

LIFELINE-2050

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Lifeline-2050

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Green 2050

Pillar - Resource efficiency



Project 1
Project 2
Project 3
...

Lifeline:

Methods and tools for Optimal Utilization of
Resources in Built Environments

towards

Climate Neutral Economies by 2050



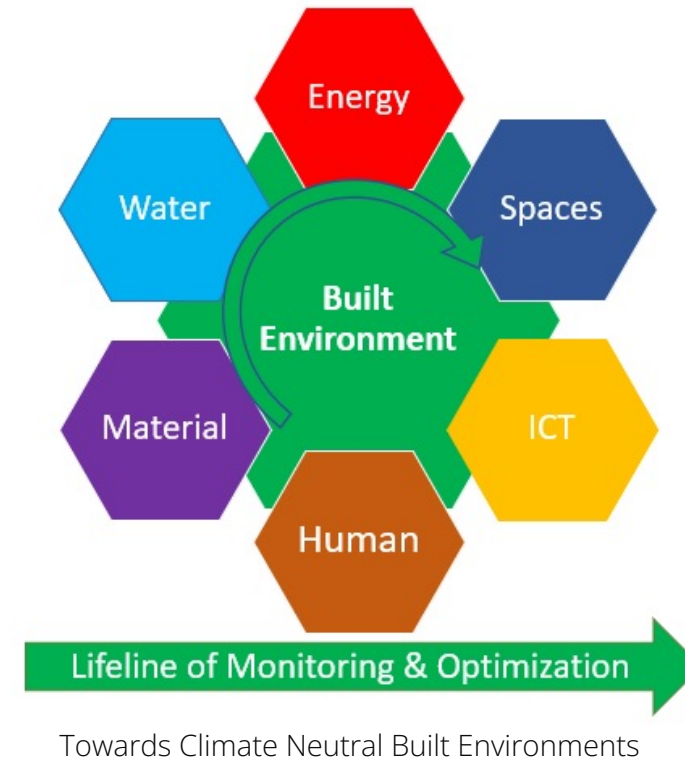
NTNU



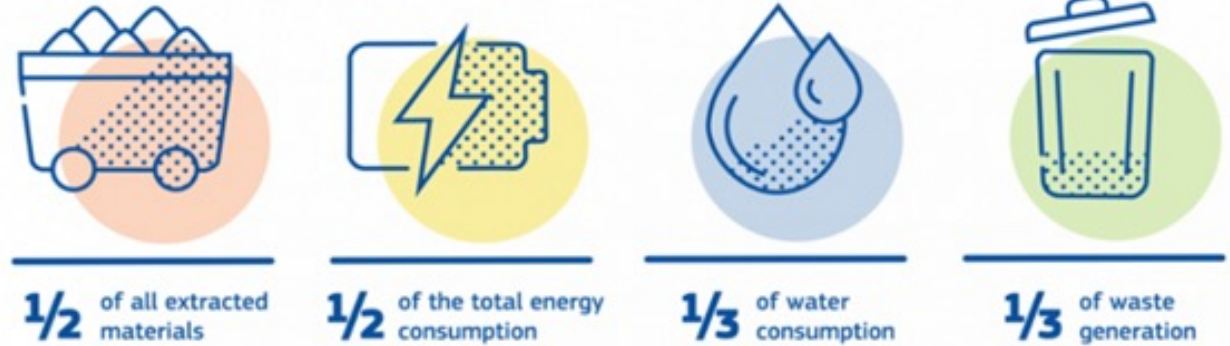
Aim and objective

The aim is to
optimize the utilization of our limited resources
in synergetic way
during the life cycle of built environments (BE).

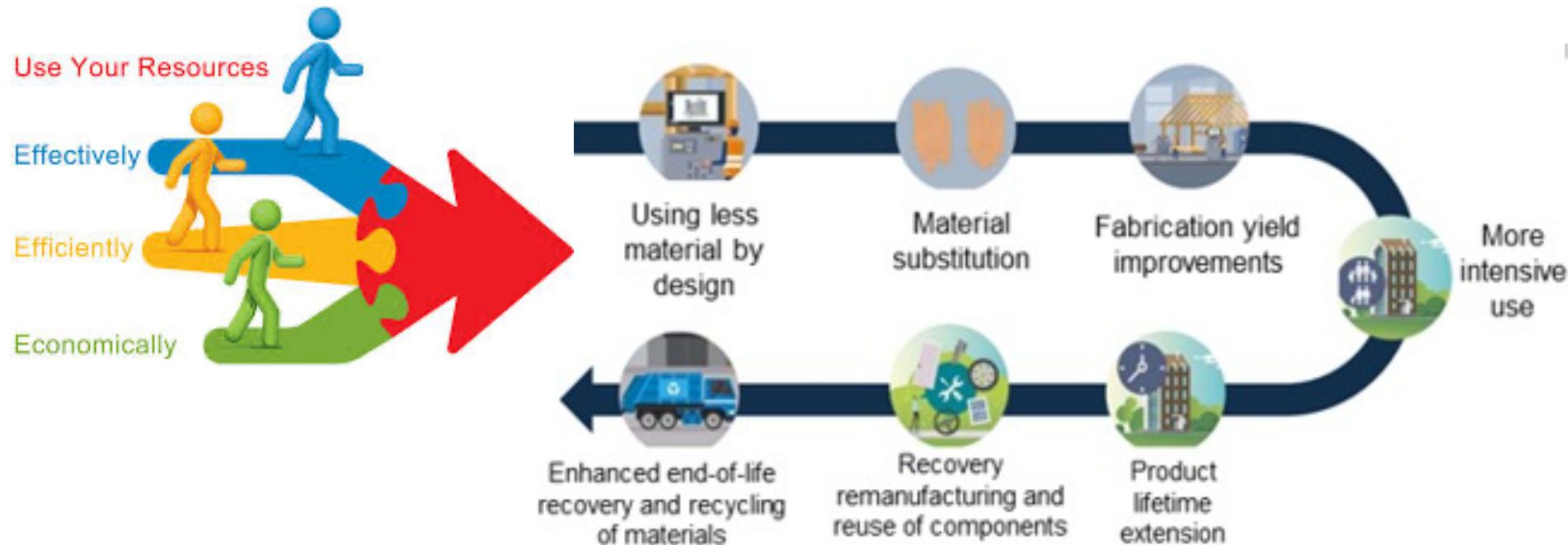
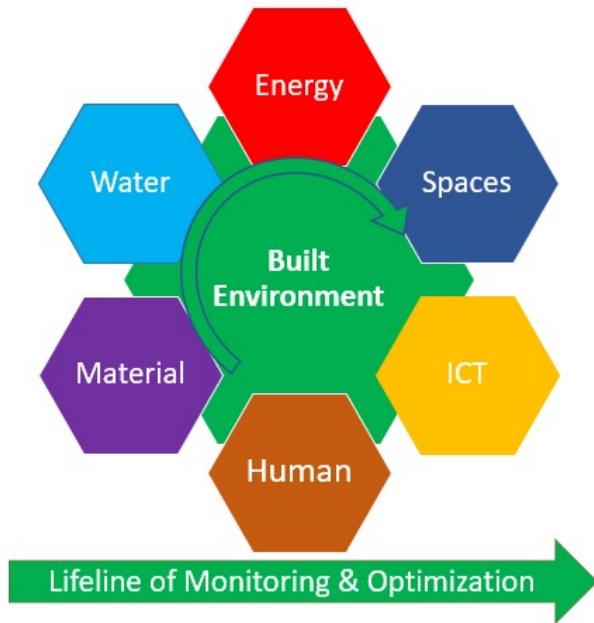
The main objective is to develop
a holistic knowledge-based assessment framework,
digital optimization toolbox (sub-digital twins),
education-innovation hub.










The Impact



Building environments are the **most resource-intensive sociotechnical systems** in industrialized countries [Giljum, S. et al. 2016].



Multidisciplinary team and PhD positions

PhDs	PhD-topics and reference to the SO-positions	Main supervisor
PhD 1	Increasing material circularity within structural systems.	Haris Stamatopoulos 
PhD 2	Achieving sustainable positive energy districts through local energy sources.	Natasa Nord 
PhD 3	Managing the asset of water nature-based solutions.	Franz Tscheikner-Gratl 
PhD 4	Maximizing the utilization of indoor spaces and systems towards healthy intelligent buildings.	Mohamed Hamdy 
PhD 5	Upgrading smartness level of buildings with effective use of ICT.	Amin Moazami 
PhD 6	Engaging human through innovative business models and KPIs for optimal decision-making.	Nora Johanne Klungseth 
PhD 7	Creating an innovative information chain for synergetic utilization of resources.	Lizhen Huang 

Material

Energy

Water

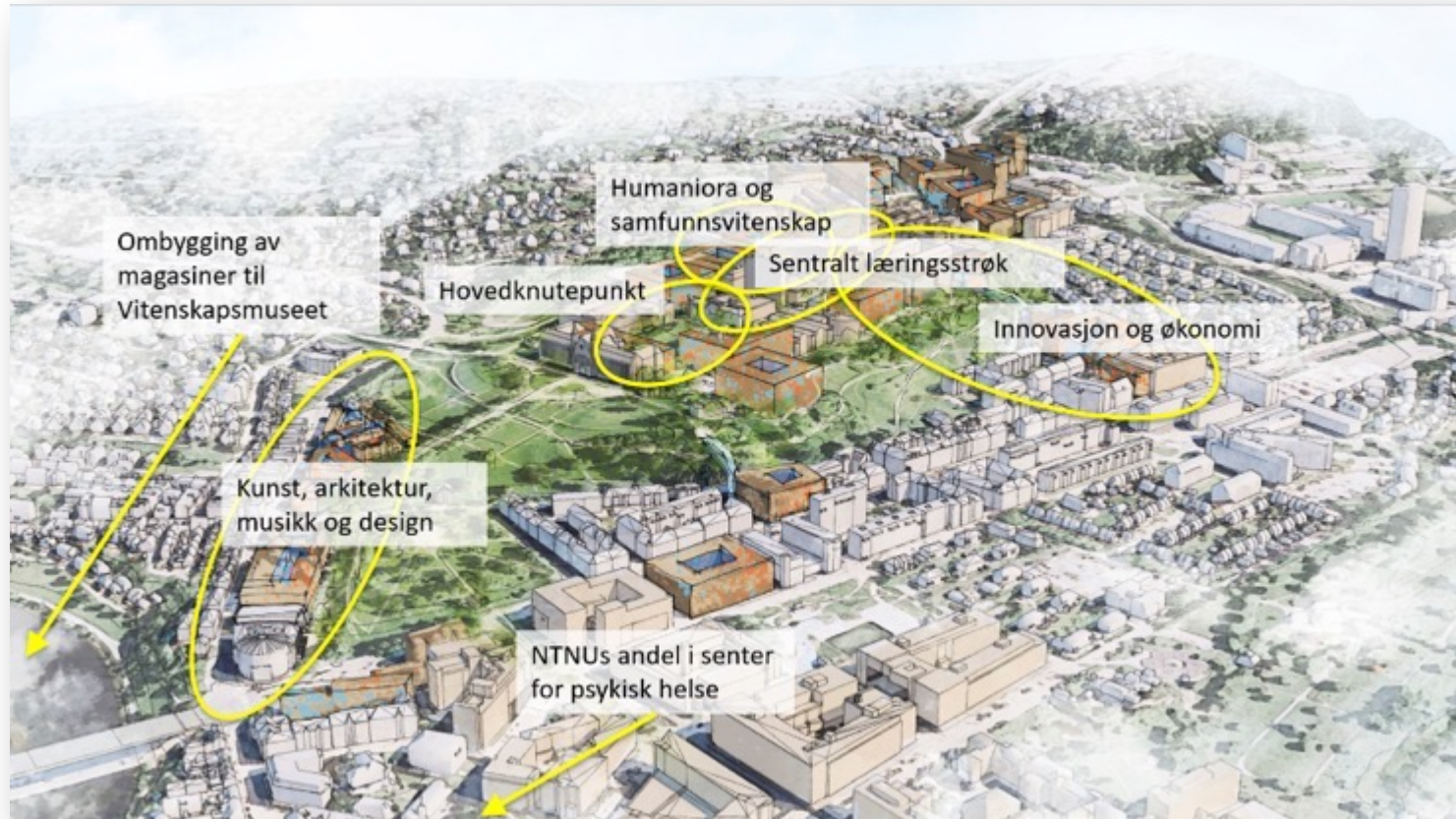
Indoors

ICT

Human

Data

Demonstration – Cooperation with campus development project



The government has allocated 40 million NOK for a pre-project on NTNUs unified campus in 2020. Statsbygg is now preparing its organization and starting the pre-project.

The illustration shows the areas explored for new buildings and re-building to unify NTNUs campus in Trondheim. The yellow circles show which areas to be further investigated. Image: Eggen Arkitekter/Hanna Jones/NTNU

<https://www.ntnu.edu/campusdevelopment/2020/unified-campus-what-happens-in-2020>

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Thank You!



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