European Council
of
Civil Engineers

CONSTRUCTION NEWS

by Aris Chatzidakis, ECCE President

11 June 2021

European Council
of
Civil Engineers

ECCE participates in the following forums related with the Construction Industry:

- **High Level Tripartite Forum**
- **Thematic Group 1 “Stimulating investment in building renovation, infrastructure and innovation”**
- **Construction 2050 Alliance**

European Council of Civil Engineers

High Level Tripartite Forum

EUROPEAN COMMISSION
Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

Sustainable Industry and Mobility
Circular economy and Construction

- The date for the **Meeting of the High Level Tripartite Forum 2021** has not been announced yet**.**
- ECCE has been participating in the meeting of the High Level Tripartite Forum.
- The 8th HLF meeting was held virtually on 17 June 2020 where ECCE was represented by the President Aris Chatzidakis.
- *Agenda of the 8th Meeting of the High Level Tripartite Forum*
- *Presentations delivered during the 8th Meeting of the High Level Tripartite Forum*

European Council of Civil Engineers

Thematic Group 1

(1)

EUROPEAN COMMISSION

Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

Sustainable Industry and Mobility

Circular economy and Construction

- The **Thematic Group 1 "Stimulating investment in building renovation, infrastructure and innovation" meeting** was held on **3rd December 2020** as online event.

- **ECCE Vice President/ President Elect Andreas Brandner** participated in the meeting representing ECCE.

- The meeting consisted of the following parts:
  - **Part 1: Digitalization of Construction – Towards a digital transition**
  - **Part 2: Initiatives and practical implementation of digitalization**

❑ The Agenda of the meeting is available here.
❑ The minutes of the meeting are available here.
❑ The presentations of the meeting are available here.

European Council of Civil Engineers

Thematic Group 1
Concluding Remarks

The necessary elements for **successful digitalisation of the sector are standardisation, a common approach to data and processes, language and classification systems**. In this context, harnessing the power of data and using open source approaches that can be shared among all the stakeholders across the building lifecycle are of utmost importance. **Upskilling and retraining of the workforce and culture change in the sector** are indispensable in this transformation. The process can only succeed if **stakeholders cooperate across the supply chain and between Member States**. The change should be driven by the sector itself, including SMEs, with the support of the public authorities. Construction-specific DIHs and other PPP initiatives could play crucial role in this.

European Council of Civil Engineers

Thematic Group 1

(3)

ECCE Vice President/President Elect's remarks

- The renovation wave still prefers the thermal renovation and lacks the holistic approach including structural upgrade. Infrastructure is only mentioned in a few words, but is not dealt with.
- The digital Europe Programme did not explicitly deal with construction and the needs of construction – in my point of view too theoretical.
- Horizon Europe – a new way to build is a good approach. It should be spread all over EU
- Digitalization is developed mostly on a national basis and not on an overall European basis, which makes the use difficult.
- The power of AI in construction and R&D – in construction you do not have a situation like in a producing industry with same production conditions throughout. Building is mostly a unique product and therefore is much more complex to deal with. As we have a lot of different languages in Europe software should not only be in English but also in other official languages of Europe.
- BIM – There is still a need of a more precise definition of BIM. Need of European standards.
- Digital Building Permit – works well in Estonia as it was setup completely new. It is difficult to implement as there are different national laws, standards, etc. (even within countries there are different building laws)

European Council of Civil Engineers

Construction 2050 Alliance

(1)

- The **"Construction 2050 Alliance"** is a partnership established in 2020 made of 47 European organisations representing the actors of the built environment working together to advance the needs and priorities of the wider construction and built-environment sector at EU level.

- The European Council of Civil Engineers is a member of the C2050 Alliance.

European Council of Civil Engineers

Construction 2050 Alliance (2)

Latest activity

- **C2050 Alliance Event on the role of construction in the national Recovery Plans**
  - On 2 December, the Construction 2050 Alliance brought together experts from all over Europe, including representatives from the European Commission, the European Parliament and national governments. They discussed the important role that the construction sector may play as the European economy recovers slowly from the COVID-19 pandemic. **The Alliance's key message is that the built environment must be a key priority in all national Recovery plans and in the new EU funding initiatives.**

- **Construction 2050 Alliance meets with the Cabinet of Commissioner Breton**
  - On 28 January the Construction 2050 Alliance held a meeting with the Cabinet of Commissioner Breton and discussed the construction-related priorities for the Commission for 2021, the forthcoming new Industrial Policy and the role of construction in the recovery from the Covid pandemic.

European Council of Civil Engineers

Construction 2050 Alliance

Latest activity

- **The Construction 2050 Alliance launches its website and social media**

Website	www.euconstruction2050.eu
Twitter account	@ConstructEU2050
LinkedIn page	Construction 2050 Alliance

European Council of Civil Engineers

Construction 2050 Alliance

Latest activity

- **EU Industrial Strategy: the construction value-chain stands ready to define a pathway for transition to achieve EU goals**

- On 5th May, the European Commission released the new EU Industrial Strategy, which puts a renewed focus on the key ecosystems, including construction.

- ECCE, the European Council of Civil Engineers, as member of the Construction 2050 Alliance, welcomes the priority given to the construction ecosystem as one of the sectors that faces the most important challenges in meeting climate and sustainability goals and in embracing the digital transformation.

- Check out the Construction 2050 Alliance Press Release

European Council of Civil Engineers

Construction 2050 Alliance

Latest activity

The idea is to present some concrete examples to dispel false myths about the construction sector and to discuss the regulatory and financial framework needed to enhance the positive potential of the construction sector, so to crucially contribute to the achievement of the main EU priorities and goals.

Registration through the link http://bit.ly/3p6uphg

European Council of Civil Engineers

Renovation Wave Initiative

- The **Renovation Wave initiative** is a priority under the European Green Deal and the recovery plan for the EU, aimed at **increasing the rate and quality of renovation of existing buildings and thereby help decarbonise the building stock.**

- Given the relatively labour-intensive nature of renovation work and the way in which this matches the "green, digital and resilient" ambition of the Commission recovery package, the Next Generation EU Communication talks of regulatory and financial support to "at least doubling the annual renovation rate of existing building stock".

- The Renovation Wave Initiative is one of the main fields of focus for ECCE as well as for the Construction 2050 Alliance.

European Council of Civil Engineers

Renovation Wave Initiative

- ECCE contributed to the Public Consultation on the Renovation Wave Initiative. ECCE's response to the Public Consultation can be accessed here.

- ECCE has also addressed an additional Statement on the Renovation Wave Initiative to the DG ENERGY which highlighted the need of a holistic approach to the buildings' renovation following the Sustainable Structural Design (SSD) methodology principles.

- The statement is presented in the following slides.

European Council of Civil Engineers

Renovation Wave Initiative (3)

ECCE's Statement

ECCE's statement regarding the EU Commission's "Renovation Wave Initiative"

The European Council of Civil Engineers (ECCE) welcomes the new initiative of the European Commission to launch a 'Renovation Wave' for public and private buildings to address the twin challenge of energy efficiency and affordability.

As the communication states "An integrated approach to building renovation means boosting
energy performance of buildings by applying the 'energy efficiency first' principle, deploying renewables, preparing for climate impacts, deploying urban green and blue infrastructure and incorporating circular economy, waste treatment and pollution prevention principles."

Although we agree with the concept of a wider and integrated approach of renovation, we have to remark that it is still far from a holistic view of the problem of maintaining and upgrading the performance of existing buildings and infrastructure. We would like to state that renovation and retrofitting works need to be done in parallel with other necessary interventions so that the essential requirements established in the construction products Directive are also respected.

European Council of Civil Engineers

Renovation Wave Initiative (4)

ECCE's Statement

We would like to remind that according to the existing Directives structures shall fulfill the following essential requirements:

- Structural resistance and stability
- Safety in case of fire
- Hygiene, health and the environment
- Safety and accessibility in use
- Protection against noise
- Energy economy and heat retention
- Sustainable use of natural resources

The vast majority of the existing European building stock has been built without modern provisions for earthquake resistance and energy efficiency, resulting in seismic vulnerable and low energy performance buildings.

Europe's basic traffic (road and railway) infrastructure was built mainly between the years 1950-1980. It counts already 40-60 years of life. When the infrastructure was designed and constructed, technical knowledge was quite different as far as several factors of outmost importance in designing are concerned. That is durability maters, earthquake risk and seismic loads, analysis methods and modeling facilities, pollution impact on ageing process of structures and completely different, less heavy, traffic loads.

European Council of Civil Engineers

Renovation Wave Initiative
ECCE's Statement

These assets of European countries need urgent maintenance and retrofitting to keep their value and meet today's functional and safety standards. They need to be upgraded if Europe wants to maintain its productive and human life respect standards.

This represents a huge renovation and maintenance volume which Europe has to deal with during the next years. And what is more, this has to be carried out in a sustainable and innovative way. The application of research based, advanced asset and risk management methodologies, is necessary in order to further increase the efficiency of interventions.

Additionally, in the Directive (EU) 2018/844 of 30 May 2018, in Article 7, it is stated that:

'Member States shall encourage, in relation to buildings undergoing major renovation, high-efficiency alternative systems, in so far as this is technically, functionally and economically feasible, and shall address the issues of healthy indoor climate conditions, fire safety and risks related to intense seismic activity.'

European Council of Civil Engineers

Renovation Wave Initiative

ECCE's Statement

Sustainability has become one of the most ambitious challenges for Europe's growth, according to 2020 Europe Strategy. The construction sector bears a huge responsibility in relation to sustainable development because of several impacts that derive from its three dimensions: environment, economy and society.

A building has to fulfill its own performance not only in the abovementioned common triple-bottom line of sustainability, but also in usability, capacity, reliability, safety and comfort. In this context, designing a sustainable construction turns out to be a very complex issue and therefore a holistic approach is the key for sustainability in the construction sector.

The construction sector needs to develop new ways and methods from the conception to the construction of structures, aiming to achieve a competitive sustainable building market. In order to obtain this European objective, a new design methodology is needed, focusing on a multi-performance and life-cycle oriented approach. Sustainable Structural Design (SSD) methodology addresses the possibility to include environmental aspects from the very beginning of the project in structural design, so that proper decisions with regard to design options can be made in the most influential stages of design. The new generation of Eurocodes will enlarge our understanding for sustainability.

European Council of Civil Engineers

Renovation Wave Initiative
ECCE's Statement

For existing buildings SSD means that when renovation projects of a certain scale are undertaken, structural upgrade should be considered and funded jointly with functional and energy efficiency upgrade.

It is reasonable to state that investing in siloed energy efficiency renovation schemes overlooking building's safety is unwise to say the least, even more in seismic hazard regions, where the first seismic episode after renovation may bring down all the energy-efficient renovated unsafe buildings.

So, we would like to state that this renovation wave shall promote and fund interventions according to the holistic approach of upgrading the existing buildings and infrastructure and of course structural safety shall be the first target of renovation.

European Council of Civil Engineers

Joint Research Center Pilot Project Workshop "Integrated techniques for the seismic strengthening and energy efficiency of existing buildings"

(1)

From 16 to 19 November 2020, the European Commission's Joint Research Center organized a Workshop on the Pilot Project "Integrated techniques for the seismic strengthening and energy efficiency of existing buildings".

The pilot project puts forward a holistic approach to improve simultaneously the seismic safety and energy efficiency of the European building which is completely aligned with ECCE's 3S Initiative and the recent ECCE Position Paper on "The Need for integrating Structural / Seismic Upgrade of Existing Buildings, with Energy Efficiency Improvements".

ECCE was invited to participate in this Workshop.

European Council of Civil Engineers

Joint Research Center Pilot Project Workshop "Integrated techniques for the seismic strengthening and energy efficiency of existing buildings"

(2)

The workshop had the following objectives:

- Create awareness among participants of the issue's challenges and opportunities
- Engage stakeholders to create a network for information exchange
- Present the pilot project and share the knowledge produced
- Exchange ideas on technical/scientific and policy issues
- Collect feedback on needs, knowledge gaps and expectations to inform efforts in the second phase of the pilot project.

ECCE President Aris Chatzidakis participated as speaker on the first day of the Workshop where he presented the main points of ECCE's Position Paper on the need for integrating seismic upgrade of existing buildings with energy efficiency improvements. ECCE President in his presentation **stressed the importance of the holistic view of the problem of maintaining and upgrading the performance of existing buildings and infrastructure and the need that this approach is integrated in the European Commission's Renovation Wave Initiative.**

The Workshop's report can be accessed here

European Council of Civil Engineers

ASCE 2018: Future-proofing infrastructure often means going back to basics (1)

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

The American Society of Civil Engineers (ASCE) gave US infrastructure an overall grade of D+ in the 2017 Infrastructure Report Card for good reason. Our infrastructure is aging, deteriorating, and holding our communities back; we are relying on **infrastructure built more than a century ago to meet the needs of a completely changed world**.

The **backlog of infrastructure projects** related to drinking water manifests itself in broken water mains—an average of one every two minutes.2 **We depend on a network of roads and bridges that were designed in the Eisenhower era or before**.

With earthquakes, wildfires, volcanic eruptions, rising sea levels, and hurricanes dominating the headlines, it is crystal clear that **our system of aging infrastructure needs to be made resilient**. As engineers, we are working to rebuild and upgrade infrastructure to better withstand these challenges, **operating under the assumption that hazard events will continue with increasing regularity and severity. But that's only one element of what it means to future-proof our infrastructure**.

European Council of Civil Engineers

ASCE 2018: Future-proofing infrastructure often means going back to basics (2)

Infrastructure that is designed to meet future needs and withstand future hazards often incurs a higher initial cost. However, it is a worthwhile investment that pays for itself in the long run; the National Institute of Building Sciences estimates that every dollar spent on making infrastructure more resilient saves $6 – an improvement over 2005, when the ratio was 1 to 4.

As we make plans to repair and upgrade our infrastructure with an eye to the future, the following five steps will have an outsize impact:

- Building a foundation of data,
- Evaluating the full life cycle of a project,
- Considering a variety of disaster scenarios,
- Looking to land use and context-sensitive solutions,
- Supporting research and development that can be applied to the infrastructure sector.

The backlog of infrastructure maintenance in the United States presents an opportunity to go beyond the status quo. Optimizing our infrastructure investments will require civil engineers and community leaders to rethink and reinvent every stage of project delivery and embrace the challenge to innovate and to transform our practice. We can learn from past successes and failures and **design our infrastructure to be resilient—built for today and ready for tomorrow.**

European Council of Civil Engineers

Spotlight on Infrastructure Investment

(1)

- **An International Monetary Fund (IMF) report has recommended that governments invest in infrastructure spending as a response to Covid-19.**

- The IMF's most recent Fiscal Monitor publication said investment in infrastructure would prepare economies for the transition to the post-Covid-19 world and help create jobs.

- The report said; "increasing public investment in advanced and emerging market economies could help revive economic activity from the sharpest and deepest global economic collapse in contemporary history."

- "It could also create millions of jobs directly in the short term and millions more indirectly over a longer period. Increasing public investment by 1 percent of GDP could strengthen confidence in the recovery and boost GDP by 2.7 percent, private investment by 10 percent, and employment by 1.2 percent".

European Council of Civil Engineers

Spotlight on Infrastructure Investment

(2)

- According to the IMF, even before the pandemic public investment had been weak for more than a decade; “despite crumbling roads and bridges in some advanced economies and massive infrastructure needs for transportation, clean water, sanitation, and more in most emerging and developing economies.

- “Investment is now urgently required in sectors critical to controlling the pandemic, such as health care, schools, safe buildings, safe transportation, and digital infrastructure.”

- The IMF’s Fiscal Report can be viewed here.

European Council of Civil Engineers

European Infrastructure: Aging and poorly maintained

(1)

The decade-long policy of austerity imposed across Europe has in general been accompanied by a generalized **cut in public investment in infrastructure** and, above all, in the budget allocated to **maintenance and upgrading of the existing infrastructure**.

These economic circumstances unfortunately coincide with the completion of 40-60 years since the creation of Europe's basic infrastructure in the 60s and 80s. This means that **basic infrastructure, mainly transport and hydraulic, is starting to deplete their technically expected life span**.

Therefore, the phenomena of failures and accidents that are happening more and more frequently are technically expected and obviously a **broad maintenance program and upgrade of our infrastructure is required**. It is not just the **issue of aging** that needs to be addressed. There are also serious developments in our scientific knowledge that needs to be incorporated into them, and, above all, the **increase in design traffic loads and speeds** with which they have been calculated in relation to the current ones. In countries with high seismicity like Greece, the relevant knowledge and security levels of today's constructions have nothing to do with those of the time when designing and constructing these infrastructures.

European Council of Civil Engineers

European Infrastructure: Aging and poorly maintained

(2)

Of course the **problem exists across Europe**. In France, the Minister of Transport estimates that one-third of the country's 12,000 bridges are in need of maintenance. In 7% of the cases, the situation is considered to be risky for collapse so there is a need to immediately address the problem, and it has been proposed that the loads are reduced on them.

In Germany, while only 12.5% of bridges are considered to be in poor condition, only 12.5% are considered to meet modern requirements. The rest is clear that they were not designed for today's loads.

In Italy they estimate that some 300 bridges are at risk of failure and there is a sense of depletion of the basic infrastructure life cycle in the technical world.

These infrastructures are vital for Europe's economic, social and regional development and to this end they have been identified as Trans-European Networks. I recall, in order to be aware of the magnitudes, that the extensive Trans-European Network includes 136,706 km of motorways and 138,072 km of railway lines.

European Council of Civil Engineers

European Infrastructure: Aging and poorly maintained

(3)

So there is a European dimension problem and a European dimension policy is needed. Currently, there are thoughts and processes at Committees level, but we strongly believe that this matter should be among the priorities of the next programming period.

In Greece a considerable amount of work has been carried out at the technical preparations level. The Technical Chamber of Greece (TCG) has organized a number of workshops on these issues. Since 2002 the Earthquake Planning and Protection Organization (EPPO) has issued Instructions for the Inspection and Evaluation of Bridges. The Ministry of Infrastructure, Transport and Networks issued also in 2009 detailed Manuals for Bridge Autopsy and Assessment. EGNATIA SA has an updated monitoring and maintenance program and accumulated know-how. ERGOSE also proceeds to the instrumental monitoring of its network bridges. Also, maintenance has been carried out on several existing bridges and there are studies ready for implementation.

European Council of Civil Engineers

European Infrastructure: Aging and poorly maintained

Obviously, the scale of needs requires a much more organized approach and the Minister's announcement to establish a country's infrastructure register will help to record and know of the existing capacity so that we do not need to search to find out who has the responsibility and ownership of an infrastructure every single time. In addition to the necessary organizational and managerial effort, the unified administrative structure, the modernization of monitoring methods and the assessment of infrastructures, it is clear that significant resources will have to be mobilized either from Community resources or from national or other mixed funding methods.

European Council
of
Civil Engineers

- **SO I SUGGEST THAT THE NEXT ECCE MANIFESTO SHOULD BE ON INFRASTRUCTURE INADEQUACY OF EUROPE**

THANK YOU