

Sustainable communities: tools

In this session:

- video Smart infrastructure
 - ISO 37101 standard
- Circles of Sustainability model
- video 7 principles for building better cities

Water shortages and nature based solutions

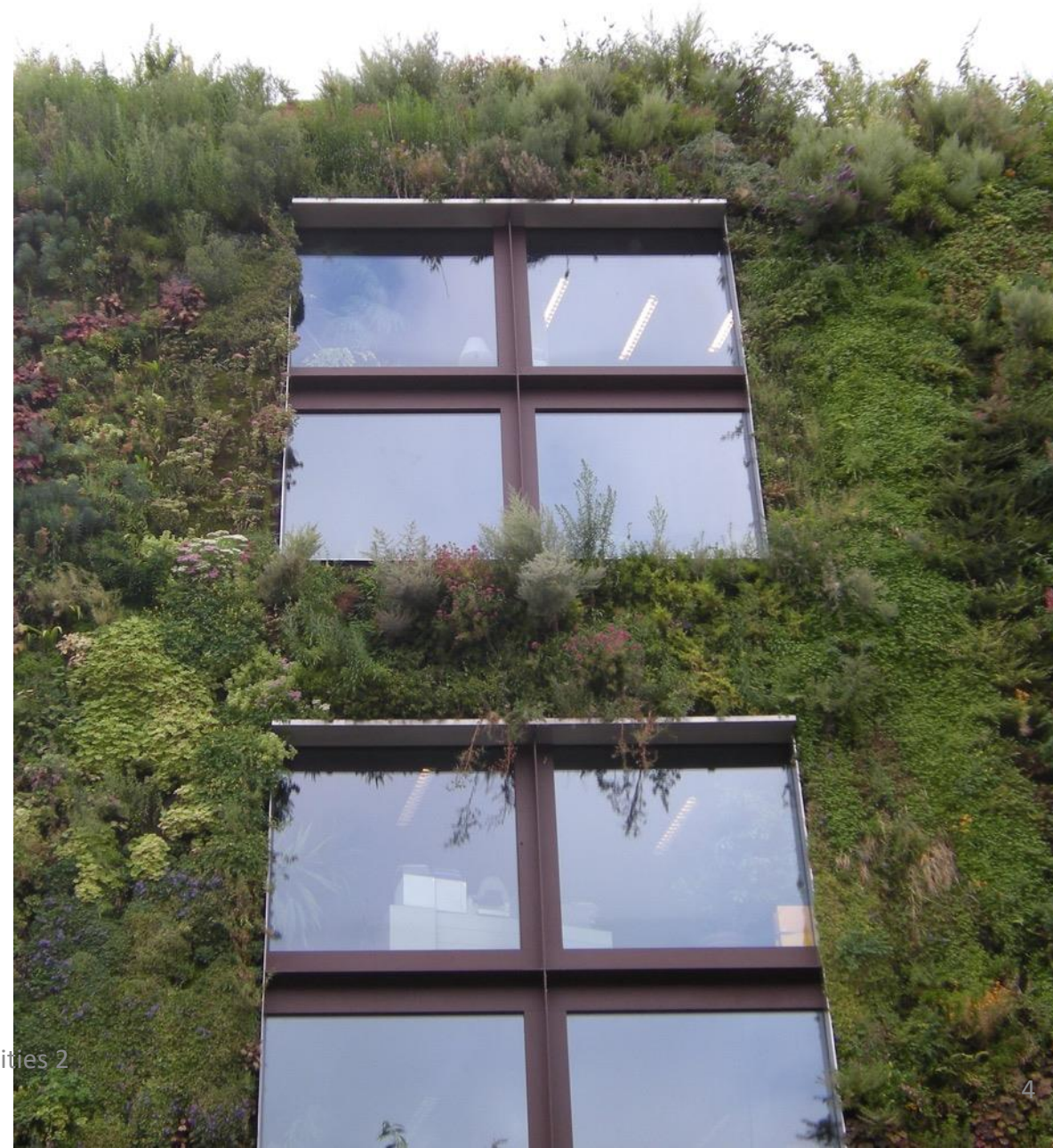
- <http://www.climateactionprogramme.org/news/un-promotes-nature-based-solutions-to-tackle-growing-water-shortages>

”Big city disease”

- <https://www.theguardian.com/cities/2018/mar/19/disease-populations-fall-beijing-shanghai>

Smart infrastructure

- from the SDG Academy online course **Age of Sustainable Development**
 - with prof. Jeff Sachs
- <https://youtu.be/t0k5ap7RhIw>



Four frameworks to advance sustainability in cities and communities

In the previous lecture:

- Sustainable Development Goal 11
- Society's Commitment to Sustainable Development (Finland)

In this lecture:

- ISO 37101 standard Sustainable development in communities
- Circles of Sustainability method



3 - ISO 37101



ISO 37101

- <https://www.youtube.com/watch?v=vXJMP529DUo>
- **Sustainable development in communities — Management system for sustainable development — Requirements with guidance for use**



ISO 37101:2016

Sustainable development in communities --
Management system for sustainable development --
Requirements with guidance for use

- Purposes of sustainability
 - motivation behind investments in sustainability activities
- Maturity matrix (Annex A)
 - a way of planning and measuring progress
- Sustainability issues
 - 12 key areas of sustainability in cities and communities



ISO 37101: Purposes

Purpose of sustainability	Examples
Attractiveness	Appeal to citizens, investors; businesses, culture; sense of identity.
Preservation and improvement of environment	Reducing greenhouse gas emissions; protection of biodiversity and ecosystem services, reduced health hazards
Resilience	Climate change mitigation and adaptation; preparedness for shocks and stresses, risk reduction
Responsible resource use	Improved land and resources management; sustainable production and consumption, circular economy
Social cohesion	Accessibility; culture; dialogue, diversity; equity; heritage; inclusiveness; inequalities reduction; sense of belonging
Wellbeing	Access to opportunities; education; happiness; healthy environment; prosperity; quality of life; security; self-confidence; welfare



ISO 37101 Sustainability issues

1. Governance, empowerment and engagement
2. Education and capacity building
3. Innovation, creativity and research
4. Health and care in the community
5. Culture and community identity
6. Living together, interdependence and mutuality
7. Economy and sustainable production and consumption
8. Living and working environment
9. Safety and security
10. Community infrastructures
11. Mobility
12. Biodiversity and ecosystem services



Supporting guidelines

ISO 37104 Practical local implementation of ISO 37101

ISO 37120 – **Indicators** for city services and quality of life

ISO 37122 – **Indicators** for smart cities

ISO 37123 – **Indicators** for resilient cities



ISO 37101: Maturity matrix

⇒ ⇒ GROWTH IN MATURITY ⇒ ⇒			
1. Start-up – isolated initiatives	2. Establishing coherent framework	3. Integration and embedding	4. Leadership and innovation

Description of typical initiatives, activities and outcomes of each stage of maturity



ISO 37101 table of contents

ToC is similar to
ISO 9001 and
ISO 14001

- 3 Terms and references
 - contains explanations for the key terms
- 4 Context of the organisation
 - examines how serious and organized the city is to promote sustainable development
- 4.6 Sustainability issues
 - indicates which of the 12 topics are included
- 5 Leadership
 - reveals how seriously the top management is committed

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- 6 Planning
 - outlines the steps needed to implement sustainability, for example 6.1.2 Baseline review, 6.1.3 Compliance obligations and 6.1.5 Identifying and engaging interested parties
- 6.2.2 Strategy for sustainable development
 - outline for priorities and actions
- 7 Support
 - who's in charge, how much resources available
 - communication channels and documentation

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- 8 Operation
 - activities
- 9 Performance evaluation
 - results of the activities against plans and targets
- 10 Improvement
 - corrective actions, progress

4 - Circles of sustainability



Insert a picture of Circles of sustainability graph
(profile circle)

e.g.

https://www.researchgate.net/figure/Johannesburg-Circles-of-Sustainability_fig6_320611785

The book by Paul James *Urban Sustainability in Theory and Practice: Circles of Sustainability* (2015)

https://www.academia.edu/9294719/Urban_Sustainability_in_Theory_and_Practice_Circles_of_Sustainability_2015

provides more information, pictures, questionnaires etc.

Circles of Sustainability

- <http://www.circlesofsustainability.org/>
- Profile circles
 - level of sustainability in different sectors
- Process circles
 - development planning, implementation, measurement and communication
- Engagement circles
 - participating entities and their level of engagement
- Knowledge circles
 - nature of and access to information and knowledge
- tools and activities

Circles of Sustainability - Questionnaires

- Urban profile questionnaire
 - to assess the different factors of sustainability (Economics, Ecology, Politics, Culture)
- Social life questionnaire
 - to assess the view of citizens in different areas of sustainability



Circles of Sustainability

- example for sustainability assessment: East Hampton, NY
- ➔ • <http://circles.rosslearningsystem.org/#/assessments/single/31>
- carried out by high school students
 - can you do as good – or even better – analysis?
- background information
 - Ross Learning System
 - <http://www.circlesofsustainability.org/projects/developing-a-sustainability-curriculum/>

Case Brasilia

- Brasilia was founded as the capital of Brazil in 1960
- the modernistic urban designers did not foresee the growth of population and waste
- <https://www.reuters.com/article/us-brazil-dump/brasilia-closes-latin-america-largest-rubbish-dump-idUSKBN1F82VI>

Case Detroit

- Once the major American car manufacturing city, Detroit went bankrupt
- Now, urban farming or "agrihood" is renewing the city
- <https://detroit.curbed.com/2017/11/15/16651078/detroit-urban-agrihood>

Greenest European cities

- European Green Cities (EGC): a network of cities, organizations, and companies working for the development of green cities and buildings
 - <http://greencities.eu/home-1>
- European Green Capital award
 - <https://ec.europa.eu/environment/europeangreencapital/>

7 principles for building better cities

- by Peter Calthorpe
- <https://www.youtube.com/watch?v=IFjD3NMv6Kw>
 - video (<15 minutes)
- terms and abbreviations used in the video:
 - Bus Rapid Transit (*BRT*)
 - Vehicles miles traveled (*VMT*)
- Observe:
 - can you identify these 7 principles at work in your home town?

Learning diary questions

- approx. 1 page text of similar extent
 - a) Highlight the three most interesting topics of this lecture.
 - b) Study the characteristics of a sustainable community presented in the ISO 37101 standard (sustainability issues) and Circles of Sustainability model (profile circle).
- What similarities can you find? Are there any differences?
- Which one do you find more attractive, practical or user-friendly, and why?

