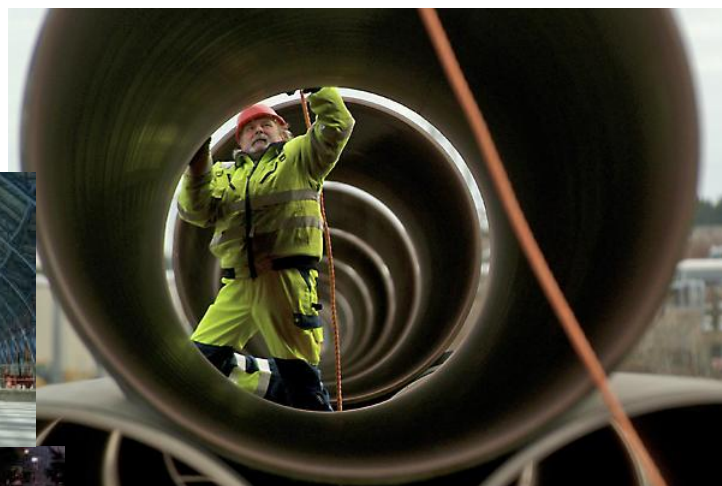


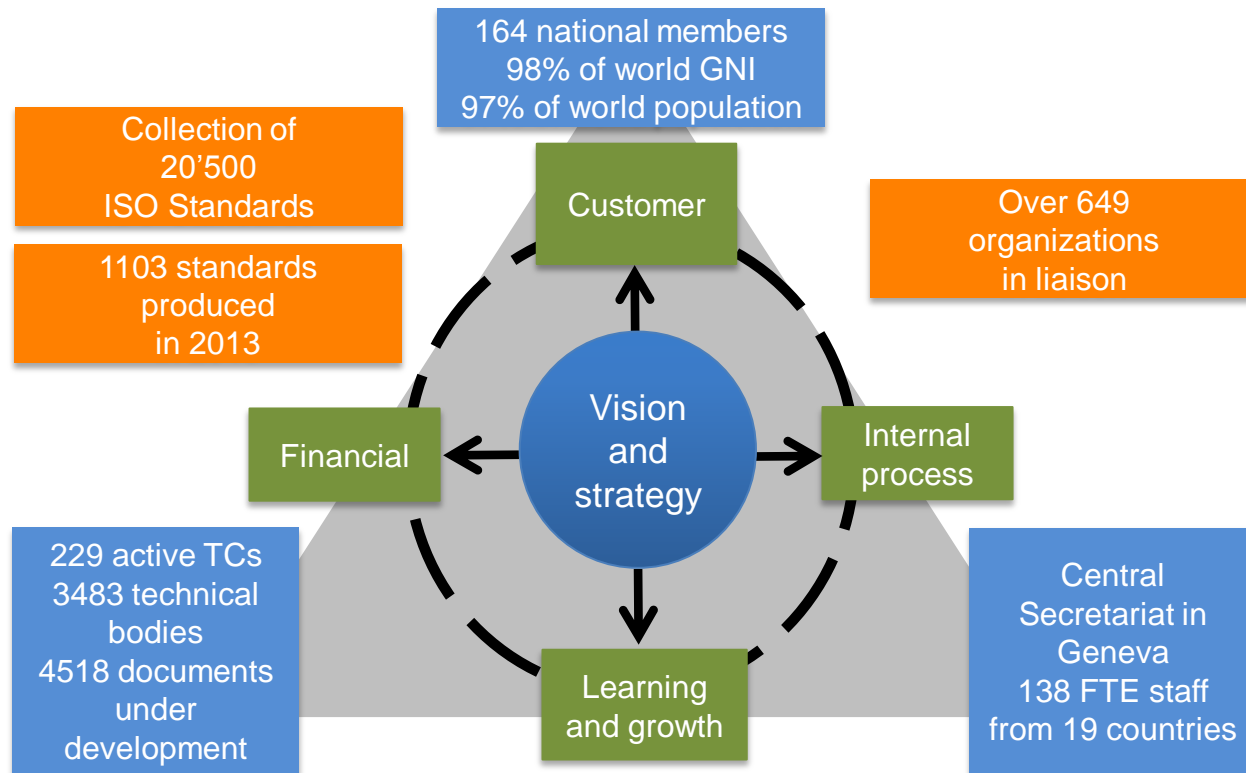
ISO 37120 standard on city indicators – how they help city leaders set tangible targets, including service quality and quality of life

Rob Steele
ISO Secretary General
steele@iso.org

Briefing notes CLC Lecture series
Singapore, 15 October 2014



ISO, a global system



Breadth of ISO's work in recent years

2009

- Fraud countermeasures and controls
- Traditional Chinese medicine
- Sustainability in event management
- Energy efficiency & renewable sources terminology
- Sustainability criteria for bioenergy

2010

- Asset management
- Natural gas fuelling stations
- Pigments, dyestuffs & extenders
- Safety amusement rides and devices
- Treated wastewater re-use for irrigation
- Biogas
- Energy savings

2011

- Project, programme & portfolio mgt
- Additive manufacturing
- Facilities management
- Outsourcing
- Risk management
- Bionics
- Fireworks
- Coal bed methane Carbon capture and storage

2012

- Railway applications
- Sustainable development in communities
- Plastics and rubber machines
- Compliance programs
- Forensic sciences
- Customer contact centres
- Light and lighting

2013

- Sludge recovery, recycling, treatment and disposal
- Biotechnology
- Sustainable purchasing
- Anti-bribery management system – Requirements
- Innovation process: interaction, tools and methods
- Management consultancy
- Fine bubble technology
- Water re-use
- Occupational Health & Safety MS requirements
- Clean cookstoves and cooking solutions
- Collaborative business relationship management
- Chain of custody of wood and wood-based products
- Educational organizations management systems

2014

- Brand evaluation
- Online reputation
- Domestic gas cooking appliances



New ISO groups touching upon sustainability pillars of:

Environment

Economic

Societal

**International standards
level the playing field**



ISO 37120 - Sustainable development of communities -- Indicators for city services and quality of life

- The indicators included in ISO 37120:2014 will help cities
 - assess their performance
 - measure progress overtime
 - ultimate goal of improving quality of life and sustainability
- The standard's uniform approach will enable cities to seamlessly compare where they stand in relation to other cities. This information can in turn be used to identify best practice and learn from one another

<http://www.youtube.com/watch?v=eGXqsYXNoI4>



Areas covered by the standard

- Economy
- Education
- Energy
- Environment
- Finance
- Fire and emergency response
- Governance
- Health
- Recreation
- Safety
- Shelter
- Solid waste
- Telecommunications and innovation
- Transportation
- Urban planning
- Wastewater
- Water and sanitation

Benefits of using the standard

- More effective governance and delivery of services
- International benchmarks and targets
- Local benchmarking and planning
- Informed decision making for policy makers and city managers
- Learning across cities
- Leverage for funding and recognition in international entities
- Leverage for funding by cities with senior levels of government
- Framework for sustainability planning
- Transparency and open data for investment attractiveness
- Comparable data for city decision making, insight and global benchmarking

Who can use the standard and what else is ISO working on?

- ISO 37120:2014 can be used by any city, municipality or local government wishing to measure its performance in a comparable and verifiable manner, irrespective of size and location or level of development.
- ISO 37120:2014 is the first ISO standard for city indicators. It is being developed as part of an integrated suite of standards for sustainable development in communities.
- Scope of ISO/TC 268 - Sustainable development in communities include requirements, guidance and supporting techniques and tools to help all kind of communities, their related subdivisions and interested and concerned parties become more resilient and sustainable and demonstrate achievements in that regard.
- The proposed series of International Standards will thus encourage the development and implementation of holistic, cross-sector and area-based approaches to sustainable development in communities. It will include Management System Requirements, Guidance and Related standards.

In case you need additional information, the Smart Cities Council is currently doing a series on ISO 37120, analyzing one of its indicators each week. They have also published a couple of generic overview articles on the standard which include links to more background info:

<http://smartcitiescouncil.com/article/dissecting-iso-37120-why-new-smart-city-standard-good-news-cities>

<http://smartcitiescouncil.com/article/new-iso-standard-gives-cities-common-performance-yardstick>

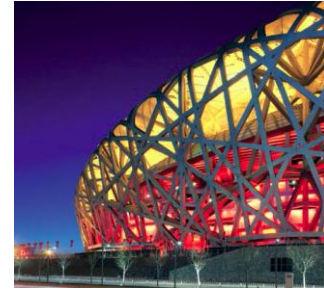
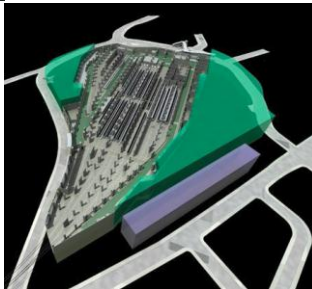
Example of indicators around Education

THEME	CORE INDICATORS	SUPPORTING INDICATORS
Education	Percentage of female school-aged population enrolled in school	Percentage of male school-aged population enrolled in school
	Percentage of students completing primary education	Percentage of school-aged population enrolled in school
	Percentage of students completing secondary education	Number of higher education degrees per 100'000 population
	Primary education student/teacher ratio	

ARUP's experience in developing infrastructure solutions

Terry Hill
ISO President

Briefing notes CLC Lecture series
Singapore, 15 October 2014



Arup has more than 35 years' experience in Asia, combining local insight with global expertise to deliver a wide range of landmark projects..

A few examples of issues ARUP is involved in

In a future where 75% of people live in cities, the world's population stands at 9.5 billion and there are advances in technology that can only be dreamed about today, the [Future of Rail 2050](#) takes a user's perspective and explores how rail travel might change for passengers and freight.

Cities are wasting the potential of smart technologies by failing to realize the value of their hidden infrastructure and digital assets, according to a report published today by The Climate Group, Accenture (NYSE: ACN), Arup and Horizon Digital Economy Research at The University of Nottingham.

A new report by Arup and the Future Cities Catapult estimates a £200billion global market for products and services that improve the way cities are planned and operated through integration.

A ground-breaking study into future scenarios for urban water management launched today at a Committee for Sydney, Sydney 2054 workshop will help cities in Australia and across the world address key pressures that pose challenges to safe, secure and sustainable supply of water. The study, led by Arup and Sydney Water, draws on a range of future scenarios in mapping how water supply in Sydney and other major cities could look in 25 years in the face of population growth, increasing scarcity of water and continued budget pressures.

Cities

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Transforming the 21st Century City via the Creative Use of Technology

Recent Publications

- [Future Cities: UK Capabilities for Urban Innovation](#)
- [Urban Mobility in the Smart City Age](#)
- [Designing with data: Shaping our future cities](#)
- [Smart Cities Market: UK Opportunities](#)
- [Global Innovators: International Case Studies on Smart Cities](#)
- [Solutions for Cities: An analysis of the Feasibility Studies from the Future Cities Demonstrator Programme](#)
- [Sensing Cities](#)

Key Publications

- [Information Marketplaces: The new economics of cities](#)

Smart cities



Digital technologies make smart cities more liveable, sustainable and prosperous.

Your city relies on a complex web of systems and services to survive. As independent experts in the built environment, we understand how technology can be used to help cities thrive.

Arup sees smart cities as one of the tools for urban development, with people at the heart of the process. We advise policy makers, executives, city departments, developers, and industry on defining how much to invest and how much value they can get from being 'smart'. Our range of services covers strategy and organisation, urban informatics, business systems and architecture, and infrastructure advice that, taken together or individually, will help deliver smart services.

Understanding the opportunity

Just how big an opportunity is this? Our [report for the UK's Department for Business, Innovation and Skills \(BIS\)](#) estimates the smart cities industry will be worth more than \$400bn globally by 2020.

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More contacts +

Projects



Ciudad Creativa Digital masterplan

Masterplan design for a new digital industry hub in Mexico.



Nordic Solutions for Sustainable Cities

Cataloguing sustainability innovations, policies and technical solutions of Nordic cities.

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FUTURE CITIES: UK CAPABILITIES FOR URBAN INNOVATION

CATAPULT
Future Cities

ARUP

CHAPTER 1. FUTURE CITIES MARKET

UK FUTURE CITIES: UK CAPABILITIES REPORT

CHAPTER 3. RESEARCH & ACADEMIC CAPABILITIES

UK Future Cities Research

The UK is a major centre of world-class academic research – with research across a range of disciplines being relevant for developing future cities solutions. The UK's best universities consistently rank among the world's leading institutions. In subjects with particular relevance to future cities, Cambridge, Imperial and Oxford are ranked in the world's top 50 universities for civil and structural engineering¹. An assessment of Europe's top 50 architecture schools includes seven UK universities (five of which are in London).

While research relevant to future cities sits within various academic disciplines, a number of UK universities have moved toward establishing explicitly urban-focused and multi-disciplinary research centres. Cross-faculty collaboration is enabling new combinations of academic thinking to tackle city challenges (see table 'Selected Specialist Urban Research Groups in the UK' at the end of this chapter). A number of universities including Glasgow, Newcastle, Manchester, UCL, Imperial and LSE have multiple centres working on urban-related research.

Alongside city-focused research institutes, academic research within more established disciplines has a long standing interest in issues relevant to future cities. For example, there is extensive UK-based university research on issues around particular technology or functional areas such as building physics, water systems and transport systems.

The following map illustrates examples of specific projects currently under way at UK universities, the breadth and richness of activity across spatial infrastructure engineering, digital technology and commercial innovation for future cities. It shows that many of the research projects combine design and approaches for instance, the Retrofit 2020 project investigates how innovative business models in engineering and commercial business model innovation can contribute to accelerating the retrofitting of the built environment towards sustainability goals.

Public research funding in the field is provided through the Engineering and Sciences Research Council (EPSRC) with over £200 million of active research grants for 'urban' research.

CHAPTER 3: UK FUTURE CITIES: UK CAPABILITIES REPORT

30 • FUTURE CITIES: UK CAPABILITIES REPORT

Arup UrbanLife

The smart solution for cities

Transforming power-hungry urban areas into low-carbon smart cities via the creative use of technologies

ARUP

Smart Cities
Transforming the 21st century city
via the creative use of technology



ARUP

EXISTING BUILDINGS

On average, energy used in buildings accounts for 45% of C40 cities' carbon emissions.

Mayoral powers in the building sector are exercised by 27 of the C40 cities. Twenty-seven cities have the authority to regulate private buildings and 22 own and operate public buildings. Seventeen cities reported to have the authority to enforce regulation over private buildings. The same number hold regulatory powers over public buildings.

C40 cities have implemented 192 actions to reduce carbon emissions from existing buildings.

Key actions



WASTE MANAGEMENT

Globally, waste accounts for around 3% of total greenhouse gas emissions.

On average, C40 mayors exercise strong powers in the waste sector, especially over residential and municipal building waste collection, and street cleaning and waste management. Cities own and operate these functions.

C40 cities have implemented 783 actions to reduce carbon emissions from waste.

Key actions



Climate Action in Megacities:

C40 Cities Baseline and Opportunities

Version 1.0 June 2011

40 cities
297 million residents
4,734 climate actions

ARUP

C40
CITIES
CLIMATE LEADERSHIP GROUP

Mayoral powers



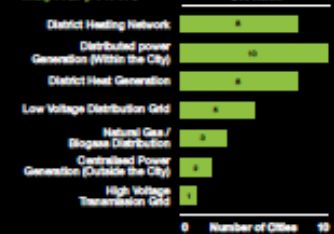
Water use per capita per day varies from about 100 litres in African C40 cities to just over 100 litres in European C40 cities.

10 mayors exercise relatively strong powers in the water sector. The strongest average powers are for water supply, with 18 cities owning or operating water supply, with 17 and 16 cities also own or operate storm-water infrastructure respectively.

C40 cities have implemented 192 actions to reduce carbon emissions from the water sector.



Mayoral powers



C40 cities have implemented 266 actions to reduce carbon emissions from urban energy.

On average, C40 mayors exercise strong powers in the energy sector. The strongest average powers are for water supply, with 18 cities owning or operating water supply, with 17 and 16 cities also own or operate storm-water infrastructure respectively.

C40 cities have implemented 266 actions to reduce carbon emissions from urban energy.



Liveable Cities

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UNIVERSITY

UCL

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Transforming the Engineering of Cities for Global and Societal Wellbeing

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Our ambition

To create an holistic, integrated, truly multi-disciplinary city analysis methodology, which uniquely integrates wellbeing indicators, is founded on an evidence base of trials of radical interventions in cities, and delivers the realistic and radical engineering solutions necessary to achieve our vision

Our vision

To transform the engineering of cities to deliver global and societal wellbeing within the context of low carbon living and resource security through developing realistic and radical engineering that demonstrates the concept of an alternative future.

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Research Updates

LC News 25th September 2014

The latest edition of LC News is now available

If you have any news, articles, events, papers or items of interest that you wish to see included in future issues, please forward them to Joanne Leach (j.leach@bham.ac.uk) for consideration. You can also join the LC News mailing list by contacting Joanne...

[More information](#)

Professor Brian Collins Elected to Trustee Board of the Royal Academy of Engineering

The Royal Academy's Fellowship Elected 10 Members to its Newly Formed Trustee Board

At its Annual General Meeting (AGM) on 15 September 2014,

Future Events

OCT 16 2014 Northern Futures 'Open Ideas Day'

ImaginationLancaster

For those of you based in and/or interested in the North of England, on the 16th October the Cabinet Office's Policy Lab are...

[More information](#)

NOV 28 2014 6th Bi-annual Summit



Thank you !