State of Play for Circular Built Environment  
soft launch 23 June 2020

15:30 – 15:40 Opening Teppo Lehtinen, Director General, Ministry of the Environment Finland

15:40 – 15:50 Objectives and Introduction to the Regional Circular Built Environment Reports

15:50 – 16:10 Key Findings from six Regional Reports
- Oceania, Professor Usha Iyer-Raniga
- North America, Dr. Naomi Keena
- Europe, Ms. Ninni Westerholm
- Asia, Ms. Zeenat Niazi
- Latin America, Mr. Paul Moreno
- Africa, Dr. Jeremy Gibberd

16:10 – 16:20 Comments to the Regional Reports
- Mr. Jesús Salcedo
- Mr. Guillermo Penagos
- Ms. Christina Cheong

16:20 – 16:30 Recommendations and Conclusions
- Prof. Usha Iyer-Raniga

16:30 – 16:50 Discussion
- Building Materials
- Financial Models
- Regional Recommendations

16:50 – 17:00 Next Steps

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#SDG12
#BuildCircular
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Housekeeping rules for a smooth webinar

• please, keep your microphone muted and camera off when not speaking
• post your questions in the meeting chat and indicate if it is addressed to a specific speaker
• questions will be answered during the discussion session after the presentations
• if you prefer to ask a question orally, please, use the raise hand button
• in the interest of time, please keep your comments concise
Material use will double by 2060
Cement, sand, gravel, limestone, steel are the main materials

Built environment impacts

High resource use, environmental impact, employment

The BE consumes 40% of total global raw materials used
Capital and ongoing life cycle impacts

30% global material waste
40% energy related CO2-e emissions
30% water use

Attributes 6% of the global GDP
Employs 10% of the global workforce
Many informal workers

Circular built environments
Sustainable Buildings and Construction Programme

Commenced in 2015

Two main thematic areas: ARBE and MACE

SDGs came into effect in 2016

State of play reports

Africa
Asia
Europe
Latin America and the Caribbean
North America
Oceania

Process

Currency of knowledge
Engagement with academia, practitioners
Peer review by industry experts

Mapping against the SDGs

Built environment focused
Circularity outcomes
Consider both developing and developed world
Global high level indicators and regional indicators if required
Why?
Building stock will double by 2050 in Asia, Africa and Latin America. Global material use will double by 2060. Building materials comprise a third of material use. Concrete will contribute to 12% of GHG emissions by 2060.

What?
Circular economy is about: designing out waste, keeping materials and products circulating in the system, optimising resources, providing long lasting solutions so we do not draw on the use of virgin resources, and regenerating natural systems.

Where?
Focus will be on the new growth regions of the world, in Africa, Asia, Latin America and the Caribbean. By 2050, almost 90% of the world’s population is expected to be in urbanized Asia and Africa.

Advantages:
• Reduce and eventually eliminate the use of virgin resources.
• Reduce and eliminate environmental impact.
• Support local jobs and local economies
Regional reports

1. Oceania (Aus/NZ)
2. North America (US)
3. Europe
4. Asia
5. LAC
6. Africa
Key findings: Oceania

Context
Increased population and urbanization. Associated impacts with building and construction.

CE Policies:
Waste is a key driver. Resource recovery through MSW, C&D waste and C&I. Legislative requirements need to be in place.

Landfill levies:
Reflecting the true cost of waste. Jobs: CE policies have created jobs. E.g. SA.

Material considerations:
Product stewardship and the sharing economy. GHG emission savings by not using virgin materials.

Where are we at?

Enabling circular transitions
- Existing stock and material quality
- Building life cycles
- Procurement
- Showcase examples
Key findings: North America

Context
Report focuses on U.S.A.
Relationships between economic development, urbanization, and the construction sector.

Key Challenges:
- Entrenched linear material throughput economy.
- Growing material consumption and associated waste.
- Lack of innovation in the construction sector.

Where are we at?

CE Implementation:
- Primarily within realm of waste management e.g. US EPA’s SMM framework.
- Federal Legislation to promote circular manufacturing, i.e. RAMI Act.

Key Enablers:
- Building certification programs as cross-cutting policy instruments.
- Policies, incentives, and the role of design in promoting circularity in the BE at federal, state and local levels.

Transitioning to a CE
- Design multi-beneficial policies that take a whole building life cycle and systems-thinking approach
- Promote multi-stakeholder engagement in the built environment
Key findings: Europe

**CONTEXT**
- Highly developed region
- Predicted population decrease after 2021
- Focus on the existing building stock
- Unity brought by the EU

**SECONDARY MATERIALS**
- Develop new recycled products/materials or materials with high recycled content
- Increase trust in secondary materials through standardization

**DESIGN FOR DISASSEMBLY**
- Design buildings that can adapt and be disassembled and reassembled
- Find ways to do the above to existing buildings

**BUILDING AS A SERVICE**
- Rethink the relationship to buildings
- Co-living, Co-working, etc.
- Innovative procurement contracts such as leasing contracts

**CHANGING THE COMMON PRACTICES**
- Lots of excellent examples already exist
- Need for regulations, incentives, and enforcement
The Asia Region

Diversity and vulnerability | Rapidly urbanising yet over 50% Rural | Access and quality issues in shelter persist for the poor | Greenfield as well as transforming brownfield trends | Rich traditions and resources of bio-mass use, and secondary resources from Industrial processes | Large informal and unskilled construction workforce

State of Play

Circularity concepts in different phases of the building lifecycle, | design of the building and of building products | manufacturing – of the products and the construction of buildings | building use – use of buildings and the built environment | post life – reuse as well as recycling of materials and building elements, that is construction debris re-use

Policies & opportunities

Resource efficiency policies and environmental regulations for resource extraction and waste management exist | Policies are not necessarily backed by incentives, standards, public procurement systems for secondary materials | Poor data systems, informality and inadequate fiscal supports for circularity | Opportunities lie in modular assembly based systems and bio-based products | Life-cycle and material flow systems for decision-making | New Business models and green skills
Key findings: Latin America and the Caribbean

Context
Over 400 million people will live in cities of 1 million or more by 2050
Demand for resources and virgin construction materials

CE Policies
Governments must take the lead in coordination with all stakeholders.
Incentives for CDW management should be regulated throughout the LAC region

Resilience
Education for sustainability.
Education must incorporate resilience against climate change as a cross-cutting theme

Material considerations
Responsibly sourced materials
Design, planning, execution, and recovery at the end of life of any building or public infrastructure

Where are we at?

Enabling circular transitions
Public procurement must demand circularity in tenders.
Private sector must generate value for themselves and society
Key findings: Africa

Context
Rapid urbanization.
Urgent sustainable development priorities
Climate change impacts
Limited capacity

CE Policies:
Local content policy and standards
Labour intensive and small enterprise friendly Government procurement.

Construction:
Large housing and infrastructure backlogs
Legislation, support req for high quality long-life sustainable buildings

Neighborhoods:
Create opportunities for circular food, waste, energy water enterprises that support sustainable living and working patterns

Where are we at?

Enabling circular transitions
• Circular building standards
• Valuing the informal economy
• Hybrid buildings
Regional report commentary

Africa
Mr. Jesús Salcedo

LAC
Mr. Guillermo Penagos

Asia
Ms. Christina Cheong
Conclusions and Recommendations

Prof Usha Iyer-Raniga|| June 2020
One size does not fit all
Different priorities in different parts of the world

Europe
CE has been practiced for over a decade. Lots of lessons learned

Oceania and North America
Populations are increasing, particularly in the metros. Greenfield and brown/grey field developments

Africa, Asia, LAC
Populations are increasingly getting urbanized, higher densities, both greenfield and brown field/grey field developments.

MENA
?
Key recommendations

Linear to circular
- Government support
- Industry practices
- Clients and consumers

Monitoring and reporting
- Using the SDGs, targets and indicators.
  - In particular:
    - SDG 9
    - SDG 11
    - SDG 12
    - SDG 8
    - SDG 13

Life cycle of buildings
- Capital and operating cost considerations
- Use of renewables where possible
- Reduce resource use

Building materials and waste
- Smart and circular use of materials
- Alternative, bio-based materials

Affordability and resilience
- Low cost materials
- Local materials
- Education, skilling and re-skilling

New business models
- Shared ownership
- Green design options
- Green procurement
- Building passports and track/trace
- High value materials recovery
Key recommendations

Skills and education
Vocational skills
Higher education training
Operation and maintenance of buildings
Circular renovation
Waste microgrids

Collaboration and financing
Collaborations across government, business, industry
Systemic thinking for circularity
SDG indicators mapped for circular built environments across various regions

Credit: Ashley King
Discussions

Building materials can be mined for second and third lives. What are the barriers and how do we overcome them?

Current financial models need to be recrafted to support circular outcomes. What may some of these models be?

Regional recommendations. What are your views on the recommendations relevant to your region?
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Final launch scheduled in the Autumn