



Shaping a Circular Sustainable Future

# How to procure circular buildings?

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101033740

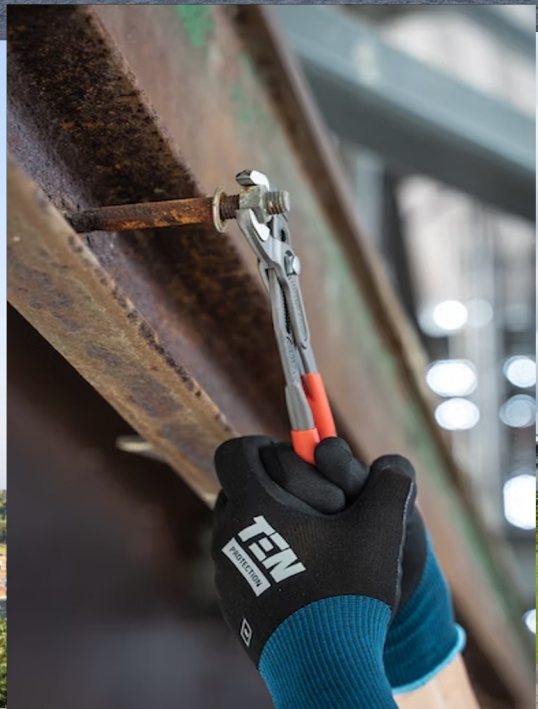


# Why circular construction?



- The construction sector is responsible for more than **40% of the primary energy consumption** in Europe, and **36% of CO2 emissions in Europe** (Eurostat, 2020).
- A circular approach in construction can significantly **reduce the embodied emissions of building materials and material consumption.**
- Multifunctional green roofs, façades and interior elements can help to **increase biodiversity** in our cities, **reduce the heat island effect** and **improve the well-being of people.**





# Half a good home - an affordable modular design in Chile



Architect Alejandro Aravena designed affordable homes in Chile with a budget of \$7,500 per home including land. The architectural practice Elemental decided to spend the money on what they called “half a good house”, rather than a whole bad house, which meant providing a structure with the basics of plumbing and shelter, which residents could then expand using their own labour and skill. These affordable houses are be adapted as the needs and number of family members evolve over time.

[Find out more.](#)



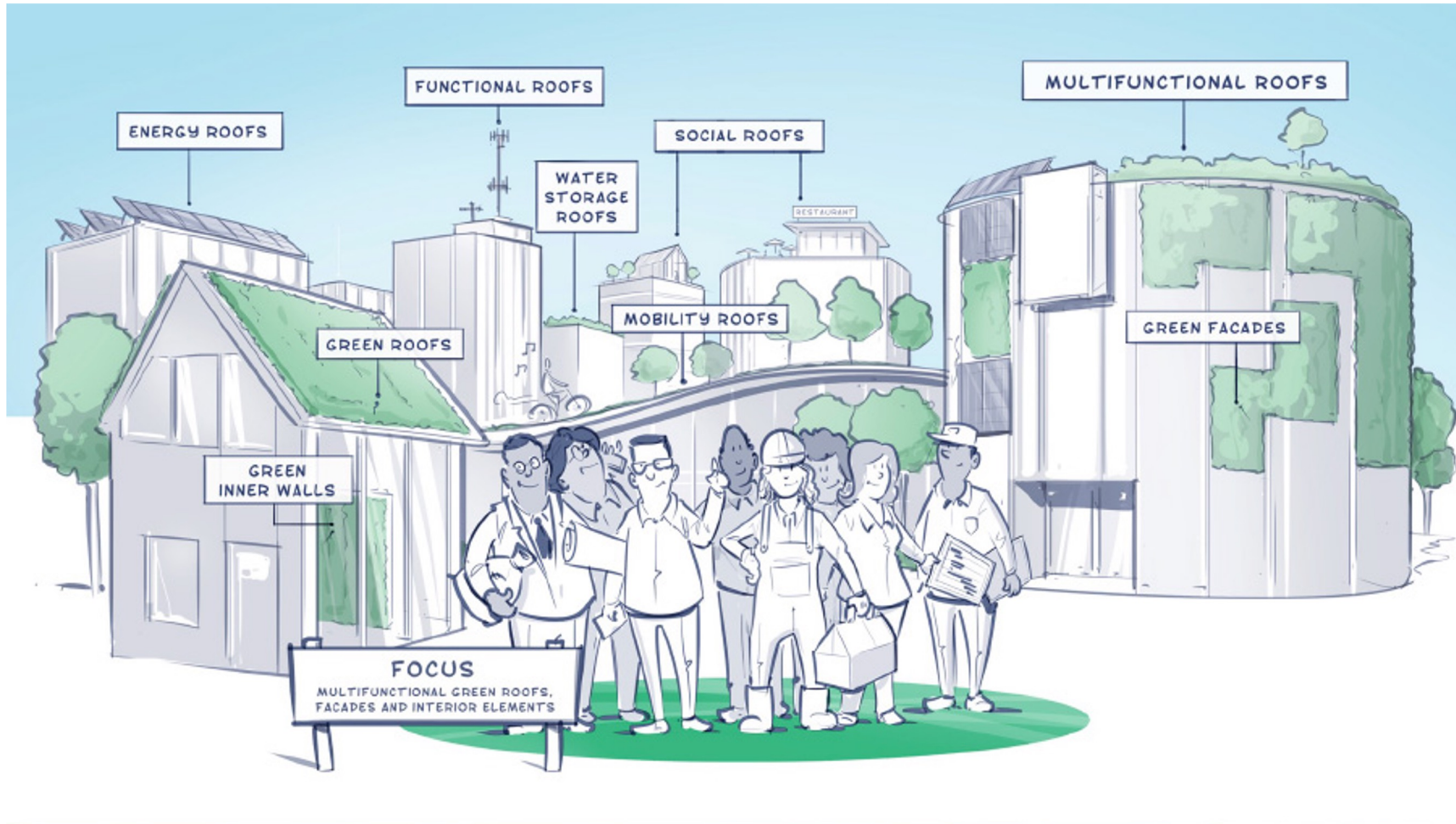
# Why stimulate circular skills?



- To have more circular buildings and to achieve the energy transition in the construction sector, we need **more people with the relevant skills to build and maintain circular buildings.**
- There is currently a skills gap in Europe, as estimates show that **more than three-quarters of companies across the EU** report having difficulties finding workers with the necessary skills.
- By stimulating demand for skills, public procurers can contribute to **sustainable growth, more innovation and improve competitiveness** in the construction sector.



# How can public authorities stimulate construction skills?





### **AS A MASTER PLANNER**

Embed in roadmaps, plans or strategies objectives and measures to encourage the upskilling and reskilling of the construction workers

### **AS BUILDING OWNERS AND PUBLIC PROCURER**

Use public procurement to stimulate demand for circular construction skills at each step of a building's life



### **AS AN ECONOMIC DEVELOPER**

Support training organisations and companies which are adopting more circular business models to develop their activities, influence market trends and promote job creation



## **AS A FINANCIAL PARTNER AND REGULATOR**

Use financial grants, subsidies, and tax incentives as leverage to develop a new economic sector and to encourage workers to upskill



## **AS A NETWORK FACILITATOR**

Encourage local stakeholders to change their practices by developing tools, such as digital platforms, training sessions, and storage platforms



## **AS AN URBAN PLANNER**

Embed circularity requirements in urban planning regulations to have an impact in the long-term



# Why public procurement?



- Representing **14% of the EU's GDP**, public procurement is a powerful market force that public authorities can use to stimulate circular construction skills.
- Public authorities are **owners of large building assets**, **big buyers** of construction and demolition services, and **employers** of practitioners responsible for building programmes and urban project managers.
- Public purchasers can **send a signal to the market** and promote the growth and acquisition of circular construction abilities by including requirements for certain building standards, certificates, or credentials in tenders.



## OFFER INTERNAL TRAINING TO STAFF

Providing training on the circular economy, circular construction and renovations, and circular procurement can help ensure that procurers and other relevant staff have the knowledge and skills required to embed circular criteria in tenders and to follow a circular construction project.

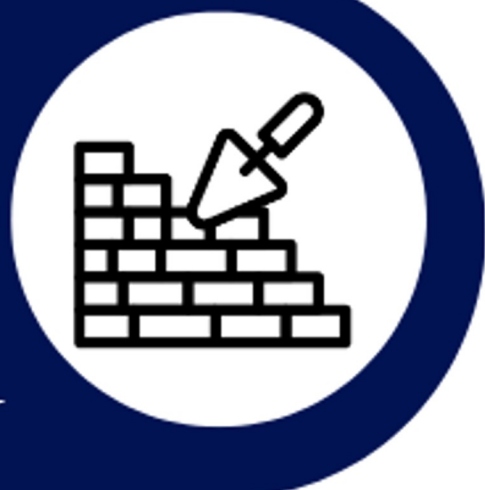


## ENGAGE CONTRACTORS

Market dialogues, fairs, and other events offer an opportunity for public authorities to engage and communicate to potential bidders the circular objectives of upcoming construction projects.

## **PROCURE SELECTIVE DEMOLITION AND DECONSTRUCTION SERVICES**

Public authorities should ensure that buildings that cannot be renovated or retrofitted are selectively demolished. Furthermore, procuring pre-demolition inventories and material audits can help identify building components and materials with the highest reuse or recycling potential



## **PREVENT CONSTRUCTION WASTE BY DESIGN**

Procuring buildings that are circular by design (modular, designed for durability and disassembly, integrate reused or recycled materials or multifunctional etc...) can help reduce demand for virgin materials.

## **PROCURE MAINTENANCE, RETROFITTING AND REFURBISHMENT SERVICES**

Procuring retrofitting and refurbishment services can reduce the energy consumption of existing buildings, upgrade them to new standards, as well as encourage construction workers to upskill to build their competencies in the latest refurbishment and retrofitting standards.



## **INCLUDE TRAINING CLAUSES IN TENDERS**

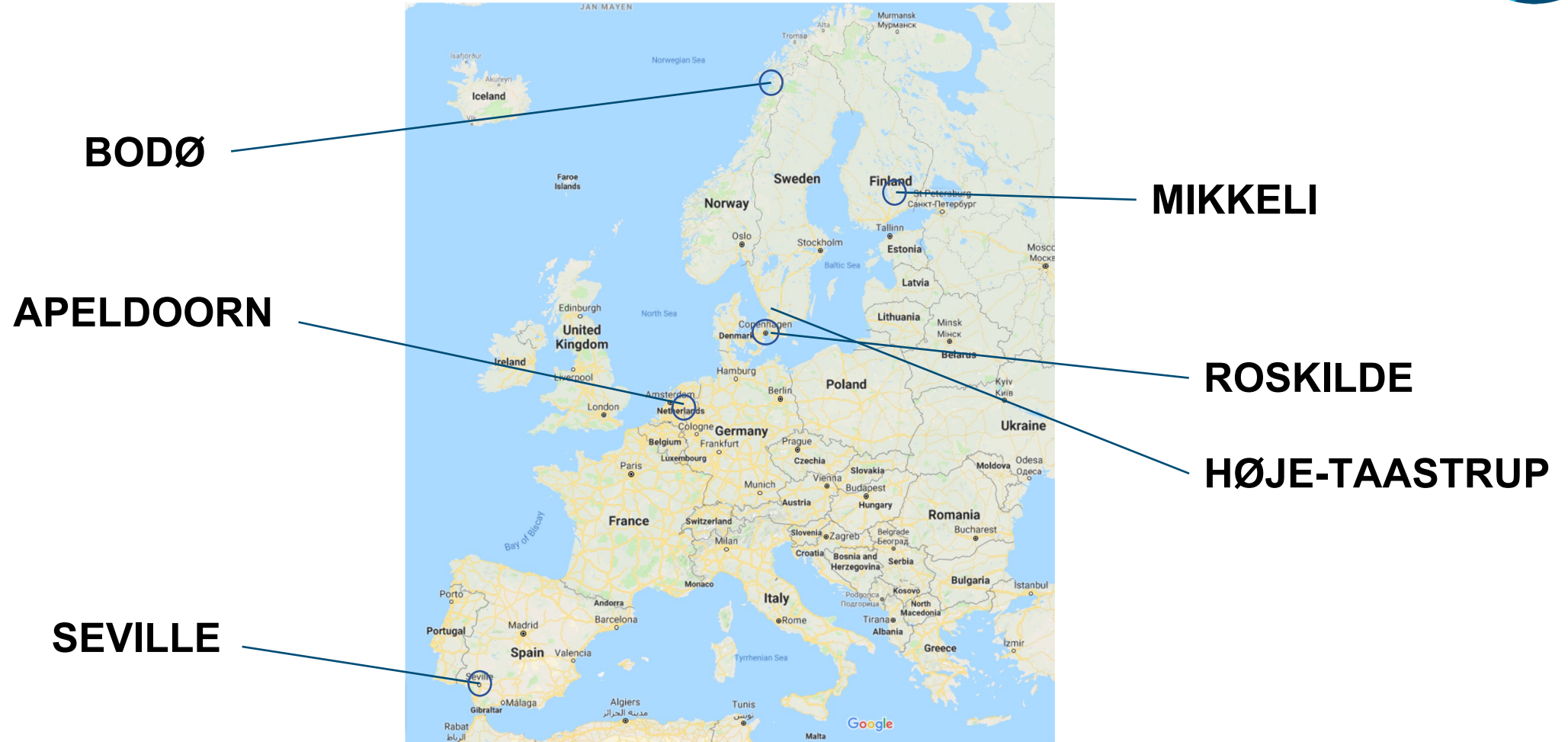
Training clauses can ensure that the winning contractor commits to training their staff during the project in a specific set of skills.

## **INCLUDE CIRCULARITY SKILLS TO RECRUIT THE DESIGN TEAM FOR AN URBAN PROJECT**

Through spatial planning, a municipality can divide and classify the physical environment in a way that promotes circular resource management.



# The 6 cities involved in CDW



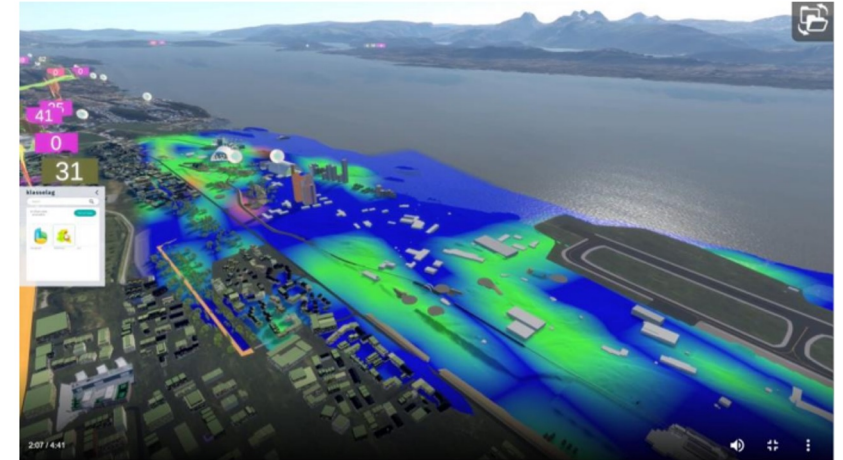
# Circular material management at Bodø's military airport

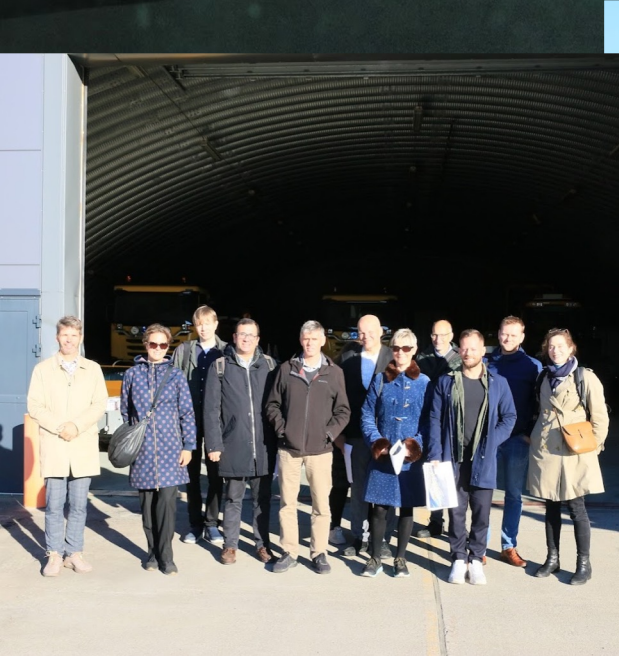


Bodø's old military airport is being demolished and the current civil airport will be relocated on the old military site. A new city district will be built on the site of the current civil airport.

The project maximises the repurposing of existing structures, and selective demolition and reuse of construction materials where this is possible. The project used 3D visualisation and lifecycle CO2 tools, construction material passports, as well as a Pre-demolition audit to map the structures and materials to be reused.

[Find out more here.](#)







# Preservation and selective demolition of Hall 11/12 in Roskilde



The City of Roskilde, Denmark, has procured the pre-demolition screening for the selective demolition of Hall 11. The building will be demolished and its materials incorporated into other construction projects. Concrete recovered from the demolition will be crushed for recycling into new concrete in the construction of a parking house.

[Find out more here.](#)



# Circular demolition of a hospital and healthcare centre



Mikkeli is demolishing two public buildings using circular material management methods, including digital tools: Pankalampi Health Care Centre and Tuukkala hospital.

The sites will be scanned and a pre-demolition audit will identify potentially recoverable materials and their characteristics. Following a selective demolition procedure, salvaged materials will be incorporated into a digital databank and construction materials marketplace.



[Find out more here.](#)



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for public procurers



Guidance for  
policymakers



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## Colophon

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