The European Construction Industry Federation's director of technical and environmental affairs shares the impact of policy on sustainability

Sustainability in the built environment

Sustainability in the built environment is hard to define. Its meaning can be all-encompassing, alluding to the people-planet-profit model of what used to be known as corporate social responsibility. On the other hand, given current EU policy developments, the emphasis can be on the second element, with efforts directed towards environmental aspects. In the European Construction Industry Federation (FIEC), there are three 'commissions' roughly aligned with the people-planet-profit model, which is a useful way of explaining how the federation organises its lobbying work. Broadly speaking, the Social Affairs Commission (SOC) tackles the 'people' aspect, working on issues such as labour law, health and safety, skills and young people. The Technical Commission (TEC) deals with the 'planet' aspect, covering subjects such as energy and resource efficiency, climate change and research and innovation in construction. The 'profit' aspects are handled by the Economic and Legal Affairs Commission (ECO). Its subjects include EU investment, public procurement, transport and infrastructure planning and contracts.

These three commissions do not work in isolation and the separation of tasks does not always neatly follow the people-planet-profit framework. For example, indoor air quality and its impact on human health is covered by the Technical Commission. Dangerous substances falls under both TEC and SOC, as there are both technical and environmental aspects, but also consequences for the health of workers exposed to such substances.

In any case, sustainability in the built environment, whatever the definition, is a vast subject and one that is evolving as we acquire more knowledge. Likewise, EU policies evolve in parallel, meaning that this area of policy generates considerable work for FIEC and other relevant industry federations, such as those for engineers, architects, material producers and so on. In this article, the focus is on FIEC's efforts to promote sustainability under the 'planet' pillar.

Policy approaches to sustainable construction need to be more synchronised and avoid contradiction and repetition

Construction and climate

In 2015, FIEC hosted a conference on climate change with its French member federations in Paris, to coincide with COP 21[1] and published *10 Proposals to tackle Climate Change*. More recently, the main relevant current EU policy frameworks are the Circular Economy Action Plan and the Clean Energy Package. Within these frameworks, FIEC has worked in particular on the proposals to revise the waste and landfill directives, which form part of the former and the proposal to revise the Energy Performance in Buildings Directive (EPBD), part of the latter. Since its publication, along with the communication *Clean Energy for All Europeans* at the end of November 2016, the EPBD proposal has moved swiftly through the legislative process with the current expectation that the final proposal will be agreed before the end of this year.

FIEC's position on the original proposal[2] and its press release on the European Parliament[3] amendments can be found on its website, http://www.fiec.eu. In brief, the federation supports attempts to improve renovation rates and the findings of the consultation that preceded the EPBD proposal resonate with members' concerns. That said, the FIEC position called for 'technology-neutral' measures, which should be achievable, taking into account local circumstances, building methods and available materials, not to mention national regulations and targets in terms of the environmental impact of buildings.

Furthermore, as the EU legal framework is already complicated, FIEC has strongly advocated for the compatibility of existing legislation with new proposals and in particular the avoidance of duplication, where the risk of

this happening occurs. For example, one case of a compatibility issue is the question of how the new voluntary assessment framework for the environmental performance of buildings, known as Level(s),[4] will be used alongside the new EPBD. Level(s) aims to improve the sustainability of buildings, with a number of indicators, which can be used by experts to evaluate relevant performance aspects. Developed over the last three years by DG Environment and the Joint Research Centre, the framework was published after the European Parliament had already drawn up its EPBD amendments. The result is that there is no mention of Level(s) in the EPBD proposal or amendments. FIEC has expressed concern about this. Examples of possible duplication appeared in draft EPBD amendments, which referred to Ecodesign measures. FIEC published a position on Ecodesign and Energy Labelling in 2014, which explained that the objectives of these are achieved with respect to construction materials, via the Construction Products Regulation. Adding other layers of regulation merely creates an unnecessary burden for the industry.

Relevant legislation aside, contractors are already tackling energy renovation and are ready to undertake the necessary work, when building owners are able to pay for it – with or without public financial support. A truly effective deep renovation, aimed at achieving maximum energy savings, is usually expensive. Furthermore, it is not merely a question of fixing off the shelf kits to the building envelope. It is a major and potentially disruptive undertaking.

Policymakers tend to have an over-simplified view of energy renovation. On top of this, owners want to see a tangible return on investment. The extent of likely savings can be difficult to predict precisely before renovation takes place and difficult to demonstrate afterwards, especially in the short term. Therefore, expert advice as well as financial support from the available EU funds, is necessary to meet the needs of those seeking to invest in/renovate their buildings. There is a dilemma in many cases: cheap, 'quick fix' renovation rarely gets the maximum results, but expensive, deep renovation may never pay for itself in a period of time that the owner/investor considers acceptable.

In some cases, demolition is more cost-effective than renovation, which complicates environmental and circular economy policies

Moreover, unfortunately, there are some buildings for which demolition is the most cost-effective solution. This hard fact does not sit easily alongside existing policies for a circular economy and energy efficiency and appears to contradict the concept of sustainability, but pragmatism should trump idealism when necessary, to avoid counter-productive measures.

Digital solutions

The fourth industrial revolution, commonly known as Industry 4.0 also applies to construction, with the term Construction 4.0 being used widely. This development is offering real solutions, not only to help speed up the rate of energy renovation, but also to improve productivity in the industry overall and to contribute in the long term to the circular economy, by making recycling easier via the logging of all relevant product and building information in a digital model. Building Information Models (BIM) will facilitate design for deconstruction, enabling not only the logging of materials, but also the management of maintenance programmes for the building, including for its technical systems. This kind of information will create smart buildings that are more efficient during their lifecycle and easier to adapt in the case of change of use. If and when deconstruction becomes the preferred option, the comprehensive data contained in the model will enable demolition contractors and recycling companies to track materials, remove and sort them.

This will enable the recycling or reuse of a maximum possible proportion of the materials, with only a minimum ending up as waste. In the future, standards for secondary materials should enable a reduction in the amount of waste generated during building deconstruction, raising the quality of these materials and providing more certainty for those

If buildings are to become more sustainable, renovation will prove a crucial strategy

companies that purchase secondary materials, either for further treatment/recycling or for reuse.

The Circular Economy Action Plan has already had an impact on lifecycle thinking, meaning that the industry is already exploring and using new processes for fixing and installing, so that reuse or recycling is possible in the long term. This does not take account of any future changes in regulation with regard to toxicity or the contents of new materials yet to be developed. Nevertheless, digital construction is introducing new processes, new business models and new ways of thinking that support the circular economy.

It also supports energy efficiency, because smart buildings have systems that automatically adjust heating or air conditioning according to need. For example, when a room/floor/apartment is temporarily unoccupied, the ambient temperature can be adjusted. Therefore, digital construction is having an impact on – and will increasingly contribute to – energy efficiency and a reduction in the consumption of raw materials. In short, digital construction is good news for sustainability.

FIEC's goals and priorities

Since 2008, the construction industry has been hit by a protracted downturn, which has left the industry with output levels and numbers of workers that have not entirely recovered. Indeed, FIEC reported for the first time in a long period, in its last statistical report, that the first signs of a tentative recovery had appeared in several European member states. Although this is encouraging, it would be wrong to think that we are out of danger as an industry and we now need to plan for sustainable growth, ensuring that we balance our obligations with respect to the environment and the relevant EU and national policies and legal requirements with the legitimate need to be profitable and competitive.

Building Information Models (BIM) will create smarter, more efficient buildings

The federation will continue to defend its positions on the Circular Economy Action Plan and the proposal for a revision to the EPBD. At the same time, we have published a position on the possible revision of the Construction Products Regulation and we will maintain our call for only one regulatory framework for construction products, complimented as it already is by relevant standardisation. In addition, we will build on the BIM manifesto that was published earlier this year, with a work programme on Construction 4.0, soon to be finalised.

References

1 http://www.fiec.eu/en/themes-72/climate-change.aspx

2 "Yes to revised EPBD but not all provisions are smart!" 15/03/2017

3 "Energy renovation challenge oversimplified by EPBD" 27/09/2017

4 Published by DG Environment, July 2017 http://ec.europa.eu/environment/eussd/pdf/factsheet_DEF.pdf

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