



# Construction 2020 - Competitività e sostenibilità nel settore delle costruzioni

**Bruxelles, 19 febbraio 2018**

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# Piano d'azione "Construction 2020"\*

- ✓ *Stimolare condizioni favorevoli agli investimenti*
- ✓ *Migliorare la base di capitale umano*
- ✓ *Migliorare l'efficienza delle risorse e l'impatto ambientale*
- ✓ *Rafforzare il mercato interno dei prodotti e servizi*
- ✓ *Promuovere la competitività globale delle imprese di costruzioni dell'UE*

\* **COM (2012) 433 final**

# Collegamenti con le priorità dell'Unione Europea

**Unione dell'Energia**  
**Piano d'Investimento  
per l'Europa**

**Efficienza  
energetica  
&  
Innovazione**

**Competenze  
&  
qualificazioni**

**Nuova agenda per le  
competenze per  
l'Europa**

**Economia Circolare**

**Efficienza  
delle risorse**

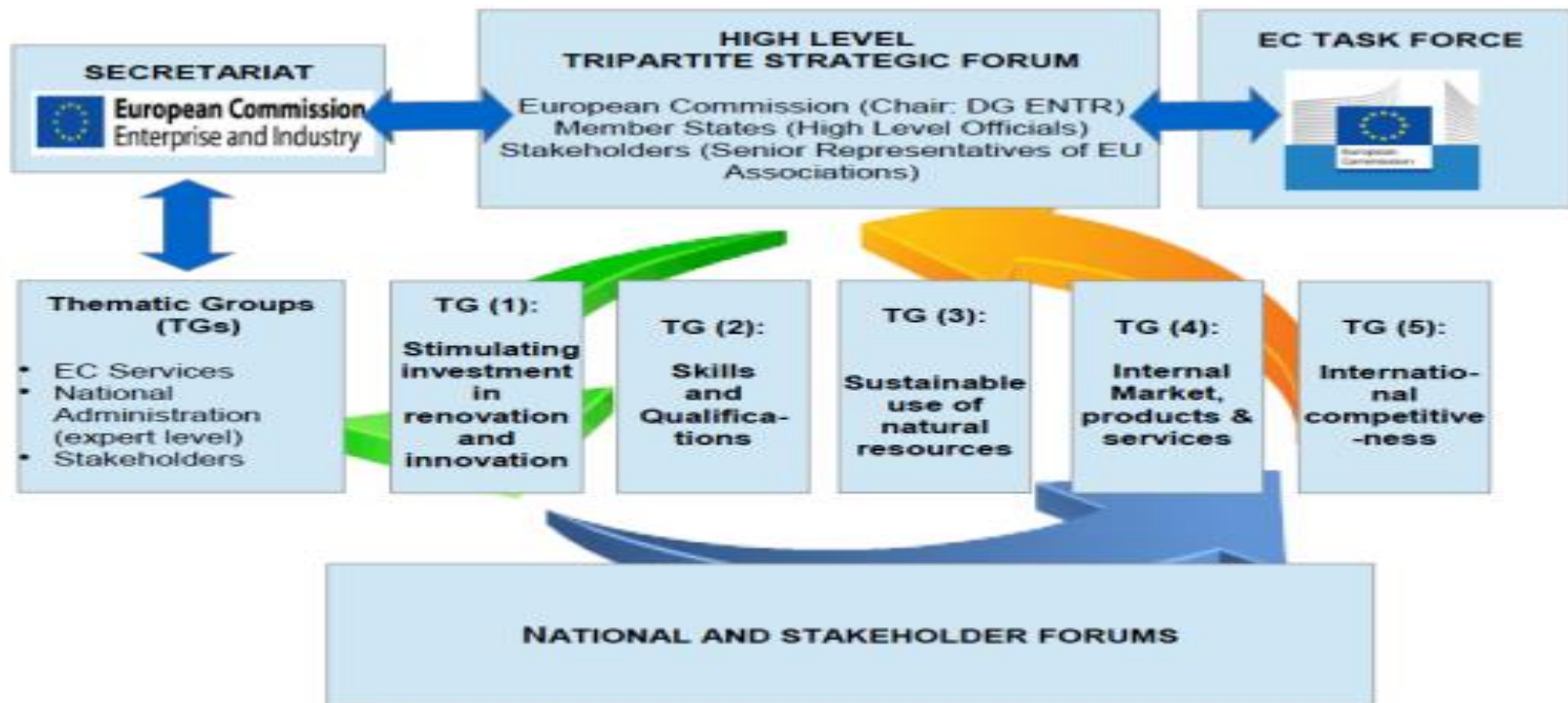
**Mercato  
interno**

**Mercato Unico  
(Digitale)**

**Mercati  
internazionali**

**A Stronger Global Actor  
EU External Investment Plan**

# Construction 2020 - Governance





# Strumenti finanziari



European Commission

### Structural Funds



European Structural Funds 2014-2020 →

### AALJP



Ambient Assisted Living Programme →

### EaSI



Employment and Social Innovation →

### ERASMUS +



Education, Training & Youth Work →

### HORIZON 2020



The financial instrument implementing the EU Innovation Union objective →

### LIFE



EU's funding instrument for the environment →

### INTERREG



Innovation & Environment: Regions of Europe sharing solutions →

### AMIF



The Asylum, Migration & Integration Fund →

### EFSD



European Fund for Strategic Investments →

### UIA



Urban Innovative Actions →

### EFSD



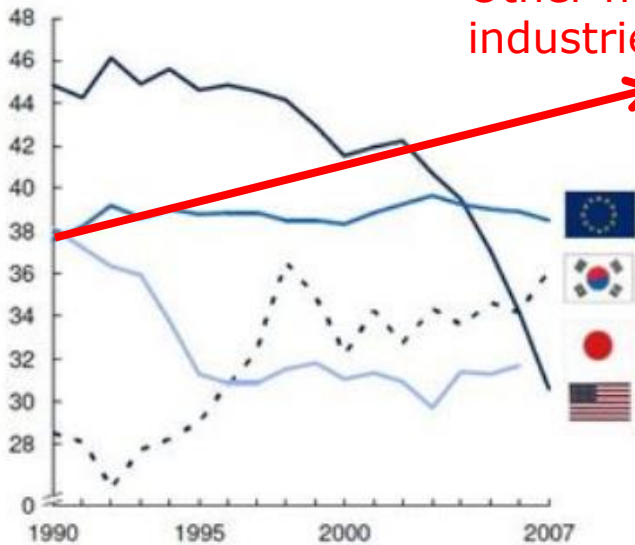
European Fund for Sustainable Development →



# Digitalizzazione

# Declining productivity and low digitalisation

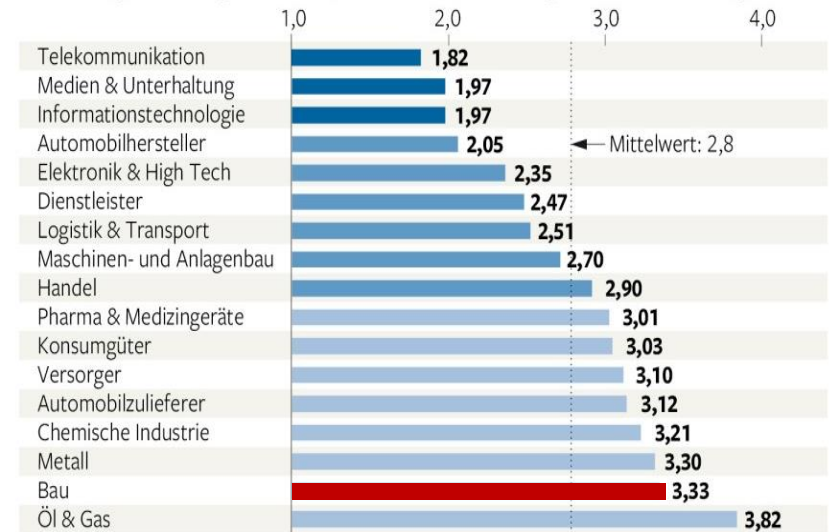
Construction productivity  
GVA per hour worked in 2007 PPP \$



Other non-farm  
industries

## Digitalisation

Bewertungsskala 1 = größtenteils, 2 = teilweise, 3 = wenig, 4 = ansatzweise digitalisiert



SOURCE: EUKLEMS; Associated General Contractors of America, 2011; U.S. Bureau of Labor Statistics

QUELLE: TOP 500 STUDIE 2014/ 

# BIM nella direttiva appalti pubblici 2014/24

- *Art. 22 (4) "Per gli appalti pubblici di lavori e i concorsi di progettazione, gli Stati membri **possono richiedere l'uso di strumenti elettronici specifici, quali gli strumenti di simulazione elettronica per le informazioni edilizie o strumenti analoghi.***
- *In tali casi, le amministrazioni aggiudicatrici **offrono modalità alternative di accesso [...] fino al momento in cui tali strumenti divengono generalmente disponibili ai sensi del paragrafo 1, primo comma, secondo periodo.**"*

→ **Costi?**



→ **Necessità di un approccio comune per l'introduzione del BIM negli appalti pubblici**

# EU BIM Task Group



## Handbook

→ guiding principles for

- a common understanding of BIM
- an agreed specification of “EU BIM Performance Level” for public sector construction projects, including
  - common concerns, i.e. IPR, liability, ownership, payment
  - technical, data, process
  - roles and skills

# Digitising European Industry





### DT-ICT-07-2018-2019: Digital Manufacturing Platforms

- 2018: Agile Value Networks:  
Lot-size One
- 2018: Zero-defect Processes  
and Products
- 2019: Machines & Human  
Competences
- 2019: Sustainable Value  
Networks

2018: 48 M€  
2019: 47 M€



### DT-ICT-08-2019: Agricultural Digital Integration Platforms 30 M€

### DT-ICT-09-2020: Digital Service Platforms for Rural Economies 30 M€



### DT-ICT-12-2020: Smart Hospital of the Future 25 M€

### DT-TDS-01-2019: Smart and Healthy Living at Home 60 M€



### DT-ICT-10-2018-2019: Interoperable and Smart Homes and Grids 30 M€

### DT-ICT-11-2019: Big Data Solutions for Energy 30 M€

← **Cross-cutting issues, IoT, Big Data, Security...** →

DT-ICT-13-2019: Digital Platforms/Pilots Horizontal Activities, 4 M€  
Including Preparation of a digital industrial platform for the construction sector, 1 M€



- Preparatory action to envision how the construction sector will look like in the future and to define the **roadmap**.
- Spot the improvement potential in the whole construction lifecycle for a more sustainable sector. Optimising resource use, environmental performance, energy-efficiency, health or comfort, aligned with the **Circular Economy** Action Plan.
- Identify how **novel** technologies/approaches in the construction sector fit together and which are the tangible contributions from European key players to the platform building process.
- Identify the **barriers** for the digitisation of the construction sector and the adoption of new technologies.
- Promote an active **eco-system** of relevant stakeholders, including start-ups and SMEs.
- **Instrument** to pave the way for digital industrial platforms in the construction sector

### **c) Preparation of digital industrial platform for construction sector**

- Define reference architecture for digital industrial platform for construction sector
- Take into account Level(s), the recently developed framework to assess environmental performance of buildings, including circular economy aspects \*
- Take stock of ongoing initiatives, promote mutual learning and coordination, and identify knowledge and intervention gaps
- Building Information Modelling and building passports are part of scope

- 1 M€
- Deadline: 14<sup>th</sup> November 2018
- At least one CSA will be supported

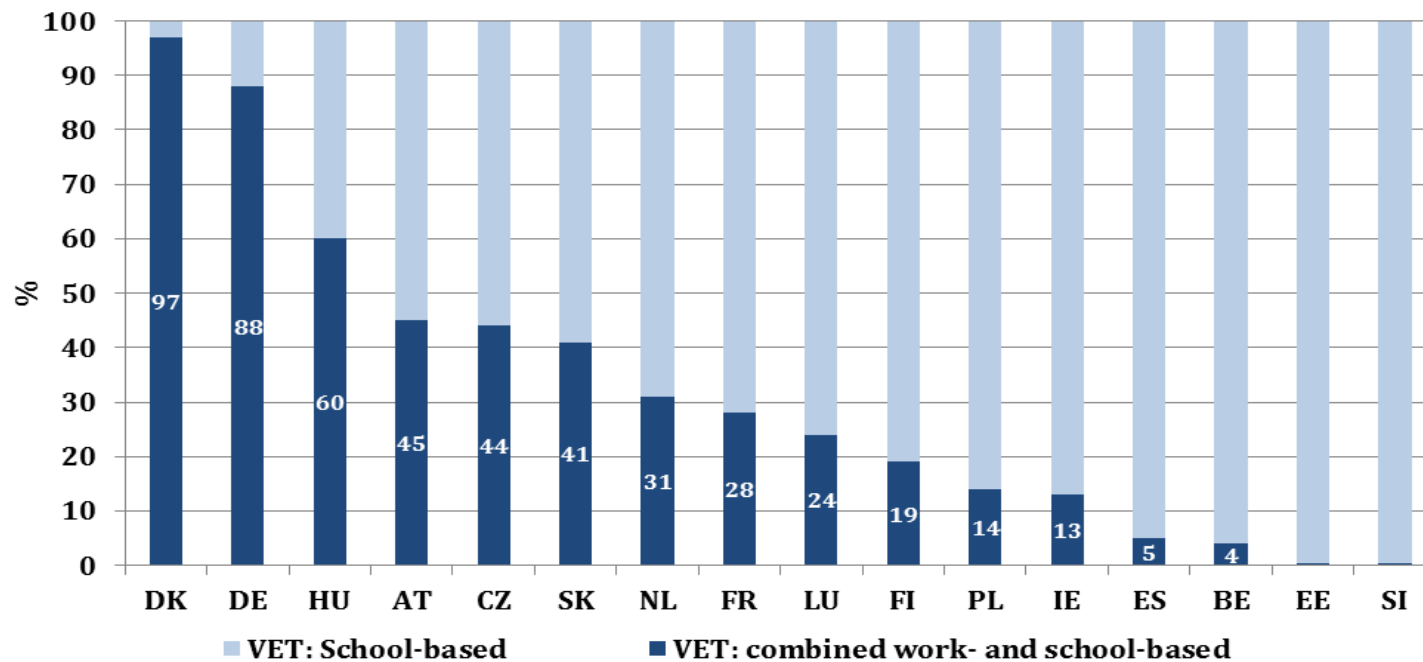
\* <http://ec.europa.eu/environment/eussd/buildings.htm>

- [Publication](#) LEIT-ICT Work Programme 2018-20
- Digitising European Industry [WG2 report](#)
- Industrial Innovation [Information Days](#)  
Brussels, 3-4 Oct 2017
- Workshop "[Digital Manufacturing Platforms for Connected Smart Factories](#)"  
Brussels, 19 Oct 2017
- Digitising European Industry  
<http://bit.ly/DigIndEU>  
@DigIndEU



# Competenze e qualificazioni

# Work-based learning is still an exception



**Proportion of VET students enrolled in combined work- and school-based VET, as a % of all students in upper secondary VET (2010)**

## Apprenticeships lead to jobs

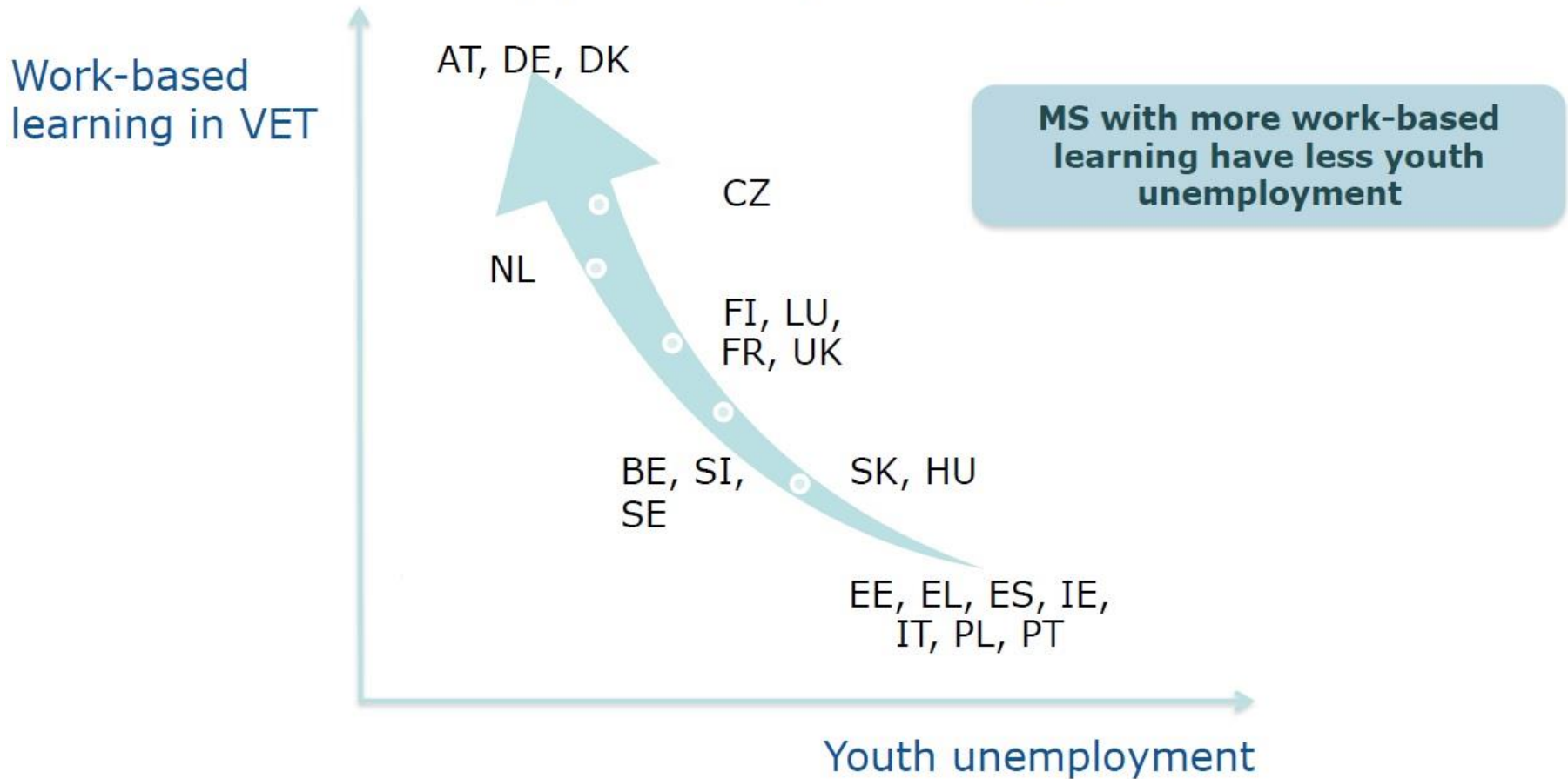


Illustration based on a comparison of the level of youth unemployment (4th quarter 2011) in relation to the share of students participating in work based learning at ISCED 3 level programmes (Cedefop)



## ***New Skills Agenda for Europe***

*Communication COM(2016) 381 – adopted on 10 June 2016*

*launched the Blueprint for Sectoral Cooperation on Skills initiative for selected sectors*

*a project supported by EUR 4 million (80%), 4-years long*

*2016 – 1<sup>st</sup> wave (6 sectors), 2017 – 2<sup>nd</sup> wave (6 sectors including construction), another waves may follow*

# Blueprint for cooperation on skills

- *facilitate the further creation of partnerships, in particular between employers and education providers,*
- *help to develop skills responses to technology deployment and innovation*
- *make easier a wider sharing of good practices*
- *help the sector to attract its fair share of young talent*

# Which areas will be supported for construction?

*1, energy efficiency*

*2, digitalisation*

*3, circular economy including bio-based and secondary recycled products*

***More information about the call available at:***

***[https://eacea.ec.europa.eu/erasmus-plus/actions/key-action-2-cooperation-for-innovation-and-exchange-good-practices/sector-skills-alliances\\_en](https://eacea.ec.europa.eu/erasmus-plus/actions/key-action-2-cooperation-for-innovation-and-exchange-good-practices/sector-skills-alliances_en)***

***Deadline: 28 February 2018 at 12:00 (midday)***



# Efficienza delle risorse

# COM(2015) 614 finale – Piano d’azione UE per l’Economia Circolare

## Construction and Demolition

Pre-demolition assessment <b>guidelines</b> for the construction sector.	2017
Voluntary industry-wide <b>recycling protocol</b> for construction and demolition waste.	2016
<b>Core indicators</b> for the assessment of the lifecycle environmental performance of a building, and incentives for their use.	2017 onwards

# EU Construction and Demolition Waste Management Protocol

- Increased demand for C&D recycled materials
- New business activities
- Increased cooperation along the value chain
- Progress towards meeting C&D waste targets
- Progress towards harmonised EU markets for C&D recycled materials
- Generation of reliable C&D waste statistics
- Reduced environmental impacts and contribution to resource efficiency

EU Construction & Demolition Waste Management Protocol

Based on volume, the construction and demolition (C&D) waste sector generates more waste than any other sector. In a lifetime, a typical person generates about 100 tonnes of waste, of which about 20 tonnes are C&D waste. How much of this waste is recycled? And if not, where does it go? Are there better solutions...

the EU.

This Protocol fits within the Construction 2020 strategy, as well as the Communication on Resource Efficiency Opportunities in the Building Sector. It is also part of the more recent and ambitious Circular Economy Package that the European Commission has adopted. Its overall aim is to increase confidence in the C&D waste management process and the trust in the quality of C&D recycled materials. This will be achieved by:

- Improved waste identification, source separation and collection;
- Improved waste logistics;
- Improved waste processing.



Recycling and re-using of C&D waste is the answer. Proper management of C&D waste and recycled materials - including the correct handling of hazardous waste - can have major benefits in terms of sustainability and the quality of life. But it also can provide major benefits for the EU construction and recycling industry, as it boosts demand for C&D recycled materials.

The Waste Framework Directive requires that 70% of C&D waste be recycled by 2020. However, with the exception of a few Member States, only about 50% of C&D waste is being recycled. The good news is that some Member



of quality management, and e) Appropriate policy and framework conditions.

This Protocol has been developed for application in all 28 Member States of the European Union and has the following target groups of stakeholders:

- Industry practitioners, construction sector (including renovation companies and demolition contractors), construction product manufacturers, waste treatment, transport and logistics as well as recycling companies;
- Public authorities at local, regional, national and EU levels;
- Quality certification bodies for buildings and infrastructure;
- Clients of C&D recycled materials.

The Protocol includes good practices from across the EU that can be sources of inspiration for both policy makers and practitioners. It also includes an overview of definitions and a checklist for practitioners.

This initiative has been launched by the European

Commission, with the support of the Commission's contribution from industry and national government officials according to the tripartite principle of the Construction 2020 initiative.



Ref. Ares(2017)1500669 - 2003/2017



EU Construction & Demolition Waste Management Protocol



[http://ec.europa.eu/growth/toolsdatabases/newsroom/cf/itemdetail.cfm?item\\_id=8985](http://ec.europa.eu/growth/toolsdatabases/newsroom/cf/itemdetail.cfm?item_id=8985)

## Protocol translations & Presentations

### Roadshow in 6 capitals + events

- **Information:** meeting national stakeholders and authorities
- **Networking:** opportunities and enthusiasm for best practices
- **Reach:** Press coverage in trade and business media



Roadshow presentations:

[http://ec.europa.eu/growth/content/workshops-eu-construction-demolition-waste-management-protocol-6-eu-capitals\\_en](http://ec.europa.eu/growth/content/workshops-eu-construction-demolition-waste-management-protocol-6-eu-capitals_en)

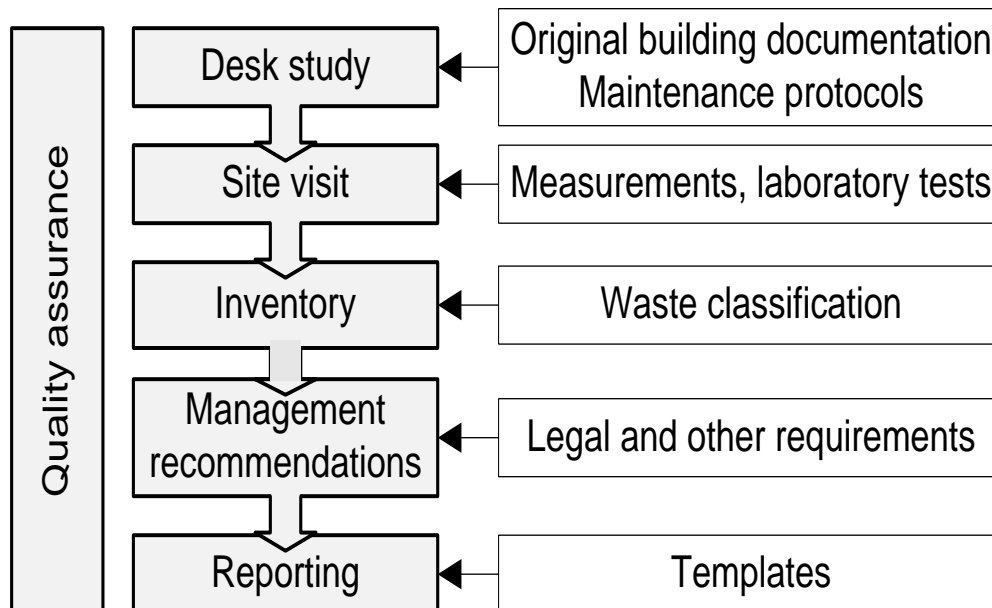
Protocol translations:

<http://ec.europa.eu/DocsRoom/documents/20509/attachments/1/translations/>

# Guidelines for Pre-demolition & renovation waste audits

Development of Specific Tools and/or Guidelines for Assessment of Construction and Demolition Waste Streams prior to Demolition or Renovation of Buildings and Infrastructures

- a specific task within the project planning
- the first step towards recycling
- fair competition amongst contractors
- awareness and traceability processes.
- assurance that contaminants are safely removed
- better demolition waste management



# Indirizzi del protocollo

## Barriere per il mercato delle materie secondarie

- Alcuni Stati Membro hanno raggiunto tassi di recupero pari a circa il 90%, altri sono ancora arretrati
- Bassa qualità percepita dei materiali derivati dai rifiuti

## Insieme comune di principi per aumentare la fiducia

- Professionalità degli operatori dell'industria del recupero dei rifiuti da C&D e diffusione delle migliori pratiche
- Sostegno e apporto delle autorità pubbliche
- Trasparenza, tracciabilità, monitoraggio e diffusione di dati

# Level(s)

## EU approach to sustainable building performance reporting

- Tracking the levels of sustainability performance of buildings, taking into account the full life cycle.
- For different building professionals at different stages of a building project.
- Supports different levels of sustainability maturity, from beginners of assessment to LCA professionals.

<http://ec.europa.eu/environment/eussd/buildings.htm>

Test phase

Conference on 4 December 2017, Brussels



In progress

Finalisation of the project



2019



Level(s)

Building sustainability  
performance

#BuildCircular



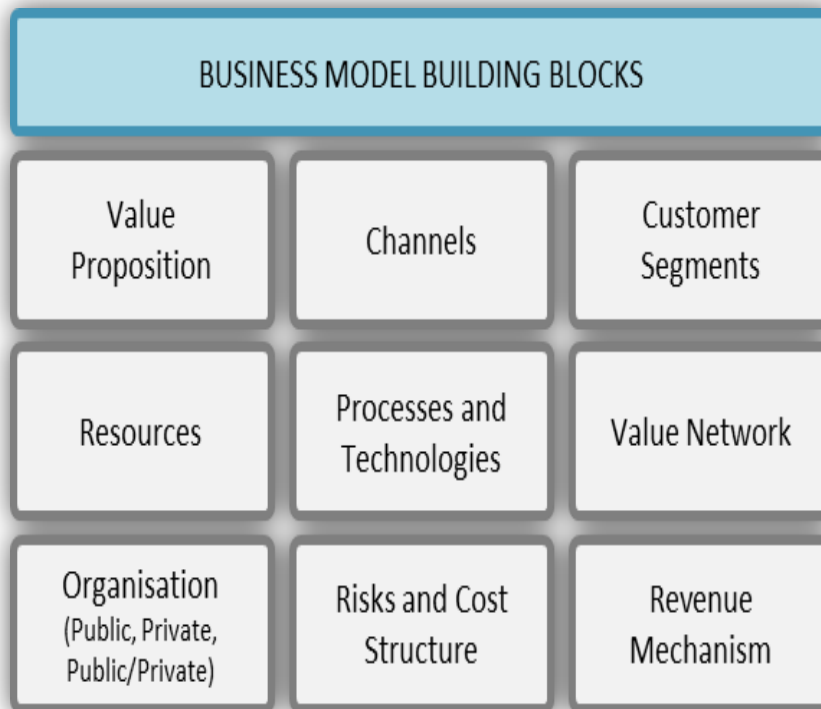
## MACRO-OBJECTIVES & INDICATORS

<b>1. GHG Emissions</b> Along the building lifecycle	<b>Primary &amp; Delivered Energy consumption in use:</b> kWh/m <sup>2</sup> /yr	<b>Global Warming Potential</b> embodied CO <sub>2</sub> eq./m <sup>2</sup>	Service life Adaptability Deconstruction/Reuse/Recyclability	<b>Other LCA Criteria:</b> o zone depletion, acidification, eutrophication, Photochemical o zone creation
<b>2. Material Impacts</b> Low Impact material life cycles	<b>Bill of Materials:</b> Abiotic fossil fuels, minerals and metals, Biotic materials	<b>Waste Flows:</b> kg/m <sup>2</sup> Disposed, reused, recycled, E recovery		
<b>3. Water Use</b> Circular use of water resources	<b>Use Phase Consumption:</b> m <sup>3</sup> /occupant/yr			
<b>4. IEQ</b> Healthy & comfortable spaces	<b>Indoor Air Quality:</b> ventilation rate l/s/m <sup>2</sup> ; CO <sub>2</sub> ppm; RH % <b>Pollutants:</b> TVOC, CVOC, RI VOC, formaldehyde, benzene, PM <sub>2.5</sub> & 10 <b>Thermal Comfort:</b> % time out of range degree days or hours		<b>Light</b> <b>Acoustic</b> <b>Visual</b>	
<b>5. Climate Change</b> Adaptation, resilience & impact	<b>Extreme weather events under future climate scenarios:</b> <b>Thermal Comfort:</b> % time out of range degree days or hours 2030/2050 <b>Flood Risk:</b> surface water runoff; flood risk area		<b>Sun Rain</b> <b>Wind Snow</b> <b>Sea level</b>	
<b>6. Cost &amp; Value</b> Optimised over whole life	<b>Life cycle costs</b> EUR/m <sup>2</sup> /yr	<b>Value Creation &amp; Risk Factors:</b> Data quality of indicators		

# Looking forward

- Foster **investments in CDW recycling infrastructure** in MS/regions lagging behind the target of 70% of recovery (WFD 2008/98/EC). Such investments could be supported by the Investment Plan for Europe.

Workshop 16 November 2017



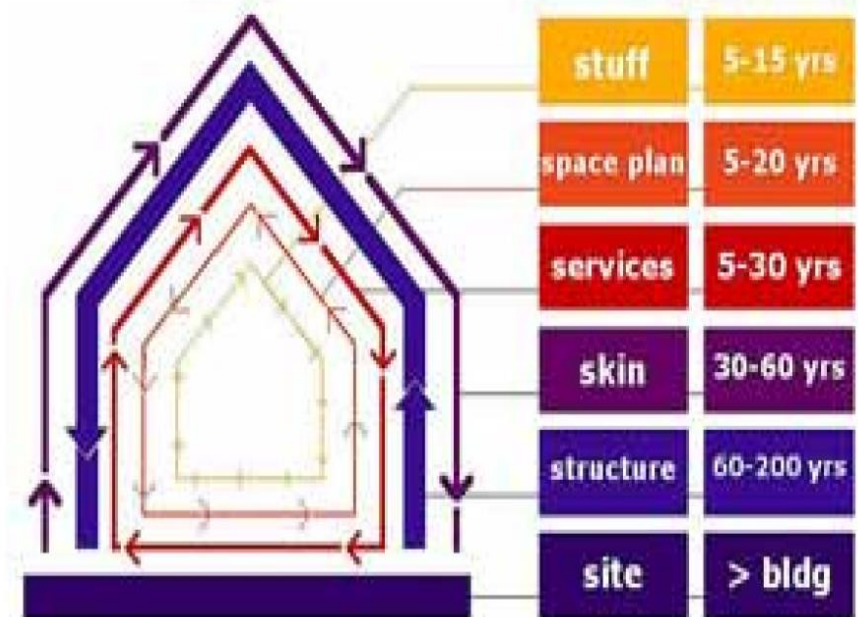
IDEA Consult 2017



## Looking forward

- Develop **principles and rules for the design of buildings** in order to generate less waste and facilitate recycling.
- Increase the **durability and recyclability** of building components
  - Building design improvements , durability, adaptability, reversibility.
  - Design for Deconstruction (DfD), Design for Disassembly

Construction 2020 TG3 meeting 23 November 2017



Stewart Brand's Six S's / 'Layers of Change' diagram  
(Brand. 1994)



# Fitness check

# Construction Fitness check

- Covers EU legislation on **Internal Market, Energy Efficiency, Environment and Health & Safety over 2004 – 2014.**
- Focus on **construction and renovation of buildings** (no infrastructure works) and **related sectors** (construction materials & professional services).
- Essentially aimed at:
  - Estimating **costs and benefits** of EU legislation for construction;
  - Identifying **inconsistencies, overlaps, gaps, and obsolete measures** in legislation.

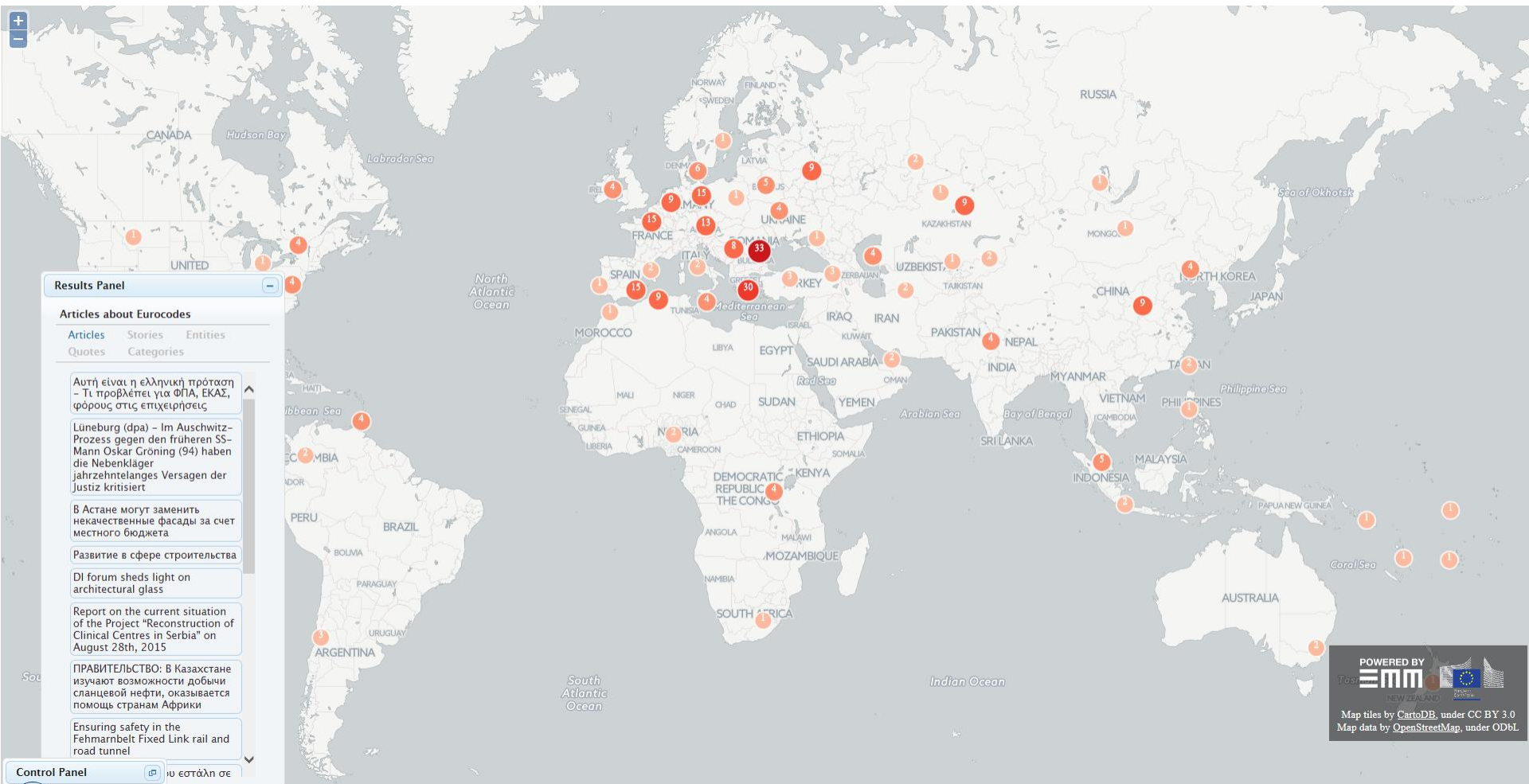
➔ **Staff Working Document planned for Q2 2018**



# **Mercati internazionali**

# What does the world say about the Eurocodes

## The JRC European Media Monitor – published on the Eurocodes website



# Construction 2020 Strategy

## TG5 "International competitiveness"

*Political attention, as demonstrated by the discussions during the Competitiveness Council during the 2016 Slovakian presidency*

- Importance of the internationalisation of EU construction sector and participation of SMEs in this process, and reminded that the current migration crisis can also provide opportunities for the EU construction companies.
- Communication COM(2016) 860 final) "Clean Energy For All Europeans", and its ANNEX 1 "Accelerating clean energy in buildings" are of particular interest for the construction sector, e.g. in terms of performance of buildings or the role of consumers in energy transition.

# Assess actions at EU level to support the internationalization of EU SMEs of the construction sector

- *Multicriteria and systemic analysis of national and EU level measures*
- *Targeted geographical areas*
  - *Africa-Caribbean-Pacific (ACP) area*
  - *Asia*
  - *Latin America*
  - *Middle-East*

# Assess actions at EU level to support the internationalization of EU SMEs of the construction sector

- *Needs and expectations from the different stakeholders (public, private, national, EU level) of the different frameworks and programmes to support SMEs from the European construction sector in their efforts to internationalise themselves.*
- *Key questions and challenges*
  - actors,
  - resources,
  - strengths and weaknesses
  - opportunities and threats,
  - potential improvements

# Success stories of internationalization of EU construction SMEs

- *Construction sub-sectors where these successful SMEs operate*
  - Transport infrastructures (road, railway, airport, waterway, port)
  - Energy (production, distribution)
  - Water (production, treatment, distribution)
  - Waste (collection, treatment, management)
  - Buildings (housing, public services, commercial and industrial)
  - Communication networks
  - Construction services (architecture, engineering, technical consultancies)
  - Construction products and materials manufacturing and trading
- *Way/strategy of these successful EU construction SMEs*
  - "Niche"market
  - Technical or marketing excellence
  - Distinctive proposal for sustainable projects
  - Single entrepreneur
  - Collective approach: partnership/cluster/joint-venture

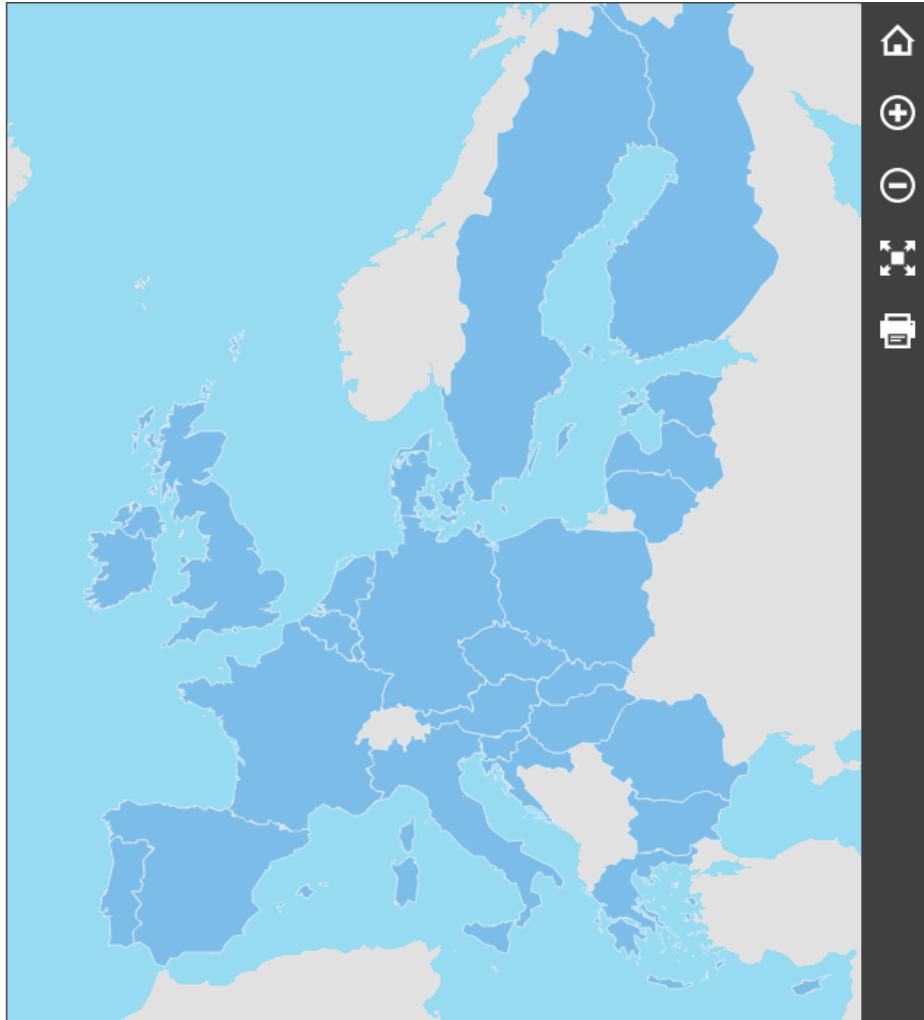


# Osservatorio europeo per il settore delle costruzioni (ECSO)



European Commission

# ECSO



## European Construction Sector Observatory

Country profile  
Italy

March 2017

### In a nutshell

The **Italian construction sector** is a vital part of the national economy, with its gross value added accounting for 18.8% of GDP. Severely affected by the economic crisis it has experienced a 9.5% drop in the number of companies between 2008 and 2014, with negative repercussions on production (which fell by 42.0% over 2008-2015), profitability and employment in the sector. The turnover and gross operating surplus dropped by 35.4% (to EUR 267.7 billion) and 39.6% (to EUR 45.7 billion), respectively, with the number of workers also declining by 29.3% over 2008-2015.

Several specific issues are currently undermining the viability of the Italian construction industry. Firstly, **access to finance** has been particularly unfavourable, with outstanding loans to the construction sector declining by 13.6% between 2010 and 2015. Secondly, 69% of companies reported **delays in payment from Public Administrations** in 2016, thus having to wait an average of 172 days before being paid. As a consequence, there has been a surge in the number of bankruptcies in the sector since 2008, which amounted to 2,900 in 2016.

On a positive note, although residential building permits and the house price index dropped by 84.5% and 14.0% over 2005-2015, respectively, the **housing market** has been picking up since 2014, with the number of residential sale transactions increasing by 16.3%, from 444,636 in 2015 to 517,164 in 2016. This is spurred by low interest rates and improved mortgage lending to households. Schemes such as the EUR 670 million First Home Guarantee Fund and the EUR 113.4 million Fund supporting interests on mortgage loans are contributing to supporting the purchase of dwellings. To offset the 34.1% drop in construction investment over 2008-2016, the Budget Law 2017 introduces important measures to stimulate **public and private infrastructural investment**. Major ones include the comprehensive Casa Italia Plan, which saw the set-up of the EUR 47.6 billion Infrastructural Investment and Development Fund, aiming to finance infrastructure investments in transport, water and wastewater infrastructure, public construction, prevention of seismic risks and urban rehabilitation. EU funds are also crucial, with EUR 3.4 billion allocated for network infrastructures in transport and energy alone.

There have also been signs of renewed interest in **innovation and sustainable construction** among companies, with increasing R&D expenditure in some sub-sectors and 30.5% of enterprises carrying out product-process innovation. The market for **energy efficient renovation** is also booming, spurred by the *Renovation Bonus* and *Eco Bonus*, offering tax deductions of up to 65% on eligible renovation interventions. Italian construction companies also fare remarkably well in **foreign markets**, both within the EU and internationally (Latin America, Africa and the Middle East), with foreign revenues accounting for 70% of the total revenues of the sector in 2015.

After a period of sustained decline, 2017 will therefore see the start of a revival for the Italian construction sector, with growth being forecast at 2.2% in 2017, 1.8% in 2018 and 2.2% in 2019, mainly led by investment in infrastructure and by EU funds. However, the intricate regulatory context and the suboptimal efficiency of the public administration may discourage private foreign investment in the future.

Construction

## Per ulteriori informazioni:

[http://ec.europa.eu/growth/sectors/construction/index\\_en.htm](http://ec.europa.eu/growth/sectors/construction/index_en.htm)

