the introduction of sustainable issues in project and construction activities.

So it's necessary to define what we really mean with "sustainable architecture" and if there are some tools useful for designers both in planning stages as guidelines for projects sustainability and in final assessment phases as checklists.

Green building rating (or labelling) systems, originally settled for assessing building sustainability can also be used by designers as guidelines in preliminary planning stages. They are based on lists of requirements: the assessor must give a score to each of them and the total score gives us a sort of "school report" on building sustainability. In this work we analyse and compare main green building rating systems.

Concerning the main rating systems, as Breeam, Leed and GBTool, in the second chapter we try to compare their sustainable issues focussing on benchmarks, qualitative indications and best available technologies. Then main architectural realisations taken out from the last Olympic Games and Universal Expositions are collected and analysed with particular attention to sustainable solutions adopted.

***Dunc Gray Velodrome (Sidney Summer Olympic Games 2000)***

***PRIMARY ENERGY CONSUMPTION***  
Use of natural ventilation and illumination

***WATER CONSUMPTION***  
Water efficient landscaping.

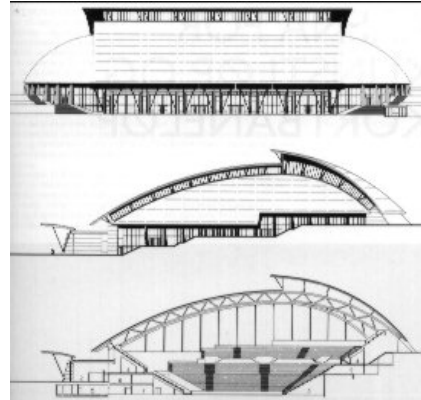
***VISUAL COMFORT***  
Optimised day-lighting



***Hakon Hall (Lillehammer Olympic Winter Games 1996)***

***PRIMARY ENERGY CONSUMPTION***  
Optimised day-lighting

***MATERIALS CONSUMPTION***  
Post-Olympic reuse as multifunctional building



***Japanese Pavillon (Expo Hannover 2000)***

***MATERIALS CONSUMPTION***  
Use of transparent, waterproof and fireproof recycled paper (3600 mq)



Focussing on GBTool, the tool that has gained more credits because of its completeness and international adaptability, in the third part of the work we try to fit its issues to our national regulations, in order to point out the main problems due to an application to our context.

The main objectives of the work can be summarised as follows:

- To point out the state of the art of green building tools from an international point of view;
- To highlight the main problems concerning the elaboration of a tool applicable to our national context.

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