Report on the Conference
"Construction: Let's build changes"
6th July 2017

Hotel Crowne Plaza, Brussels

Plenary session

Mr Gwenole Cozigou (DG GROW, European Commission) opened the conference by addressing the many challenges but also opportunities for the construction sector in facing various policy goals. **Cities and buildings** are evolving to become more sustainable and serve people's needs in an inclusive and affordable way. **Infrastructure** must have the resilience to accommodate new demands while ensuring safety and security requirements. **Investment decisions and design processes** must embrace a wider range of factors and be more strategic long term. **Technological innovation** will bring radical changes to the construction value chain. A **long-term vision at EU level** is fundamental to facilitate change.

Mr Maroš Šefčovič (Vice-President of the European Commission for Energy Union) pointed to the role of the European construction industry regarding the response to **economic and societal challenges** such as jobs and growth, urbanisation, digitalisation, demographic changes, as well as energy and climate challenges. The **construction industry generates about 9% of European GDP and accounts for 18 million direct jobs**. Construction activities covering renovation work and energy retrofits add almost twice as much value as the construction of new buildings. Sustainable buildings can be one of the drivers for modernisation of the sector and its workforce. To move towards this transformation whilst at the same time delivering the much-needed clean energy

transition, the Commission adopted the new package "**Clean Energy for All Europeans**" last November. It includes the flagship **Smart Finance for Smart Buildings Initiative** which, alongside the Juncker Investment Plan and the European Structural and Investment Funds, will further boost investments in energy efficiency and smart buildings by public sector entities, energy services companies, SMEs and households. A significant part of these funds will be used at the level of **cities and regions**, where local and regional actors play a crucial role in supporting clean energy buildings, through decisions affecting such things as building codes and urban planning. The **New Skills Agenda,** published in 2016, will be highly relevant for delivering the new skills necessary to make construction processes more efficient and flexible. To end, Vice-President *Šefčovič* underlined that initiatives under the **Circular Economy package** could help to reduce costs related to construction materials and energy.

Dr Jan Mischke (McKinsey Global Institute) presented the results of the study 'Reinventing Construction: A Route to Higher Productivity '. The study argues that the construction industry can **catch up with total economy productivity** through actions in seven areas: regulation, collaboration and contracting, design and engineering, supply chain management, on-site implementation, technology and capability. Government intervention may support disruption and realign incentives. **Governments, as policy makers,** could combat informality and corruption, create transparency on cost and performance, increase speed and lower uncertainty of permit procedures, move to results-based and harmonised building codes, support land pooling, and develop skills. **Governments as owners** can pool projects into standardised portfolios of work, move to best value and performance-based contracting and tendering, support piloting of or mandate new approaches and technologies (e.g. BIM).

Mr Ofer Familier (Vayyar) presented an innovative **3D imaging sensor** that can look inside and through materials. The technology was originally developed for health applications and then expanded to other areas and sectors, including automotive and construction. *Mr Familier* stressed the importance of industry working with innovators, to develop new technologies. It is vital, therefore, that legislative frameworks should enable such cooperation to take place and thereby encourage the development of new ideas.

Mrs Nathalie de Vries (MVRDV) highlighted the need for healthier, inclusive and welcoming cities and the contribution of architects and planners in developing such designs that meet citizens' needs and wishes. *Mrs de Vries* identified five short-term actions to raise awareness and boost the modernisation of the sector:

- Increase **innovation**, providing a productivity opportunity ;
- Set **stricter regulations for sustainability**, for which integrated design is important;
- Enable businesses, especially small firms, to **experiment**;
- Support the **development of modern architecture firms**;
- Develop an **international construction agenda**. To support this point, Mrs de Vries took the Netherlands as an example, where a strategy has been adopted to achieve energy neutral buildings by 2020 and a completely circular construction sector by 2050.

Towards a sustainable built environment

Parallel Session A: Using construction to reshape our cities

There are increasing challenges in reshaping our cities. They need to be smart and sustainable, but also liveable, affordable, welcoming and resilient, which requires long-term **integrated urban development strategies** based on people's needs. To address such challenges, the EU Urban

Partnerships (based on the Pact of Amsterdam)[1] offer an example of new forms of cooperation between cities, national governments and the EC, based on an integrated approach at all levels.

When setting objectives and implementing strategies, cities and towns need to **exercise leadership and put in place their capabilities to deliver**. The Greek city of Trikala, which is being transformed into a 'smart' city under the city authority's leadership, prioritises citizen's needs and delivers practical solutions to their day-to-day problems.

Transformation also requires investment and, therefore, investors. So, it may be necessary to **extend such partnerships and to engage with the private sector.** However, many proposed investment projects are not bankable due to **competency issues in city authorities: some need** to develop or procure such capabilities in areas such as urban planning, finance, as well as IT. The importance of such expertise will increase in the future, as loans become more important compared to grants.

New regulations and standards are not a problem, provided these are fair and forward looking, and take into account the long timeframes and cycles inherent to urban planning and construction. Also, it is essential for local governments to **invest in public transport**, as this brings leverage to private (high-density) investment opportunities, thereby contributing to sustainable urban development.

It was reiterated that cooperation and partnerships between city authorities and national governments, but also between public and private actors, including the construction sector and financial institutions is important. In conclusion, the **session bridged two parallel worlds**, that of 'urban' with that of construction.

Finally, the need for **developing affordable housing** was underlined.

Parallel Session B: Sustainability – resource efficiency and beyond

Buildings serve different functions in our daily lives and should ultimately provide shelter to people. This needs to be done in a sustainable way. They must offer comfort and foster well-being, while being adjustable to changing demands. The European Commission presented 'Level(s)', an **integrated framework for sustainable building performance**, which takes these broader notions into account. The framework has been developed by the European Commission in collaboration with stakeholders and provides steer and support to the mainstream market on future sustainable buildings. It targets low greenhouse gas emissions and resource efficient material use throughout the life cycle, resource efficient use of water, healthy and comfortable spaces, adaptation and resilience to climate change and, finally, optimal lifecycle costs. It was noted that, by linking indicators to these characteristics, the framework will deliver a common sustainability language for the built environment and support the sector in its decision making. Stakeholders were encouraged to try out 'Level(s)' (call for first movers).

The session revealed general agreement that the framework for sustainable buildings performance is a useful reporting tool. By aligning Environmental Product Declarations (EPD), Life cycle assessment (LCA) and Building Information Modelling (BIM) the framework can support the **flow, transparency and comparability of data**. Moreover, it is simple and easy to understand and it can help financial institutions to release financial products for sustainable buildings.

Further, the session showed agreement on the demand for policy intervention **including legislation, standards and best practices.** However, it remains to be seen how the existing framework in Germany can be integrated with the European Commission's 'Level(s)' framework.

It was also stressed that **green and innovative public procurement** is an important strategic tool in the transition towards a more sustainable construction sector. However, tools should be provided to

[1] See https://ec.europa.eu/futurium/en/content/pact-amsterdam

make it easier for the mainstream market to embark on the route towards sustainable buildings, and not keep these tools exclusively to certain niche markets. Further, throughout the whole construction value chain, sustainability has to reflect the full life cycle and resource consumption in general (including energy), as opposed to only **energy efficiency.**

Towards a resilient construction sector

Parallel Session A: Innovation and Digitalisation and their impacts on business models

Innovation and digitalisation offer a range of opportunities to increase business volumes, raise productivity, and improve efficiency in construction. **Building Information Modelling (BIM)** allows the sharing of information which leads to better decisions along the value chain, from design to building, operation, maintenance, and demolition. Innovation and digitalisation have the potential to revolutionise the whole construction process and building lifecycle. For example, **3D printing and robotics** offer the prospect of less costly and timelier construction, saving on materials, and business opportunities for new players to enter the construction sector. Furthermore, **modern sensors** using the 'Internet of Things' allows to better monitor the construction process and improve control over the performance of buildings during their lifecycle, making them smarter, improving efficiency and saving valuable resources. The session showed how innovators and established actors see this evolving environment and their expectations concerning the role of the EU and of other public and private stakeholders.

The session indicated that ground-breaking changes are taking place right now and that the industry needs to embrace them, or face significant disruption, similar to the automotive sector. Throughout the conference **benefits of smart design and lifecycle management of buildings**, **automation** (off/on – site production), or **new techniques** (like 3D printing, drones, virtual reality, sensors) were presented through examples.

In terms of digitalisation, there is a need to **move from innovation to implementation,** including better and wider collection of data, more efficient management of the data using platforms, and more extensive use of the data in user-friendly applications. To speed up digitalisation, and in particular the use of BIM, governments and local authorities were called upon to be ambitious in their requirements and **procurement specifications**. The speakers concluded that if Europe can assist in kick-starting this new market, huge opportunities lie ahead for the sector as well as for citizens, and European companies can emerge as leaders in the global market.

Parallel Session: B: Skills - a capable workforce to deliver transformational change

Building capacity to effectively achieve current goals requires new ways of looking at skills and competencies. To be competitive and sustainable, while facing the challenges of an ageing workforce, migration and misalignment of skills, the construction sector has to foster new **technological, sustainability-related, managerial, and communication skills**. To increase the availability of a skilled workforce there is a strong need for wider sharing of good practices, such as innovative training approaches and successful Vocational Education and Training schemes that facilitate smooth school-to-work transitions. The educational system should offer more **flexibility** by providing the possibility of individual training for students. Such efforts can help to convert construction into a cohesive and innovative sector with an efficient allocation of limited human resources.

There was agreement in the session that working towards an improved built environment – meeting higher standards, working in new partnerships, enhancing productivity, promoting energy efficiency, working with new technologies – requires **new skills and modernisation of training**. The existing workforce has to be continuously up-skilled. Also, in order to attract young people and educate them, the **image of the sector** needs to be improved. The skills challenge can only be addressed by the industry itself, with support from the public sector. P**artnerships between employers and education**

providers are vital in this respect. The Blueprint for Sectoral Cooperation on Skills, Build Up Skills and the European Alliance for Apprenticeships were mentioned as positive examples.

Conclusions and vision for the future

Ms Fulvia Raffaelli (DG GROW, European Commission) summarised the key messages from the four parallel sessions. She underlined the necessity of designing a better built environment, which is smart, sustainable, energy efficient, welcoming and based on partnerships between all. Furthermore, public authorities need to provide clear messages about long-term goals and the timeframe for the construction sector to respond. *Ms Raffaelli* pointed to the importance of building a more resilient construction sector, which embraces innovations, new technologies, new business models and can raise its productivity. To achieve this, capacities need to be strengthened across the construction value chain including, among others, urban planning, IT, construction and finance. Finally, construction is a key enabler for reaching other policy goals related to sustainability, energy, digitalisation, employment, urban environment etc.

Ms Elżbieta Bieńkowska (Commissioner for Internal Market, Industry, Entrepreneurship and SMEs), in her concluding presentation, highlighted that the construction sector has long been a key focus for the European Commission. Firstly, **cities** are the source of many economic, environmental and social challenges and should play an important role in the solution. To this end, the EU's Urban Agenda seeks to improve the quality of life in urban areas and respond to these challenges. In addition, the construction industry has a big role in the context of **sustainability**, which is addressed in the Circular Economy Action Plan and last winter's Energy Union package. Working together with industry, the European Commission has developed several tools in this area (e.g. the assessment framework for the environmental performance of buildings, the construction and demolition waste management protocol, and the Green Public Procurement criteria for construction projects) and is now testing them. *Ms Bieńkowska* made a call for first movers to try these new tools. Further, it is crucial to embrace **digitalisation and innovation** in order to make construction processes and the operation of buildings and cities more efficient. *Mrs Bieńkowska* announced the launch of the Building Information Modelling Handbook[2] on the 6th of July 2017, which was produced by the EU BIM Task Group with the support of the Commission. Finally, with many changes relying on a competent workforce, **the development of time and purpose-appropriate skills** is vital for the future of the sector.

In his closing remarks, *Mr Gwenole Cozigou* (DG GROW, European Commission) pointed out that modernisation is a challenge for the construction industry, an industry anchored in traditional local markets. However, the European Commission is actively engaged on many fronts to help and support the construction value chain to build changes. He invited everyone to join the collaborative effort that the European Commission is implementing through the Construction 2020 Agenda, and that is being pursued through various EU flagship initiatives, such as the Energy Union, the Circular Economy and the Single Market.

[2] available at www.eubim.eu/handbook