We live in a “take, make, use, dispose” culture. This linear approach prevails in the construction industry, and it harms the environment in the broadest sense. The resulting climate cost is high, unsustainable and often results in homogeneous urban environments. The construction industry is responsible for a higher level of carbon emissions (9% globally through material production) than both air and sea transport combined (2% of total carbon emissions).

This report describes circular actions that can be taken to prevent and manage the consequences of climate change. It also describes the aesthetic effects of such actions – how circular design helps to create unique urban environments for all citizens.

Circularity means that resources should remain in an economic and functional cycle for as long as possible. The concept of waste is not part of such a practice, as all materials are considered a resource.

The United Nations has stated that we need to reduce emissions by 7.6% every year between 2020 and 2030 to limit global warming to 1.5°C.

Figures from 2018 show that carbon emissions resulting from material production by the construction sector are significantly larger than those from both air and sea transport combined.

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THE TRANSITION TO CIRCULARITY
The question now is, how do we return to circular practices that have been adapted to today’s challenges on a larger industrial scale?

To succeed in the transition to a circular approach in developing urban environments, we need to recognise differences in approaches. Every site has its own character defined by natural conditions and how these are managed over time. This means that every project requires individual assessment regarding solutions and design. But as many good examples have shown, circularity is indeed possible!

It is crucial that governments and other stakeholders ensure effective implementation. Laws and regulations must reflect the change and make it happen, and developers must include circularity as a part of their requests. We all have a role to play.

To fully appreciate the transition to a more sustainable, circular construction industry we must embrace the following:

- A re-evaluation of the built environment from the perspective of a circular mindset, including the reuse of existing buildings and building elements
- The use of recycled and biobased materials, such as wood
- A closer consideration of landscape features, including ‘wise’ land use and circular methodology in water management

THE AESTHETIC BENEFITS OF CIRCULARITY
A circular point of departure results in site-specific solutions, and often the preservation of historic elements of the site concerned. Taking circular action is made visible to different degrees in the physical environment. Sometimes it is easy to see, such as when an old brick building is placed in a modern context. But circular actions are sometimes more difficult to perceive visually, for instance when a modular building has been erected, or elements of the terrain and vegetation have been incorporated into the new developed landscape.

Circular action results in places with a more site-specific character and diverse visual expressions, where nature is made more visible and available in the urban environment.

How do you embrace circularity in your development plans? Read the latest Sweco Urban Insight report “Going circular - a vision for urban transition” for expert insight into how and why we can transition the development into a more climate-friendly model.

THE USE OF RECYCLED AND BIOBASED MATERIALS
Mjøstårnet, Norway. The tallest wooden building in the world (85.4 m high). Generally up to 50% carbon is saved by building in wood compared with conventional construction.

RESTORING A HISTORICAL ELEMENT
Kapucijnenvoer, Belgium. The Voer, a tributary of the river Dijle in Belgium, has been uncovered and exposed again after a century of remaining hidden from view. Residents of the Kapucijnenvoer can now experience a pleasant, green living space and enjoy views of the water once again.