



Ursula von der Leyen
President of the European Commission

“... And we all know, Europe is a powerhouse in science. Our new Horizon research programme is the largest ever. **But we also face a big paradox: We, Europeans, are excellent in making science with money. But we are not so good in making money out of science.** And the new European Innovation Council is there to help resolve this paradox.”
(18/03/2021)

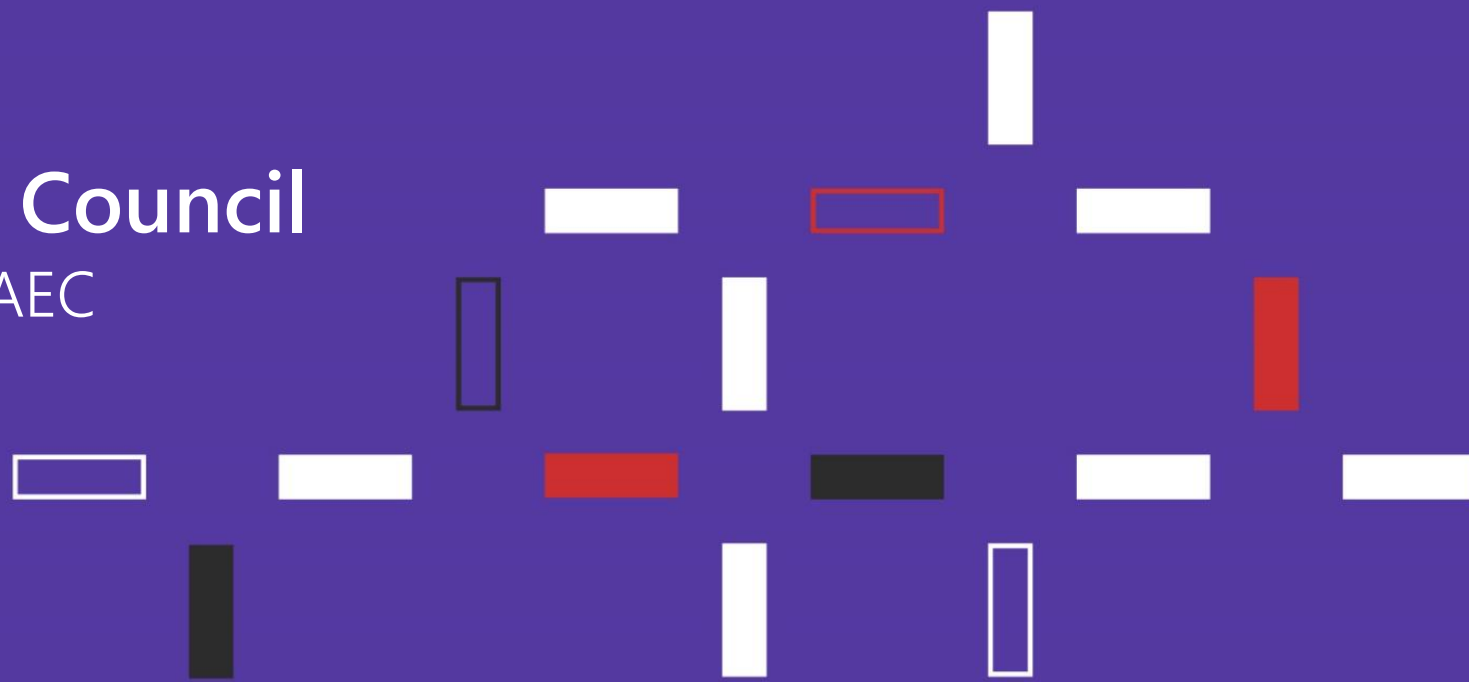




Backing visionary entrepreneurs

The European Innovation Council

Franc Mouwen, Program Manager AEC



European Innovation Council is Europe's most ambitious innovation initiative

- **€10 billion** programme to identify, develop and scale up breakthrough technologies and disruptive innovations in Europe
- **Unique** in the world to combine research on emerging technologies with Accelerator for start-ups, SMEs and scale-ups
- **EIC Fund** is largest VC deep-tech investor in Europe (over €3 billion)
- **Innovator-centric** steered by Board of leading innovators
- **Pro-active management** approach by Programme Managers
- Enhances the European **innovation ecosystem**

European Innovation Council Work Programme 2022

Budget €1.7 billion



THREE MAIN FUNDING SCHEMES

EIC PATHFINDER

early-stage technology research	€350 million
grants	< €4 million



EIC Pathfinder Open 2022 (€183 million)

Submissions open 1 March, close 4 May



EIC Pathfinder Challenges 2022 (€167 million)

Submissions open 15 June, close 19 October

EIC TRANSITION

technology validation and spin-out	€131 million
grants	< €2.5 million



EIC Transition Open (€70.9 million) and Challenges (€60.5 million)

Apply anytime from 1 March,
cut-offs: 4 May and 28 September

EIC ACCELERATOR

commercialisation and scale-up	€1.16 billion
grants	< €2.5 million
equity investments	< €15 million



EIC Accelerator Open (€630.9 million) and Challenges (€536.9)

Apply anytime,
cut-offs: 23 March, 15 June and 5 October

European Innovation Council Work Programme 2022



BUSINESS ACCELERATION SERVICES

For all EIC awardees, as well as selected applicants:



Access to coaches, mentors, expertise and training



Access to global partners (leading corporates, investors, procurers, distributors, clients)



Access to innovation ecosystem and peers



WHAT'S NEW IN THE 2022 WORK PROGRAMME



A new **EIC Scale-Up 100** initiative to identify 100 potential deep-tech unicorns



Equity investments **above €15 million** for technologies of strategic European interest



Stronger support to women innovators

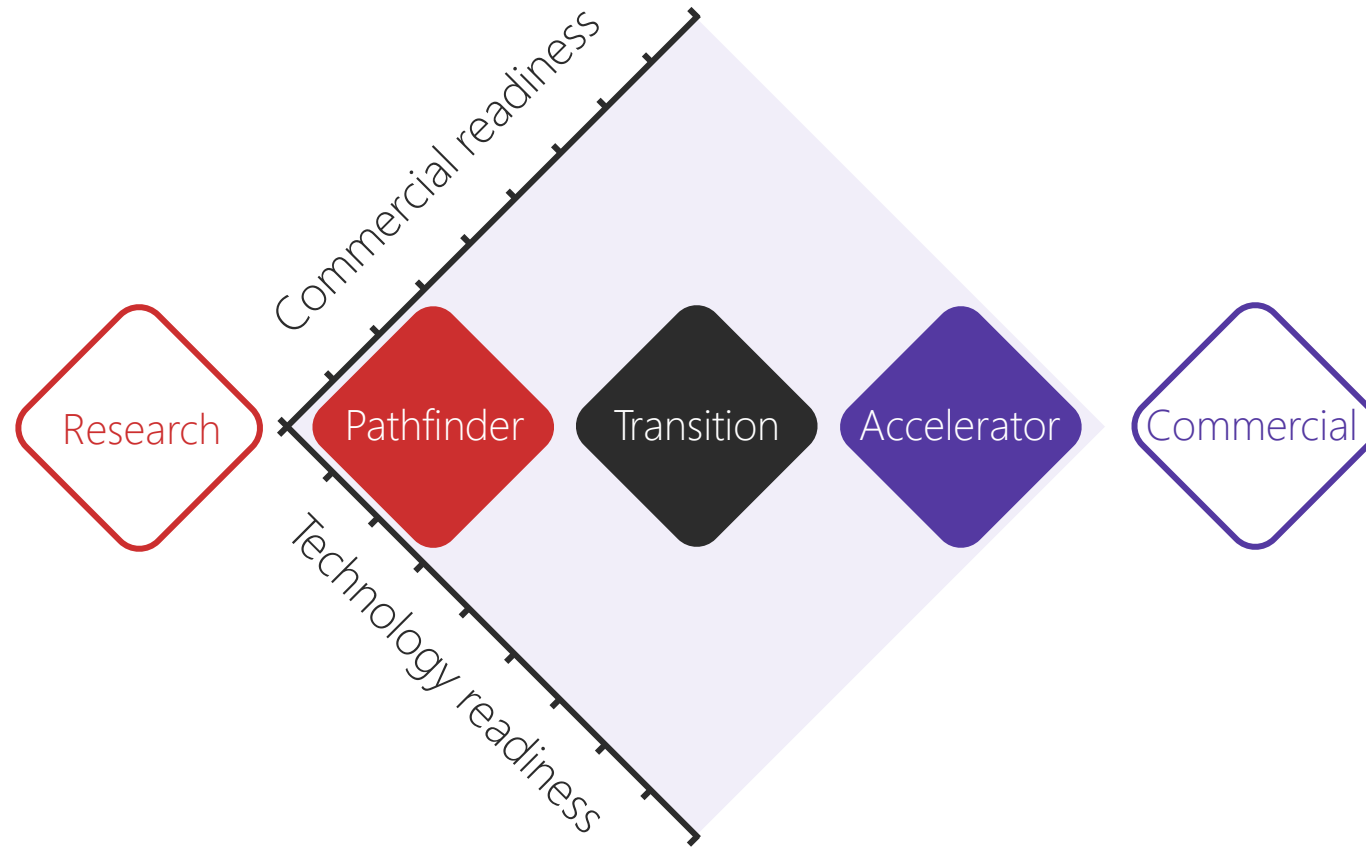


Simplified Seal of Excellence

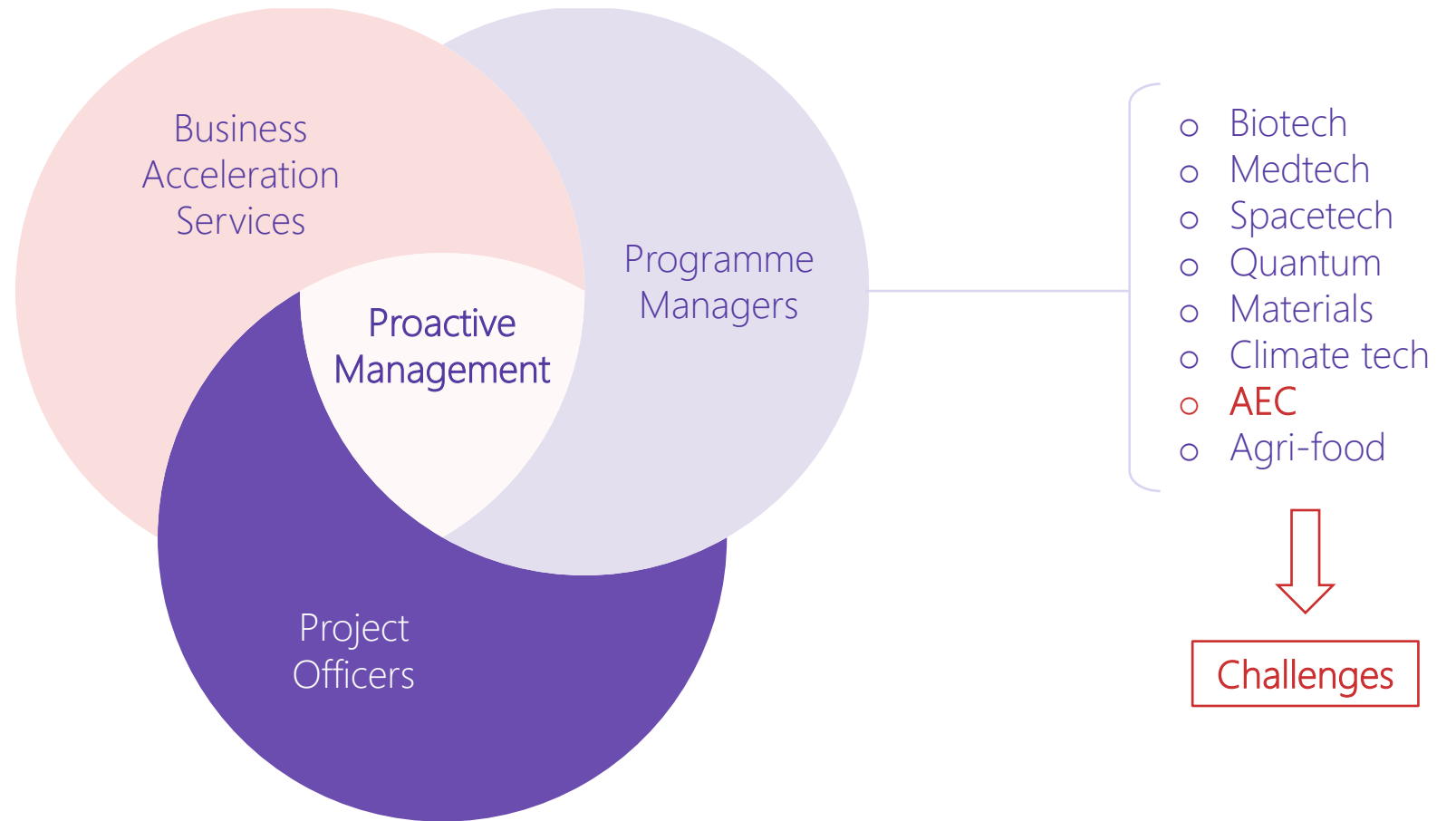


Apply for one of the new EIC challenges in the green, digital and many other emerging technologies

EIC stages the entrepreneurial journey as pathfinder, transition, accelerator with increasing readiness levels

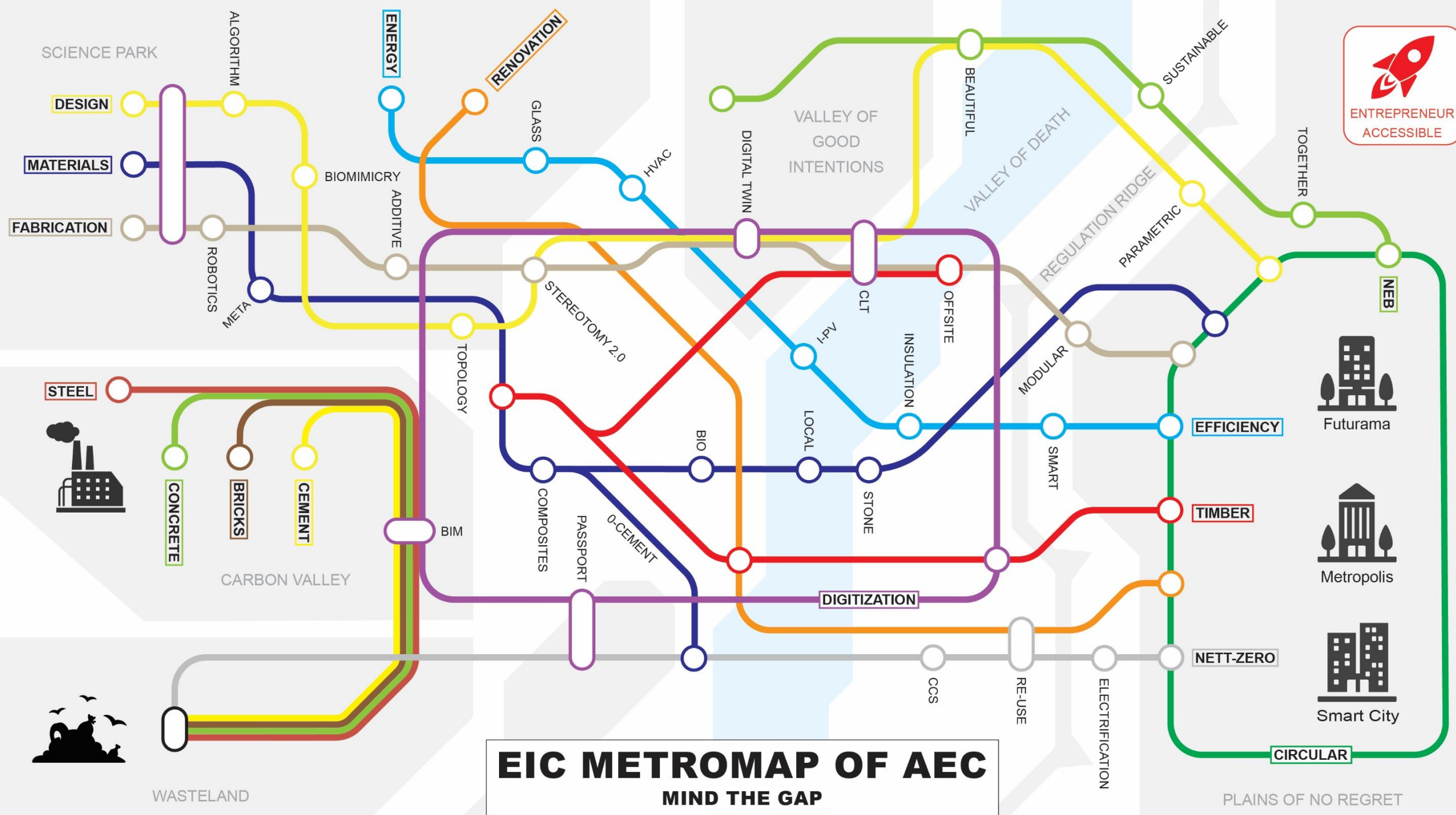


With proactive management the EIC aims to maximize its support to success of the entrepreneurial journey





ENTREPRENEUR ACCESSIBLE



EIC METROMAP OF AEC

MIND THE GAP

WASTELAND

PLAINS OF NO REGRET

The EU faces a monumental task to decarbonize and modernize the construction sector within 30 years

- The EU committed to net-zero by 2050 by law
- Emissions of the construction sector are estimated at 5-12% of EU's total
- Also, the construction sector accounts for 50% of EU extracted material ...
- ... and construction and demolition waste accounts for over 35% of EU's waste

Global context: the world will add the equivalent of 1 New York City, per month, for the next 40 years:





“ We know that the construction sector can even be turned from a carbon source into a sink, if organic building materials like wood and smart technologies like AI are applied.

Ursula von der Leyen

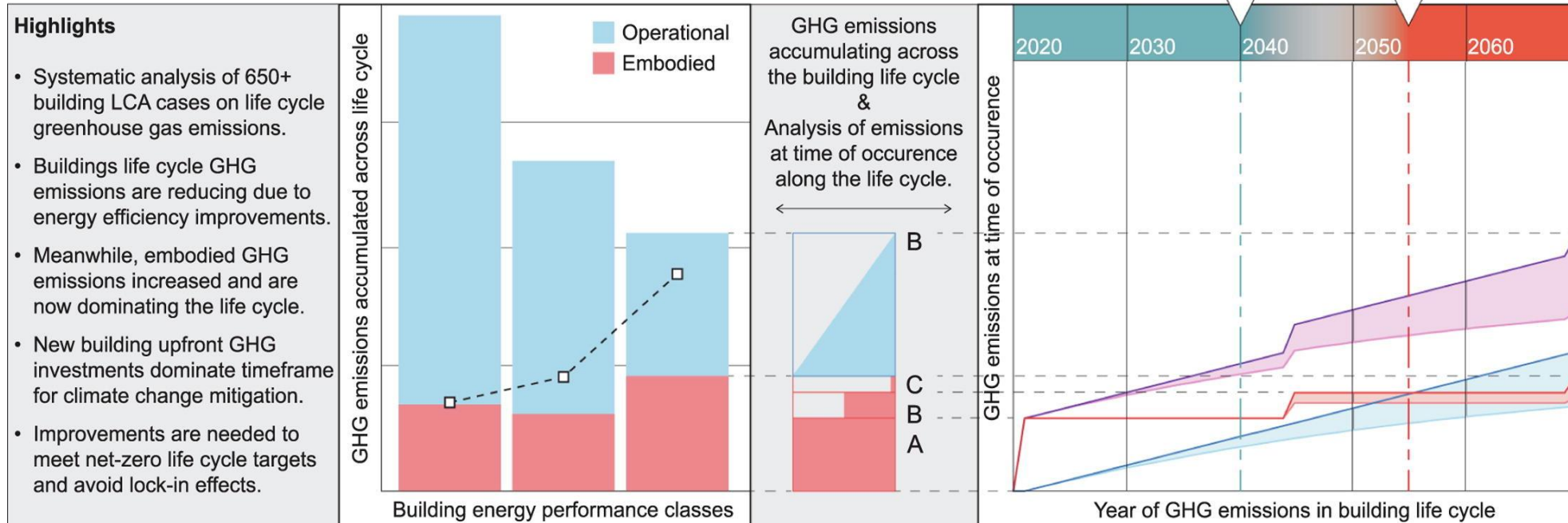
President of the European Commission
State of the Union address, 9 Sep 2021



Fossil fuels ugly fossil sister is embodied in our buildings and a climate change mitigation challenge

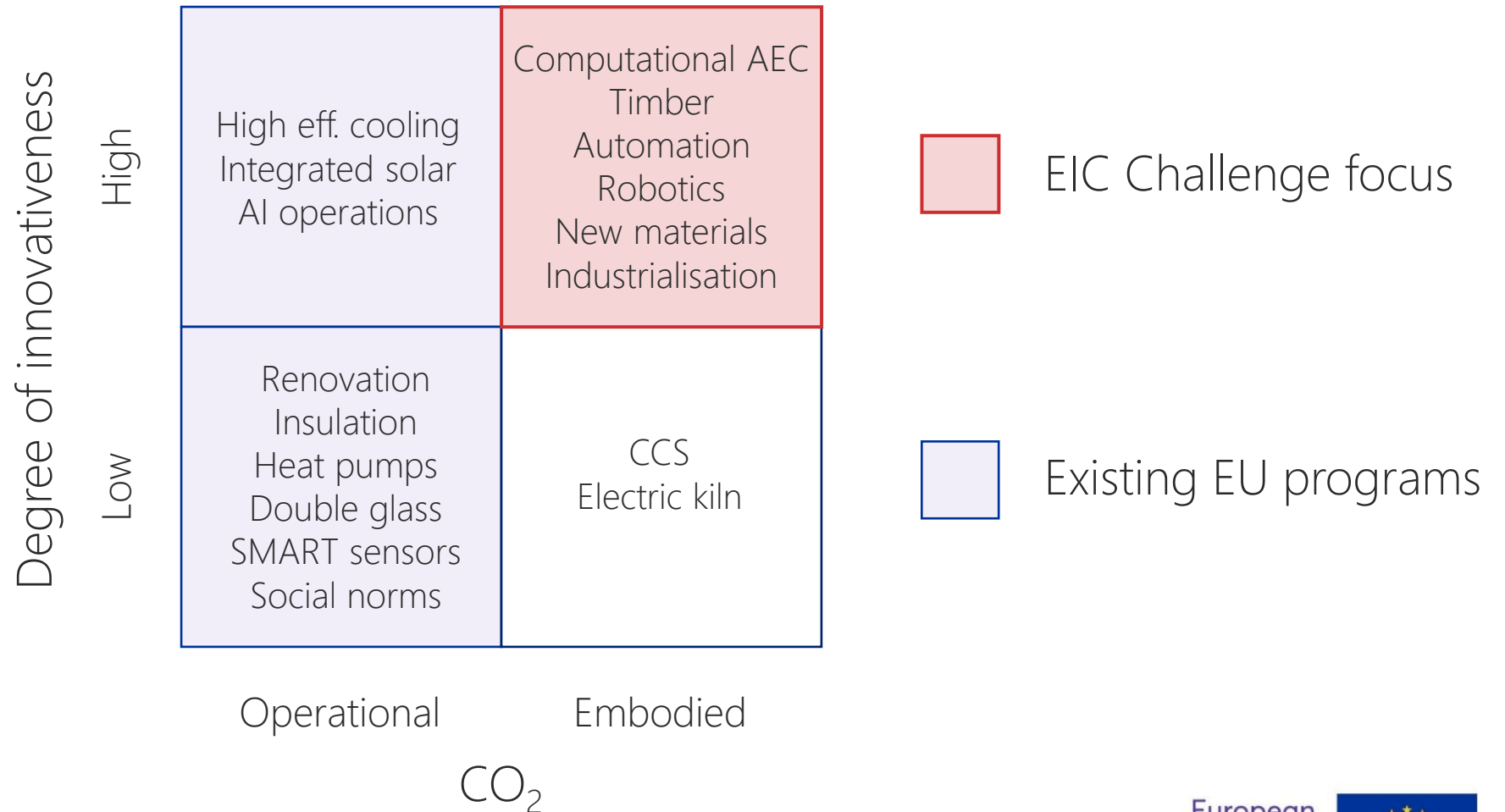
Embodied GHG emissions of buildings - the hidden challenge for effective climate change mitigation.

M. Röck et al., Applied Energy, 2019.



The EIC “AEC Challenges” aim to attack 2 problems: reducing embodied emissions, increasing productivity

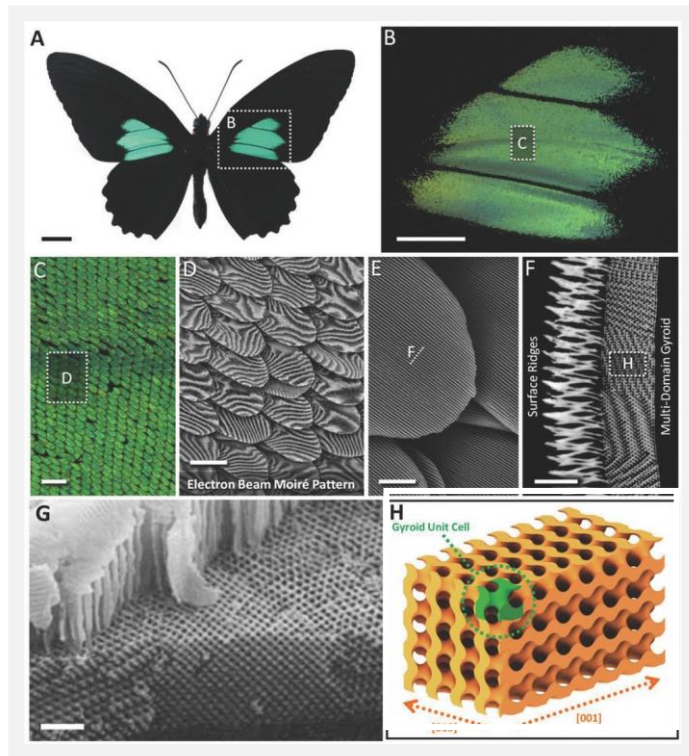
The EIC Mission
is to support
deep-tech
entrepreneurs



Nature uses few materials in endless complex ways; humans many materials in simplistic, wasteful ways

Gyroids at nanoscale in butterfly wing

In-situ concrete pouring and formwork



Paradigm



Rooted in EU legacy, computational digital AEC* offer pathways to use less and alternative materials

Once ...



Unreinforced
concrete
3D

Then ...



Stone
stereotomy
3D

Then ...



In-situ reinforced
concrete
2D+

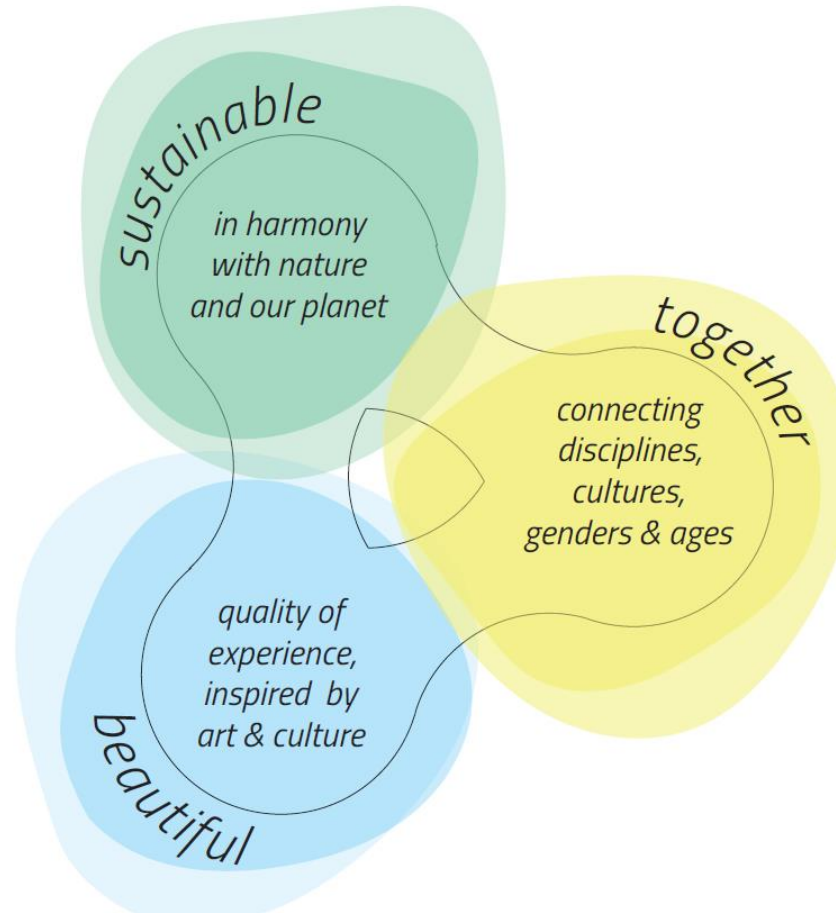
... our logical digital future?



Computational design
Digital meta-concrete
3D+

* AEC: Architecture Engineering Construction

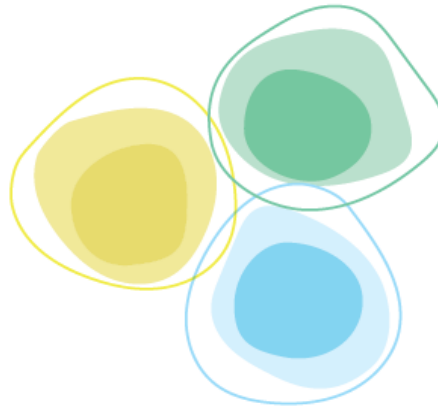
New European Bauhaus



New European Bauhaus

Inclusion

- LEVEL I: Embedded
- LEVEL II: Consolidated
- LEVEL III: Transformational



Sustainability

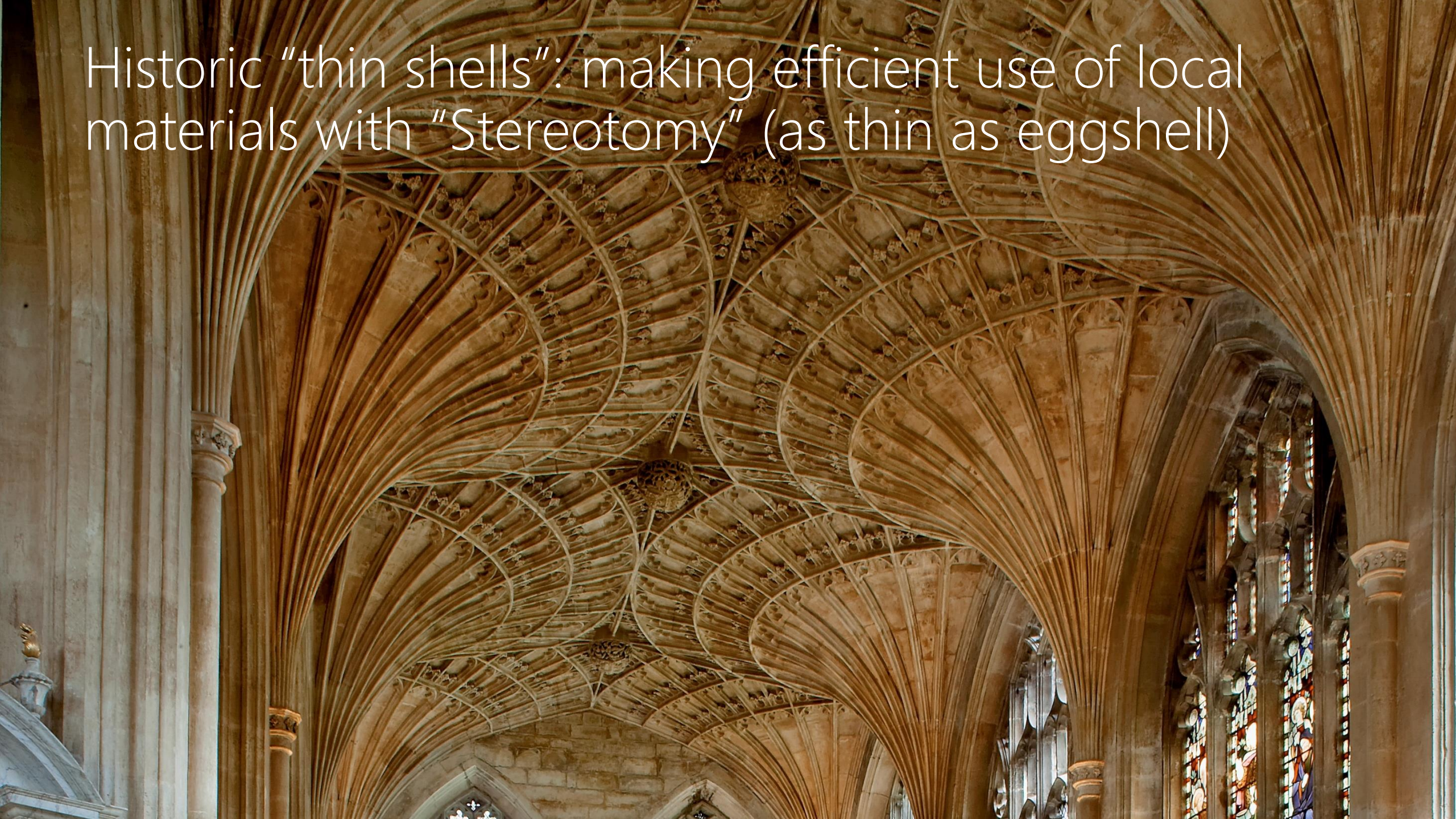
- LEVEL I: Linear
- LEVEL II: Circular
- LEVEL III: Regenerative

Quality of Experience

- LEVEL I: Fragmented
- LEVEL II: Connected
- LEVEL III: Integrated



Historic "thin shells": making efficient use of local materials with "Stereotomy" (as thin as eggshell)







AEC Challenges: deep chain digitalization to cut CO₂, push productivity, drive experience and sustainability

Digital workflow of: Design ▷ Engineering ▷ Fabrication ▷ Assembly ▷ Operation ▷ Re-use

Challenge

Under discussion (2023)

Scope

This Challenge aims to attract cutting-edge science and technologies that contribute to a deep digitization of the AEC value chain:

- **Computational design** scientific advances and new technologies that ultimately enable mass-adoption of parametric, generative and algorithmic design and physical simulation. The ultimate complexity of algorithmically designed objects may well approach the complexity of nature itself: biomimicry.
- **Alternative materials** enabled by computation, i.e. engineered, bio-, locally sourced, recycled, regenerative and meta-materials and alternatives to cement.
- **Digital fabrication** (3D print), industrialized manufacturing, assembly robotics.

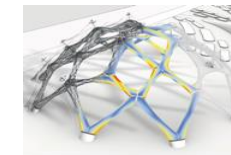
Objectives and impact

Objective is to transform the AEC sector into a **productive**, digitally enabled, **climate neutral sector**. Impacts include delivery of sustainable, inclusive and high quality building products in line with the **New European Bauhaus mission**.

Rationale

Horizon Europe's Strategic Plan 2021-2024: "Making Europe the first **digitally enabled**, circular, **climate neutral** and **sustainable** economy through the **transformation** of its mobility, energy, **construction** and **production** systems."

Mood board



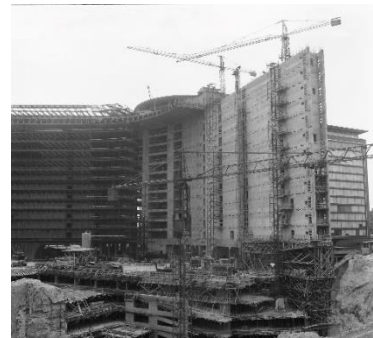
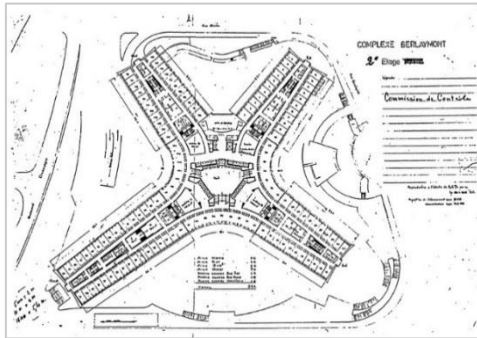






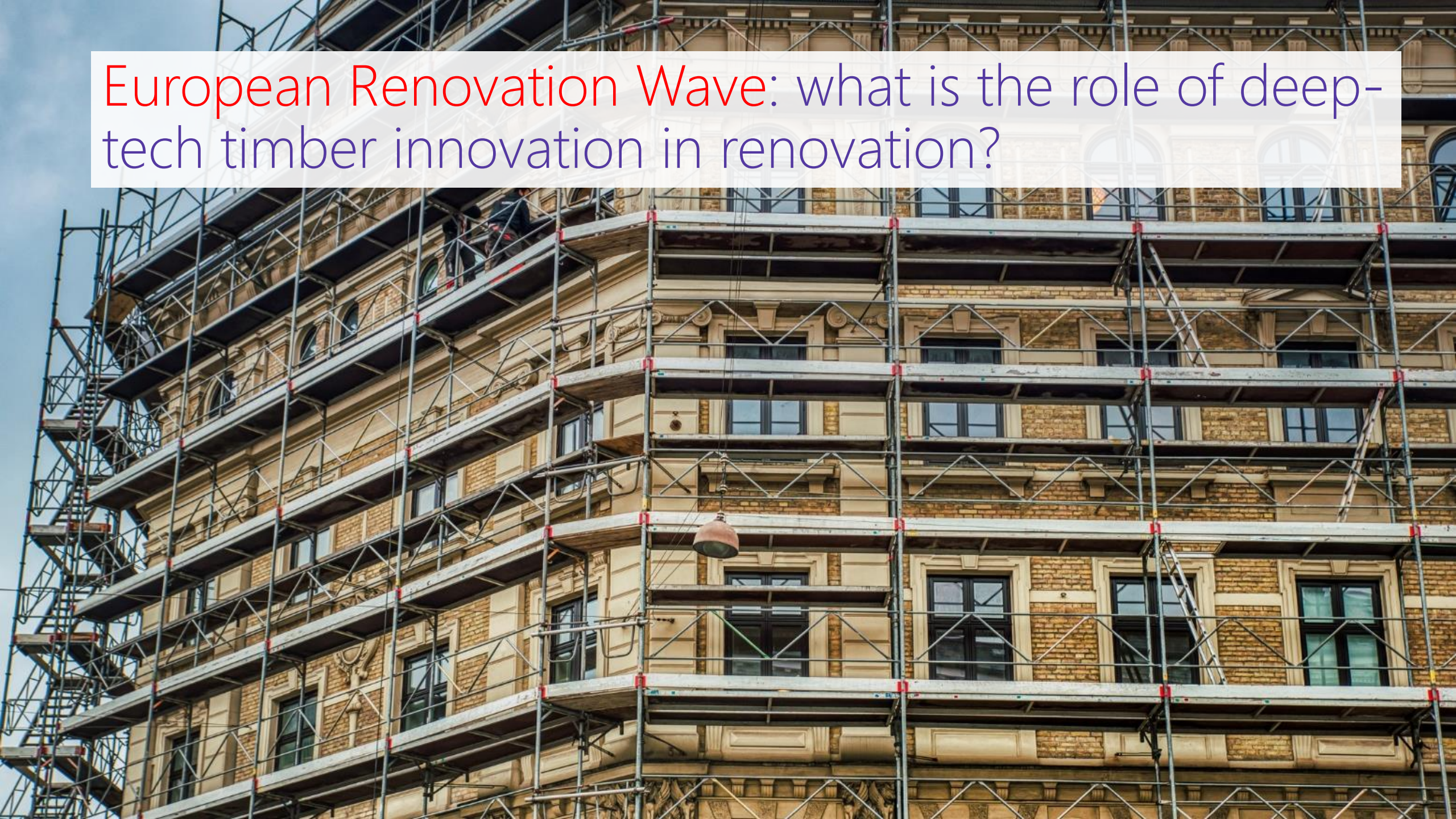


To the future and back: regulation and design decisions made today affect people generations from now.



----- 1959 ----- 1963 ----- 1969 ----- 2022 -----

European Renovation Wave: what is the role of deep-tech timber innovation in renovation?





Gare Maritime Brussels