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Can innovative infrastructure strategies unlock the path to carbon neutrality?

K. Negishi, F. Ott, H. Pley-Leclercq

ORIS Materials Intelligence

irf2024.irfofficial.org

Agenda

1. Goals, gaps and solutions
2. Framework for reducing infrastructure's impact
3. Digital platform enabling Collaboration
4. Conclusion



Infrastructure's impact, gaps and solutions

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Urgency in climate mitigation and gaps

Today, **25%** of global GHG emissions coming from the transport sector, out of which **75%** is due to the road transport.



greenhouse gas emissions in transport by 2050

(European Green Deal)

However, engagement from countries for the transport sector is low

Economy-wide mitigation target : 84%

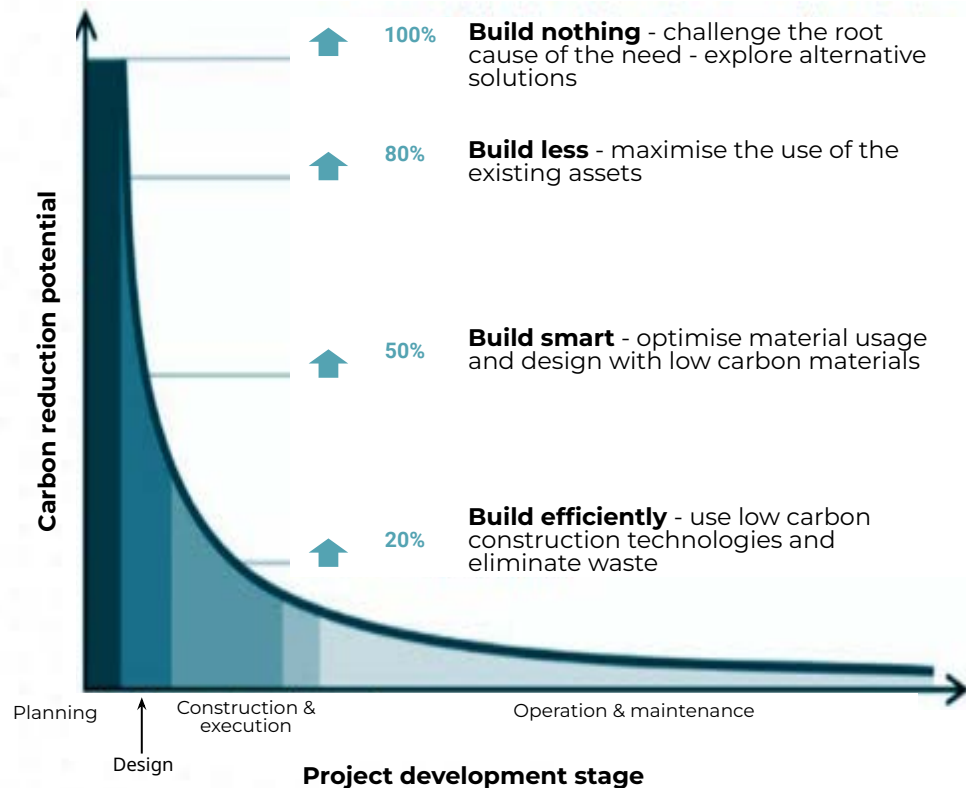
Transport sector mitigation target : 16%

Transport sector adaptation target : 4%

Non-transport mitigation target : 27%

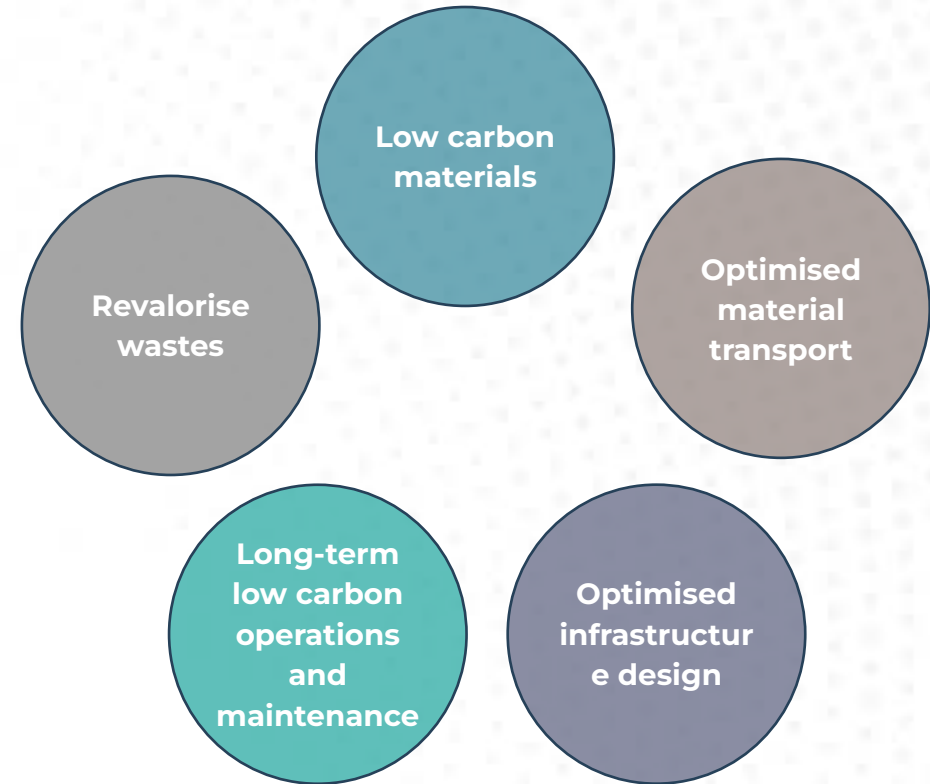
Principles for climate mitigation

Earlier actions for greater potential of climate mitigation



(source: World Green Building Council, 2019)

Life cycle thinking



Streamlined process for sustainable decision-making

Assess

Base design to identify area of focus for more sustainable solutions

Benchmark

Alternative solutions with a focus on big impact reduction

Compare

designs based on key performance indicators

Decide

a final solution to achieve global objectives



Upscaling materials intelligence to infrastructure intelligence

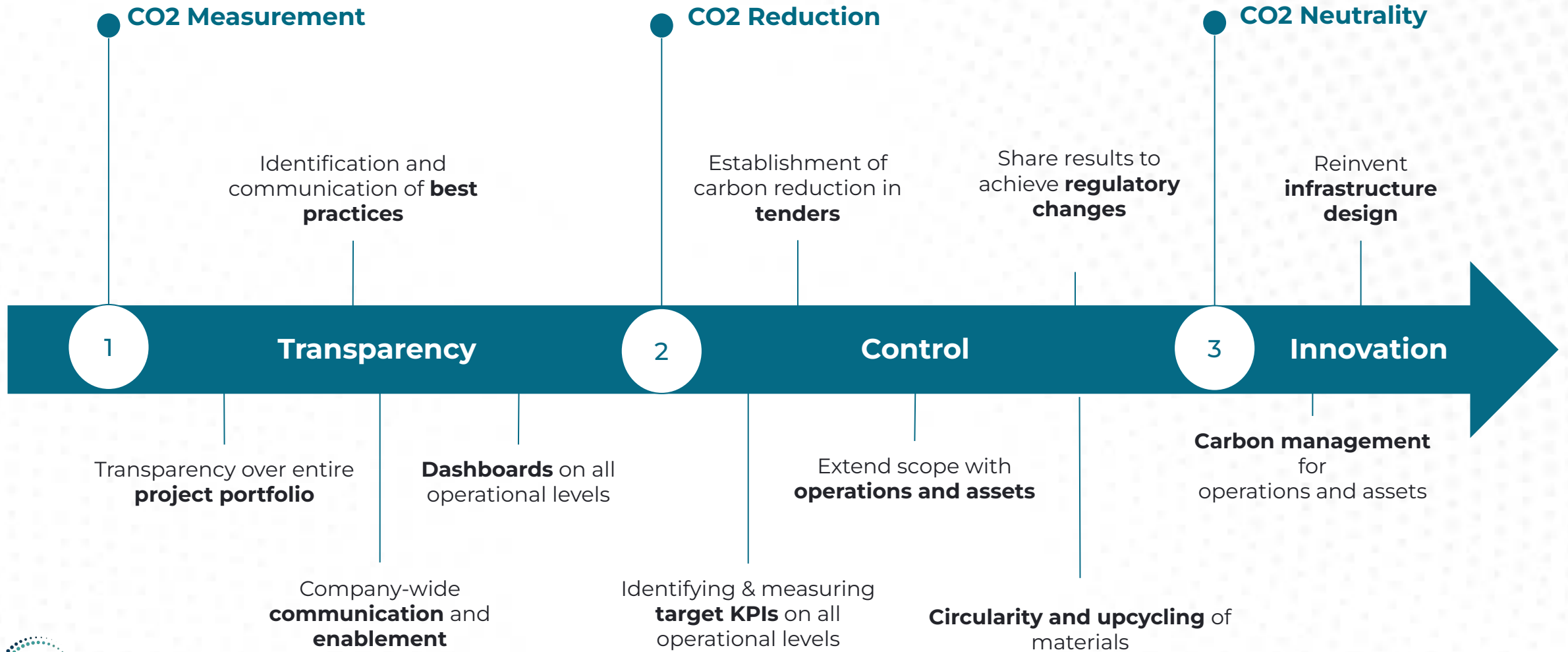




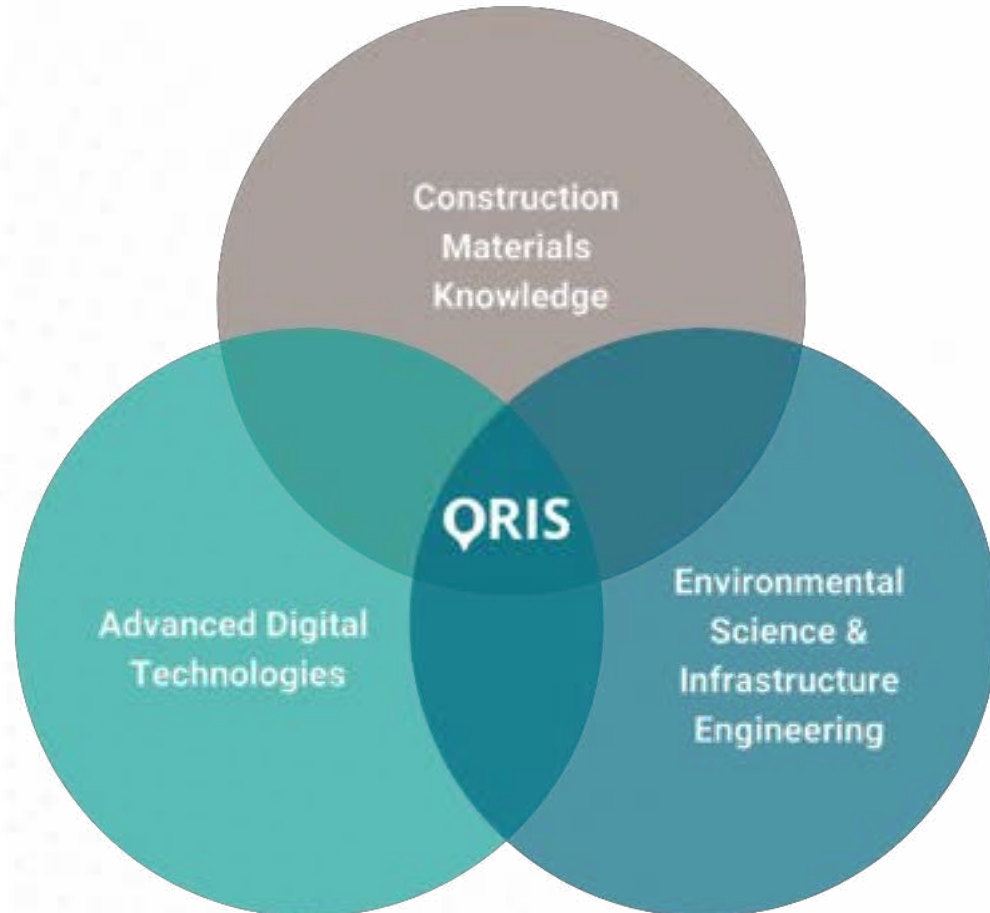
Framework for reducing impact in infrastructure

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Framework for carbon neutrality in infrastructure



Innovation based on Collaboration and Data



Crossing 3 sectors of expertise enabling intelligent project data management

- ❖ **Data collection** through a whole value chain of infrastructure projects
- ❖ **Data connection** to various modelling tools for infrastructure performance assessment
- ❖ **Data visualisation** for supporting informed decision makings



Collaborative digital platform

ORIS Materials Intelligence

Connecting materials to construction projects

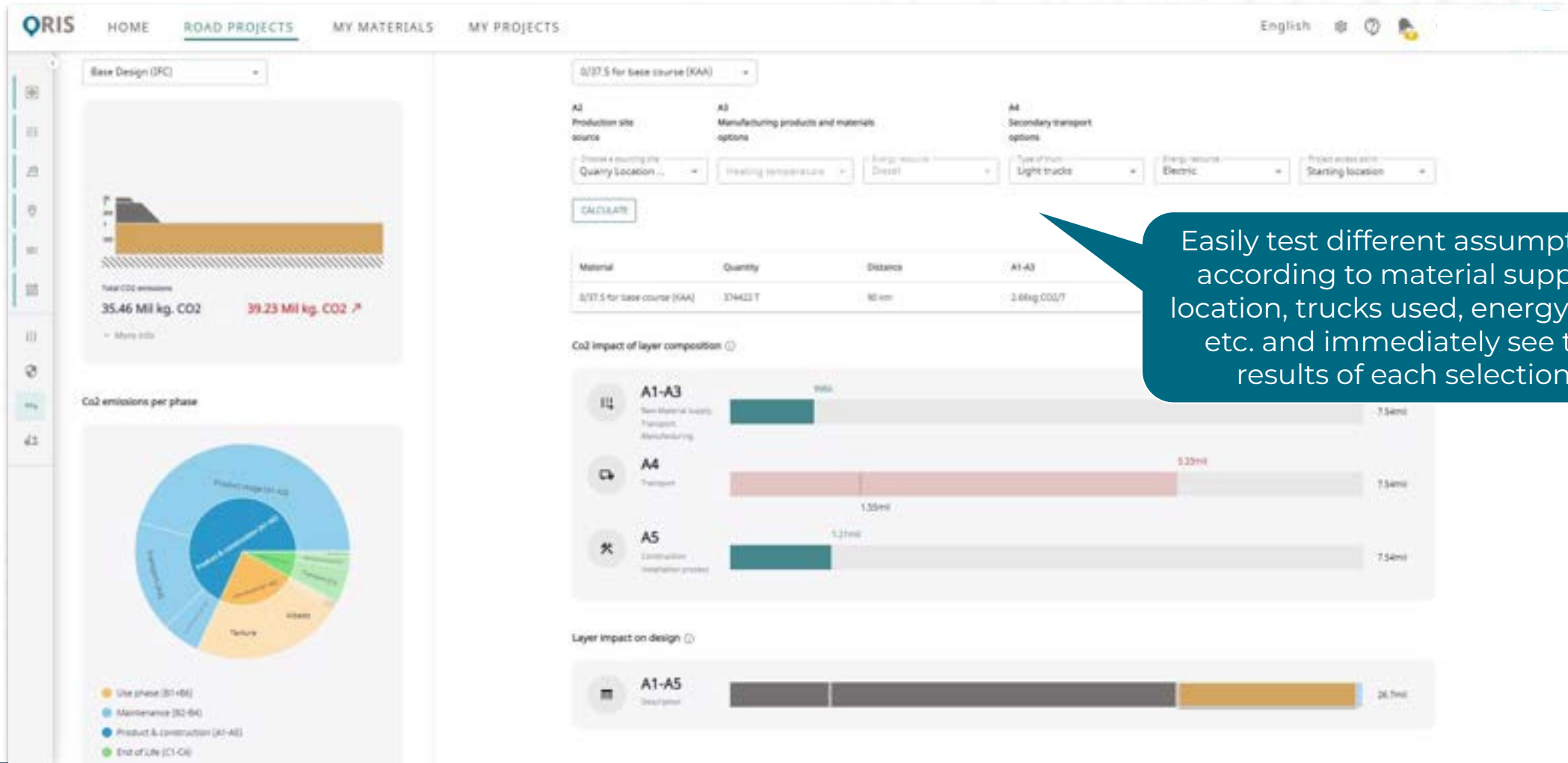
The screenshot displays the ORIS software interface. At the top, the navigation menu includes HOME, PROJECT PORTFOLIO, MATERIALS AND SOURCING, and TRANSPORTATION ANALYSIS. The user is logged in as Nicolas Miravalls. The main section is titled 'Sourcing' and shows details for 'Section 3 PK23350 to 38300' in Finland, with 'Lot Name: OT1' and 'Project Name: TTJ: Espoo-Salo'. A 'RETURN TO PROJECT' button is visible in the top right.

On the left, there are two tabs: 'PRODUCTION SITE' and 'PROJECT SITE'. Below them is a filter section with a 'filter by' dropdown and a 'Sort by' dropdown set to 'Distance'. A list of material suppliers is shown, each with a count and an 'All' checkbox:

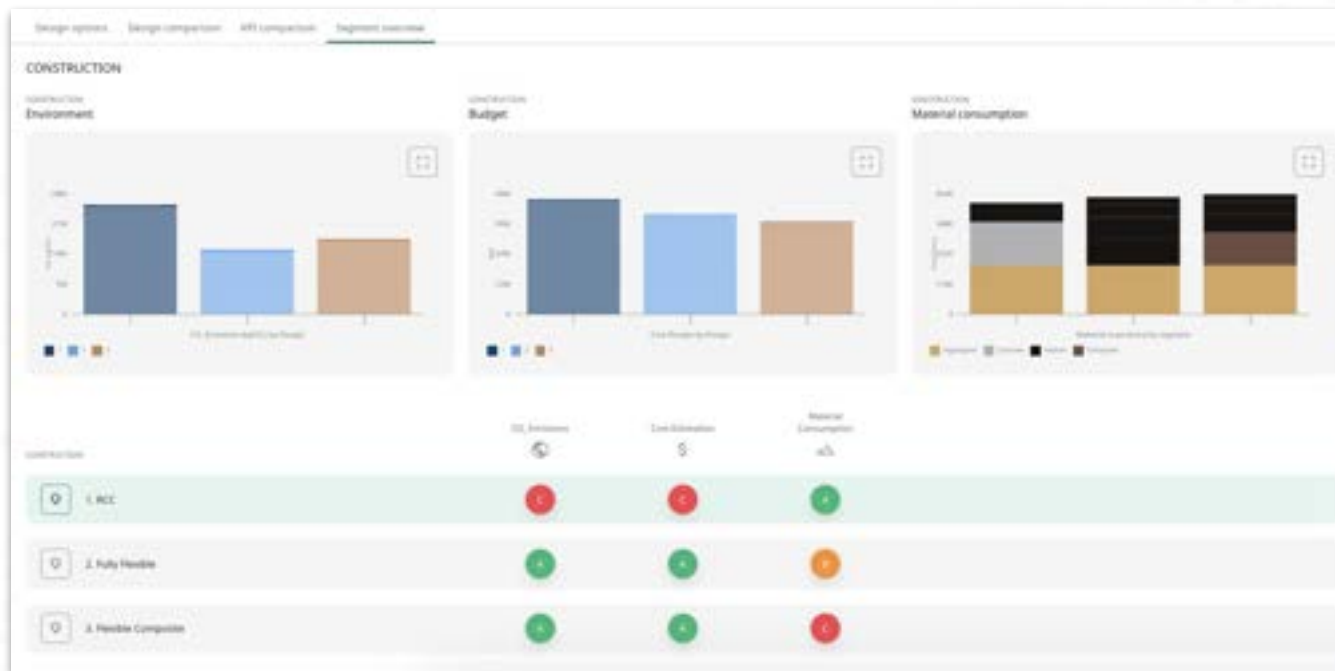
Material Type	Count	Action
Asphalt plant	7	All
Bitumen Supplier	3	All
Concrete plant	29	All
Quarry	15	All
Recycling	3	All
Steel supplier	2	All

At the bottom of the list is an 'ADD SITES TO LIST' button. The right side of the interface features a map of the region, including parts of Norway, Finland, and Estonia. Numerous blue pins are placed on the map, representing the locations of the selected material suppliers. A teal speech bubble points to the map with the text: 'Selection of all the material suppliers that should be taken into the analysis. ORIS selects the supplier closest to the construction site.'

Gathering insights through life cycle stages

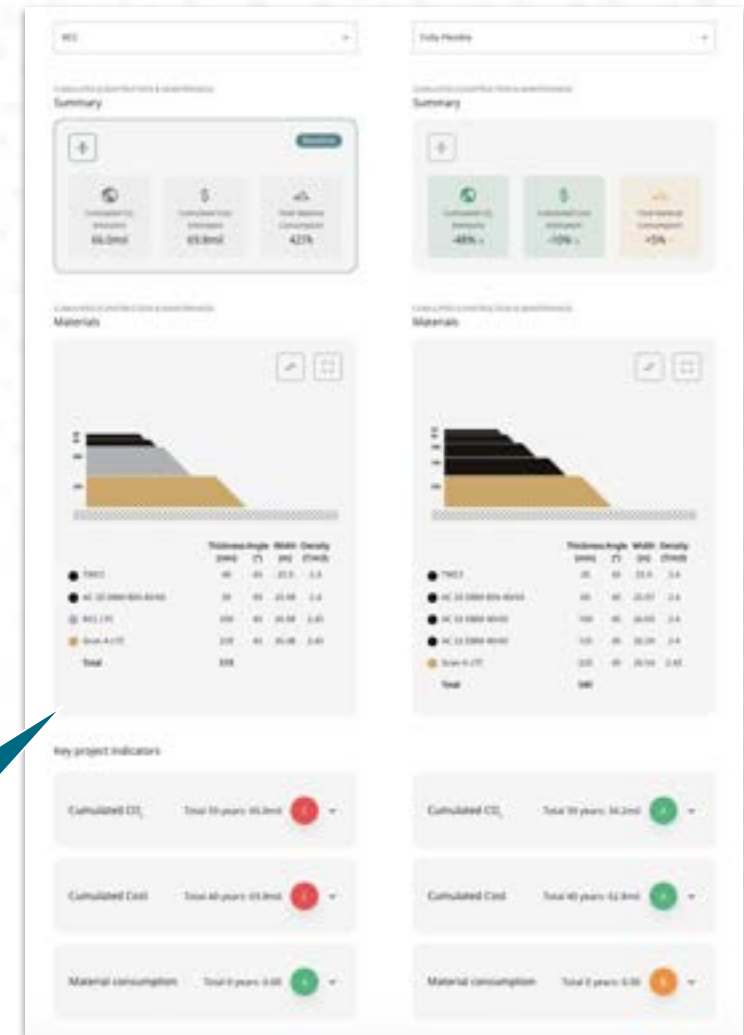


Supporting decision-making



See how different pavement designs compare to each other. Choose the period of observation.

Detailed side by side comparison of two selected pavement options.

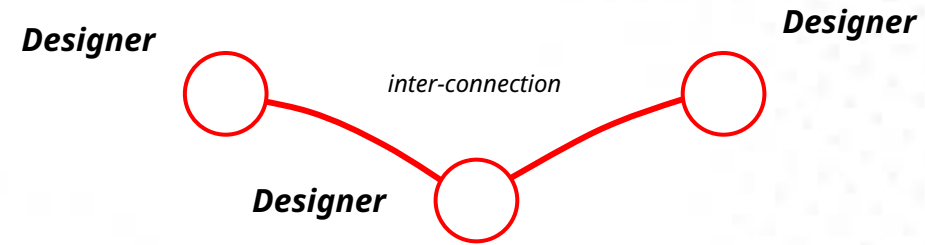




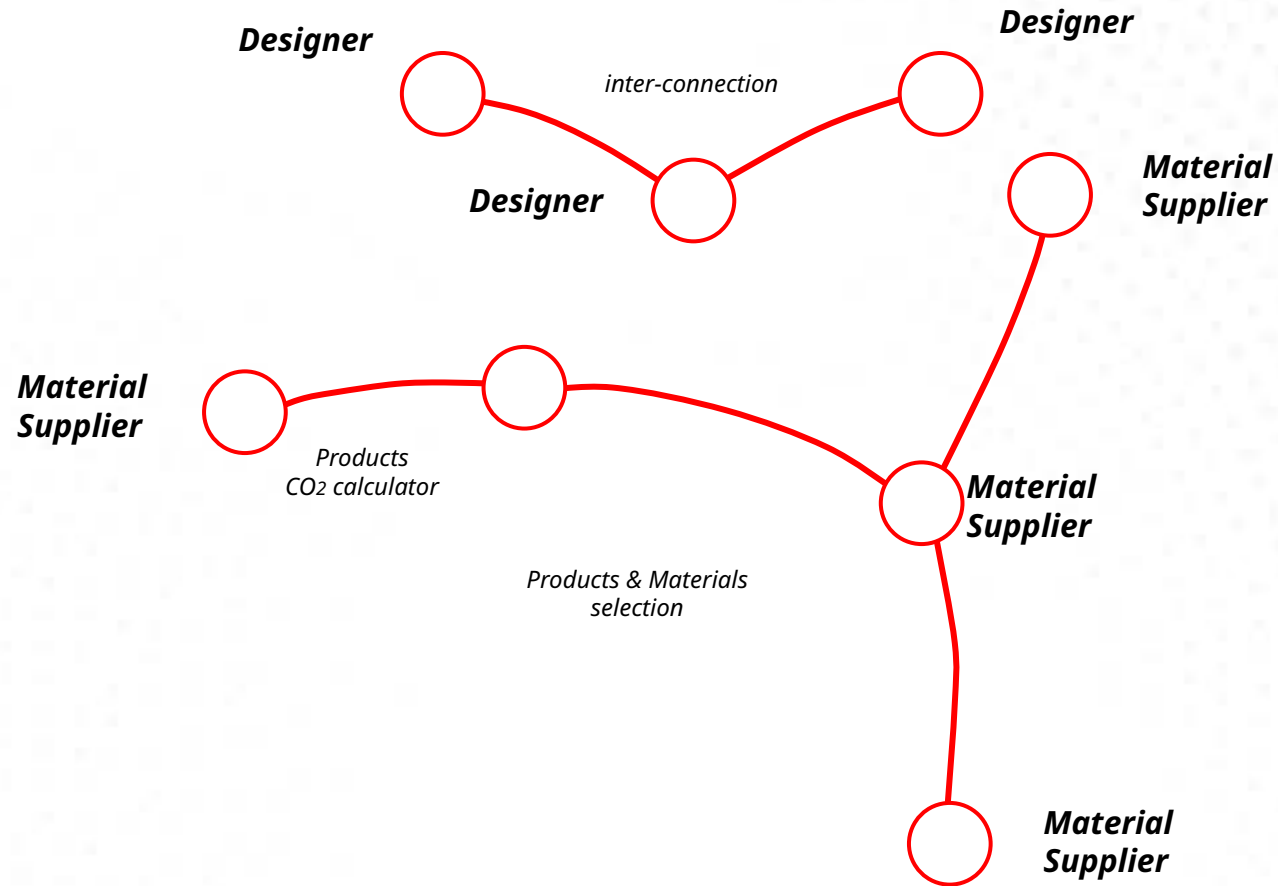
Conclusion

Creating synergy for carbon neutral infrastructure

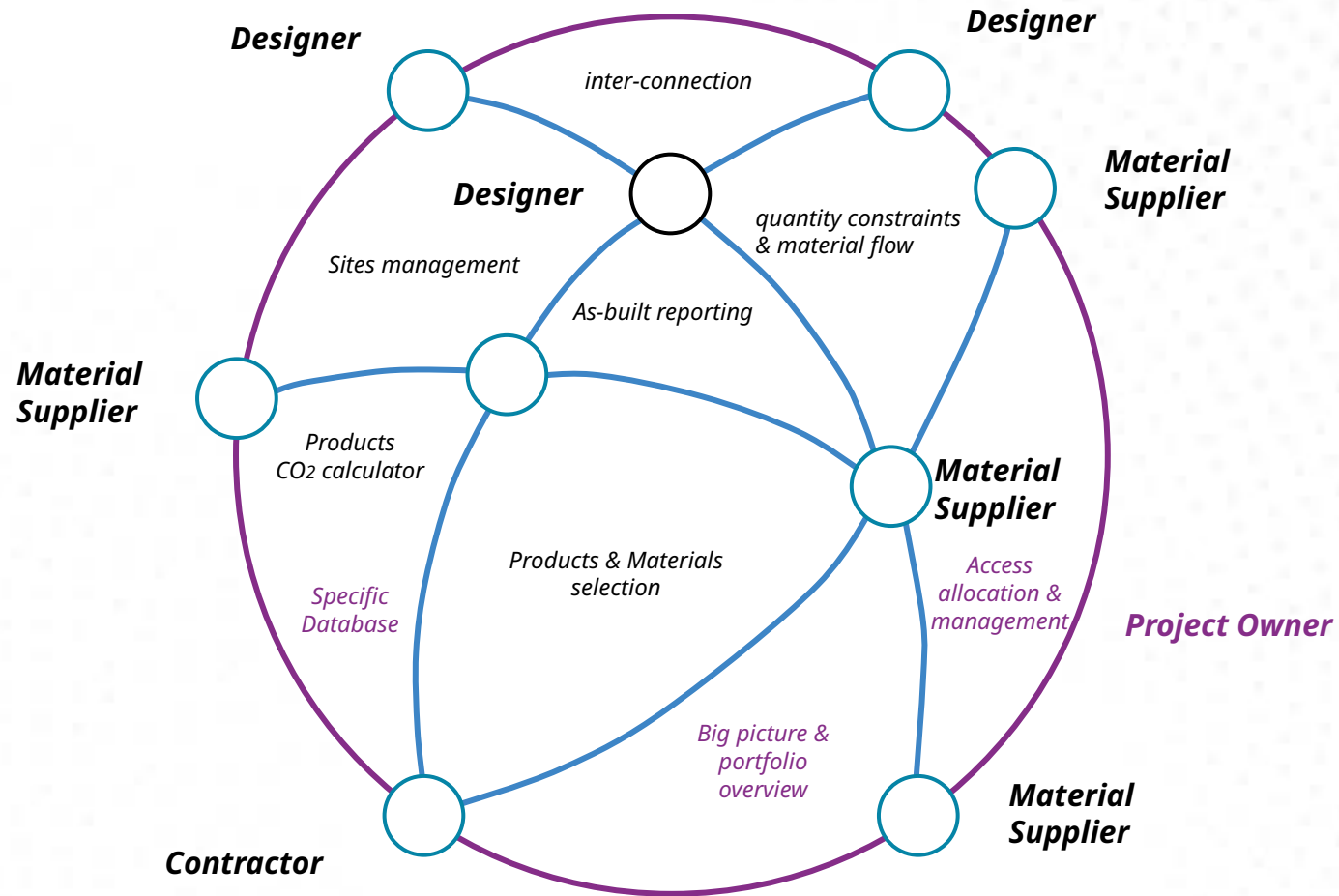
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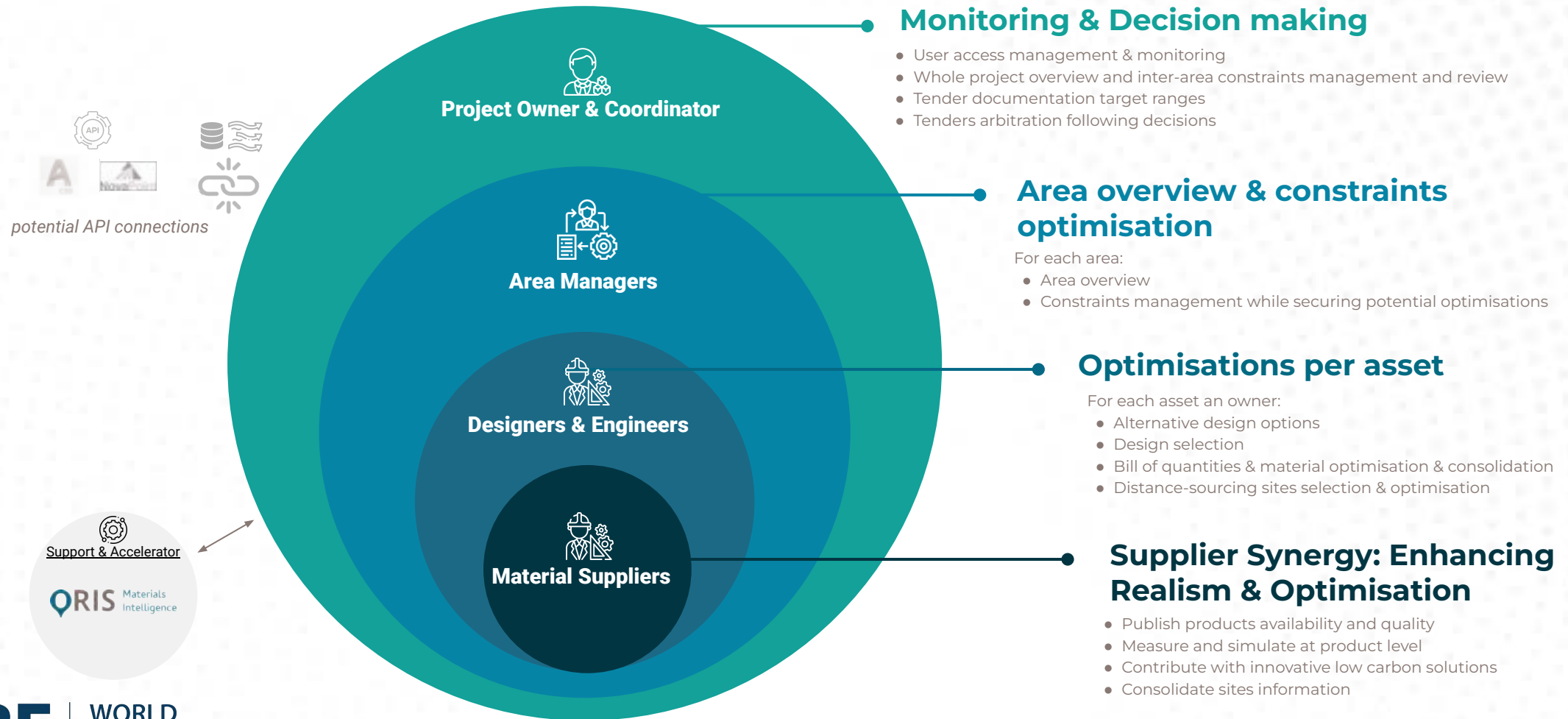
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Engaging a whole value chain



Unlocking the full optimisation potential towards carbon neutrality





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Koji Negishi

LCA Expert

koji.negishi@oris-connect.com

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