



THE URBAN INFRASTRUCTURE INITIATIVE



FINAL REPORT
SUMMARY



wbcSD urban



FOREWORD

This report sums up the experiences of 14 leading global companies that worked collaboratively with 10 cities around the world to advance urban sustainability through the World Business Council for Sustainable Development's Urban Infrastructure Initiative (UII). The companies come from a range of industry sectors and, as WBCSD members, are committed to promoting sustainable development.

The initiative has demonstrated the value for cities in working with business early in the development of their sustainability strategies. This report recommends several ways to overcome barriers to such business involvement. These recommendations are aimed at cities, businesses themselves and other key stakeholders.

The recommendations of the UII will open up new opportunities for businesses to drive the urban sustainability agenda forward. This has benefits for the private sector, including the members of this project, as well as for cities. However, it is important to note that the member companies carried out this initiative collectively and with no opportunity for direct commercial gain.

The objective, as with all WBCSD programs, has been to accelerate business solutions for a sustainable world – a world in which nine billion people can live well, and within the planet's resources, by the year 2050.

WBCSD PRESIDENT'S STATEMENT



The Urban Infrastructure Initiative (UII) is a truly groundbreaking project. It leverages two of the most powerful global forces for sustainable development – city sustainability leadership and business innovation and solutions delivery – and demonstrates the real value and synergies of strategic public-private collaboration.

I would like to thank the UII Co-Chairs – Cemex, GDF Suez and Siemens – and the 11 other industry-leading participating companies for their foresight and dedication in establishing the UII and making it a success. I also would like to thank the 10 cities around the world that have made the initiative possible through their willingness to be pioneers of an exciting new model of cross-sector engagement.

At the WBCSD we know that innovation and collaboration can be difficult in the real world. We see that the lessons and recommendations in this report provide a clear way forward for cities, business solutions providers and other key actors – such as city associations and international financial institutions – who will all need to work together to make transformational action happen.

And the WBCSD is all about making action happen. The WBCSD's Action2020 Initiative will catalyze sustainable business solutions at scale to address the world's most urgent environmental and social priorities. Working with city leaders, citizens and other city sustainability initiatives to co-create and implement innovative business solutions to the complex cross-cutting challenges facing the world's cities will be central to this agenda. The UII has provided a wonderful foundation for the realization of these partnerships for action in practice.

For all of us, the challenge and the opportunity are clear: Sustainable cities are the key to achieving a sustainable world.

A handwritten signature in black ink, consisting of a stylized 'P' followed by 'eter Bakker'.

Mr. Peter Bakker
WBCSD President

ASSURANCE GROUP CHAIRMAN'S STATEMENT



Cities all over the world are facing challenges with regards to the realization, operation and maintenance of urban infrastructure and services. In more mature economies, infrastructure improvements are required to maintain standards of living and economic competitiveness. In economies that are seeing rapid urbanization, the scale and pace of this urban development will require investments in urban infrastructure over the next three decades that exceed all previous investments put together. In both contexts, better planned and smarter urban infrastructure will be required to meet the challenges of climate change adaptation and mitigation. These challenges are further compounded by competing demands for resources, making cost efficiencies an imperative.

New and radical thinking is required – in the way we plan and design water and sanitation systems, buildings, solid waste management facilities, energy supply and distribution, mass transit systems, and communications. While new technologies are emerging every day and can help cities and metropolitan regions “do more with less,” transformative progress will require that these systems be conceived, planned and designed in a much more holistic manner so as to create the conditions for development that are more sustainable.

The Urban Infrastructure Initiative (UII) has been an important first step in this direction. By involving several leading global companies to help a given city make better informed decisions, the initiative has broken new ground on several fronts. It has obliged very different companies with very different cultures and areas of focus to work as a team. It has equally obliged different departments and services of a local government to work as one. It has engaged cities and technology companies in an intensive dialogue and exchange of ideas on what works and what to avoid. By bringing together companies that are involved daily in the implementation, operation and maintenance of urban infrastructure, this has been, without a doubt, a new and unprecedented approach to helping cities shape their respective development strategies and policy options.

Last but not least, it is my firm belief that one of the most important but perhaps intangible benefits from the UII experience has been that all parties have learned from this unique initiative and from each other. I am sure that I speak on behalf of all of the members of the Assurance Group in saying that what has kept us engaged and excited throughout the duration of the UII has been listening to and tracking those lessons learned. This report synthesizes many of those lessons in the form of recommendations. It is imperative for all of us, in our different roles, to use what we have learned to help forge new business models and new forms of partnerships that can help move all of us towards a more sustainable urban future.

A handwritten signature in black ink that reads "Nicholas You". The signature is fluid and cursive, written in a professional style.

Mr. Nicholas You
Chairman
Urban Infrastructure Initiative Assurance Group

EXECUTIVE SUMMARY

The WBCSD Urban Infrastructure Initiative (UII) is an innovative global project demonstrating the role of business as a strategic partner to help cities turn their ambitious sustainability visions into a reality.

The UII is a multi-sector collaboration between 14 leading global companies that worked with 10 cities around the world. The outcomes of this major initiative suggest that all cities seeking to realize their sustainability objectives can benefit from engaging with business early in the planning and strategy development process. Early engagement leverages the capability of business to identify innovative and cost-effective solutions to complex, cross-cutting urban sustainability challenges. It allows business input to be provided where it is of greatest value to decision-making and can create an innovative ‘laboratory’ in which cities can explore and evaluate ideas and solutions in a dynamic and inexpensive manner. Ultimately, this involvement can help cities and their citizens make better-informed decisions about accelerating progress towards sustainability.

Cities are at the leading edge of the global sustainability agenda. By 2050, 70% of the world’s population will live in cities – this is where the battle for a sustainable future for humanity will be won or lost. Cities around the world are rising to this challenge by pursuing ambitious objectives that will make them more competitive, resource-efficient, resilient and inclusive.

Realizing these visions in practice is a complex challenge for city leaders. In particular, they will typically necessitate major transformations in the design, construction and operation of a city’s infrastructure systems – including buildings, energy, mobility, telecommunications, water, sanitation and waste management services – and optimizing the inter-linkages between these systems.

Businesses that are committed to sustainability and experienced in delivering effective solutions can help cities navigate these challenges and turn a high-level vision into practical and implementable action plans. Business can play a vital role not only in providing specific infrastructure, technology, services and financing solutions, but also in contributing to the strategy that will support the overall optimization of urban systems to drive sustainability.

While there are already excellent examples of cities and business working together at the strategic level, this is the exception rather than the rule. This represents a major missed opportunity.

The WBCSD established the UII to advance the urban sustainability agenda by showcasing the critical role that business can play as solutions providers and by providing a platform for collaborative strategic engagement between cities and business. The UII brings together 14 leading member companies – Cemex (Co-Chair), GDF SUEZ (Co-Chair) Siemens (Co-Chair), ACCIONA, AECOM, AGC, EDF, Honda, Nissan, Philips, Schneider Electric, TNT Express, Toyota and United Technologies – with an array of knowledge and skills to help unlock opportunities for urban authorities to create cities that are more sustainable, efficient and livable.

This multi-sector, multi-company group worked with the following leading cities: Turku (Finland); Tilburg (The Netherlands); Ahmedabad, Rajkot, Surat and Vadodara in Gujarat State (India); Yixing (China); Kobe (Japan); Guadalajara (Mexico); and Philadelphia (USA). In each city, the UII mobilized a multi-disciplinary team of company experts to work collaboratively with senior city officials. These teams took an integrated, cross-sector approach to analyzing the city’s major sustainability challenges and to developing an innovative “solutions landscape” (i.e., a portfolio of practical solutions) to address these challenges.

While the UII is a pilot project that has worked with a relatively small number of leading cities, this report summarizes the evidence – particularly the perspectives of city leaders – that suggests that the early involvement of business can be of real benefit to any city administration aiming to advance sustainability.

The initiative has demonstrated the willingness and ability of business to be a strategic partner for cities in advancing the urban sustainability agenda. It has shown that leading businesses have a detailed understanding of the challenges and constraints that cities face and can be valuable contributors in helping cities find solutions. This report highlights a number of potential applications where the early, collaborative involvement of business should be considered by cities.

From a global perspective, bringing together the powerful synergies of city sustainability leadership and business innovation and the delivery of solutions represents an enormous “win-win” opportunity to drive rapid transformation towards sustainable development. Cities will win by getting practical, cost-effective solutions in order to realize the sustainability aspirations of their citizens. Leading businesses will win through the unlocking of markets for innovative products and services that will be essential in delivering this transformation, forming the foundation for the urban green economy. The UII has made an important contribution in pioneering how this global opportunity can be realized in practice.

THE RECOMMENDATIONS FOR CITIES, BUSINESSES AND OTHER ORGANIZATIONS TO TAKE THIS AGENDA FORWARD ARE FOR:

CITIES TO

1. *Work with business as a key stakeholder in sustainability strategy development.*
2. *Develop or enhance stakeholder engagement and consultation processes to leverage the value of working collaboratively with business.*
3. *Clarify the scope for early business engagement in sustainability strategy development under local regulatory frameworks and consider removing the barriers to business engagement that are not in the public interest.*
4. *Create or strengthen cross-departmental coordination to enable integrated solutions to urban sustainability challenges.*

BUSINESSES TO

5. *Pursue opportunities for sustainability strategy partnership with cities.*
6. *Collaborate with other businesses and professional experts on urban sustainability strategy development.*

INTERNATIONAL ORGANIZATIONS, NON-GOVERNMENTAL ORGANIZATIONS (NGOs) AND URBAN PROFESSIONAL ASSOCIATIONS TO

7. *Support and facilitate strategic engagement between cities and business as an effective tool to drive urban sustainability.*



Figure 1 UII partner cities



UII SOLUTIONS LANDSCAPE REPORTS: OVERVIEW

TURKU (FINLAND)



- City Overview:** Sixth largest city in Finland.
- Population:** 180,000.
- UII Companies:** Siemens (lead), ACCIONA, GDF SUEZ, TNT Express, Toyota, and United Technologies.
- Date of Workshops:** Dialogue: December 2010; Transformation workshop: March 2011; Report launch: October 2011.
- Main Challenges:** Transport and logistics, energy supply, and energy use.
- Solutions Landscape:** 18 initial solutions were proposed in 3 clusters (energy supply, energy use, transport & logistics) with 8 priority solutions identified.

TILBURG (THE NETHERLANDS)



- City Overview:** Sixth largest city in the Netherlands.
- Population:** 200,000.
- UII Companies:** TNT Express (lead), AGC, CEMEX, Schneider Electric, and Siemens.
- Date of Workshops:** Scoping discussion: February 2010; Dialogue and transformation workshop: September 2011; Report launch: May 2012.
- Main Challenges:** Translate the city's 2045 climate neutral vision into specific projects to be implemented in the near future.
- Solutions Landscape:** 10 priority solutions were identified covering business parks, buildings, transport and energy supply.

GUJARAT CITIES (INDIA)



- City Overview:** Ahmedabad, Rajkot, Surat and Vadodara are the four largest cities in Gujarat State, India.
- Population:** The populations of the four cities range between 1.4 and 6.3 million.
- UII Companies:** United Technologies (lead), ACCIONA, AECOM, AGC, GDF SUEZ, Schneider Electric, and Siemens.
- Date of Workshops:** Dialogue and transformation workshops: July 2011; Report handover and expert workshop: July 2012.
- Main Challenges:** Urban planning, energy efficiency and wastewater management.
- Solutions Landscape:** Urban planning was the 'umbrella' under which solutions for energy efficiency and wastewater management were considered. 10 solutions were proposed in each of the 3 solution categories.

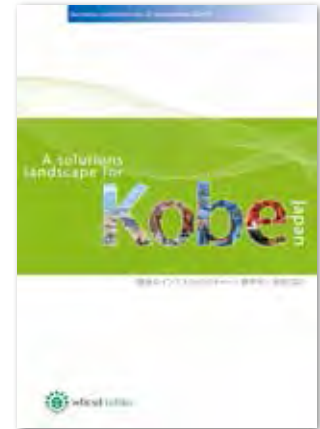
YIXING (CHINA)



- City Overview:** A county-level city in Jiangsu province at the center of the Nanjing-Shanghai-Hangzhou delta.
- Population:** 1.25 million.
- UII Companies:** Schneider Electric (lead), AECOM, and Siemens.
- Date of Workshops:** Dialogue: April 2012; Transformation workshop: October 2012; Report launch: June 2013.
- Main Challenges:** Urban planning, transport and mobility, and energy efficiency (industrial sector and buildings).
- Solutions Landscape:** The enhancement of urban planning through a strategic master plan was proposed, supported by specific solution recommendations covering transport and mobility and energy efficiency.

UII SOLUTIONS LANDSCAPE REPORTS: OVERVIEW

KOBE (JAPAN)



- City Overview:** Major Japanese city representative of many of the economic, demographic and environmental issues in Japan.
- Population:** 1.5 million.
- UII Companies:** AGC, Honda, Nissan, Toyota (four joint-lead companies), with Schneider Electric, Siemens, and TEPCO (in the initial phase).
- Date of Workshops:** Dialogue; June 2012; Report handover ceremony: May 2013.
- Main Challenges:** Income per head in 2009 lower than in 1990, rapidly aging population and rising greenhouse gas (GHG) emissions from the commercial and household sectors.
- Solutions Landscape:** Four major solution sets were proposed covering: energy and energy efficiency, sustainable mobility, knowledge network formation and internationalization, disaster resilience and reconstruction. The CASBEE-City sustainability assessment tool was proposed as a key tool for enhancing sustainability performance and evaluating solutions.

GUADALAJARA (MEXICO)

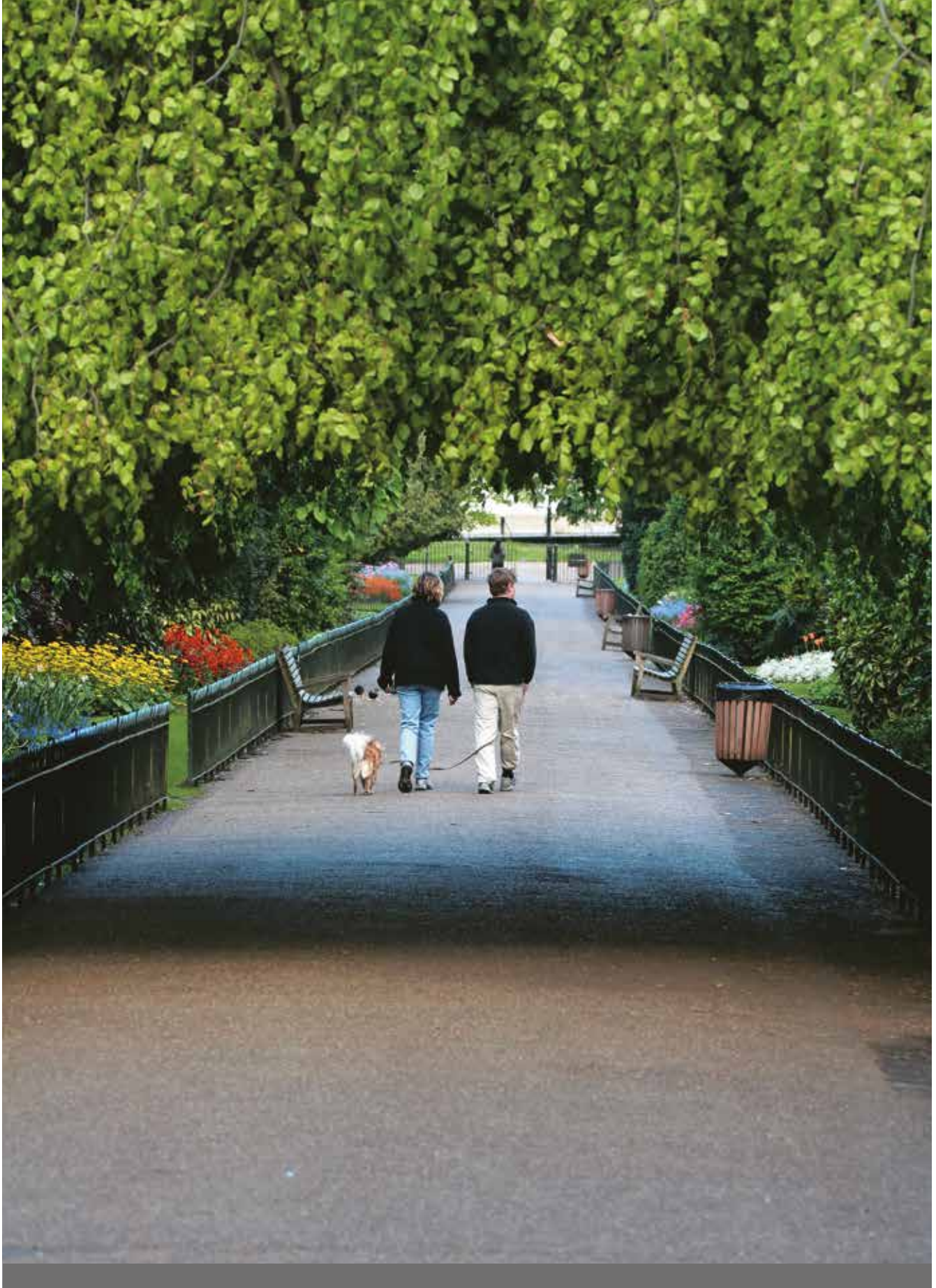


- City Overview:** Second largest city of Mexico and capital of Jalisco.
- Population:** 4.4 million.
- UII Companies:** CEMEX (lead), ACCIONA, GDF SUEZ, Schneider Electric, and Siemens.
- Date of Workshops:** Dialogue: May 2012; Transformation workshops June to July 2012; Report launch: September 2013.
- Main Challenges:** Mobility and logistics, security and social development, buildings & housing, waste.
- Solutions Landscape:** 20 solutions were identified in the 4 main challenge areas with direct and indirect linkages between solutions also highlighted.

PHILADELPHIA (UNITED STATES)



- City Overview:** Second largest city on the East Coast of the United States and the country's fifth-most-populous city.
- Population:** 1.5 million.
- UII Companies:** Siemens (lead), AECOM, Schneider Electric, TNT Express, Toyota, TNT Express, and United Technologies.
- Date of Workshops:** Dialogue: March 2012; Transformation workshops: May to November 2012; Report launch: November 2013.
- Main Challenges:** Building on existing urban sustainability initiatives and programs under the *Greenworks Philadelphia* plan to achieve efficiencies and synergies.
- Solutions Landscape:** Integrated solutions focusing on place-based approaches (focusing on the EcoDistrict model), sustainable infrastructure and mobility. Solutions to enhance the efficiency and environmental performance of the city's vehicle fleet were also proposed.



UII MEMBERS

CO-CHAIRS



A global building materials company that provides high-quality products and sustainable solutions to customers and communities in more than 50 countries throughout the world.



Provider of highly efficient and innovative solutions to individuals, cities and businesses in the sectors of electricity, natural gas as well as energy efficiency and environmental services.




Global partner for cities when it comes to the sustainable development of urban infrastructures with green, efficient products, solutions and financing models.




The WBCSD is a CEO-led, global coalition of some 200 companies advocating for progress on sustainable development. It aims to be a catalyst for innovation and sustainable growth in a world where resources are increasingly limited.


MEMBERS




A leader in the creation, development and management of renewable energy, sustainable infrastructure and water services, contributing actively to sustainable development.



A provider of professional, technical and management support services, working to enhance and sustain the world's built, natural and social environments.



A global materials and components supplier of core technologies based on glass, fluorine chemistry and ceramics.




A leading player in the energy industry, active in all areas of the electricity value chain, from generation to energy supply, trading and network management, with expanding operations in the natural gas chain.




The world's largest motorcycle manufacturer and a leading automaker, providing a wide variety of products, ranging from mobility to power and clean energy production products.



A global manufacturer of automotive products and marine equipment, and provider of related services.



A diversified health and well-being company, serving professional and consumer markets in healthcare, lifestyle and lighting.



A global leader in energy management that provides solutions to make energy safe, reliable, efficient, productive and green in homes, buildings, industrial facilities, data centers and across the electrical networks.



A leading company in the transfer of goods and documents around the world with a focus on time- and day-definite service.



A global vehicle manufacturer contributing to the sustainable development of society through manufacturing and provision of innovative and quality products and services.



A provider of high technology products and services to the building systems and aerospace industries worldwide including United Technologies Building and Industrial Systems, United Technologies Aerospace Systems, Pratt & Whitney, and Sikorsky.

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Chemin Eugène-Rigot 2, Case postale 246, 1211 Genève 21, Switzerland, Tel: +41 (0)22 839 31 00, E-mail: info@wbcsd.org
1500 K Street NW, Suite 850, Washington, DC 20005, US, Tel: +1 202 383 9505, E-mail: washington@wbcsd.org