

Recommendations to the Danish Government from the Climate Partnership for the construction industry – status on progress

Ib Enevoldsen, Managing Director, Ramboll in Denmark
9 June 2021



Bright ideas.
Sustainable change.



Recommendations to the Danish Government from the Climate Partnership for the construction industry



Presidency and steering group



- Chairman: Managing director Jesper Kristian Jacobsen, Aarsleff A/S (The Danish Construction Association)
- Vice chairman: Vice President Ingrid Reumert, VELUX A/S (Confederation of Danish Industry)
- Vice chairman: MD Peter Kaas Hammer, Kemp & Lauritzen A/S (TEKNIQ The employers)
- Deputy director Jakob Brandt, SMV Denmark
- Secretariat leader Gunde Odgaard, The BAT Cartel
- Managing director Lene Espersen, Danish Association og Architectural firms
- Senior Vice President Henrik Frank Nielsen, ROCKWOOL A/S (Dansk Industri)
- Managing director Ib Enevoldsen, Ramboll Danmark A/S, (The Danish Association of Consulting Engineers)
- Managing director Michael S. Larsen, CG Jensen A/S (Confederation of Danish Industry)



KEMP&LAURITZEN

SMVdanmark



dansk byggeri



Participants

- Barslund A/S
 - BAT-Kartellet
 - BJERG arkitektur
 - BL
 - Blik & Rør
 - BRAVIDA DANMARK A/S
 - Bygherreforeningen
 - Bygningsstyrelsen
 - CG Jensen A/S
 - Concito
 - Danfoss Heating
 - Dansk Byggeri / Dansk Beton
 - Dansk Elforbund
 - Danske Arkitektvirksomheder
 - DOVISTA A/S
 - EL:CON A/S
 - Enemærke & Petersen a/s
 - Fibertline A/S
 - Finans Danmark
 - fsb
 - Green Building Council Denmark
 - GSV Materieludlejning A/S
 - HD Lab
 - Helmer Christiansen A/S
 - Holm Tømrer- og Snedkerfirma A/S
 - HusCompagniet A/S
 - Høje Taastrup kommune
 - Intego A/S
 - Kemp & Lauritzen A/S
 - Krydsrum arkitekter a/s
 - Københavns Kommune
 - MOE A/S
 - NCC Danmark A/S
 - NIRAS A/S
 - Pension Danmark
 - Per Aarsleff A/S
 - Rambøll Danmark A/S
 - Region Hovedstaden
 - ROCKWOOL A/S
 - Saint-Gobain Denmark A/S
 - Sanistål
 - SBi / AAU
 - SMVdanmark
 - Spangenberg & Madsen
 - Teknologisk Institut
 - Vandkunsten
 - Vejdirektoratet
 - VELUX A/S
 - Vilhelm Lauritzen Arkitekter
 - Wexøe A/S
 - Wicotec Kirkebjerg
- Secretariats**
- Dansk Byggeri
 - Dansk Industri/DI Byg
 - FRI
 - TEKNIQ Arbejdsgiverne

How did we work?

- The construction sector was gathered
- 4 months process with +100 managers and specialists
- 5 working groups:
 - Energy renovation
 - Operation of buildings
 - Design & materials CO2 content
 - Construction sites
 - Construction processes
- Report with 63 initiatives + 100s of ideas



The outset - where are we today?



40 %

of Denmark's energy
consumption
used in buildings



20 %

of CO2 emissions stems from
energy consumption in our
buildings



35 %

of our waste stems from the
construction industry



10 %

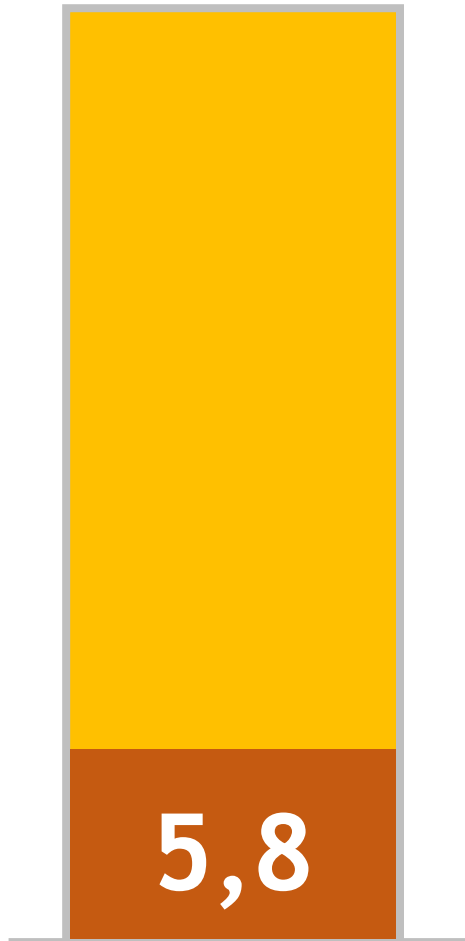
of Denmark's CO2 emission
stems from the construction
process and the production of
building materials

28,7 Million tonnes per year



**Moving forward towards
2030 Denmark must reduce
CO₂ emissions with
28,7 Million tonnes per
year**

28,7 Million tonnes per year



**The construction industry
can contribute
5,8 Million tonnes per year
- corresponding to 20%**

The 2030 vision of the construction industry

Target:

- Total of 5,8 Million tonnes CO₂ reduction
- 25 % reduction of energy consumption in buildings
- Phasing out fossil fuels
- Strengthened Danish exports
- Reduced price of green conversion



5 green building blocks

- 1 Intelligent energy management and energy renovations - 1,2 Million tonnes of CO₂ /year
- 2 From fossil fuels to green heating - 1,8 Million tonnes CO₂ /year
- 3 CO2 accounts for buildings - 1,1 Million tonnes CO₂ /year
- 4 Fossil-free building sites - 0,55 Million tonnes CO₂ /year
- 5 Energy labelling for all buildings - lever

Energy renovation of existing buildings

14 initiatives that contribute to

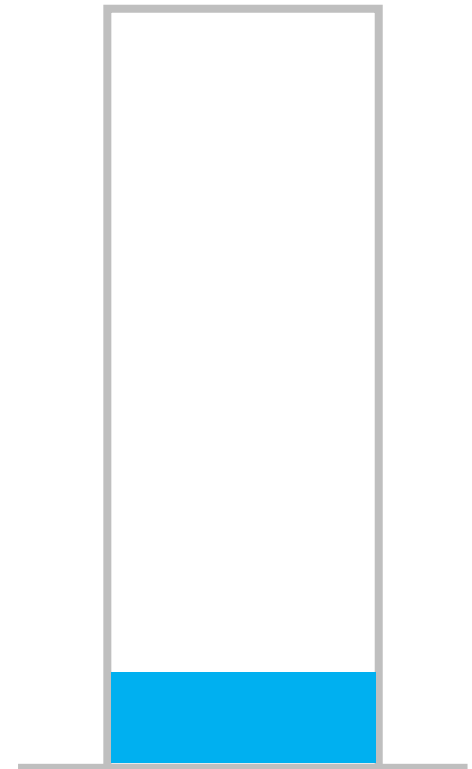
- Reducing heat consumption by 10%
- Reducing CO2 emissions from heating
- Releasing 760,000 tonnes of biomass / year for use in industry
- Reduce the price of the green transition by a total of DKK 6 billion

Can be implemented in 2030

Top 5 initiatives

1. 10% heat savings through increased renovation and compliance with energy requirements
2. Renovation of **120,000** public housing units
3. Public investment in heat savings
4. Package solutions for energy renovation for homeowners
5. The energy label as an active tool for energy savings

5,8 Million tonnes/year



CO₂-reductions from operation of buildings

5,8 Million tonnes/year

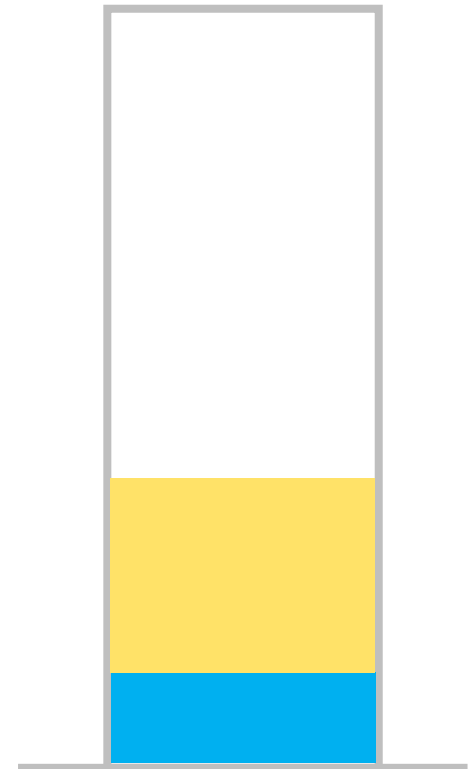
14 initiatives that can
save

2,5 Million tonnes
CO₂ per year

Can be implemented in
2030

Top 5 initiatives

- Phasing out natural gas
- Intelligent control of energy consumption
- Oil boiler replacement
- Optimization of heat pumps
- Renovation of technical installations



Design and the CO₂ content of materials in buildings

5,8 Million tonnes/year

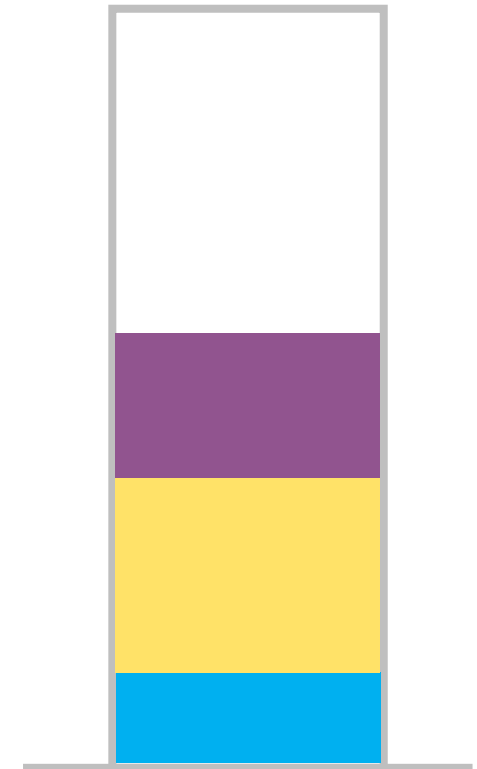
20 initiatives that can save

1,1 Million tonnes CO₂ per year

Can be implemented in 2030

Top 5 initiatives

1. Life Cycle Analyses (LCA) and targets for CO₂ in tender material
2. Project-specific climate accounts in all tenders
3. Reduction of material consumption and CO₂ emission in design
4. Development of a database for LCA in construction
5. Development of the sustainability class and revision of technical joint property



CO₂ reduction at the building site

6 initiatives that can
save

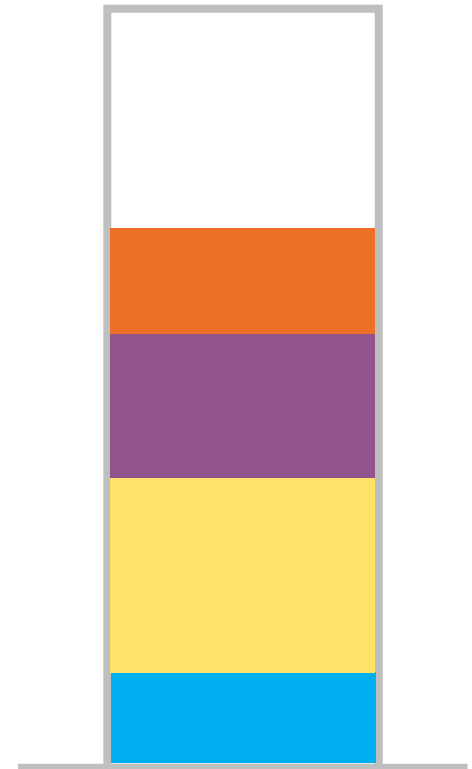
0,8 Million tonnes
CO₂ per year

Can be implemented in
2030

Top 6 initiatives

1. Electricity supply at the building site
2. CO₂ free dehydration and heating
3. Fossil-free production equipment at the building site
4. CO₂ accounts for the building site
5. Fewer materials and less waste
6. Better planning and procedure at the building site

5,8 Million tonnes/year



CO₂ reduction in the civil engineering sector

17 initiatives that can save

0,5 Million tonnes CO₂ per year

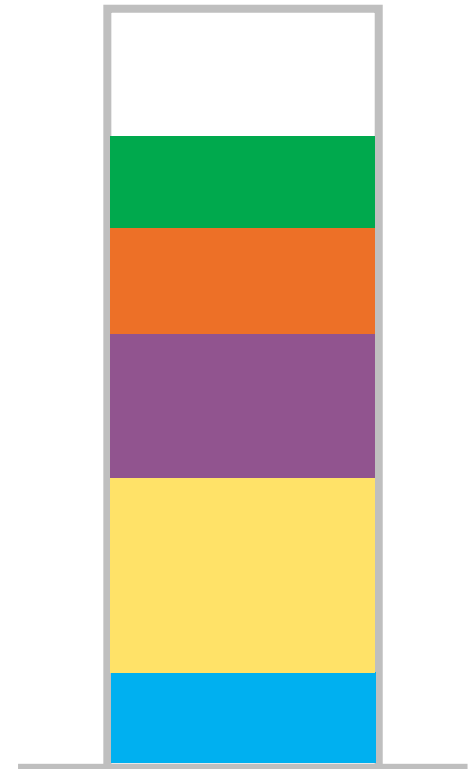
Can be implemented in 2030

Top 5 initiatives

1. Fossil and emission-free plant machinery
2. Transition to electric vehicles on the roads¹⁾
3. Use new types of cement with fewer cement clinkers
4. Climate-friendly asphalt
5. Robots, Additive Manufacturing and Digital Twins

¹⁾ Effect is included in cross-cutting initiative

5,8 Million tonnes/year



Cross-cutting: Transition to electric vehicles

5,8 Million tonnes/year

Initiative that can save

1,1 Million tonnes
CO₂ per year

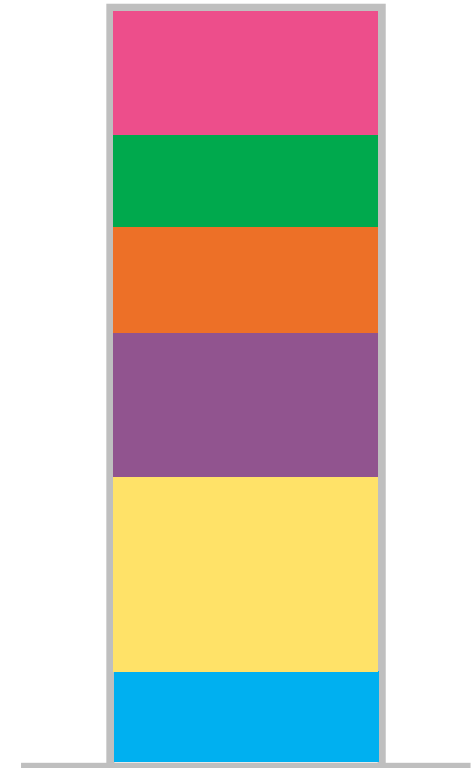
Can be implemented in
2030

Initiative

Transition the industry's vans and passenger cars to electric vehicles

Depends on

1. Green car taxation
2. Comprehensive plan for charging stations
3. Tax deduction for intelligent charging stations



Government implementation

Where are we today – and what should we prepare for

Handcenter Plus Live Nyhedsbrev E-avis Annoncer Erhverv Administrativt Persondata

POLITIKEN

Mandag

KLIMA DANMARK KULTUR DEBAT KLIMA INTERNATIONALT SPORT FORBRUG OG LIV IBYEN PODCAST FOR ABONNENTER MENU

Nybyggeri skal indeholde mere træ, mindre beton og færre p-pladser

I en ny strategi lægger regeringen op til at indføre CO₂-krav til nybyggeri i 2027. Det er for sent, mener branchen.

AUTOMATISK OPLÆSNING



Træ er så smukt bygget at vindtæret byggeriet her i Højbjerg ved Aarhus, men der er stadig regler, som gør det vanskeligt at bruge træ til nogle byggetyper.

Serier

FINANS

Seg Q

Forside Serier Analyse Indsigt Investor Økonomi Debat Top job Podcast E-avis Seneste nyt


C25	OMX530	NIKKEI	EURO	USD	GBP
1.551,12	1.586,46	24.905,59			

BREAKING Regeringen vil forbyde at holde mink frem til 2022

Regeringen vil renovere almene boliger for 30 milliarder

Som første udspil til den økonomiske genopretning efter corona vil regeringen lave grøn renovering af boliger.

CORONA RAMMER VERDEN 01.05.2020 KL. 14.00



»Rundt om i hele landet bliver der nu mulighed for at udfæste vinduer, isolere bade eller udfæste olietæt. Det vil gerne lade læsere, beskæftigelsen og klimaet.« skriver klimaminister Dan Jørgensen (S) i en pressemeddelelse. Arkivfoto: Miriam Dalgaard

Introduktion

Coronakrisen Transport- og Boligministeriet Regering

Regeringen vil afsætte 30 milliarder kroner fra Landsbyggefonden til grønne renoveringer af almene boliger fra 2020-2026. På "kort sigt" vil det kunne renovere 72.000 boliger.

BØRSEN.

Adgang via Rambøll Bliv kunde | Kontakt | Log ind

Forside Seneste Kurser Gazelle E-avisen Uddannelse Pro Finans Pro Selvstændig Pro International

Wammen søger igen hjælp til grøn omstilling fra topchefer: "Det skal fyre op under kedlerne i en grøn genopretning af dansk økonomi her og nu"

Regeringen modtager tirsdag en liste med prioriterede forslag, som ifølge finansministeren vil indgå som "en meget vigtig del i de politiske forhandlinger"



Store kommuner vil bygge for ni milliarder i 2021

Der vil laves 10 større kommuner vil bygge anlægsloftet markant sænke, efter indkomsten er faldet. Det giver stor byggeri i landet i 2021



Altinget

Regeringen fjerner anlægsloftet for kommunerne og regionerne resten af året



Altinget

Regeringen vil måle klimabelastning af offentlige indkøb for hundrevis af milliarder





National strategi for bæredygtigt byggeri

5 indsatsområder og 21 initiativer skal understøtte byggeriets grønne omstilling



- Mere klimavenligt byggeri og anlæg
- Holdbare bygninger af høj kvalitet
- Ressourceeffektivt byggeri
- Energieffektive og sunde bygninger
- Digitalt understøttet byggeri



Pulje til fremme af bæredygtigt byggeri

Aftaler om finansloven 2021

Der afsættes 25 mio. kr. årligt i 2021 og i 2022.

Maj 2021

Bred politisk aftale om gennemførelse af fem initiativer:

- Videnscenter om bygningers klimapåvirkning
- Videreudvikling af beregningsværktøjet LCAbyg
- Fremme af genbrug af bærende konstruktioner
- Fremme af miljøvaredeklarationer (EPD'er)
- Styrke omkostningseffektive energirenoveringer



Den frivillige bæredygtigheds-klasse

Første skridt mod mere bæredygtig regulering

- Toårig testfase med branchen for at indsamle erfaringer og evaluere brugen af klassen (2020-2022)
- Målsætningen er at indføre nye bæredygtighedskrav til byggeriet i bygningsreglementet fra 2023
- Med den nationale strategi for bæredygtigt byggeri er det besluttet at indføre kravet om LCA fra 2023



Rumakustik
i boliger



Livscyklusvurdering
– bygningens
samlede klimapå-
virkning



Ressource-
anvendelse på
byggepladsen



Støj fra ventilations-
systemer i boliger



Totaløkonomisk analyse
– omkostninger til
opførelse, drift og
vedligehold



Detaljeret eftervisning
af dagslysniveauet



Drifts- og ved-
ligeholdelsesplan
for opretholdelse
af indeklimaet

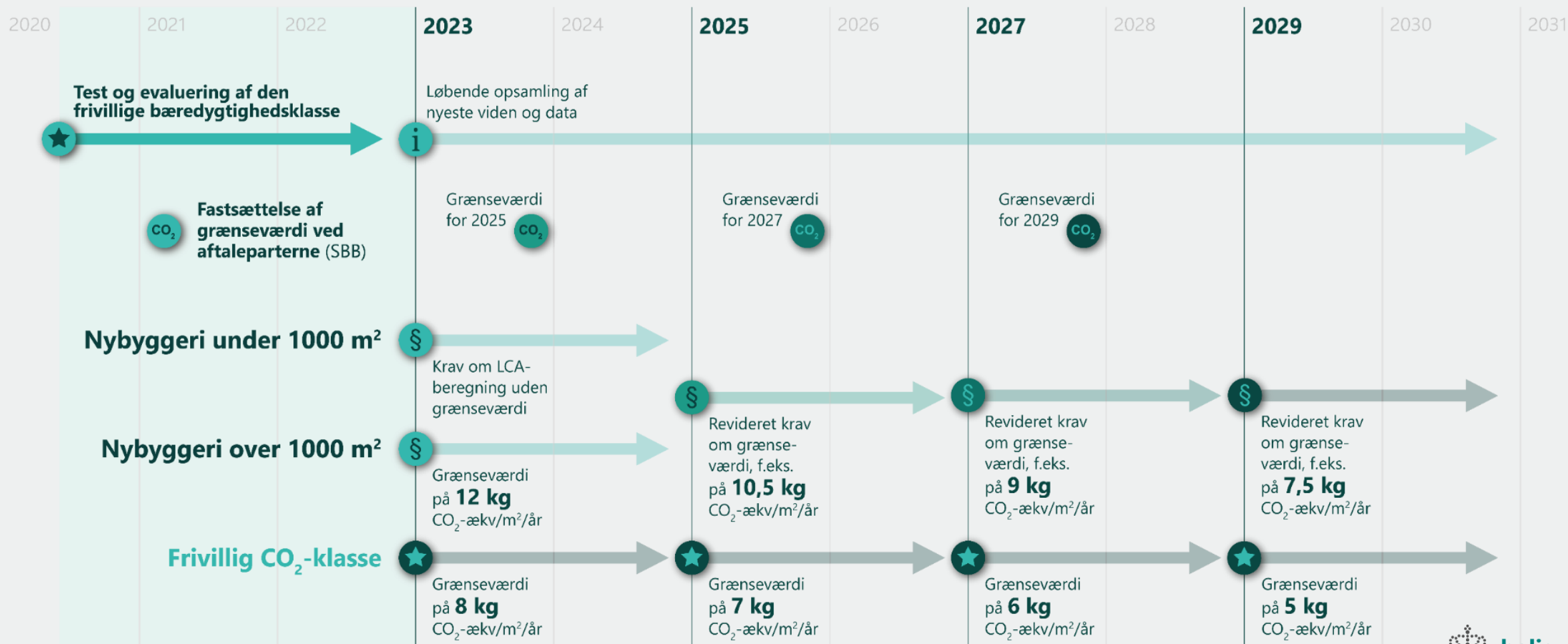


Afgasninger
til indeklimaet



Dokumentation
af problematiske
stoffer

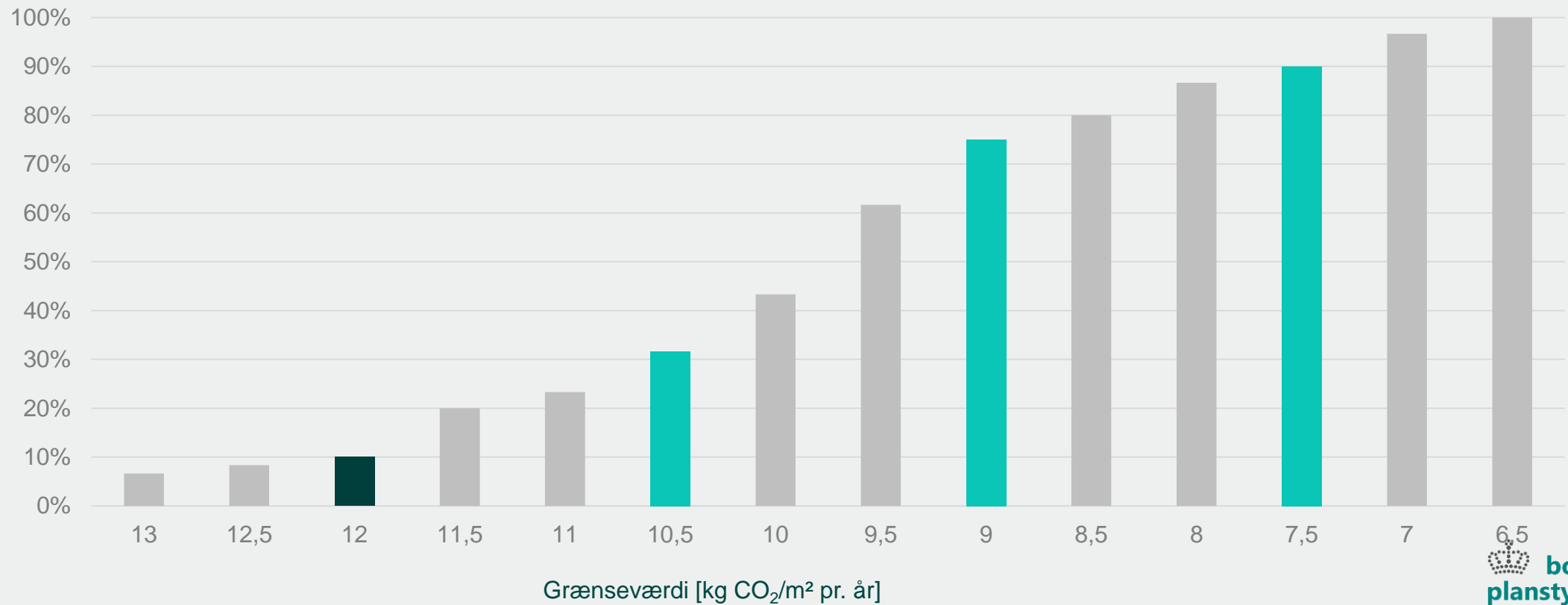
Trinvis indfasning og stramning af CO₂-krav



Indfasning af grænseværdi

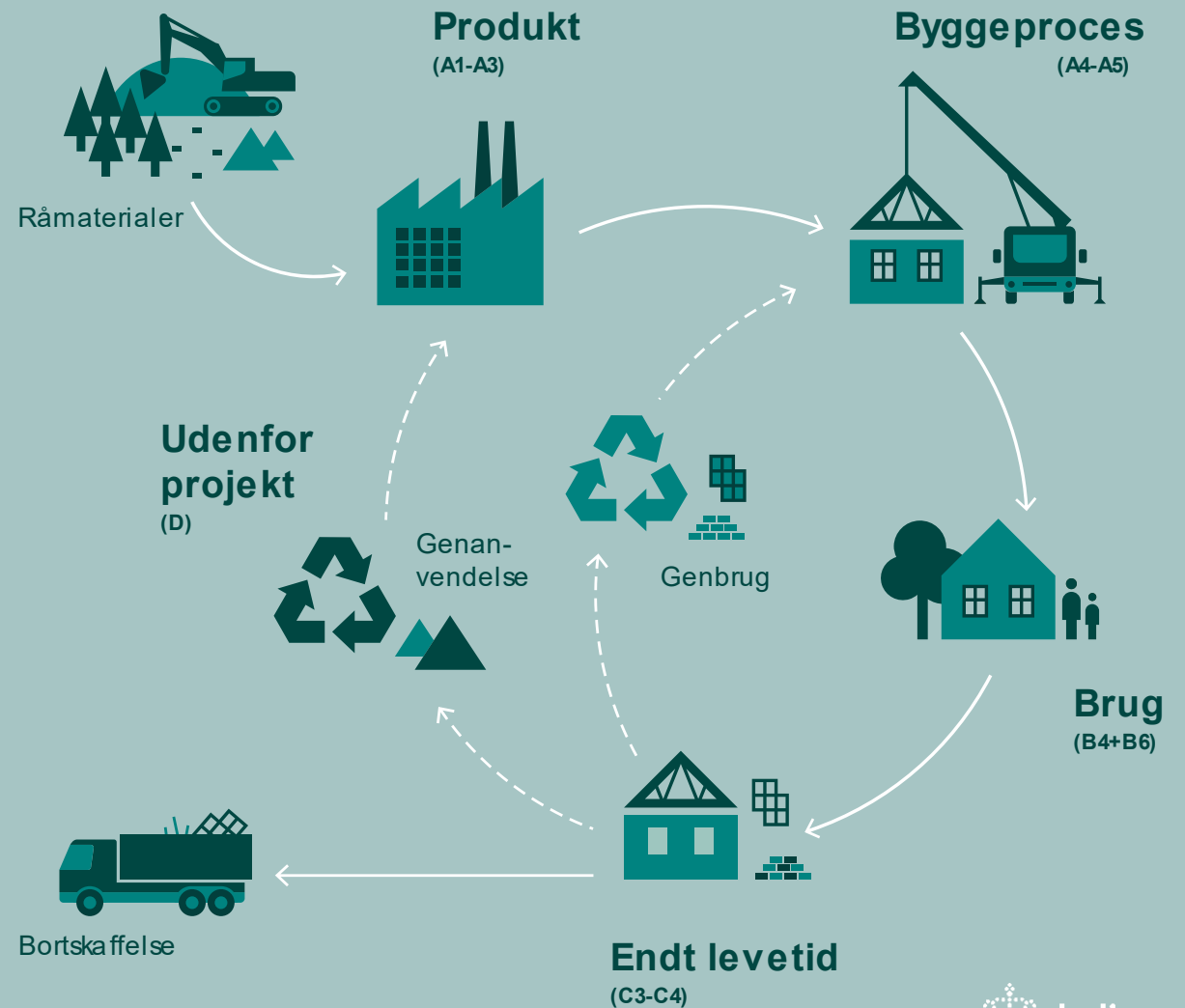


Andel nye bygninger, der ligger over fastsat grænseværdi fra 2023 og mulige fremtidige grænseværdier



Forberedelser frem mod indførelse af CO₂-krav

- **Videnscenter om bygningers klimapåvirkning**
 - Informere og vidensdele om LCA-beregninger, udarbejde undervisningsmateriale mm.
 - Digital opsamling af data og analyser
- **Videreudvikling af LCAbyg**
- **Fremme af miljøvaredeklarationer**
 - Informationsindsats
 - Indsats for at samle EPD'er
 - Smidig integration med LCAbyg
 - Pulje til tilskud til udvikling af EPD'er



Byggebranchen skal forberede sig til nye krav

Det skal understøttes, at hele branchen kan følge med indfasningen af krav til bygningers klimaaftryk



Branchen skal bl.a.

- opbygge erfaringer og viden om LCA-beregninger
- være opmærksomme på nye samarbejdspotentialer- og udfordringer ved brug af LCA-beregninger fra tidlig designfase til byggeriet er opført
- opbygge viden om og brug af miljøvaredeklarationer for byggevarer (EPD)

Der etableres et koordineringsudvalg for bæredygtigt byggeri, der bl.a.

- skal understøtte branchens indfrielse af kommende bæredygtighedskrav om dokumentation af LCA-beregning og grænseværdi
- skal sikre bred forankring af strategiens initiativer i byggebranchen

EU policy initiatives shaping construction and real estate

Taxonomy - starting question ...

... why does the EU have to take policy action and increase financial flows towards sustainable buildings?



Net-Zero
by 2050!

What is the EU Taxonomy? And why have it?

What is it?

A list of **economic activities** with **performance criteria** for their contribution to **six environmental objectives**.

“Classification system”

Why have it?

“...managing climate change depends on making finance flows consistent with the long-term decarbonisation objectives and climate-resilient development.”

Source: Mid-Term Review of the Capital Markets Union

Environmental objectives

1. **Climate change mitigation**
2. **Climate change adaptation**
3. Sustainable use and protection of water and marine resources
4. Transition to a circular economy, waste prevention and recycling
5. Pollution prevention and control
6. Protection of healthy ecosystems

Substantial contribution to at least one of the six environmental objectives

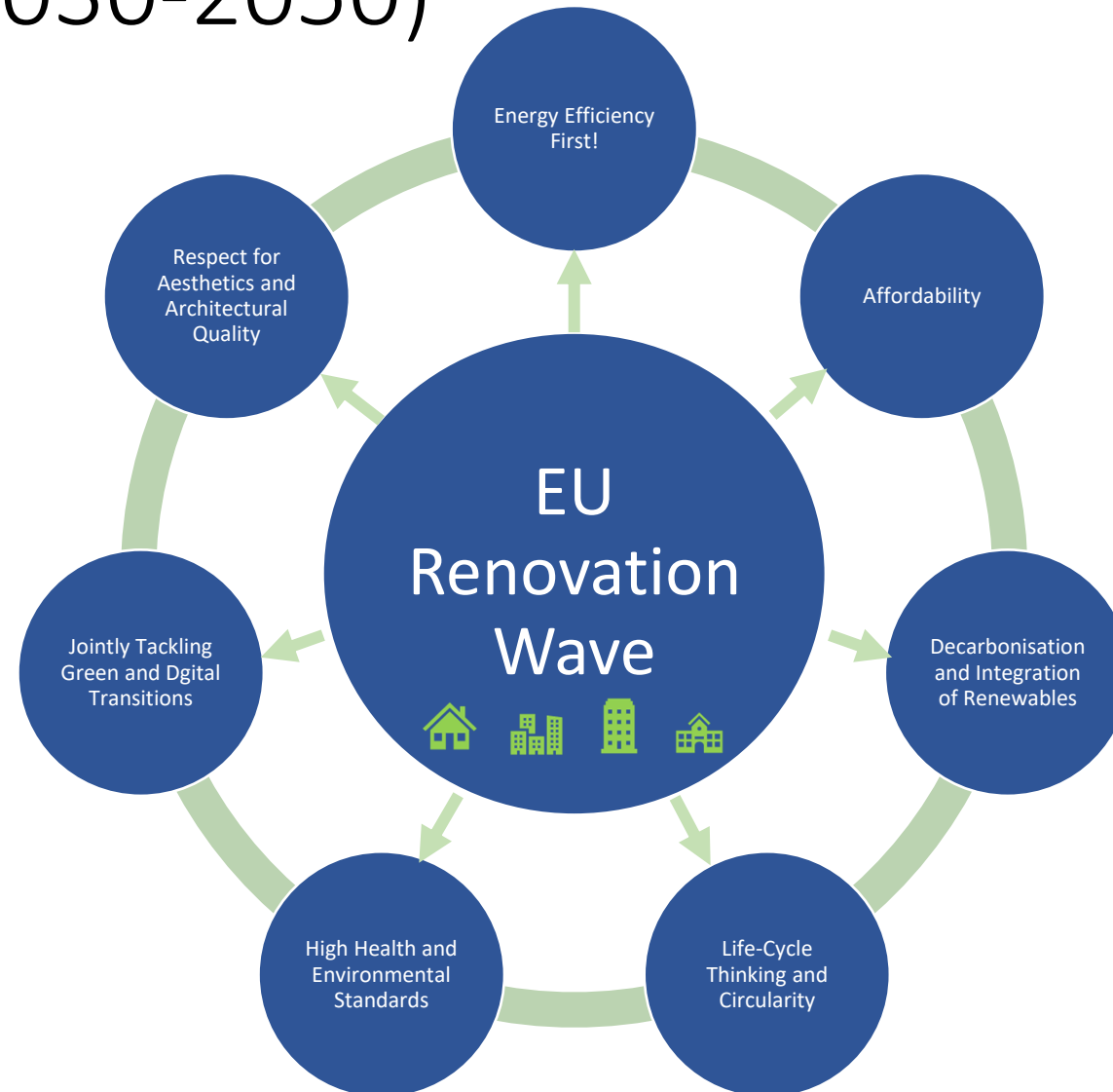


Do not Significant Harm with regard to the other five environmental objectives

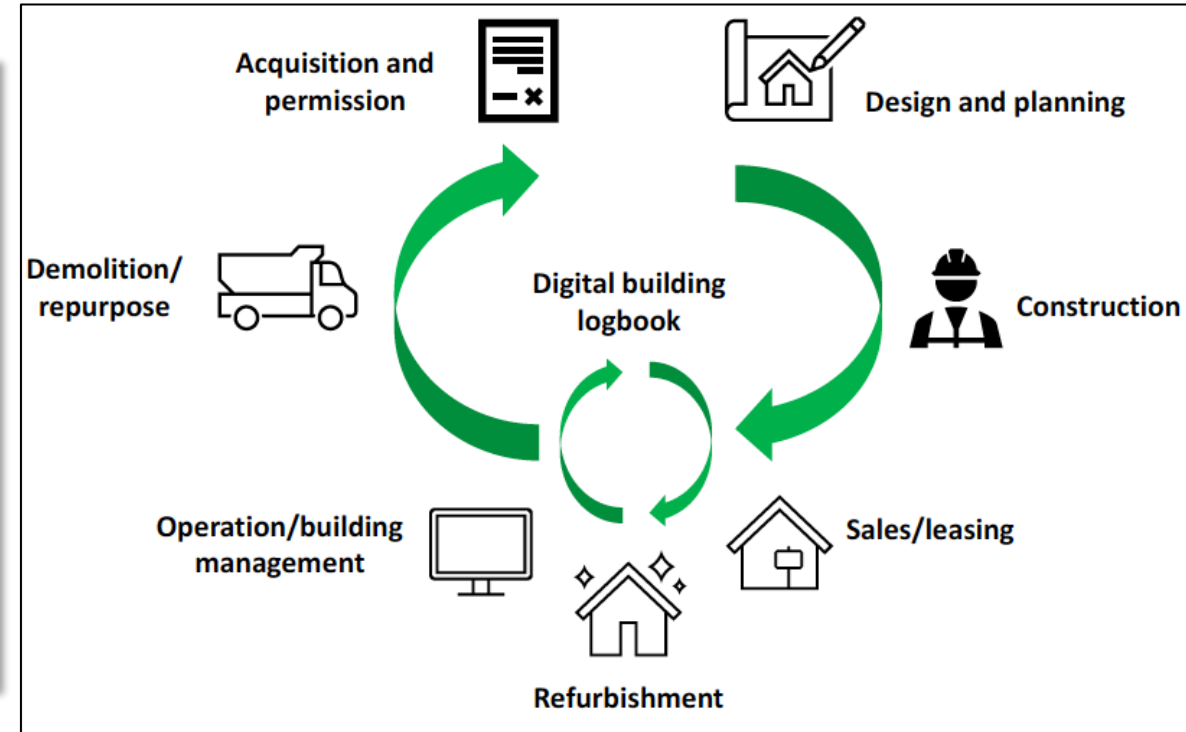


Meeting minimum social safeguards

A Renovation Wave for Europe – Key principles (2030-2050)



Digital Building Logbooks



Source: EU Commission

New European Bauhaus

- **Platform for experimentation and connection**, fostering collaboration across thinkers and doers who want to design our future ways of living together.
- **Bridge** between the world of **science and technology** and the world of **art and culture**.
- **Invitation** to change perspective and to look at our green and digital challenges as **opportunities to transform** our lives for the better.
- **Fresh approach** to finding **innovative solutions** to complex societal problems together through co-creation. The initiative aims to shape our thinking, behavior's, and markets around new ways of living and building, including by influencing public procurement.

- Bring citizens, experts, businesses, and Institutions together and facilitate conversations about making tomorrow's living spaces more **affordable and accessible**.
- Mobilise designers, architects, engineers, scientists, students, and creative minds across disciplines to reimagine **sustainable living** in Europe and beyond.
- Strive to improve the **quality of our living experience**. It will highlight the value of simplicity, functionality, and circularity of materials without compromising the need for comfort and attractiveness in our daily lives.
- **Provide financial support to innovative ideas and products** through ad-hoc calls for proposals and through coordinated programs included in the Multi-Annual Financial Framework.

Thank you

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Bright ideas.
Sustainable change.