



Urban City 2050

Urban Infra Revolution UIR

Developing a clean, safe and renewable city

Geopolymer Camp 2018

Dr. Mervi Matilainen, CEO
Apila Group Ltd.
2018



Metsä



storaenso



UPM



Saimaa University of Applied Sciences



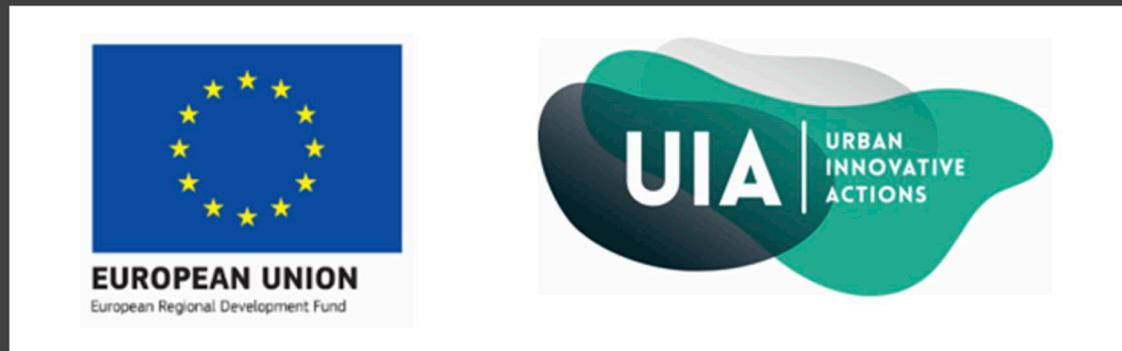
reform



Urban Infra Revolution (UIR)

Duration: 11.2017—10.2020

Financing: Co-financed by the European Regional Development Fund through the **Urban Innovative Actions (UIA) Initiative**



UIA is an Initiative of the European Union that provides urban areas throughout Europe with resources to test new and unproven solutions to address urban challenges.

Based on article 8 of ERDF, the Initiative has a total ERDF budget of EUR 372 million for 2014-2020

Circular Economy projects funded in 2017

City of Antwerp (Stad Antwerpen)
City of Heraklion (Δήμος Ηρακλείου)
City of Kerkrade (Gemeente Kerkrade)
City of Lappeenranta (Lappeenrannan kaupunki)
City of Ljubljana (Mestna občina Ljubljana)
City of Maribor (Mestna Občina Maribor)
City of Sevrان (Ville de Sevrان)
City of Velez-Malaga (Ayuntamiento de Vélez-Málaga)

City of Lappeenranta

ERDF Budget: € 3,386,638.40

Total Budget: € 4,336,568.40

Urban Infra Revolution

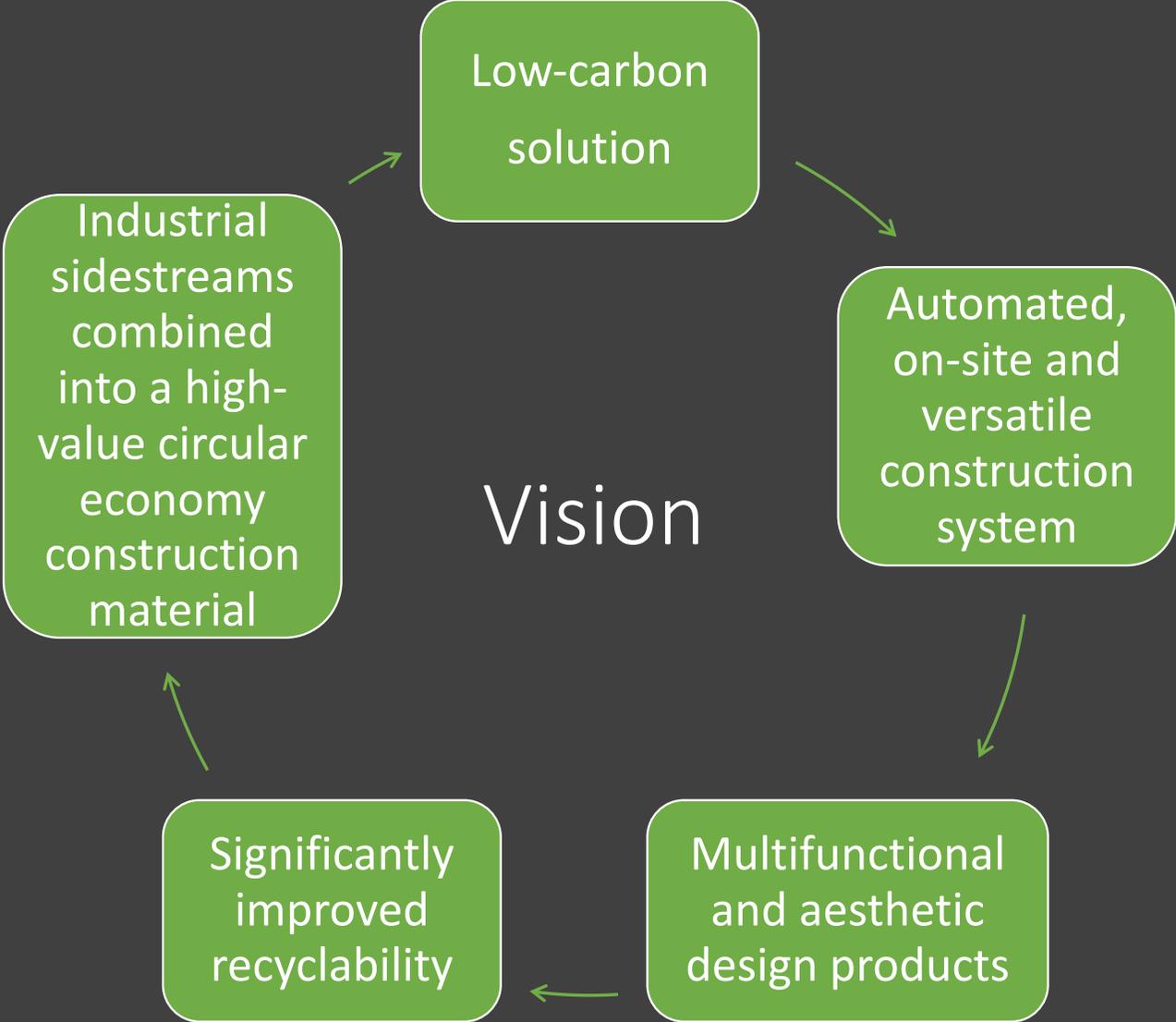
The City of
Lappeenranta aims to
reduce the
environmental impacts
of its operations.



It strives for a carbon-neutral, waste-free and emission-free city, with increasing wellbeing among its 72 725 inhabitants.

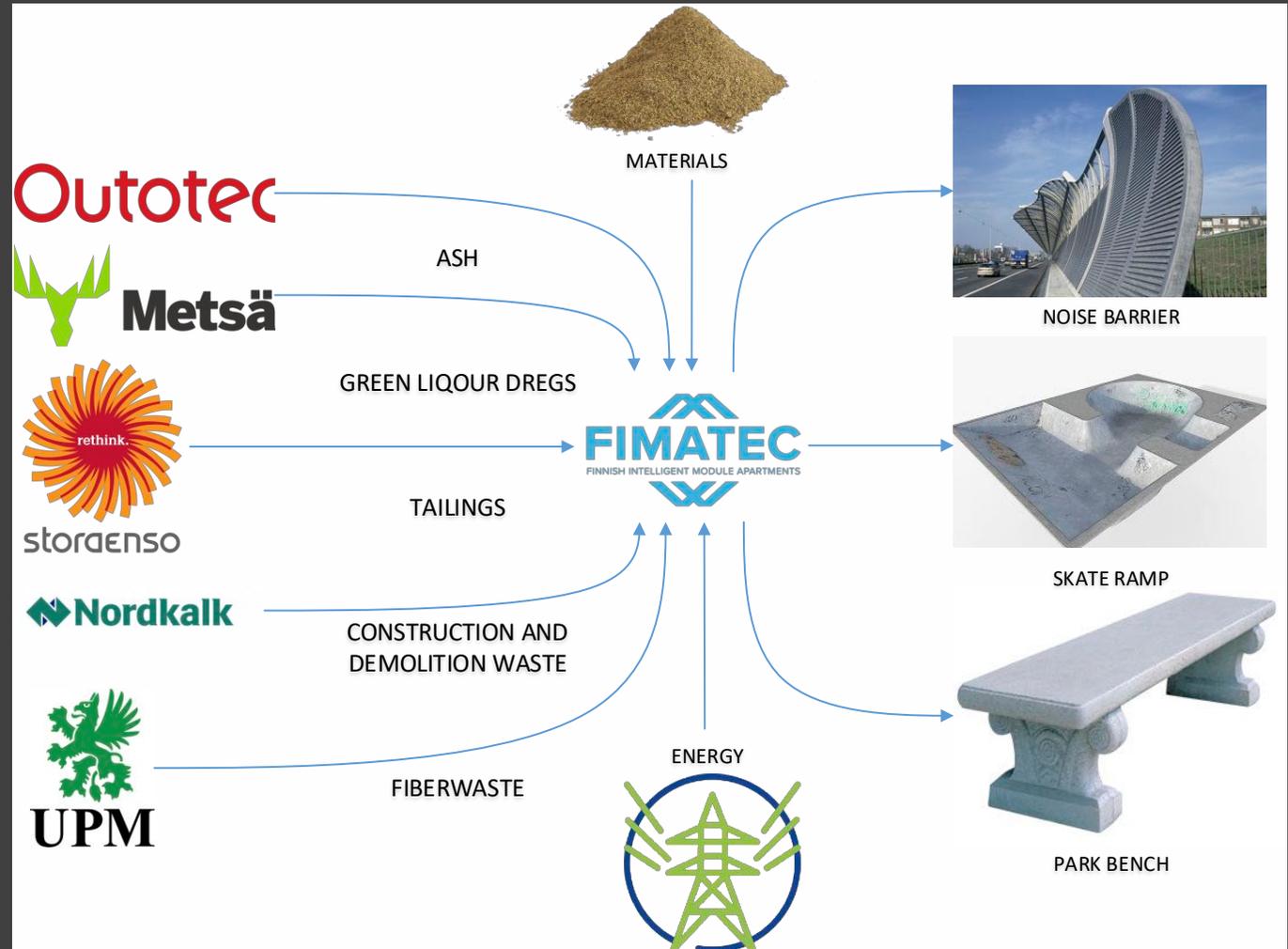
Urban Infra Revolution

*Closing the loop
with 3D printable,
recyclable
geopolymer
composites made
of sidestreams.*

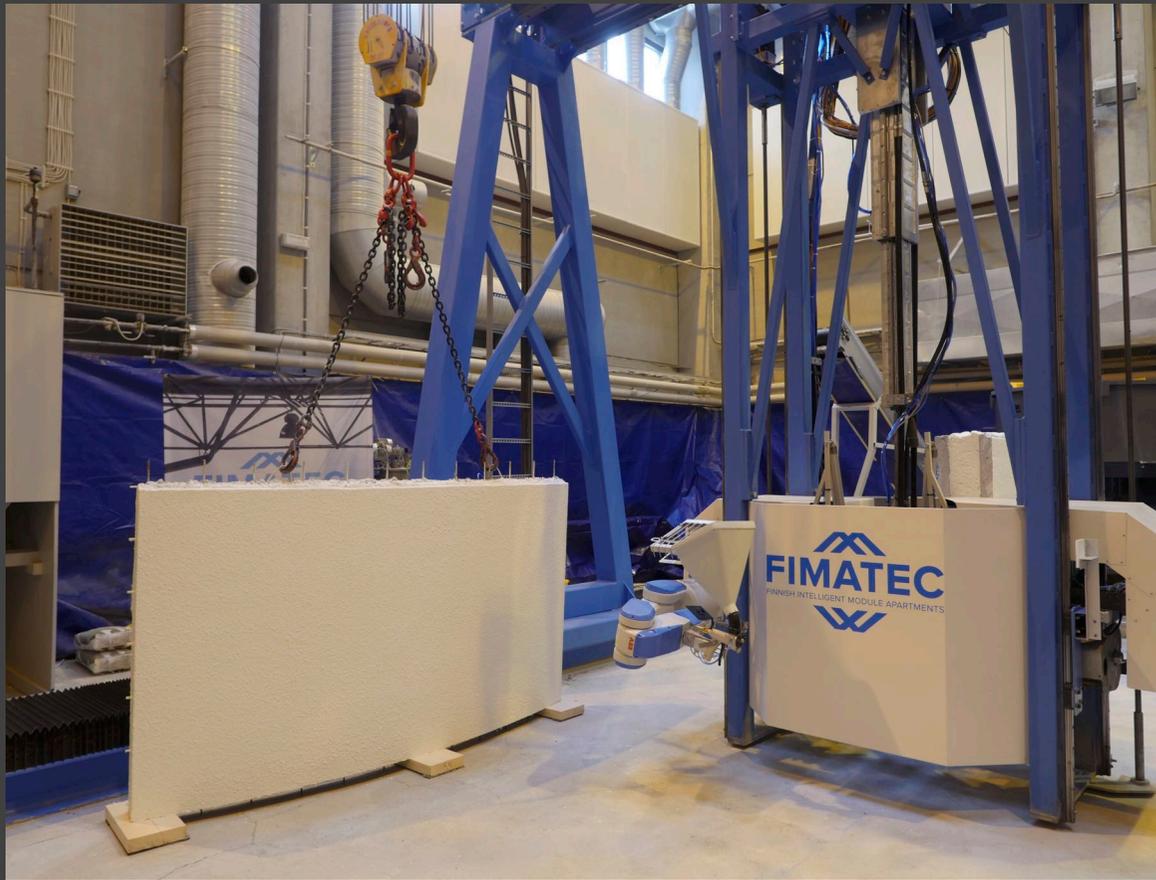


Urban Infra Revolution

Mission



Urban Infra Revolution



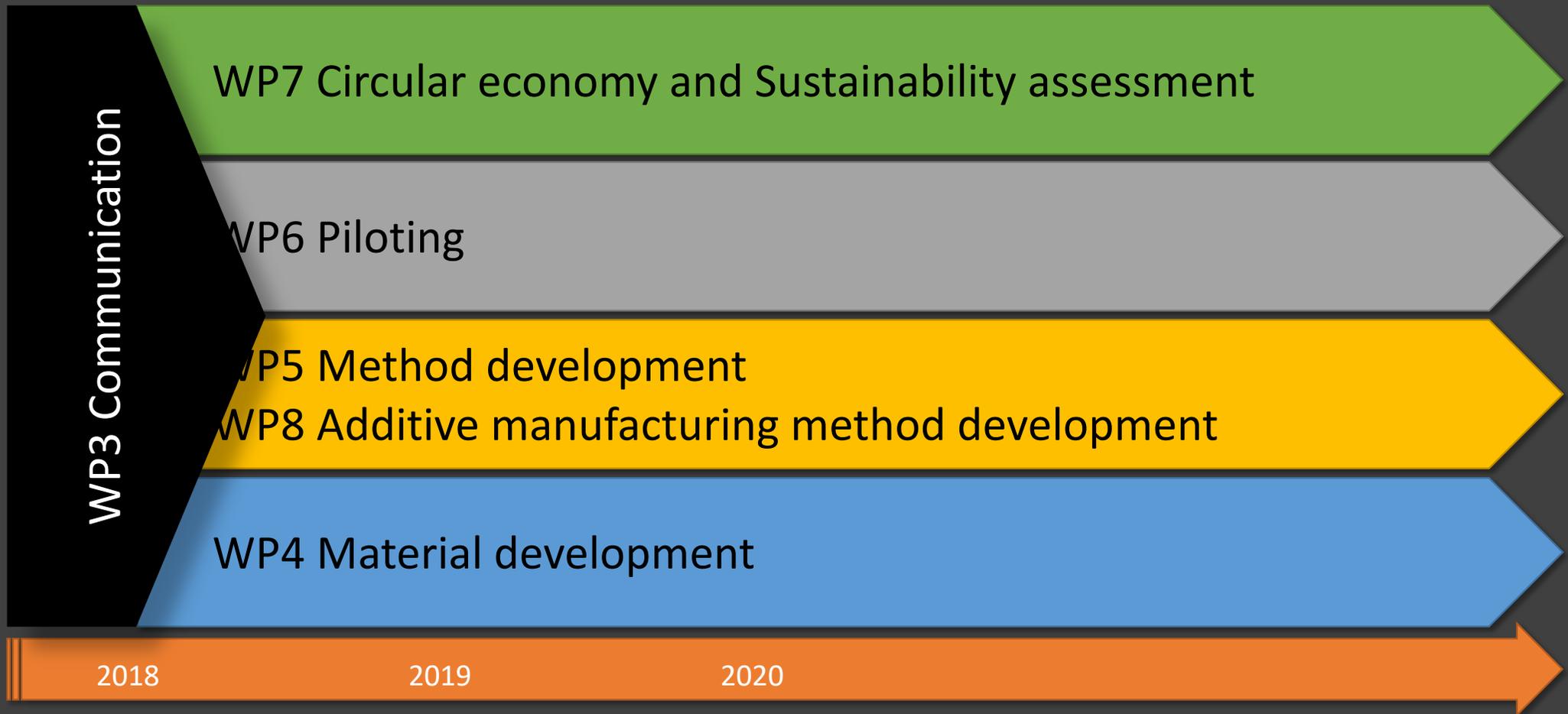
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Urban Infra Revolution

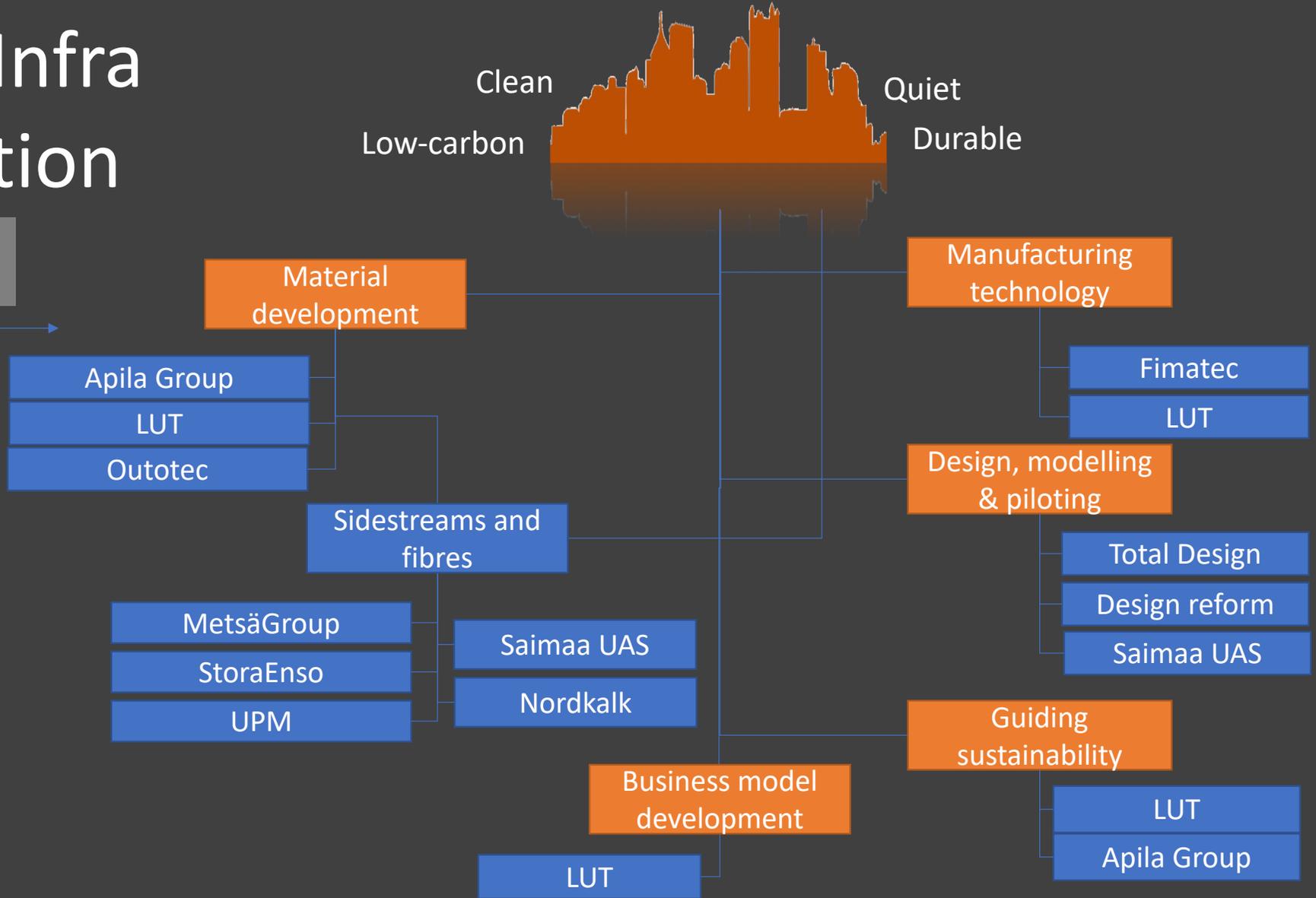
Roadmap



Urban Infra Revolution

PhD Kinga
Korniejenko

Expertice



Industrial side streams

- Ashes
- Tailings
- Green liquor dregs
- Construction & demolition waste
- Biofibres



Raw materials

Materials handling

- Quality control
- Separation / enrichment
- Grinding
- Drying
- Logistics

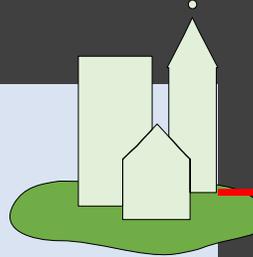
Additive
manufacturing of
urban structures

Devices,
licences

Technology
development (AM)

Using urban construction

- Cities
- Industry
- Citizens



Recycling

Thank You for Your attention!

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Apila Group – Closing the loop with materials wisdom

- Circular economy pioneer since 2009
 - Surveys for sidestream utilization
 - Industrial symbioses
 - Ecosystem development
 - Material development
 - Nutrient recycling technology development
- Personnel: 4 Dr (Chem) + 2 M.Sc. (Tech.)
- Premises and operations in Eastern Finland
 - Joensuu: Headoffice and Laboratory of Sustainable Products
 - Lappeenranta: Office for Environmental services

Awards

- 1st prize in Start me up -business idea competition in 2017: Circular economy breakthrough product from waste

www.apilagroup.fi

@Apilagroup

#materialswisdom