

Let's Construct Europe's Future

With Innovative Buildings and Infrastructures

> the Construction sector and EU 2020 innovation ambitions



As the European Union launches the "Europe 2020" initiative – a strategy for smart, sustainable and inclusive growth – showing how the EU can come out of the crisis and move to a more sustainable and dynamic growth path delivering high levels of employment, productivity and social cohesion, the Construction sector reaffirms its commitment to contribute to this move, by intensifying in particular R&D and innovation initiatives throughout its value chain, as follows:



The Construction sector promotes a resource-efficient, sustainable and competitive "European growth"

- by creating an energy-efficient built environment integrating renewable energies,
- by providing the transport sector with modern infrastructures,
- by reducing the ecological footprint of products and services.



The Construction sector is a factor of economic, social and territorial cohesion:

- which gives access to proper and healthy housing,
- which improves the independent and inclusive life of the ageing and disabled European population,
- which preserves cultural heritage works.

The Construction sector plays a major role in Europe competitiveness:

- by improving the business environment,
- by developing a lead market in sustainable construction.



The Construction sector creates new skills and jobs, fosters digital society, and is involved in smart growth initiatives through innovation.



The Construction sector is the biggest industrial employer in Europe:

- it represents 9.9% of the GDP and 51.4% of the Gross fixed Capital Formation;
- with 14.9 million operatives, it represents 7.1% of Europe's total employment and nearly 30% of industrial employment;
- it gathers 3 million enterprises (EU27), of which 95% are SMEs with less than 20 operatives, acting on local markets and in a highly standardized environment. (Source: FIEC, figures 2009).

The Construction sector has a significant influence on the whole economy:

- the buildings/infrastructures supplied by the Construction sector serve a lot of other industries and services;
- nearly 45 million workers depend on construction activities in Europe;
- 1€ spent on construction generates directly around 3€ in total economic activity (mainly local);
- it is one of the best ways of stimulating economic activities, not only in the Construction sector, but across the economy as a whole, including troubled manufacturing sectors.



How the Construction sector contributes to EU 2020 ambitions

The Construction sector promotes a resource-efficient, sustainable and competitive European growth:

> By creating an energy-efficient built environment

By 2050, most new and existing buildings and districts will be energy neutral and have a zero CO₂ emission. Numerous buildings and districts, based on new materials, products and processes, integrating renewable energy sources and clean distributed generation technologies, will even be energy positive, thus becoming real power plants integrated to smart grids.

The ECTP-launched European Initiative E2B (Energy-Efficient Buildings) is currently implemented under FP7 within the EeB PPP.

> By providing the transport sector with modern infrastructures

Infrastructures networks transport people and goods: they are fundamental lifelines of today's society. Functional infrastructures networks are essential to Europe's prosperity, affecting economic growth and quality of life to a large extent, matching the needs of the resident population with the rules of the global market and trade.

Modernized surface and sub-surface infrastructure, adopting innovative advanced solutions, will provide smooth operation and increased transport fluidity.

The newly ECTP-launched Initiative reFINE (Research for Future Infrastructure Networks in Europe) aims at these goals.

> By reducing the ecological footprint of products and services

The Construction sector develops a preventive approach with respect to environmental challenges. It is decreasing the use of resources (including available space) and is increasing the safeguarding of the environment. It is reducing the need for raw materials while favouring recourse to recycled materials and materials with enhanced performances.

The Construction sector is a factor of economic, social and territorial cohesion:

– It gives access to a proper and healthy housing by refurbishing decayed dwellings and regenerating cities in a sustainable way, as well as developing resource-efficient and low cost social dwellings to guarantee housing access to everybody.

– A high level of employment is maintained in the biggest industrial sector, via boosting RDI programmes and parallel efforts to implement outcomes in practice, e.g. through training and education.

– It improves the independent and inclusive life of the ageing and disabled European population by developing advanced indoor and outdoor accessibility and smart technologies.

– By employing 25% of immigrant workforce, the sector has a major role in its integration into the European society and economy.

– Conservation of cultural heritage works makes people enhance rich history and culture and contributes to promoting tolerance and impeding ethnic conflicts.

– Territorial cohesion, which mostly depends on interconnections within and between territories, is highly sustained by suitable and affordable public infrastructures. The Construction sector also plays a significant role in enabling sustainable water management.

The Construction sector plays a major role in Europe competitiveness:

The competitiveness of our industrial activities in Europe is a prerequisite to achieve our ambitions and to surmount the grand challenges addressed in the EU 2020 strategy. In this respect, the Construction sector contributes a lot as an enabling sector:

– The Construction sector improves the business environment, especially for SMEs, by providing logistics and transport infrastructures and facilities for all industries, enabling the development of prosperous companies and preventing their relocation.

– As a local, regional, national and international industry, the sector shows an adequate level of activities throughout Europe. It maintains jobs at local level throughout a dense and extended tissue of SMEs and craftsmen, to which the transfer of knowledge through demonstration and training programmes on best practices is moving forward.

– The sector activities offer ample opportunities for new business, i.e. by opening a new buildings retrofitting market, by speeding up the industrialization of its processes, or by promoting the take-up of key enabling technologies such as eco-, nano-, bio- and ICT-technologies.

– By promoting performance-based approaches and ambitious targets to develop a lead market in sustainable construction, the construction industry becomes a driver for further industrial development which can be exported outside Europe. This will enable the construction industry to compete globally and to increase its export of components, equipment, infrastructure works and know-how.

– By preserving an attractive cultural heritage in Europe, it enhances the competitiveness of the European tourism sector.



The Construction sector creates new skills and jobs, and needs more training and education:

The Construction sector modernizes its labour market, with a view to increasing labour participation on the one hand, and meeting the labour supply and demand more efficiently on the other hand:

- > It facilitates labour mobility through relevant legislation, common European construction skills recognition, common “construction” language, further EU harmonization of construction-related codes, etc.
- > It facilitates the development of relevant skills (cooperation in education and training, flexible response to labour market demand, involvement of industry, etc).
- > It strengthens the cooperation with social partners to better solve social problems related to construction (dwelling, refurbishment, disabled population, etc.).
- > It improves health and safety on building sites (legislation, new technological solutions, new organization of work, training and education, etc.).

The Construction sector productivity depends to a large extent on education and training. A workforce that is better educated and trained can produce higher value goods and services, and is more likely to innovate. Investments in training also generate substantial gains for firms. New training models are being developed. Two key drivers for changes are the shift to performance contracts and the issue of health related to ageing workforce.

The Construction sector and the digital Society:

Information and Communication Technology is the main innovation driver in most industries and core enabler of economic growth in the 21st century. Process renewal, supported by ICT, is one of the main vehicles towards the vision of the Construction sector. ICT will assist the Construction sector:

- in meeting Client & User Requirements: customer involvement in processes; value procurement; conformity of products and services to users’ expectations; adaptability of the built environments to changing needs;
- in becoming sustainable: optimized use of resources over total product life cycle; energy efficiency in built environments; healthy and safe environments; virtualized built environments;
- in transforming the Construction sector: industrialization and automation; safe and attractive employment opportunities; open EU-wide trade; international competitiveness; dynamic enterprise networks and new business models.

The Construction sector is a highly information-intensive industry which uses state-of-the-art technologies in all processes and products in order to satisfy clients’ expectations in a sustainable way. As a knowledge-based industry, it offers attractive workplaces for skilled and well-educated personnel. European construction industry works competitively on the open global market supported by flexible SME-based supply networks.

The Construction sector is involved in smart growth initiatives through innovation:

Since the setting up of a European Construction Technology Platform, gathering today more than 230 member-organizations, and supported by a set of National Platforms in nearly all Member-States, a chief ambition of the sector is to develop new Research, Development and Innovation strategies to improve its competitiveness and to meet societal needs and environmental challenges.

The Strategic Agenda of the sector brought together a set of major issues, directly embedded in several grand societal and sustainability challenges faced today by the EU, such as energy and resource scarcity, climate change or ageing society:

- Technologies for Healthy, Safe, Accessible and Stimulating Urban and Indoor Environment for All,
- Innovative Use of Underground Space,
- Energy-Efficient Buildings,
- Reduce Environmental and Man-made Impacts of Built Environment and Cities,
- Sustainable Management of Transports and Utilities Networks,
- A living Cultural Heritage for an Attractive Europe,
- Improve Safety and Security within the Construction Sector,
- New Integrated Processes for the Construction Sector,
- High Added Value Construction Materials.

In order to align its strategy with the global grand EU challenges and to contribute more clearly to the Innovation Union flagship, the European Technology Platform of the Construction sector is conducting, with the involvement of stakeholders from other sectors, 2 major European Initiatives combining these issues and embraced inside the grand challenges of energy, climate change and mobility:

- The Energy-Efficient Buildings European Initiative (today implemented through the EeB PPP within FP7),
- The Future Infrastructure Networks European Initiative.



ECTP ambition

- To develop Innovative Buildings and Infrastructures to construct Europe's future
- To innovate through research and integration of inputs from other sectors using appropriate tools (such as PPPs) in the next FP
- To conduct two major European Initiatives:
 - E2B: "Energy-Efficient Buildings" European Initiative
 - reFINE: "Infrastructure Networks of Europe" Initiative

A major world-wide challenge

- Buildings = major potential for energy/carbon savings
 - today more than 40% of energy consumption
 - and around 30% of GHG emissions



Energy Efficient Buildings

Road Map

- Retrofit the existing building stock (200 million houses and many offices)
- Develop future positive energy buildings and districts
- Integrate new technologies (including renewable energy technologies)

Innovation through research

- Recovery Plan EeB PPP calls: strong involvement of industry and SMEs (24% in 2010) from the whole value chain (ECTP/E2BA: 230 Members)
- Construction sector ready to collaborate towards an "ideal house" for PPPs in the next Common Strategic Framework



Infrastructure Networks of a Sustainable Europe

Challenges

- Mobility (energy saving, safety, inter-modality, etc.), industry and services
- Existing infrastructures are getting old/obsolete
 - Roads (see winter 2010)
 - Water supply systems (leakage, water quality), etc.
- Risks: flooding, etc.
 - 100 major damaging floods between 1998 and 2004
 - 700 deaths in Europe and half a million people displaced since 1998
 - Protection and repair of damage costs €40 billion each year. Planned to increase up to €100 billion in coming years

Road Map to a reliable Infrastructure

- Greening infrastructure: 40% less impacts on the environment (raw materials, water, pollution and emissions, etc.)
- Infrastructure for a sustainable and competitive economy
 - Smart and resilient infrastructures
 - Infrastructures for an inclusive society
 - Infrastructure for a sustainable urban growth ("4D city")

Many challenges identified by the European Union to develop Europe 2020 concern the Construction sector, which has launched a move to step up R&D and Innovation throughout the value chain. This move recognized by the Recovery Plan in the field of "Energy-Efficient Buildings" needs to be corroborated by setting up a well-identified priority to Construction stakes in the coming RDI programmes.

The increasing role of Construction in building up Europe 2020 and the size of the related challenges call for a more integrated approach to the stakes and resources at European level in that field.

This is why ECTP claims for an adequately funded dedicated RDI programme designed around the 2 major issues for Europe 2020, ie generate Energy-Efficient Buildings on the one hand, and affordable Infrastructures on the other hand.