



An integrated policy approach to sustainable buildings

Glass for Europe welcomes the willingness of the European Commission (EC) to investigate policy options to promote sustainable buildings and sustainable construction practices in Europe. As recognised in several recent EC consultations, sustainability in the construction sector is pivotal to help the EU achieve its objectives in terms of energy efficiency but also resource efficiency.

In July 2013, the European Commission launched a public consultation on sustainable buildings. Glass for Europe fears that the upcoming communication may become a missed opportunity for Europe to drive change in the construction industry. The EC consultation's scope is indeed limited to the environmental impacts of manufacturing construction products and is therefore too narrow for tackling the wider issue of sustainability. Sustainability has three intertwined pillars: environmental, social and economic. As such, any policy initiative to foster the development of sustainable buildings in the EU should address these three dimensions equally.

Key elements for a comprehensive policy on sustainable buildings

- Reflect on and address all socio-economic dimensions of sustainable buildings (health, comfort, well-being, safety, security, etc.) in any EU initiative on sustainable buildings.
- Opt for policies guided by full life-cycle thinking at the building level, including the use phase.
- Set up specific measures to improve recycling of end-of-life building materials such as glass.
- Work towards harmonisation or at least recognition of various sustainability assessment methods, tools and certifications, such as EPDs, certification schemes, etc.

The contribution of glazing to sustainable buildings

Getting daylight into buildings is a key element of sustainable building design. By providing daylight into buildings and a visual connection to the outside world, glazing products bring occupants all the benefits associated with natural daylight in terms of health, comfort and well-being, while enhancing the visual quality and aesthetic of internal spaces.

Modern glazing solutions also contribute to improving the energy performance of buildings by providing a positive [energy balance](#) to the building envelope as well as by reducing needs for artificial lighting. As a matter of fact, many energy and thermal simulations suggest that, in most European climates and for most building types, the average glazed surface to floor ratio should be increased.

Besides, glass products generate minimal environmental impacts over building's full life-cycle phases, which make glass a material of choice for sustainable buildings. Glass is made of abundant non-polluting raw materials; its manufacturing process is highly energy efficient and it generates little waste. What is more, glass is fully recyclable and could be easily recycled at the end-of-life stage of buildings provided adequate collection and recycling schemes are put in place.



Sustainable buildings require integrated design processes and policies that address the economic and social dimensions of sustainability

Given that people spend more than 80% of their time inside buildings, the latter influence many aspects of human life and economic activities that go much beyond purely environmental considerations. In this respect, the design of buildings and in particular daylight provision does not only influence the health of occupants but also affect their comfort, well-being, productivity and learning abilities¹.

Buildings are complex systems that have an impact on the environment. Nevertheless they are primarily conceived for the people that use them. Therefore, design and conception of buildings is a critical phase to achieve sustainability in the built environment. For these reasons, an integrated approach to building design is needed. Such an approach should take into account items such as daylighting strategy, acoustic comfort, thermal comfort all year round, indoor air quality, safety, security and durability, operational costs (energy use) as well as environmental impact of construction products, to name just a few.

Consequently, it would be a mistake to try to address sustainability in buildings by looking at only one of these parameters in isolation from the other. **The social and economic dimensions of sustainable buildings must be accounted for in any policy on sustainable buildings.**

A full life-cycle approach is needed to reduce building's environmental impacts

The approach that seems envisaged by the EC in its public consultation is to work solely on the environmental impacts of manufacturing construction products and their assembly, i.e. the pre-construction phase of buildings. Reducing environmental impacts of construction products is a priority for the glass industry and initiatives in this field are welcomed. However, Glass for Europe believes that EU policy-makers need to endorse life cycle thinking at the level of the building, as it is the case in existing certification schemes, such as BREEAM, DGNB or HQE. Buildings are complex systems. They cannot be summarised as the addition of different materials.

Additionally, all life cycle stages of the building need to be considered from raw materials extraction to disposal and recycling of end-of-life building waste, including the use phase. The risk is otherwise high that wrong selections of materials are made, i.e. that environmental impact throughout the life cycle become higher than what they could have been if full life-cycle thinking had been followed. This is largely due to the fact that the use phase of buildings is by far the one where the biggest environmental impacts of a building take place (i.e. energy consumption and associated GHG emissions). Therefore, even if energy performance issues are addressed in other pieces of legislation (recast EPBD and EED) they should not be left aside and should be included in an integrated policy approach to sustainable buildings.

In that respect, **a methodology to conduct life-cycle analysis at building level, is under development in CEN TC 350 and is very much supported by Glass for Europe.** When finalised, this methodology will become an essential tool for the development of a comprehensive analysis of buildings.

¹ David Strong Consulting 2012: [The Distinctive Benefits of Glazing, the Social and Economic Contributions of Glazing to Sustainability in the Built Environment](#)

The EU has a role to play in the harmonisation of sustainability tools

The proliferation of national EPDs, without a harmonized and consistent methodology, creates confusion for market actors (manufacturers, consumers, etc.) and may create some distortion of competition. As such the support of a common methodology at EU level and the harmonization and convergence of current EPD systems as well as the mutual recognition of EPDs is essential and should be a priority. This would allow for better comparisons and mutual recognition of EPDs across Europe. In this respect the use of EPD developed under the EN 15804 (CEN TC 350 Methodology) should be supported.

Management of building waste and increased recycling of materials, such as glass, requires EU initiatives

As far as end-of-life of building is concerned, many efforts remain to be done to improve dismantling and recycling of materials to reach the 70% target laid down in the Waste Framework Directive. For instance, despite its recyclability, end-of-life building glass is almost never recycled into new glass products. Instead it is often crushed together with other building materials and put into landfills or recovered.

In order to improve recycling of end-of-life building products and to reach the above-mentioned EU target, specific policy measures and initiatives to improve the dismantling, sorting and collection of valuable construction waste are needed. In particular, dismantling and sorting of waste should be improved to enable recycling. Additionally, recycling targets for specific end-of-life building waste, and glass in particular, should be set in EU legislation. For more information on this topic, please refer to the recent [Glass for Europe position paper on recycling of end-of-life building glass](#).

About Glass for Europe

Glass for Europe is the trade association for Europe's manufacturers of flat glass. Flat glass is the material that goes into a variety of end products such as windows and facades for buildings, windscreens and windows for automotive, solar panels, furniture, electronics, etc. Glass for Europe has four members: **AGC Glass Europe**, **NSG Group**, **Saint-Gobain Glass** and **Sisecam** and works in association with **Guardian**.

Glass products not only provide light, comfort, style, security and safety, they are also essential **to energy-efficient buildings, houses and transport**. Windows containing high-performance glass such as low-e insulating glass, which helps keep warmth in, and solar control glass, which reflects unwanted heat away, help reduce energy consumption. Solar energy glass helps enhance the production of a renewable source of energy.