



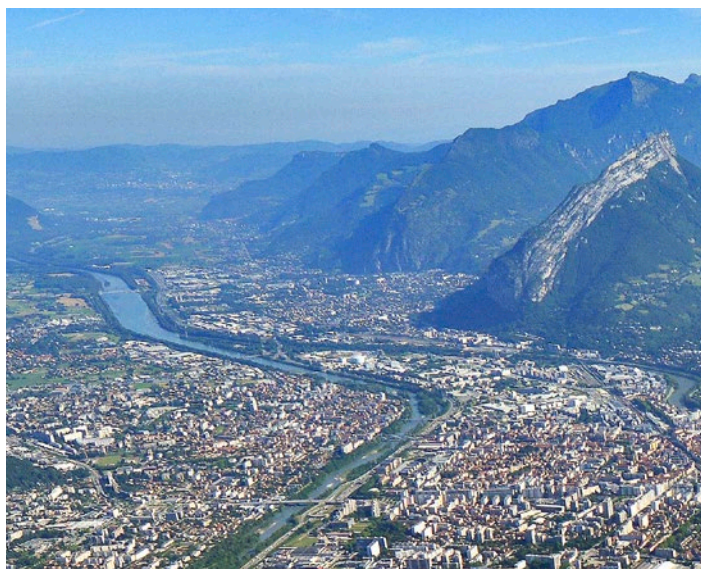
#140

focus

Your gateway to International Standards



Creating
sustainable
CITIES



ISOfocus May-June 2020 – ISSN 2226-1095

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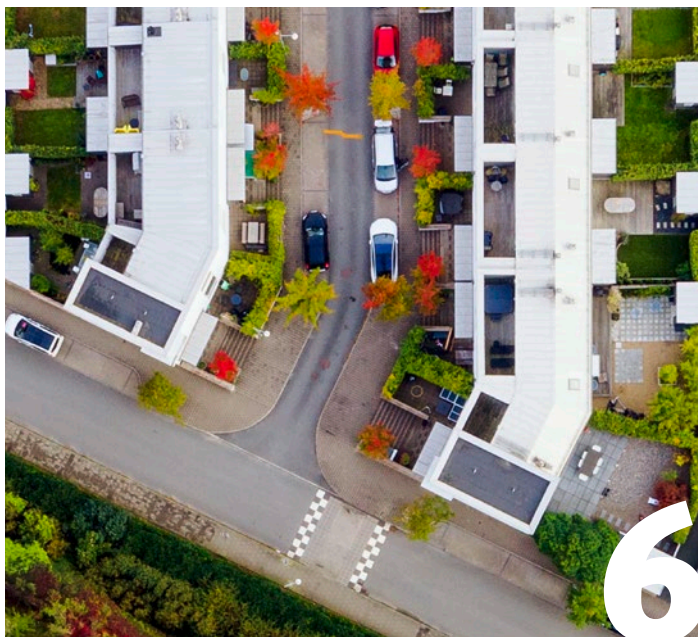
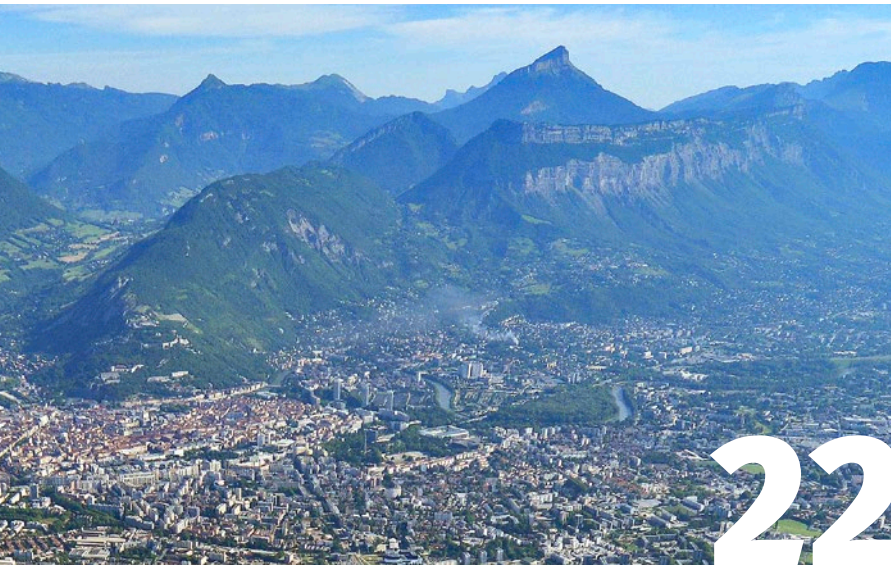
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ISO focus

May-June 2020



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Building a sustainable world one city at a time

Sweden's cities are reinventing themselves. Take Stockholm, for instance. Finding sustainable solutions, delivering prosperity to Stockholmers and applying green principles to design and construction have led the way to a smarter, more sustainable urban planning and city life. Back in 2010, Stockholm proudly became the first European Green Capital and since then has continued to engage in partnerships around eco-governance for cities. Sweden now hopes to share these tried-and-tested solutions with cities across the world.

And with good reason : cities are home to more than half of the world's population, and this figure is predicted to exceed 70 % by 2050. Cities offer greater life opportunities for their inhabitants, jobs included, but this does not negate the challenges they pose for sustainable development. For despite occupying only 3% of the planet's surface, cities are also responsible for 75% of all greenhouse gas emissions. Projections also indicate that over 80 % of the world's urban population will live in developing regions in 2050, most notably in Africa and Asia, as rural zones gradually morph into urban. This makes efficient city planning and management practices essential to deal with the challenges of an urbanizing world.

Considered urban planning is imperative to create a sustainable world where cities meet the needs of their inhabitants without compromising those of future generations. The way we design and build our cities can also positively affect the climate, the environment, not to mention our quality of life. This transformation involves five focus areas – energy, construction, transport, urban



Photo: Peter Cederling

Annika Andreassen, CEO,
Swedish Institute for Standards (SIS).

planning and water management – but is further complicated by the high prevalence of poverty, crime and violence in cities around the world. This explains why creating sustainable cities that ensure economic, social and environmental progress is a major challenge for all countries.

To make our vision a reality, we must encourage well-anchored, innovative and cross-sectoral solutions that are replicable to different world contexts. This requires orchestrating a constellation of actors such as government and local authorities, public- and private-sector entities, research centres and non-governmental organizations (NGOs). In this sense, standardization offers significant benefits as a platform on which stakeholders can develop common solutions to address economic, environmental and societal challenges. It's no wonder, then, that the ISO portfolio already boasts over three hundred standards for sustainable cities and communities.

The Swedes emphasize a culture of consensus where solutions are compiled using a holistic, inclusive and cross-disciplined approach. Sweden's younger generation are not the only ones to clamour for the need to tackle sustainability concerns; stakeholders across the board have also embraced issues surrounding global sustainable transformation processes. At the Swedish Institute for Standards (SIS), our ambition is to act as a springboard to accelerate the worldwide transformation to sustainable cities using Swedish know-how that has proved its worth. Through our stakeholders, we play an active role in many ISO technical committees, such as ISO/TC 268, *Sustainable cities and communities*, that are working hard to address these challenges.

Following our government's action plan to reinforce efforts to implement the United Nations' 2030 Agenda and its 17 Sustainable Development Goals (SDGs), SIS has been busy working on a new standard designed to further these global goals. Drawing on cross-sectoral collaboration between municipalities, industry, academia and NGOs across the country, the standard aims to offer guidance on implementing the SDGs at the local and regional levels. This has already attracted interest from more than two hundred national and international organizations that have asked to comment on the draft, reflecting the urgency of this work.

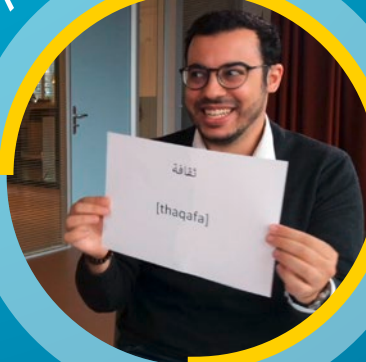
At SIS, we have high expectations for this standard and hope that it will be a source of inspiration globally. Sustainability has always been at the heart of Sweden's urban development strategies. It's about working in more sustainable ways with different partners and empowering citizens through a whole host of means. What we are proposing is a human-centred city development. We've proved that it's possible, so let's make it happen across the world, one city at a time. ■

Speak my language!

Ass dai dallala laa
(Franconian German):
Eat everything
on your plate!



She speaks German



He speaks Arabic

ثقافة (Arabic): culture

We celebrated International Mother Language Day on 21 February 2020!

We may work in just French and English, but with 24 nationalities at the ISO Central Secretariat, we have a plethora of languages. We asked participants to come up with three words from their mother tongue ranging from easy to difficult.

They then exchanged their words with another colleague of a different mother tongue. The challenge was to pronounce their colleague's words without any help. Captured was a funny, endearing moment between two people learning about culture and language.

Outrecuidance (French) :
impudence,
overconfidence

She speaks French



She speaks English



Whakapapa
(Māori loanword in English):
Ski resort
in New Zealand



myisoflife • Following

myisoflife HAPPY INTERNATIONAL LANGUAGE DAY!
Today we celebrate the rich cultural diversity around the world and right here at ISO/CS!
Tw

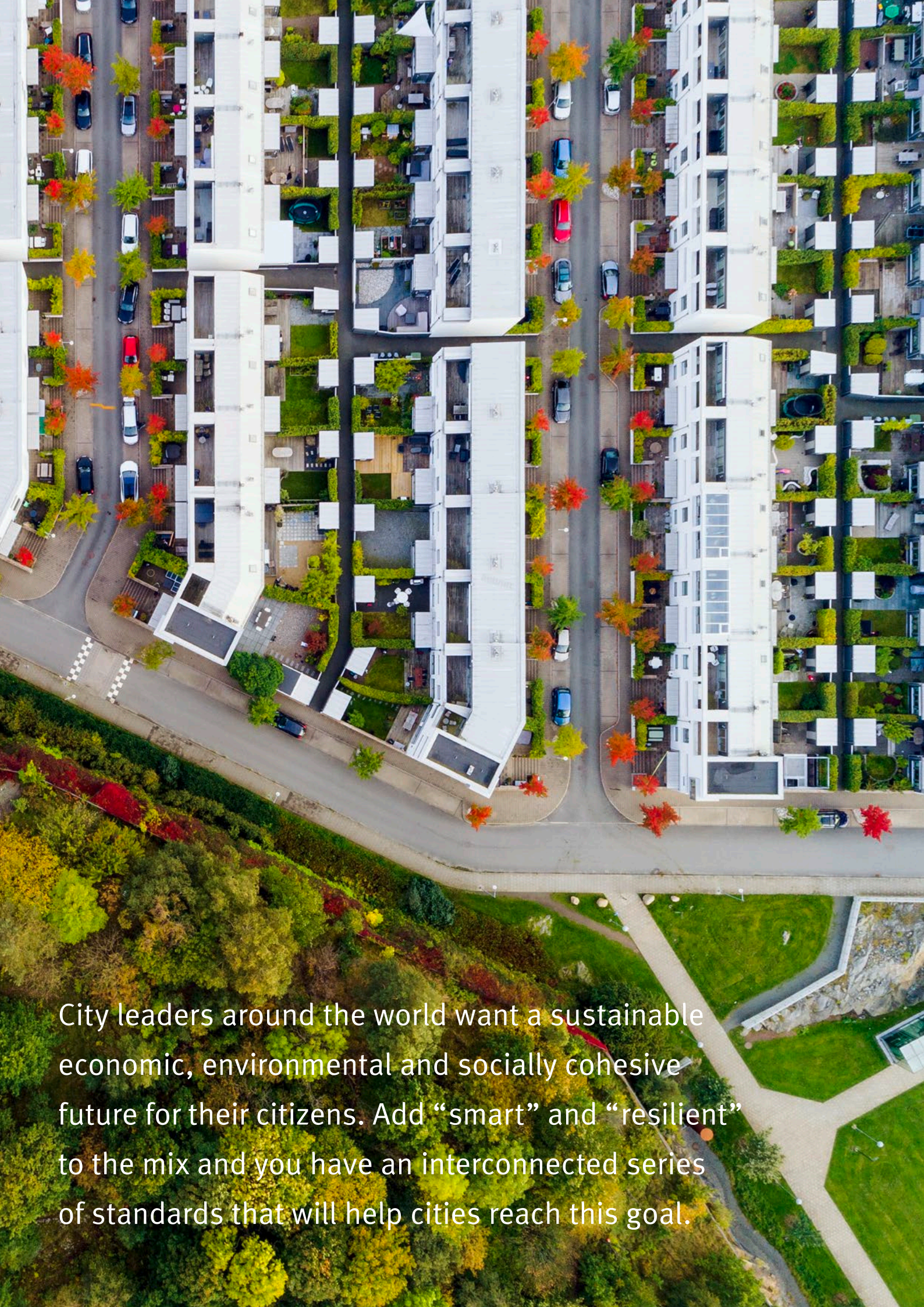
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A photograph of a modern building with large glass windows and a paved sidewalk. The text is overlaid on the image.

The smart way **to build** smart cities





City leaders around the world want a sustainable economic, environmental and socially cohesive future for their citizens. Add “smart” and “resilient” to the mix and you have an interconnected series of standards that will help cities reach this goal.



Sustainability
is the overarching
umbrella covering
the smart and
resilient standards.

by Kath Lockett

Our world is undergoing the largest wave of urban growth in history. The United Nations (UN) reported in 2018 that over 55% of the world's population lives in cities, with one in five people residing in urban areas of more than one million people. It also estimates that at least one in three people will live in cities by 2030 and forecasts an additional 2.5 billion people joining them by 2050.

With these statistics in mind, ISO has seized the opportunity to take the lead in sustainability planning for cities around the world, by developing standards that address these challenges, and has provided achievable guidelines, frameworks and measures in its rapidly growing family of standards.

Taking into consideration the United Nations Sustainable Development Goals, a set of universal directions that countries are expected to use to frame their policies for a better world, ISO's technical committee ISO/TC 268, *Sustainable cities and communities*, has published 23 standards that help cities and their decision makers incorporate smartness and resilience into their sustainability planning.

Six pillars of sustainability

Introduced in 2016, ISO 37101, *Sustainable development in communities – Management system for sustainable development – Requirements with guidance for use*, sets out broad principles (referred to in the standard as “purposes of sustainability”) of what a community may wish to achieve with a sustainable development strategy, such as responsible resource use, preserving the environment and improving the well-being of citizens. It lists six purposes for cities that can be applied globally: overall attractiveness; the preservation and improvement of the environment; resilience; responsible resource use; social cohesion; and the well-being of citizens.

“We want to ensure that every city has the freedom and possibility to discover and invent its own local solutions. Our standards are dedicated to cities and communities of all sizes, large territories or urban projects within cities,” says Aurore Cambien, Convenor of ISO/TC 268's working group WG 1 on management system standards. Following the release of ISO 37101 and the feedback received from city leaders around the world, improvements have been made and new standards developed to provide more effective methodologies.

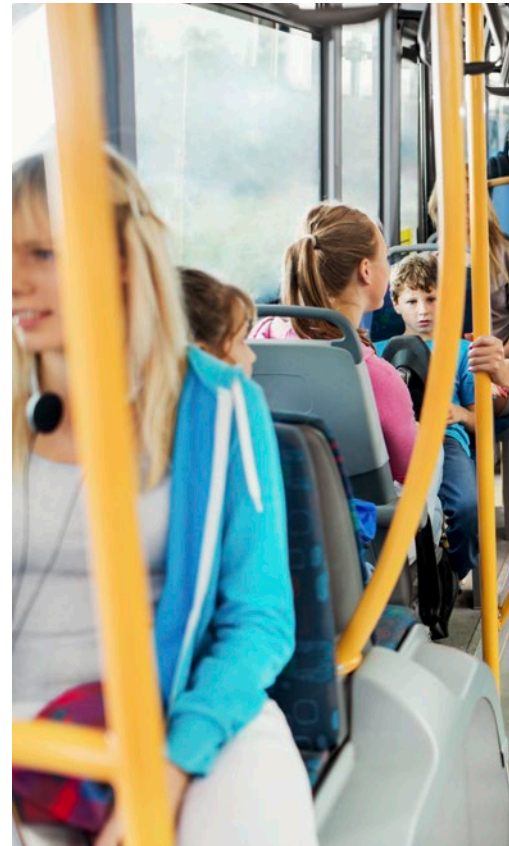
The ISO 37100 family for sustainable cities and communities now covers everything a city needs to become sustainable, such as responsible use of resources, environmental management, health, well-being of citizens, infrastructure, safety and food security. “These standards are aimed at all the stakeholders involved in maintaining a smart city, including its leaders, head planners, mayors and citizens. They codify best practice and provide guidelines on how to innovate for the future,” says Chris Parker, Convenor of ISO/TC 268's working group WG 4, which focuses on smart processes and operating models for sustainable communities.

Smart and resilient

The standards include the word “sustainable”, but many also refer to “smart” and “resilient” features as well. Parker defines sustainability as “the outcome you want to achieve for your city, which is providing a successful environment now and in the future”. This means ensuring that the environmental, social and economic needs of the present are achievable without endangering the ability of future generations to meet their own needs.

“Smart is how to do this,” enthuses Parker. “With increasingly digital ways of working and technologies such as artificial intelligence, there’s a big opportunity to drive change in cities in new ways. Not technology for technology’s sake, but real innovation that manages issues and the need for change.”

City planners can also use ISO 37106, *Sustainable cities and communities – Guidance on establishing smart city operating models for sustainable communities*, to enable real change now and in the future. Like all the standards in the series, it is aimed at the stakeholders involved in maintaining a sustainable city, including mayors, city leaders, planners and citizens. “We must put the citizen at the centre of city services and plan and work collaboratively across sectors. People and culture are some of the key factors that ISO 37106 covers, helping to identify the key barriers





“When starting to build an ISO standard, key indicators that cities have prioritized have to be properly defined. Take a fire-fighter, for instance. Are they counted if they are full time, part time or a volunteer? What about emergency response times? We discovered that some cities started counting the response time from the moment the 911 call was received, whereas others did not count the time until the fire truck was dispatched from the station. This meant that some cities were unfairly ranked as “slow to respond” if they counted from the time of the call. ISO standards clear this discrepancy up and make it possible to accurately compare response times across cities.”

Patricia McCarney,

Convenor of ISO/TC 268/WG 2, *City indicators*

city leaders face when driving smart, sustainable change and bringing together proven, practical solutions from cities around the world,” he says.

Defining “sustainable”, “resilient” and “smart” for cities around the world is also vital and forms the basis for the guidelines given under the ISO 37120 series being developed in the working group of ISO/TC 268 devoted to building globally standardized data for cities. Prof. Patricia McCarney, Convenor of ISO/TC 268’s working group WG 2, *City indicators*, describes resilient cities as ones that can prepare for, recover from and adapt to shocks and stresses, whether they are human-made or extreme events. These can include floods, earthquakes, terrorism, chemical spills, pandemics, power outages, cyber-attacks and conflicts. A resilient city can also address air and water quality, poverty and housing shortages by understanding the risks to the city and taking action to reduce those risks.

In summary, then, both smart and resilient cities have capabilities to deal with and prevent chronic stress and acute shocks by deploying a broad range of technologies. “The difference between smart and resilient,” Prof. McCarney concludes, “is that ‘smart’ sets up the systems, such as early warning alarms or smart water meters, and ‘resilient’ focuses on actions for cities to consider in moments of shock like emergency response times or heavy rain recovery.”

Cities in collaboration

Another valued family member, ISO 37107, *Sustainable cities and communities – Maturity model for smart sustainable communities*, was developed in close partnership with cities including Birmingham, Cambridge, Glasgow, London, Peterborough, Dubai, Tianjin, Singapore, Moscow and Sydney. The standard provides frameworks for cities to assess how they are performing now, to identify their strengths and weaknesses and determine how close they are to best practice.



The far-reaching focus of ISO 37101 is not to function as a “stand-alone” standard but to ensure consistency for all the others within the ISO 37100 family for sustainable cities. For instance, ISO 37104, *Sustainable cities and communities – Transforming our cities – Guidance for practical local implementation of ISO 37101*, helps city leaders familiarize themselves with other members of this family and understand what the requirements are.

Tools on how to unlock data and use it for innovation are vital to achieve sustainability, says Prof. McCarney. She agrees that the ISO 37100 family is a large and growing one and to complement ISO 37120, *Sustainable cities and communities – Indicators for city services and quality of life*, two new standards were released in 2019: ISO 37122, *Sustainable cities and communities – Indicators for smart cities*, and ISO 37123, *Sustainable cities and communities – Indicators for resilient cities*.

The aim is for all three standards to work together, Prof. McCarney explains. “Sustainability is the overarching umbrella covering the smart and resilient standards. ISO 37120 provides quantitative and descriptive sets of measurements that provide a globally standardized set of definitions and methodologies. ISO 37120 is the base standard for cities to build globally standardized data and ISO 37122 for smart cities and ISO 37123 for resilient cities are built upon this base, equipping cities to take a deeper dive and promote sustainable, smart and resilient frameworks for data-driven policy and action.”

Cities need better data and the ISO 37120 series addresses this issue through agreed definitions, measurements and reporting mechanisms all cities could use. Prof. McCarney again: “Cities can measure performance management of services and quality of life over time, learn from one another by comparing performance across a range of measures and support policy development and priority setting. All three standards are connected, which allows mayors to now ask: How are we doing? How are we doing compared to the other cities in our group?”

We must put
the citizen
at the centre
of city services
and plan and work
collaboratively
across sectors.

IT'S A WONDERFUL WORLD

Experience smarter urban living with ISO/TC 268's standards for sustainable cities.

Performance evaluation

ISO 37106
Smart city operating models

ISO/TS* 37107
Maturity model for sustainable communities

ISO 37120
Indicators for city services and quality of life

ISO 37122
Indicators for smart cities

ISO 37123
Indicators for resilient cities

Management systems

ISO 37101
Management system for sustainable communities



Community infrastructure

ISO/TS* 37151
Performance metrics for community infrastructure

ISO 37155 series
Operation of smart community infrastructures

ISO 37156
Data exchange for smart community infrastructures

Smart transportation

ISO 37154
Best-practice guidelines for transportation

ISO 37158
Battery-powered buses

ISO 37159
Rapid transit in and between large city zones

ISO 37161
Energy saving in transportation services

ISO 37162
Transportation for newly developing areas

*TS: technical specification

Room for improvement

ISO is also keen to learn from the cities that are using its standards. Boston in the United States is the first city to have over five years of implementing ISO 37120 and is building high-calibre globally comparable data. As a result, the city is now able to fully embrace predictive analytics, which will help with better decision making, data and transparency for citizens.

“We want to develop a visualization tool for cities to put the data to even more use. This data is trusted because it is ISO and third-party verified and can be expanded into predictive analytics, new tools and portals to share and compare data,” Prof. McCarney says.

Recognizing uniqueness

Smartness and resilience will continue to play an important role in the ISO 37100 family. Global insurance companies need data for assessing a city’s safety and are keenly interested in ISO 37123, says Prof. McCarney. They are interested in how this standardized city data can help track emergency alarms and response times, systems preparedness, recovery processes and the adaptations and infrastructure needed to prevent and reduce future risks.

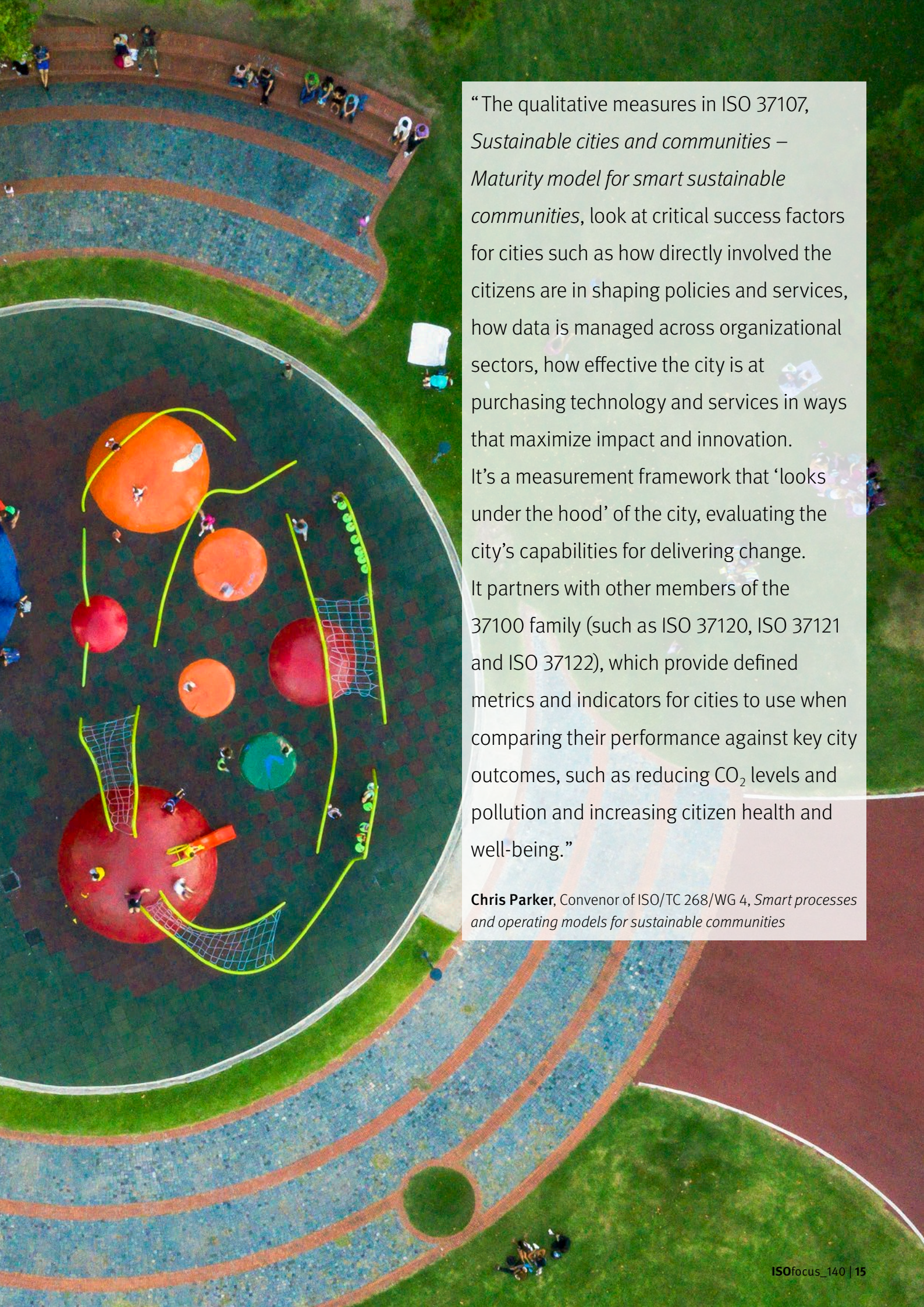
When working with international teams and members from different cultures and time zones, it can sometimes feel like herding cats, Chris Parker admits, but Aurore Cambien insists that’s why the working groups are so useful in helping to highlight a range of issues facing cities. “We all have a different understanding of what sustainable cities should be and have had many debates about smart and sustainable methods and processes. The challenge is having everyone share a common understanding so that we share the same objectives globally.”

All cities are unique, but they rarely face unique challenges. Rather, they crystallize a number of present-day worries and common expectations. To be considered smart, a city must necessarily incorporate aspects related to improving governance, planning and infrastructure, all of which should reflect positively on its citizens’ well-being. And standards, as the epitome of best practice, can help each one find its own path towards sustainability. ■



“There is more to add to the family. We are currently developing other standards that focus on urban project development. Paris has provided a great case study for other cities to follow with their ‘Parisculteurs’ initiative promoting urban agriculture on the tops of buildings. They’ve been using ISO 37101 and tell us that it has had positive impacts on social cohesiveness and attractiveness, and we foresee global benefits for other cities implementing our standards in the future. Sometimes standards can seem quite conceptual and theoretical, so successful case studies show other cities how they can actually do it.”

Aurore Cambien, Convenor of ISO/TC 268/WG 1, *Management system standards*



“The qualitative measures in ISO 37107, *Sustainable cities and communities – Maturity model for smart sustainable communities*, look at critical success factors for cities such as how directly involved the citizens are in shaping policies and services, how data is managed across organizational sectors, how effective the city is at purchasing technology and services in ways that maximize impact and innovation. It’s a measurement framework that ‘looks under the hood’ of the city, evaluating the city’s capabilities for delivering change. It partners with other members of the 37100 family (such as ISO 37120, ISO 37121 and ISO 37122), which provide defined metrics and indicators for cities to use when comparing their performance against key city outcomes, such as reducing CO₂ levels and pollution and increasing citizen health and well-being.”

Chris Parker, Convenor of ISO/TC 268/WG 4, *Smart processes and operating models for sustainable communities*

An aerial photograph of a city square. In the foreground, a yellow and black tram is moving across the square. Numerous pedestrians are walking in various directions. The ground is paved with light-colored tiles. The overall scene is bright and clear, suggesting a sunny day.

DESIGNING

tomorrow's cities

TODAY



Dr Bernard Gindroz, Chair of ISO/TC 268.

What kind of city do we want to live in? One that is smart, resilient and sustainable, of course. To achieve our vision, we need to start planning now, with a little help from ISO standards. Dr Bernard Gindroz, Chair of ISO/TC 268, explains.



ISO recognizes that most of the world's resources are concentrated in cities.

Cities used to grow organically as necessity required. People needed places to sleep, eat and worship and infrastructure was created to deal with immediate needs for water, sewage, transport, gas and electricity in vast networks of improvisation. Then, gradually, things changed and cities began to happen “on purpose”. Today, high-tech materials, sensor networks and quality data all conspire to let town planners and architects build cities that are beautiful, environmentally friendly and more pleasant to live in. And that can only be a good thing since over half of the world's population now lives in urban areas.

Underpinning the services that feature prominently in tomorrow's sustainable cities – new economic and governance models, improved public health and safety, advanced water management and transport systems – are new networking capabilities that are emerging all around the world. These in turn are supported by foundational standards developed by ISO's technical committee ISO/TC 268, *Sustainable cities and communities*, through global collaboration that spans geographical, industrial and technological boundaries.

With over 20 standards published so far and many more in the making, the ISO family of standards for cities is growing to anticipate the current and future needs of urban areas around the world. Dr Bernard Gindroz is the Chair of ISO/TC 268 and the man behind tomorrow's sustainable cities. Here, he shares his hopes for a smarter urban future.

ISOfocus: How did you end up working with ISO?

Dr Bernard Gindroz: After graduating in mechanical engineering, I went on to complete a PhD in the field of energy. This sparked my interest in sustainable energy and environmental protection. Moving towards the development of standardized measures and guidelines for other organizations and cities to follow was just a natural progression.

Back then, I was working with AFNOR, ISO's member for France, which boasts a membership of nearly 2500 companies. Its role is to lead and coordinate the standards development process in France and in Europe, while encouraging the use of standards. About four years ago, AFNOR approached me to become the Chair of technical committee ISO/TC 268 on sustainable cities and communities.

I was impressed with ISO's holistic approach to the development and implementation of International Standards for sustainability. By providing step-by-step processes, ISO standards give cities a relevant and cohesive system to carry out urban sustainability assessments and help with



future planning. ISO recognizes that most of the world's resources are concentrated in cities, meaning that we need to deal with them in a more efficient way. One of our main goals is to reconcile new technologies with the varied needs of cities around the world to ensure the well-being of their citizens now and in the future.

If a busy mayor or city decision maker is interested in using ISO standards in their city, where should they start?

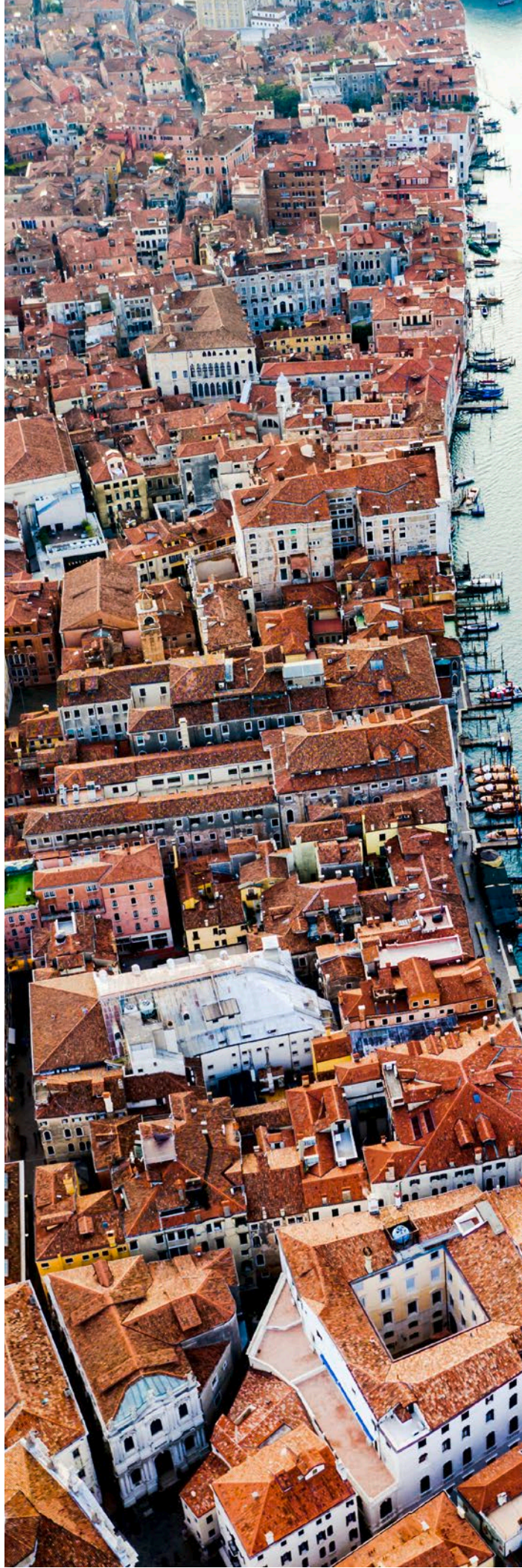
The challenges facing cities around the world are extremely complex and often very specific. Each city is unique and we need to consider the local and cultural context for it to retain its character. That said, the feedback we've received has been consistent – all cities want an overarching framework that they can use. This has been achieved through international consensus on what best practice means and how to apply it.

The framework also needs to match up with the United Nations Sustainable Development Goals, designed to create a brighter, more prosperous world for all. The standards need to ensure that issues such as energy and water management, road safety, transport, cybersecurity, health and governance, climate change, and the well-being of citizens, including that of ageing populations, are all being addressed.

To kick-start the process, I would recommend reading ISO 37101, *Sustainable development in communities – Management system for sustainable development – Requirements with guidance for use*, which is the reference base for sustainable cities. It provides a quality management system that clearly sets out the basic requirements for cities to determine their sustainable development needs and strategies. This standard is supported by other standards in the ISO 37100 family offering more specific information, structures and measures. Together, they provide a toolkit of smart practices for managing governance services, data and systems across the city in a collaborative and digitally enabled way.



Situations change,
and cities need to plan
and respond to them.



The words “smart” and “sustainable” are very commonly used. What is the difference as they relate to cities?

These buzzwords can sometimes lead to confusion. Broadly speaking, smart cities rely on useful and appropriate information to help them effectively manage their resources and plan their future development. By contrast, sustainable cities have plans and programmes in place to cover their social, economic and environmental impacts. Cities must evaluate their resilience in the face of an increasing population without negatively affecting the needs of their citizens in the future. In both definitions, human well-being remains at the heart of all these considerations. The standards of ISO/TC 268 will make a defining contribution to all 17 United Nations Sustainable Development Goals, one of which is specifically dedicated to cities. Voluntary standards are powerful tools to help ensure that cities continue to create jobs and prosperity without putting undue strain on the land and resources.

You’ve been known to emphasize the importance of statistics...

Well, all cities need alignment and investment, but they can only do this by learning more about sustainable development through case studies and benchmarking best practices. With strong communication and reporting, cities can measure, monitor and evaluate against their key targets.

We all agree that it is important to have the same terms and definitions as well as key performance indicators (KPIs) that are defined and understood by all cities. Statistics need to be standardized in much the same way. People, and that includes city dwellers, trust standards and thus statistics from standardized measurements. Statistics and ways of measuring performance can be achieved through consensus, best-practice examples and by combining the latest technology available.

Measurements and statistics can then be used by cities to compare their performance with other cities and identify potential opportunities for improvement. They can also apply these against successful case studies, best practices and common indicators, which allow future performance targets to be set and measured. It’s all about having a common understanding and common indicators that result in common value.



Let's also not forget that a continuous improvement loop is always needed. Situations change, and cities need to plan and respond to them. Our ISO standards use quality management throughout the entire process. It goes as follows: identify the vision, make the decisions, plan your programmes, implement those programmes and check on the results. Then ask yourself: "Did we deliver?"

What are the main challenges you have faced?

There are so many countries participating in the standards work. At first, it can seem a little difficult to work out what a city in Africa, for instance, might have in common with a city in Europe. Our challenge is to consider these differences in such a way that we can define the prevailing pain points and work on them together.

Our standards need to be relevant to all cities around the world. Despite the challenges, we have extremely good collaborators and cities are already reporting very positive results. In France, the standards of ISO/TC 268 now form the basis of the standards required for public and governmental sustainable development projects; they are also recognized across the European Union through a dedicated Smart City Guidance Package.

What future plans are there for ISO/TC 268?

We are receiving feedback from the cities that are already using our standards. Their support helps us identify the gaps we need to fill, and to revise and improve our existing standards.

It's always going to be a long-term vision: How do we want our cities to look ten, twenty or thirty years from now? That might seem like a long time ahead, but we need to be paving the way for the implementation of sustainable and smart solutions now. The city of 2050 is the city that we're already planning for today.

After dealing with such complex issues facing cities around the world, what do you do to unwind?

Good question! First, let me say that I'm very fortunate to work with such talented and nice people in ISO/TC 268, but when I do need to relax, nature, music and my wife are the best antidotes. I'm very lucky, she's a professional relaxation therapist! ■

GRENOBLE

The sustainable city



Building more sustainably is becoming a necessity to address tomorrow's climate and environmental challenges. Grenoble-Alpes Métropole has established itself as a leader in sustainable cities.





Christophe Ferrari, President of Grenoble-Alpes Métropole.

As Europe's largest alpine metropolis, Grenoble, dubbed the "capital" of the French Alps, has set itself a number of challenges, such as creating eco-neighbourhoods that are pleasant to live in, building a bioclimatic school and developing an urban farming project. For more than a decade, the city has been the focus of an extensive undertaking to create a community that is more energy-efficient and environmentally friendly, while meeting the demands of its current and future inhabitants.

A tall order, indeed, as Grenoble has to deal with the considerable geographical and climatic constraints of its mountainous landscape. Thus, the city's future lies in promoting a controlled urban development which uses less space, reorganizes vehicle access, reduces city-centre congestion through "soft" modes of transport and relies on clean energy resources and sustainable architecture, all of which have an impact on the well-being of citizens.

This wide-scale project is part of the EcoCité initiative, launched by the French government in 2008, which aims to find new ways of designing, building and managing cities. A partner in this initiative, Grenoble turned to ISO 37101 as part of its urban renewal programme. This common-sense standard, which provides a valuable reference tool for evaluating innovative urban projects, aims to make Grenoble more effective in achieving the major sustainable development objectives that the community has set itself. *ISOfocus* asked Christophe Ferrari, President of Grenoble-Alpes Métropole, for his thoughts.

Grenoble turned
to ISO 37101
as part of its urban
renewal programme.

ISOfocus: There's a lot of buzz around what it means to be "smart". What does that mean to a city like Grenoble?

Christophe Ferrari: The Grenoble region is a space for projects, for innovation and for social, environmental and technological experimentation. Born out of a pioneering culture in which risk-taking forms an integral part of its approach to progress, the Grenoble conurbation is constantly changing and reinventing itself.

In a global context of unprecedented environmental and social challenges, the Grenoble-Alpes Métropole area qualifies as "smart". The city has adopted digital and new technologies in its quest to become a leader in the energy transition and combat climate change and social division by developing new types of services and forms of cooperation. In other words, a metropolis whose appeal is based on its citizens' well-being and quality of life, and for which sustainable development in all its three forms – economic, social and environmental – is the common thread in all its policies.

Since 1934, the famous "bubbles" with their transparent walls have linked Grenoble to the top of the Bastille.





The majestic peaks of the Belledonne massif overlook Grenoble city centre.

Which smart solutions are already being implemented in Grenoble?

Grenoble's EcoCité programme already includes the consolidation and emergence of demonstrators and model districts for a smart, sustainable and resilient city. What's more, the metropolitan area is developing experimental projects that are unique in France involving the intelligent and collaborative management of energy data (Métro Énergie project, originally called VivaCité). These programmes are based on a partnership approach with a wide diversity of stakeholders in the region: local authorities, universities, research bodies, companies, residents and community groups.

New digital technologies and social innovation, combined with a diverse range of focus areas, have enabled the development of local projects that are both sustainable and efficient: urban and environmental design, buildings and their uses, energy and networks, mobility, innovative urban services, the renovation and energy storage of building envelopes, participatory housing, a new generation of urban heating networks, ageing and home care.



ISO 37101
establishes
a reference
framework and
a common language
for all types
of urban projects.

What are some of the ISO standards being used to support your city's efforts?

ISO 37101 for the sustainable development of cities and communities provides new perspectives on demonstration buildings and model urban projects. It enables cities to optimize their management system and refine their governance based on the principle of continuous improvement. The ISO standard was thus tested in the development of the Environmental Charter for the innovative Presqu'île demonstration district. On the strength of this experience, Grenoble-Alpes Métropole has once again committed to applying ISO 37101 to one of its flagship projects over the next two decades : the GRANDALPE project.

Tell us about this smart cities project you're engaged in and some of the anticipated outcomes. What is the greatest challenge facing cities today, and what would you tell a city leader trying to solve it?

More than just an urban project, GRANDALPE is unique in its predominantly human dimension. It consists of collective projects to improve community life and promote cooperation in order to achieve more social justice and intergenerational equity across a 400 ha central area inhabited by 30 000 people in the geographical heart of the metropolis.

While the project takes a city-focused approach, with a national or even global reach, people's daily life is also a key concern. Particular attention is given to quality of life by focusing on the provision of meeting places, local shops and businesses (as a source of social contact), better accessibility and pleasant public spaces, underpinned by a "park in the city" concept.

The GRANDALPE project aims to transform the heart of the Grenoble metropolis by 2040, with the help of the area's inhabitants and stakeholders. Its goal is to achieve excellence and to lead by example.

How can ISO standards help support some of these challenges?

ISO 37101 establishes a reference framework and a common language for all types of urban projects. It enables a successful interpretation of the synergies between projects and the different stakeholders across the region, in the interest of a common goal. ISO 37101 is also an opportunity for dialogue between the different regional levels by inviting them to assess the impact of a project or an action on a wider territorial scale; in other words, outside the boundaries of the project area itself. Once the communities have completed the assessments, the ISO standard enables them to qualify and quantify their strategic goals and draw up an operational action plan for the regional development project. ■

How does your city score?

Paving the way for urban sustainability, the ISO 37120 series of standards offers a complete set of indicators that measure a city's progress towards smartness and resilience. Here's a brief snapshot.

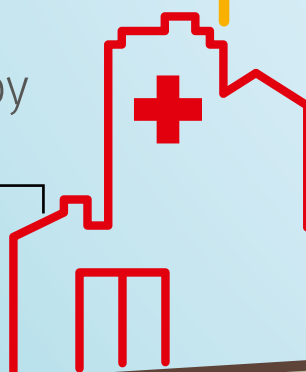
ENERGY

Green power for all



HEALTH

Feeling happy and well



HOUSING

A home for everyone



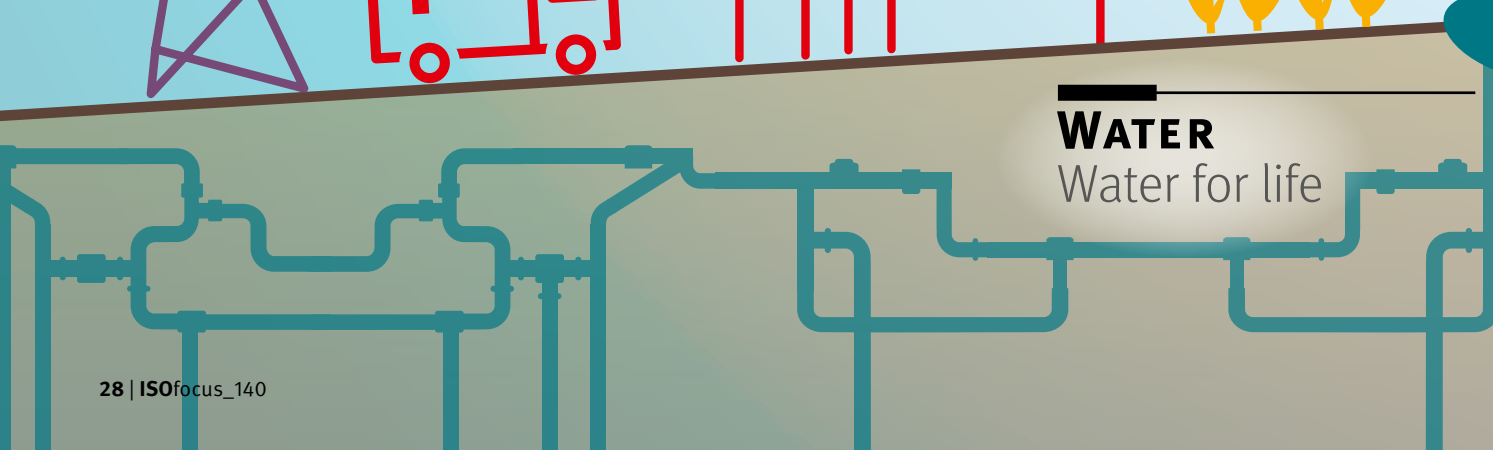
URBAN AGRICULTURE

Eating for health



WATER

Water for life



ENVIRONMENT & CLIMATIC CHANGE

A world where people thrive

TELECOMMUNICATION

Being connected



SAFETY

Keeping safe and sound

ECONOMY

Making a living



EDUCATION

Lifelong learning

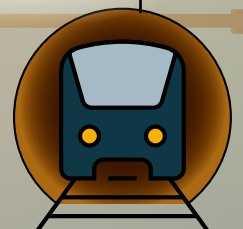
TRANSPORTATION

Getting around



SOLID WASTE

Smart recycling



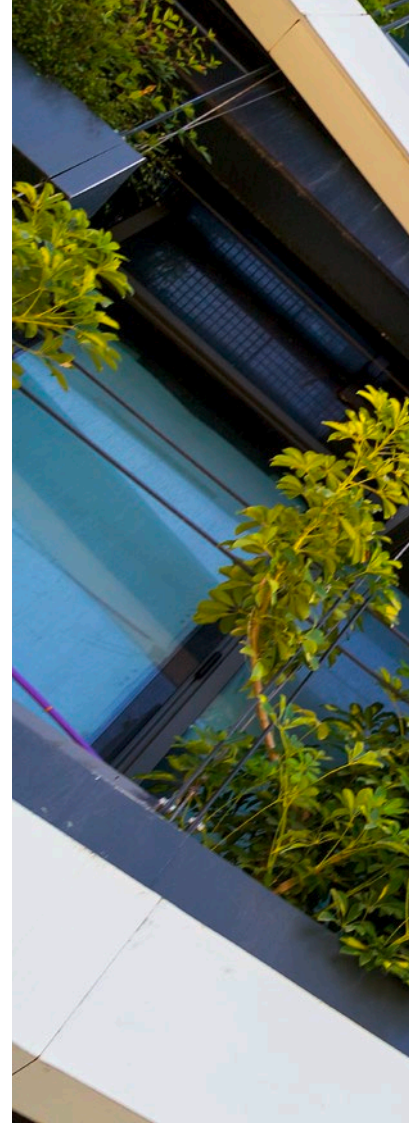




CONSTRUCTING a better future

A sector that holds
ALL the cards

We often think of planes and cars as the biggest polluters, but did you know the construction industry, which designs the buildings we live and work in, is one of the most polluting in the world? It therefore offers enormous potential to make our environment more sustainable. Progress is being made – but more can be done.



by Clare Naden

Contributing a whopping 39% of carbon emissions in 2018, the building and construction sector has some work to do when it comes to sustainable development. However, this is no easy task. Global population growth means the consequent demand for energy is also rising, having climbed 1% from 2017 and 7% from 2010.¹⁾

The Global Alliance for Buildings and Construction (GlobalABC), an international United Nations initiative working towards a world with zero-carbon buildings, reveals that the floor area of buildings globally is expected to double by 2050. If nothing is done about it, energy demand in buildings could take a 50% hike at the same time.¹⁾

The problem, of course, is that much of the energy being consumed is of the greenhouse-gas-emitting kind. But getting these emissions down is essential to reaching many of the United Nations' 17 Sustainable Development

Goals, which aim for a lasting and liveable planet, and curbing the rising earth temperatures that cause so much destruction.

Pillar of society

Yet emissions are only part of the story. The building industry is a key sector in national economies, with a strong potential for poverty reduction through the services and spaces it provides, not to mention the employment it offers. With the considerable resources it represents, the sector has a direct impact on the economic and social conditions of communities, affecting many aspects of people's lives, including their health, safety, mental well-being and more. It is a key pillar of a sustainable society.

Given the sector's socioeconomic importance, a number of efforts have been initiated towards more sustainable construction. However, improving sustainability in the built environment is challenging, because renovating existing constructs takes time and money, as does building new ones. Meanwhile, we all need somewhere to live, work, shop and receive all the necessary services in order to exist.

1) International Energy Agency and United Nations Environment Programme, *2019 Global Status Report for Buildings and Construction. Towards a zero-emissions, efficient and resilient buildings and construction sector* [pdf]



If nothing is done about it, energy demand in buildings could take a 50% hike.

Sustainable building is supported at the global level by International Standard ISO 15392, *Sustainability in buildings and civil engineering works – General principles*, which was developed to address this issue. Recently updated to reflect the changes in the industry, it sets out internationally agreed and recognized principles for achieving sustainability in building and construction. Providing a common language for all stakeholders in the industry, from designers and manufacturers to regulators and consumers, it can serve as a basis for communication and the development of evaluation criteria.

A holistic approach

Achieving sustainability in buildings is a global concern. At the United Nations Secretary-General's Climate Summit in September 2019, a commitment was made to achieve a zero-carbon building sector and contribute USD 1 trillion in building investments in developing countries by 2030. At the same time, the Net-Zero Asset Owner Alliance was created, an international group of

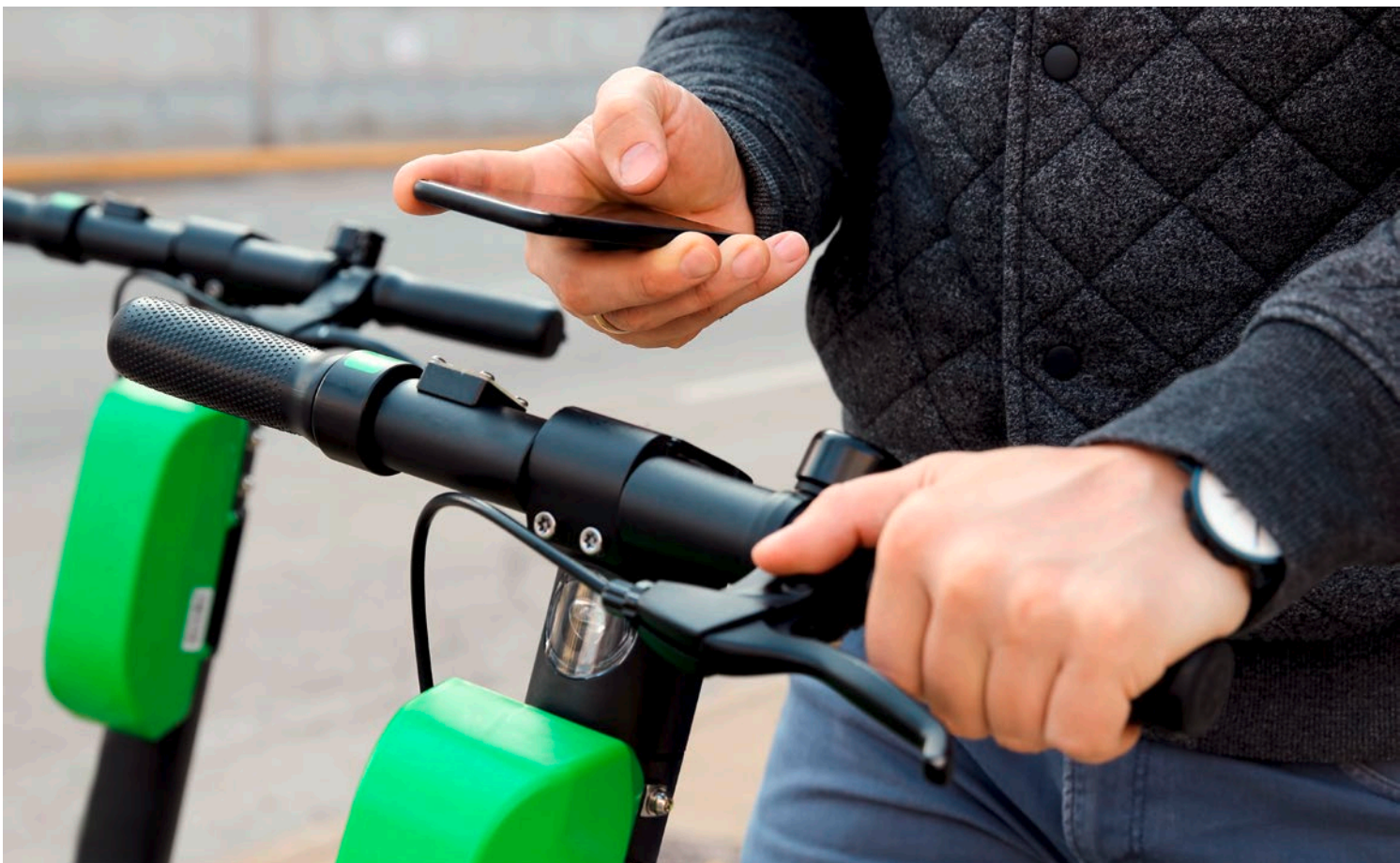
institutional investors, which together represent nearly USD 4 trillion in managed assets and have committed to transitioning their investment portfolios to net-zero greenhouse gas emissions by 2050.

While the many initiatives, commitments and incentive schemes are essential, practical tools are needed to enable everyone to turn this will into a way. This, said Emma Risén, Manager of ISO/TC 163, ISO's technical committee for measuring energy use in buildings, is where standards play a vital role. "In order to make positive change, we need to know what base we are starting from and what progress we are making. Internationally agreed standards for measuring the various criteria of a building that is working towards reduced carbon emissions are the means to do that."

The ISO 52000 series is a good example. It was developed to help organizations contribute to the zero-carbon goal by helping them assess the energy performance of buildings in a holistic way. These documents contain a comprehensive method for calculating primary energy used for heating, cooling, lighting, ventilation and domestic hot water of buildings. They can help further the cause of energy efficiency in building by allowing the performance measurement of new materials, technology and approaches to building design, construction and management.

Net-zero ambitions

There are also many international organizations dedicated to the cause. One of these is the World Green Building Council (WorldGBC), a global network of building councils working to reduce carbon emissions in the building and construction industry by 2050. Their Advancing Net Zero project aims to accelerate that goal through the Net Zero Carbon Buildings Commitment, which calls upon businesses, governments



and non-governmental organizations around the world to take action towards decarbonizing the built environment. As members of the WorldGBC, the Green Building Councils are delivering change on the national level with a number of activities such as certification schemes, education programmes and other initiatives to help industry work towards net-zero-carbon buildings.

Also working to accelerate the transition to a sustainable world is the World Business Council for Sustainable Development (WBCSD), a global CEO-led organization aimed at sustainable business. Its Energy Efficiency in Buildings initiative was devised around the claim that “projected energy use in buildings in 2030 can be reduced by 50% using today’s best practices and technologies, through actions that offer favourable economic returns”. The project involves a methodology that connects the private sector with local governments to ensure policies and activities are in place to further that goal.

The GlobalABC is also dedicated to a zero-emissions building sector, its key ambitions being to encourage the retrofitting of existing buildings and getting all actors in the sector, from design to demolition, public or private, to play their part. It provides a platform for governments and industry to increase their activities with zero-emission goals in mind, focusing on areas such as public policy, finance and education.

Getting governments on board

Governments are essential to the sustainable buildings’ cause. While more can certainly be done, some are already making efforts to decarbonize the building sector. Building codes, for example, are being revised or created to cover the energy performance of buildings, and certification schemes for low- or zero-carbon buildings have the potential to change the course of the entire sector.

In 2015, as part of the Paris Agreement, 184 countries agreed to announce their national climate commitments, known as Nationally Determined Contributions (NDCs), to reduce greenhouse gas emissions and combat rising global temperatures. Amongst the NDCs submitted, some mention specific actions related to improving building performance.

On the whole, though, global energy efficiency improvements are not taking place at a pace sufficient to offset the overall growth in demand. Designing sustainability into the building process is traditionally driven by costs, such as those related to construction, transformation and resources. More investment is needed in energy efficiency for the building sector, yet in 2018 the level of investment flattened out. So what else can be done?

The experience of people
in the built environment
is also essential
to sustainability.

DECARBONIZING THE CONSTRUCTION SECTOR

To meet the targets of the International Energy Agency, we must improve the energy efficiency of buildings at a rate of **3%** a year

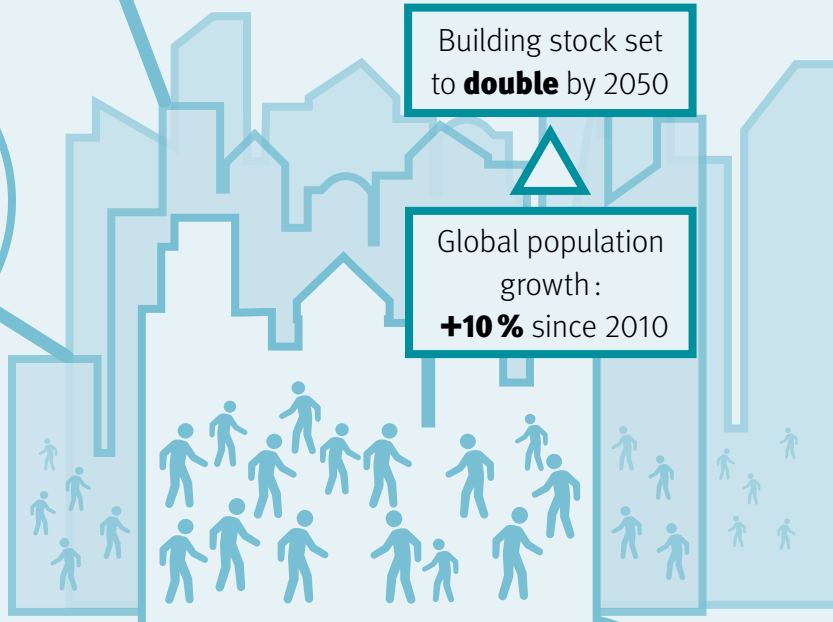


In 2018, the **building sector** accounted for **39%** of CO₂ emissions

Building stock set to **double** by 2050

Global population growth: **+10%** since 2010

The major source of rising energy is **electricity**, which rose by **19%** since 2010



From 2017 to 2018, the energy intensity of buildings...

Decreased for **space heating (-2%)** and for **lighting (-1.4%)**

Increased for **space cooling (+2.7%)**

Remained steady for **water heating, cooking and appliances**

Source: Global Alliance for Buildings and Construction (GlobalABC), 2019 Global Status Report for Buildings and Construction (www.worldgbc.org)



Achieving
sustainability
in buildings
is a global concern.

Designing with the end in mind

Turning to ISO 21931 is a good start. The two-part series, which offers a general framework for improving the comparability of methods for assessing the contribution of civil engineering works to sustainable development, helps organizations assess where they stand with their impact on the environment, and thus measure their progress. It is a useful tool for the assessment of a building or infrastructure project using a common method for expressing environmental product declarations.

These declarations portray the impact that the project has on the environment, covering everything from the production of the raw materials used through to their end-of-life decommissioning. Being internationally agreed, this series allows for fair and accurate evaluation and comparisons, and thus uniformity and consistency in the way environmental product declarations are made for construction products and services.

It's not just measuring that's required, however, but planning and forward thinking, says Karine Dari, Manager of ISO's subcommittee SC 17, which focuses on sustainable civil engineering practices under the stewardship of technical committee ISO/TC 59, *Buildings and civil engineering works*. Dari, who is also a member of the GlobalABC, believes standards can help. "ISO 20887, *Sustainability in buildings and civil engineering works – Design for disassembly and adaptability – Principles, requirements and guidance*, takes this long-term planning approach, helping owners, architects, engineers and any other party involved in the life cycle of a building to improve its sustainability, saving time and resources along the way."

The standard assists users in two ways, by extending the building's life through effective adaptability that makes it suitable for another use, and by optimizing its resources at the end of life through effective disassembly, reuse, recycling and disposal of its various materials. The result is reduced carbon emissions through optimal use of the building, lower costs through longer lifespan and better use of resources, and less waste going into landfill.

The accessibility pillar

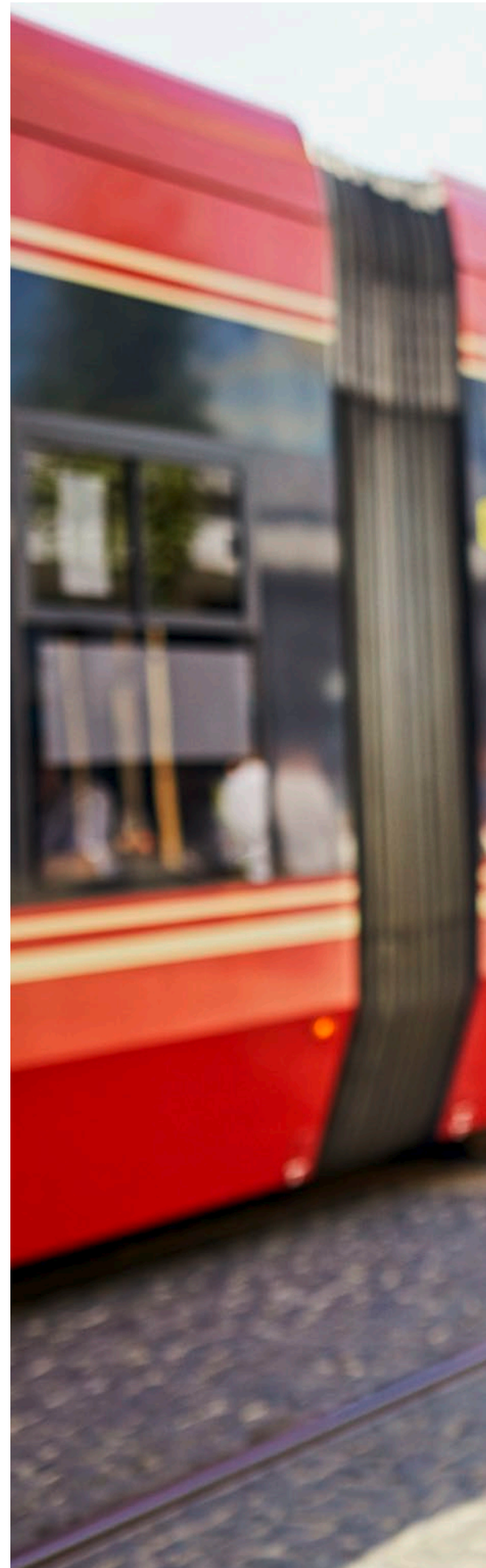
While energy performance and eco-friendly materials are important, the experience of people in the built environment is also essential to sustainability. Accessibility, for example, should be taken into account at every step of the building's life cycle, says Eduardo Álvarez, former Chair of ISO's subcommittee SC 16, *Accessibility and usability of the built environment*, that operates under ISO/TC 59.

“A well-designed building will consider accessibility in the early stages of building design. In this way, the costs of providing accessibility and usability measures are minimal and improve its sustainability substantially,” he explains. Universality is the key, he adds, because any design that facilitates accessibility to one person in a public space cannot constitute a barrier to another.

What's more, he suggests that there is a direct relationship between accessibility and safety. “If it is not safe, it is not accessible. For example, if a curb is cut so that it facilitates the circulation of a wheelchair user, how will it impact a person with impaired vision? And if an acoustic signal at that pedestrian crossing is installed to compensate, how will that affect those living in a dwelling beside it?”

Standards like ISO 21542, *Building construction – Accessibility and usability of the built environment*, can help to answer those questions as they specify a range of requirements and recommendations for many of the elements of construction that relate to access to buildings, including accessibility management.

Over a billion people in the world are affected by accessibility issues, according to the World Health Organization, either because they suffer from reduced mobility themselves or because a member in their family does. A built environment that is safe, healthy and contributes to a sustainable world, that reduces rather than adds to carbon emissions, allowing everyone to breathe easier, is a blessing to us all. Whether this will be achieved by 2030 to hit the targets of the United Nations Sustainable Development Goals is yet unclear, but there are distinct signs of progress and International Standards can help to pave the way. ■



A well-designed building
will consider accessibility
in the early stages
of building design.





Closing the gaps on accessible tourism

For more than one billion people in the world living with some form of disability, the prospect of booking a holiday can present many challenges. In an interview with *ISOfocus*, Jesús Hernández Galán of the ONCE Foundation explains why accessible tourism is essential for future prosperity and well-being and how ISO 21902 can remove obstacles to achieve this.



Photo: J. Hernández Galán

Jesús Hernández Galán, ONCE Foundation.

It's rush hour. Just a couple of hours earlier, school traffic was starting to build and now the streets and arterial roads are clogged and noisy, with buses and cars packed with commuters all edging their way out of town. Negotiating busy city centres is difficult at the best of times, but for people with disabilities, it poses a much more difficult challenge – and one that can turn a holiday into an unbearable obstacle course.

According to the United Nations (UN), there are currently over one billion people in the world living with disabilities, not to mention their spouses, children and carers. All told, this represents about a third of the global population and, as the UN points out, is a huge potential market for travel and tourism. Accessible tourism enables all of us to participate in and enjoy tourism experiences, and also goes some way to meeting the UN Sustainable Development Goal for sustainable cities (SDG 11) that touches on travel and tourism.

The ONCE Foundation, a leading Spanish organization that supports people with disabilities, has been, along with the United Nations World Tourism Organization (UNWTO), a driving force behind future standard ISO 21902, *Tourism and related services – Accessible tourism for all – Requirements and recommendations*. The standard's internationally agreed guidelines cover information on everything from policy making, strategy, infrastructure, products and services relevant to the whole supply chain. It is applicable to all kinds of stakeholders including the public sector, urban and rural tourist spaces, accommodation, tour operators and more.

Here, Jesús Hernández Galán, Director of Universal Accessibility and Innovation at the ONCE Foundation and Vice-President of the European Network for Accessible Tourism (ENAT), shares his perspective and insights on accessible tourism and why ISO 21902 can bring a global solution to a global problem.

ISOfocus: With the world facing so many critical challenges, from climate change to inequality, why is accessible tourism so important?

Jesús Hernández Galán: I believe the world is at a turning point, where many of the paradigms so far considered to be normal and standard are being demolished and replaced with new and improved systems that provide better solutions to current challenges. This can be seen in most spheres: economic, environmental and, of course, social. Some of the changes being introduced across society and in companies include a change in attitudes to accessibility and these institutions are, in large part, the driving force behind the changes. By “accessibility” we mean recognizing everyone's rights and in tourism this is understood more specifically to mean recognizing the right to enjoy free time, culture, work, family, different activities, environments and opportunities that the world and globalization offer us.

Of course, there are more pressing problems, both at a global and local level, and these must be tackled in order of priority.

They include the living conditions and quality of life of people with disabilities who, without an assurance of certain basic conditions, will not be able to achieve the living standards to enable them to enjoy travel. For me, accessibility is, therefore, a recognition of equal rights and is a goal that we must work on and pursue given all the challenges society faces.

What do you see as the main barriers to accessible tourism ?

Many of the difficulties people with disabilities face every day in the tourism industry arise from differences in regulations – which even vary within countries – with no minimum standard requirements in some countries to ensure that suitable conditions are in place for accommodation, travel and tourist activities. Similarly, in many countries where tourism is an engine for development, accessible tourism is beginning to be promoted, often with either no or insufficient regulations.

The heritage sector is another major area in which tourism often encounters significant problems. Historical monuments or natural spaces are complex environments and, given their public and heritage status, their protection requires careful consideration by specialists and managers.

Accessibility must also be incorporated as an essential requirement to ensure that a quality service is provided, and we must reduce the resistance still shown by some businesses in adapting their services. They must be made to understand that by ensuring accessibility, they will meet the needs of a broader spectrum of the population and that, as a result, better customer satisfaction will benefit the business.

How can ISO 21902 help to overcome those barriers ?

The ISO 21902 standard, promoted by the ONCE Foundation and the UNWTO, with support from the Spanish Association for Standardization (UNE) and the Royal Board on Disability, will help to standardize the regulations I mentioned above and establish a holistic approach throughout the tourism chain. The guidelines in the standard will provide a basis and starting point for countries that are beginning to promote and legislate for accessible tourism.

This standard is a compilation of many aspects to be considered in terms of accessibility, such as the physical environment, management, staff training, adapting the product and service, communication, information and guidance, the role of technology, and safety and evacuation guidelines. It also considers the specifications of each element of a journey (transport, travel agencies, accommodation, tourist companies, etc.) and the type of tourism involved (business, cultural, nature, etc.).

ISO 21902 can facilitate access to information, enabling greater commitment from the sector and greater general awareness among the population, cities and governments. The tourism sector involves a variety of stakeholders, who must all work together towards a common goal. Training professionals in each field forms an important basis for this commitment by recognizing everyone's needs when designing, managing, producing and providing different goods and services.

ISO 21902

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What are your goals and hopes for the future of accessible tourism and the development of the standard?

Future progress on this is unquestionable. More and more companies, governments and countries are including accessibility as a key requirement in their strategic plans and are taking into account the significant losses involved in designing and providing services that discriminate against 15% of the world's population. Given the demographic trends of ageing populations, there is no denying the diverse needs of the population, including the different circumstances every person faces at each stage of their lives. Accessibility and universal design provide for an inclusive service from which nobody can be excluded.

I believe that accessibility and sustainability converge towards a common goal of providing an environment and

approach that enable the entire population to coexist, regardless of any differences and needs that may arise. It is essential, therefore, to create sustainable cities and to incorporate accessibility, because no city will be 100% sustainable unless it manages to provide for 100% of its population. Achieving this presents a similar challenge to that of accessibility as it requires everyone's commitment and awareness.

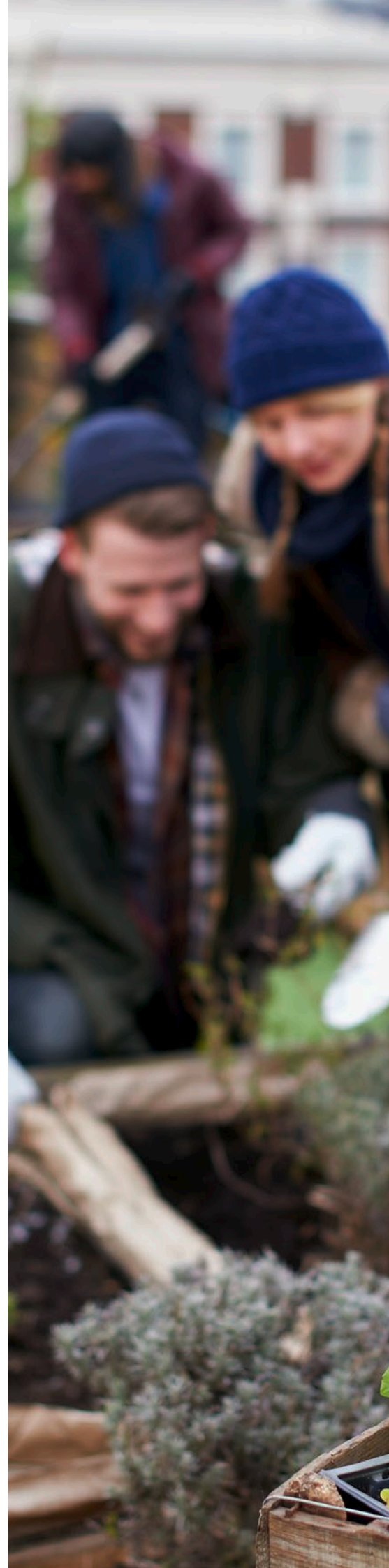
There is a lot of work to be done but we've already embarked on that path. I believe that the standard will be a major step forward and a watershed moment when many countries will find the support and guidance they need on the approach to, and planning for, accessible tourism, viewing it as key to ensuring competitiveness and quality in the sector. ■



Shaping a sustainable future

by Roxanne Oclarino

In a world where standards can be simply defined as agreed ways of doing things, they provide stakeholders with appropriate guidance to help them create structural frameworks to minimize risks, operate more efficiently and continuously improve. With many key players addressing and incorporating sustainability into their practices, ISO provides a guide to bring much-needed clarity to the conversation.





The world may have already crossed a series of tipping points. The past decades were defined with distinct climate impacts, accelerating rates of biodiversity loss, plastic waste in the oceans, enforced land-grabbing and political instability. A new era awaits us all, but we must recognize the impacts of our choices and actions to unwaveringly face the future before it's too late.

In 2015, the United Nations set the 2030 Global Agenda, with 17 Sustainable Development Goals (SDGs) at its core, to address some of the most pressing issues faced on our planet. This established a collective purpose aimed towards a future of peace and prosperity for the world. More than a common goal, this heeds an urgent call for mankind to partake in a global partnership towards sustainability – the key that will unlock our future.

The World Wide Fund for Nature (WWF) reports that the SDGs are now becoming a universal language for governments, non-governmental organizations and businesses to collaborate around shared sustainability targets, commitments, outcomes and impacts. It also

highlights the responsibility that the private sector has in addressing social and environmental issues in their respective supply chains, incorporating sustainability in their core business mission and engaging in the transformation of the wider sector they are part of.

The WWF points out how sustainability standards can help accelerate efforts to achieve the SDGs. Sustainability standards are a key in market transformation – establishing standards which address sustainability issues and offer organizations around the globe a ready-made tool to do so. Bringing together different key players into standards making embodies a multi-stakeholder approach that is highly crucial to the 2030 Global Agenda.

From a business perspective, McKinsey reports that 43% of 2900 executives surveyed said their companies align sustainability with their overall business goals, mission or values. The executives ranked reducing waste at 63%, reducing energy use in operations at 64%, and managing their corporate reputations for sustainability at 59%. This goes to show that sustainability is at the forefront of today's corporate agenda as well.



Considered as a foundation of sustainability, standards are designed to address the most pressing social and environmental challenges of our time.

What the world needs right now

International Standards are fundamental tools for addressing many of the world's pressing challenges. Created by a team of standards and sustainability experts, ISO Guide 82, *Guidelines for addressing sustainability in standards*, provides guidance to standards developers on how to take account of sustainability in the drafting, revision and updating of standards. It also aims to raise awareness of sustainability issues among standards writers and provide them with a systematic and consistent approach to identify and assess sustainability factors, which is essential in every standards-making process.

The guide has recently been updated to include information on how standards can support the SDGs and to ensure that they remain relevant in helping the world achieve a sustainable future. Jimmy Yoler, Convenor of the working group that revised the guide, states that the 2030 SDGs were their main mandate in revising the guide to guarantee that sustainability, also expressed through the SDGs, is addressed and incorporated in standards. "ISO Guide 82 aims to improve the understanding of what sustainability is and highlights the multi-faceted approaches in addressing it in standards making. The guide is a valuable asset for standards developers to deliver on the 2030 Global Agenda," he says.

Furthermore, the guide zeroes in on how sustainable development should be taken into account during the formation of committees and in subsequent phases of the standards development process. This includes which SDGs can be supported by the committee's work. It guides on how sustainable development can be embedded into the scope, structure and strategic plan of a technical committee from its inception, not to mention promoting awareness of sustainable development amongst a committee's leadership and participants, safeguarding that it will be an integral part of their work.



Sustainable solutions for all

While the SDGs set ambitious goals for 2030 and national development priorities should align with that vision, it takes collaborative efforts to make that vision a reality. Standards writing can be a complex process which needs to adapt to ever-changing environments and circumstances, taking into account the three pillars of sustainable development: society, economy and the environment. Sustainability is much more likely to be achieved as a whole if those three aspects are addressed in a truly equivalent and cohesive manner. Actions to address issues in these areas influence each other – understanding their dynamic interdependence is key in coming up with sustainable solutions that encompass all three pillars.

One could say that there are parallels in addressing sustainability in standards and addressing the sustainability issues of an organization. When multiple sustainability issues are identified as relevant and significant, it is possible that there will also be multiple solutions to address them. In such cases, conflicts can arise, i.e. implementing a solution for one issue can prevent a solution being implemented for another, or it can even aggravate the impact of the other issue. Standards developers should recognize that there can be several appropriate ways to address these issues and that the resources and capabilities to implement particular solutions can vary considerably.

Yoler states that, in such cases, standards developers should reconcile the conflicts whenever possible. Alternatively, they can consider providing multiple options in order to make standards users aware of the concerns and enable them to decide which option to adopt. “ISO Guide 82 urges standards developers to respect, consider and respond to the needs of the relevant stakeholders and, where possible and practical, engage them in an exchange of ideas and information sharing based on input from a broad and balanced base of expertise and representation,” he adds.

Making sustainability a reality

As sustainable development and progress towards sustainability are heavily dependent on a multitude of factors, ISO Guide 82 outlines a methodology that standards developers can use to develop their own approach to addressing sustainability on a subject-specific basis. On that note, ISO/TC 17/SC 16, ISO’s technical subcommittee responsible for the standardization of qualities, dimensions and tolerances and other relevant properties





appropriate to steel for the reinforcement of concrete and prestressing steels, is just right on track.

Jan Karlsen, Chair of this subcommittee, states that ISO Guide 82 is an important document in their future work. In 2019, several action plans were determined to bring sustainability in their work in line with the SDGs and an assessment was carried out to identify which plans are crucial to achieve specific goals. “ISO Guide 82 was one of the main documents used as a tool for that assessment and the committee members found this a practical and useful tool for developing our standards and making sure they are sustainable,” he says.

Recent conventions of the subcommittee concluded with the aim to establish broader groups of sustainability experts to safeguard that sustainability is taken into account in their standards-making process. “As recommended by ISO Guide 82, we have recognized the vital role that sustainability experts play in this regard and we rely on them to steer us into the right direction, making sure that our future standards are sustainable in every way possible,” Karlsen adds.

Impacts of sustainability standards have increased in recent years. They can affect whole systems in a myriad of ways by facilitating dialogue between multiple stakeholders across a sector. This can lead to improved strategies and partnerships to tackle key sustainability issues, while also helping to build mutual trust, influence attitudes or empower those who are often excluded from decisions that affect them. Considered as a foundation of sustainability, standards are designed to address the most pressing social and environmental challenges of our time. In parallel, standards are continuously evolving amidst constant struggles for legitimacy and tangible impacts on the ground. What these developments indicate is a recognition of the complexity of sustainability challenges faced at a standard’s inception, highlighting the limits of current approaches and driving a relentless pursuit for new, improved responses.

Standardization plays an important role in transforming our world into a sustainable one. Embedding sustainability issues in the standards writing itself means they are being addressed at the very core. With sustainability at the forefront of our 2030 Global Agenda, standards writers worldwide are encouraged to consider it at all stages in the standards development process. This will help to safeguard from impacts, at a global scale, of the sustainability issues that matter most. In line with this, ISO Guide 82 hopes to add value to society by helping standards build a better future for us all. ■

