Going Green

Dermot Kehily

*Technological University Dublin*, dermot.kehily@tudublin.ie

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Sustainable development is defined in the Brundtland Report (1987) as “development that meets the needs of today without compromising future generations in meeting their own needs”. Sustainable development encompasses a whole system analysis of the effects of design, not just on environmental issues, but also on social and economic issues. Any criteria assessing sustainable design and construction must address the environmental balance in meeting the best option that balances the total economic costs against social and environmental consequences.

Environmental considerations in Ireland

Traditionally, environmental considerations have not been on the agenda in the Irish construction industry. Much of Ireland’s environmental and building control legislation since the 1970s has been enacted through directives from the European Union. Many professionals and contractors, while paying lip service to the relevant buzz words, such as ‘sustainability’, have failed to incorporate these measures into their practice. Social and environmental consequences.

Drivers for change

The primary drivers for change can be traced back to a number of well-documented United Nations conferences in the 1990s, notably Agenda 21 in Rio de Janeiro in 1992, the Kyoto Protocol in 1997, and the Earth Summit in Johannesburg (2002). Many EU directives on sustainable development have been initiated by directives from the European Union. Many professional and contractors, while paying lip service to the relevant buzz words, such as ‘sustainability’, have failed to incorporate these measures into their practice.

Leadership in Energy Efficiency and Design

LEED is an internationally recognised green building rating tool, providing third-party verification where a project was designed and constructed using strategies aimed at improving performance across a number of sustainability metrics. The system was developed by the USGBC, which was formed in 1993. The first LEED programme was launched in 1998. The programme has evolved through the years and now includes rating systems for individual building types, such as LEED for Core and Shell; LEED for Existing Buildings; LEED for Homes; and LEED for Commercial Interiors. The credits change to suit the construction type in each LEED system, but the focus on the five major LEED categories remains the same. These categories are:

1. Sustainable sites.
2. Water efficiency.
4. Materials and resources.
5. Indoor environmental air quality.

Each category is further broken down into a number of credits, and points are allocated on the basis of compliance with individual credits. The overall point rating determines the level of the LEED standard attained. There are four levels of LEED certification, as shown in Figure 3: Certified, Silver, Gold, and the highest standard, Platinum.

To maximise efficiency and a greater prospect for a higher rating, it is important that an LEED AP is involved in the design process and guides the client and the design team through the process. First the credit assessment must be registered with the USGBC. As the design and construction progresses, the LEED AP will track changes and provide documented evidence that each credit has been met. Once the project is complete, the documented evidence will be submitted for verification to the USGBC. The USGBC provides the design team with resources, such as checklists and templates, to assist in standardising and streamlining the process.

Conclusion

There are a number of LEED APs in Ireland and many more BREEAM assessors. These assessors come from a wide range of disciplines in the industry. Many LEED APs in the US come from a background in construction cost management, assessing each credit and point in line with its impact on the building’s whole life cycle cost. An opportunity exists for Society of Chartered Surveyors Ireland members to guide prospective clients in gaining an accredited green building rating from LEED, BREEAM or any of the rating tools outlined above. Quantity surveyors are particularly well placed to offer this type of advice, as they can advise on green building attributes and associated credits while possibly giving the client an indication through life cycle cost analysis of the system or buildings payback and return.

FIGURE 1: Circles of sustainable development.

FIGURE 2: LEED categories (Source: USGBC).

FIGURE 3: LEED certification standards (Source: USGBC).