WORLD SUMMIT ON
SDG CITIES AND URBAN
FINANCE

REPORT OF SUMMIT

April 2024

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GPUF
Global Platform for Urban Finance

SDG Cities
Global Initiative

The World Urban Pavilion in Regent Park

Under the collaboration of

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Introduction

The World Urban Pavilion، recognized as a global hub for SDG Cities by the United Nations، organized a World Summit on UN-Habitat's SDG Cities Initiative and Urban Finance. This two-day event was conducted in collaboration with UN-Habitat، City Investment Facility، and co-organized and hosted by Glocal Platform for Urban Finance. The summit was an extension of the discussions initiated during the 5th Urban Economy Forum in October 2023، where the World Urban Pavilion and UN-Habitat explored the implementation of SDG Cities in Canadian cities.

The primary focus of the summit was to advance the Pavilion's mission of empowering cities to achieve the Sustainable Development Goals (SDGs) by aligning economic growth and investment opportunities with SDG implementation. It aimed to lay the groundwork for a comprehensive platform fostering urban economic growth while encouraging investors to align their ventures with SDGs. This global gathering provided a platform for world-class entrepreneurs to connect، share، and network، showcasing innovative urban approaches and technologies that could revolutionize city operations for sustainability.

Central to the summit was the objective of establishing strong connections between cities، financial institutions، investors، and innovative entrepreneurs. By linking them with urban developments and establishing pilot projects، the summit sought to expedite the realization of sustainability initiatives. Emphasizing the potential of cities as attractive investment destinations، the summit highlighted economic، social، and environmental outcomes.

The Glocal Platform for Urban Finance، a key partner in the summit، featured an extensive network of investors، entrepreneurs، and the private sector، ready to support cities in accessing investment opportunities and modernizing urban resources. Through the Glocal Platform، the summit aimed to bridge the gap between urban ambition and financial support، thereby shaping the future of sustainable urban development. Investors interested in contributing to projects aligned with the SDGs were required to meet specific accreditation criteria outlined during the summit registration.

The summit had four primary objectives: First، to adapt established financial mechanisms for urban finance، focusing initially on select cities. Second، to foster international collaboration for mutual benefit and the greater public good. Third، to equip cities with urban finance models and tools to execute pilot projects and facilitate development. And fourth، to disseminate knowledge and achievements from participating cities، creating a repository of best practices that inspire and promote sustainable urban development globally.

Bio's Speakers

Reza Pourvaziry

Chair of
Urban Economy
Forum

Reza Pourvaziry is an Architect with over 20 years of experience, including as an international urban researcher focusing on the concept of architecture and sustainability. Reza established the International Art & Architecture Research Association (IAARA) in 2002 to work and conduct research pertaining to urban architecture, habitat, and settlements, with a focus on sustainability, multiple international architecture awards.

He created numerous development projects and programs and started working as the member of Steering Committee of UN-Habitat's best practices since 2004. Designated by the Under-Secretary-General of the UN and former Executive Director of UN-Habitat as the First Global Advocate of UN-Habitat in 2016 for his contributions globally. He established the Middle East Regional Center for Best Practice and Local Leadership from 2012 to 2014.
Presently, he is the Founder and Chair of Urban Economy Forum since 2018, and is working on urban development projects globally. Reza established strategic partnerships between United Nations and the Government of Canada to establish the World Urban Pavilion in Regent Park, a collaborative initiative between the UEF and UN-Habitat, supported by the Government of Canada and The Daniels Corporation. The Pavilion was officially launched on April 21, 2020.

Amir Hossein Kashfi

Managing
Director، Aragon

Bringing forth over 25 years of extensive expertise in Urban Planning، Business، and the Travel and Tourism industry، Amir Hossein Kashfi is a seasoned professional currently serving as the dynamic Managing Director at Aragon Business Advisory Corp in Toronto، Ontario، Canada. His illustrious career spans 1 year and 8 months since January 2022.

Amir's professional journey is marked by a comprehensive understanding of Urban Planning intricacies، coupled with a versatile command of business management and the ever- evolving travel and tourism sector. This rich background positions him as a holistic leader with a profound grasp of diverse industries.

In his role as Managing Director، Amir adeptly steers the day-to- day operations and strategically shapes the long-term vision of Aragon Business Advisory Corp. His keen decision-making and proactive approach have been instrumental in propelling the company to new heights of growth and success.

Amir's leadership extends beyond conventional boundaries، reflecting a steadfast commitment to excellence honed over decades of professional experience. His transformative management style serves as an inspiring archetype for emerging professionals، illustrating how a multifaceted background in Urban Planning، Business، and Travel and Tourism can harmoniously converge to drive exceptional achievements.

David West

Mayor of
Richmond Hill

David West was re-elected Mayor in October 2022، after first being elected in January 2022. Prior to that، he was appointed to Council on December 4، 2013 to fill a vacancy and was elected in October 2014 and 2018 to continue as Councilor for Ward 4.

He has served the residents of Richmond Hill for years as a local business owner and has demonstrated leadership through various volunteer community positions. With the Richmond Hill Chamber of Commerce، he has been Chair of the Government Affairs Committee، a member of the Board of Directors and also served as Chair of the Chamber. A committed contributor to his community، David has volunteered with Yellow Brick House، Mackenzie Health and the Toronto Waldorf School.

Before becoming a Councilor، David served on numerous Richmond Hill committees and task forces، including: Yonge Street Subway Task Force; Cultural Leadership Council; Committee of Adjustment; RHCPA Marketing Committee; Community Hub Liaison Committee; Richmond Hill Winter Carnival Committee and more. David was also an active participant in the public consultations held during the development of Richmond Hill's Official Plan and Strategic Plan (2010 to 2014). David's current Committee participation includes Heritage Richmond Hill، Richmond Hill Heritage Centre Advisory Committee، downtown BIA and the Youth Action Committee. As a member of Regional Council، he also sits on the Housing Affordability Task Force.

Douglas Ragan

Programme Management Officer
&
SDG Cities Initiative،
UN-Habitat

Doug is an accomplished professional with a wealth of management experience in City and UN Agency settings. His career has been dedicated to driving transformative change and empowering diverse communities through sustainable urban development initiatives.
A Programme Management Officer at UN-Habitat for 13 years، Doug has led key initiatives that not only have impact at the local، national and global level. At the heart of his work is a passion for community engagement and social inclusion. By championing community engagement in local governance، Doug's has made a significant impact in hundreds of communities worldwide. Doug's leadership has extended to shaping policy frameworks on an international scale.

As the co-chair of the Inter-Agency Network on Youth Development in 2018، UN-Habitat was pen-holder for the UN Youth 2030 Strategy، where the agency played pivotal role in advocating for increased youth engagement within the United Nations system. His visionary approach and commitment to youth empowerment have been instrumental in driving forward the Youth 2030 Cities programme، which localizes the Sustainable Development Goals by involving young people in local government decisions. In addition to his work on the global stage، Doug's academic work further demonstrates his expertise.

Currently completing his PhD in Anthropology at Carleton University، he brings a strong academic foundation to his leadership.

Jennie Moore

Director،
Institute Sustainability،
British Columbia Institute of Technology

Dr. Jennie Moore is a navigator for our times: an urban ecologist and planner who is helping cities and businesses understand their use of energy and materials and point the way to reduced carbon emissions and lighter footprints -- aligned with the Earth's limited ecological resources.

After earning a master's degree in urban planning at UBC، Moore was chosen for pioneering roles in fast-emerging fields of sustainability planning. She was the first planner in charge of Metro Vancouver's Sustainable Region Initiative and first Air Quality Planner in charge of Climate Action، and she won national awards for innovative "demand-side management" in establishing an ambitious Employee Trip Reduction Program for the regional government.
She navigated in new waters، too، when she returned to UBC's School of Community and Regional Planning to do her doctorate، adapting the ecological foot-printing method developed by her supervisor، Dr. William Rees، for use by cities and regional governments. Moore's Eco City Footprint Tool (EFT) allows cities to map flows of energy and materials (urban metabolisms)، understand their ecological footprints، and measure their consumption-based and territorial carbon emissions.

Moore's keen sense of direction and achievements are coupled with skills as a speaker and administrator. Though willing to tell the truth about climate change and hyper-consumption، her good humor and belief in the power of people to effect change is inspiring. As BCIT's first-ever Director، Institute Sustainability، Moore is taking her approach worldwide.

John Safrance

Founding Partner,
EMIF Group

With over 10 years of experience in the infrastructure and finance sectors, John is a passionate and driven sustainable finance expert, who aims to create positive social and environmental impact through innovative and scalable solutions. John is currently a Founding Partner at EMIF Group, a private equity fund management and advisory company that provides project preparation funding for urban infrastructure projects in the developing world, in alignment with the UN's Sustainable Development Goals (SDGs).

John serves as a Senior Sustainable Finance Consultant for UN-Habitat, where he designed a $50 million feasibility fund that provides development capital to sub-national governments. Additionally, he is a member of the Executive Consultation Group for the Blue Dot Network, an initiative led by the OECD to establish global standards for quality infrastructure investment. In these capacities, he leverages his industry analysis, analytical, and corporate finance skills, as well as his extensive network of partners and stakeholders, to deliver high-quality and impactful outcomes for communities and the environment.

Andrew Apampa

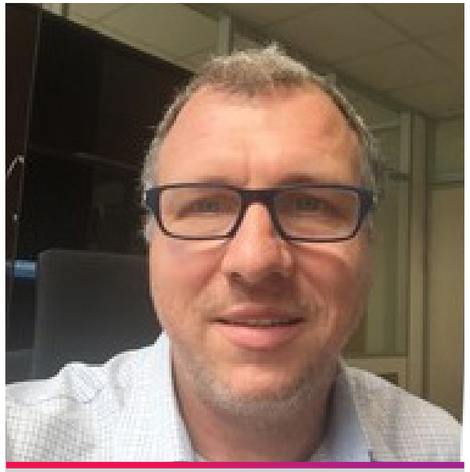
Content Manager,
Convergence

As a Manager, Andrew is responsible for developing Convergence's data and research activities, including building out Convergence's database of historical blended finance transactions and developing blended finance trends analysis and benchmarks. Prior to joining Convergence, Andrew worked at the African Private Equity & Venture Capital Association (AVCA) as a Research Associate. While there, Andrew inaugurated the Special Report series, publishing in-depth studies on thematic issues within African private equity, such as political and currency risk in African PE, and the rise of the private credit industry in Africa.

Prior to joining AVCA, Andrew worked at HSBC as an Emerging Markets Equity Strategist, where he published reports focused on investing in frontier equity markets. During his time at HSBC, he also worked on the European Equity Strategy team and the Global Research Marketing team. Prior to his time at HSBC, Andrew was at the University of Cambridge, where he completed his master's thesis on protest and mobilization in Sub-Saharan Africa. He is a CFA charter holder.

Dyfed Aubrey

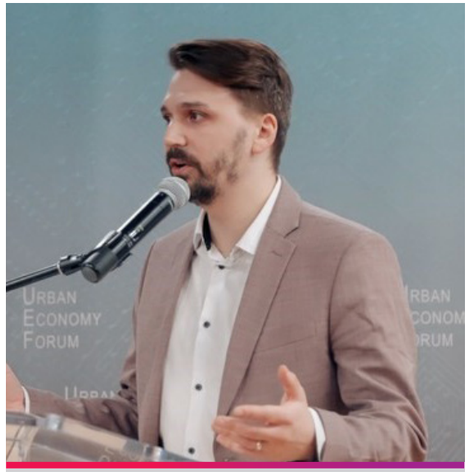
Inter-Regional Advisor, UN-Habitat &
Co-director, World Urban Pavilion



Dyfed Aubrey is an Inter-Regional Advisor at UN-Habitat and provides technical and policy advice on a broad range of urban issues including forced displacement in cities. He also coordinates UN-Habitat's Sub-Programme - Enhanced Shared Prosperity of Cities and Regions, and the global flagship initiative, SDG Cities. Previously he headed UN-Habitat's Regional Office for Arab States, and prior to that UN-Habitat's country programme in Iraq, where he led the UN's work on land, housing and shelter. His international experience also includes working with INGOs in Sri Lanka, Kenya and Kosovo in reconstruction and slum upgrading. Prior to working internationally, he was an architect and urban designer in London. He has a Master's Degree in Development Planning from the University College London.

Alex Venuto

Acting Deputy Director, World Urban Pavilion



Alex Venuto is the Acting Deputy Director of the World Urban Pavilion, where all activities for the YPP will take place. The World Urban Pavilion is looking to introduce Regent Park as an SDG Global Neighborhood. Alex is creating international partnerships between public and private sectors for local development in cities and communities across Canada and the globe. Alex has a background in public policy and community development. Alex leads the development and implementation of a number of strategic initiatives for the World Urban Pavilion's parent organization, the Urban Economy Forum.

Fernando Carou

Manager,
Renewable Energy &
Net-zero Development,
City of Toronto

Fernando Carou is a Energy transition leader. Expert in developing, managing, and delivering renewable energy and sustainability programs both in the public sector in Canada and private sector in North America, Europe, and Asia.

At the City of Toronto, Fernando leads the energy transition, accelerating environment and climate action in through partnerships and innovation. He leads a multi-disciplinary team focused on creating, developing, and operating best-in-class programs, policies, and projects for net-zero development, electric vehicles, and renewable energy.

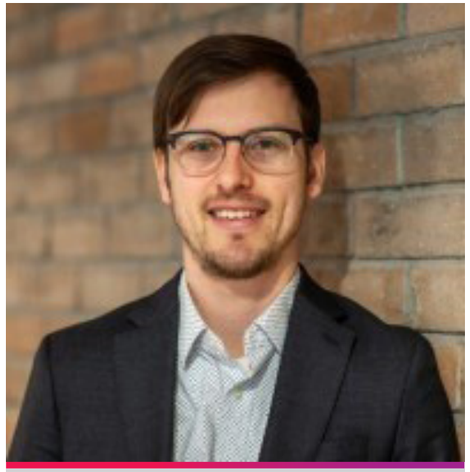
Leveraging of municipal soft and hard assets for climate action, including innovative business models and partnerships, such as:

- Toronto's solar map and calculator
- Renewable and low carbon district energy systems,
- Wastewater energy program to decarbonize buildings by displacing natural gas use.

Fernando holds an engineering degree from the University of Toronto, has sustainability training from the Harvard University Extension School, and completed courses in Advanced Local Government from Western University.

David MacMaillan

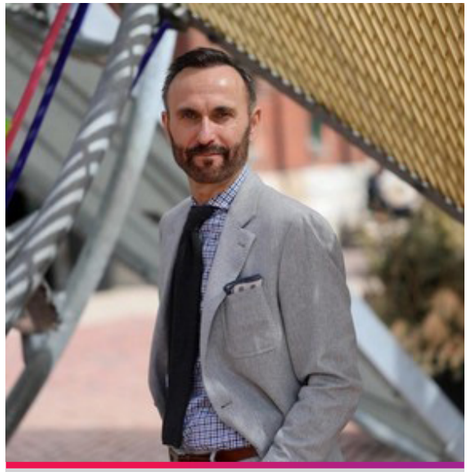
Program Manager,
City of Toronto



David MacMillan is a Program Manager in the Public Energy Initiatives – New Development Team in the City of Toronto's Environment & Energy Division. He has a Master in Environmental Studies from York University and is currently pursuing his RPP designation with the OPPI.

Dennis Fotinos

CEO،
Noventa Energy

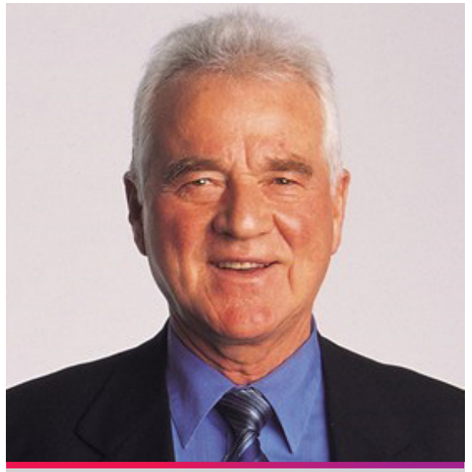


Dennis is a performance driven thought leader and entrepreneur with notable transformational achievements in the energy sector. In 1997، he initiated and led the corporate reorganization that created Enwave Energy Corporation، which he then led to sustained profitability and growth for almost twenty years as President and CEO.

As an early adopter of ESG practices، he established the forward-thinking commercial strategy that brought Enwave's capabilities to market through the development of innovative projects like Deep Lake Water Cooling. In 2018، he left the company to start Noventa Energy Partners as a platform for renewable energy innovation. In his early career، Dennis served as an elected member of regional and local governments in Toronto and as Director on several Boards including his current role on the Board of Create TO.

Frank Stronach

Founder،
Magna International



Frank Stronach (CM) immigrated to Canada from Austria in 1954 with nothing more than a suitcase، a few hundred dollars، and a dream to build his own business. In 1957 he started Magna International in a garage then built it into the world's most diversified automotive parts supplier with more than 170،000 employees in 34 countries and sales of over US$40 billion. He is currently the founder and Chairman of Stronach International، a company whose mission is to enhance society and the environment through micro-mobility transportation and organic agri-business—two of the fastest growing economic trends globally.

Mr. Stronach introduced his unique management philosophy، known as Fair Enterprise، to Magna in 1971. Fair Enterprise is based on a business Charter of Rights that predetermines the annual percentage of profits shared between employees، management، investors، and society. These rights are enshrined in a governing Corporate Constitution. Mr. Stronach notes that when Magna employees participated in profit sharing، profits went up 40% in the first year، 100% in the second year، and 200% in the third. "Employees basically became partners in the business. By knowing they get a portion of the profits، they have a great incentive to make better products for a better price،" Mr. Stronach said.

In addition to serving on corporate، government، and university boards over the years—including the corporate governance board of the NASDAQ stock exchange—Mr. Stronach is the recipient of numerous honorary doctorates and awards including being inducted into the Canadian Business Hall of Fame، the Automotive Hall of Fame in the US، and the Order of Canada. He is the author of The Magna Man، published in 2012، which tells the story of his life and career. A passionate philanthropist، Mr. Stronach has provided assistance to a wide range of charitable and community organizations over many decades.

Jennifer Hutcheon

Vice-President,
Vancity Community
Investment Bank

Jennifer is the Vice President of Vancity Community Investment Bank (VCIB), Canada's first and only values- based bank. As VCIB's VP, Jennifer leads the development and implementation of the bank's growth strategy in the areas of commercial and business banking, social purpose real estate, and climate finance.

Born from Vancity's community-first finance model, VCIB exclusively supports organizations and businesses that share a commitment to positively impact the communities where they live and work. VCIB's specialized project financing has supported thousands of impactful projects across the country. Visit vcib.ca for more information.

Jeff Ranson

Director,
Responsible Development,
Northcrest

Jeff joined Northcrest Developments to lead the Responsible Development strategy for the redevelopment of the 370-acre Downsview Airport Lands in Toronto. He brings two decades of experience with sustainability leadership positions at BOMA Toronto, the Canada Green Building Council (CaGBC), Sustainable Buildings Canada, and Toronto 2030 District. He frequently advises on public policy including appointments to the City of Toronto Climate Advisory Group and the Waterfront Toronto Design Review Panel (2017-2023).

He received his MDes and the President's Award for Graduate Studies at OCADU for his work on developing market transformation roadmaps for low-carbon housing in Peru and holds an HBA from the Richard Ivey School of Business at Western University.

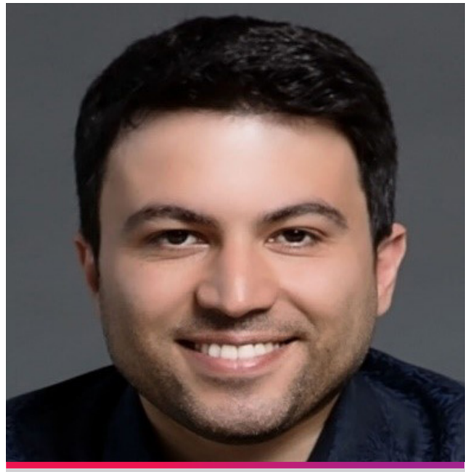
Ivan Vasyliv

Chief Design Officer،
Serotiny Group

Ivan is focused on delivering and expanding sustainable development using a holistic process that harmonizes economic، environmental، social، and cultural demands of each project. He works with landowners to develop opportunities for high-performance buildings using lifecycle costing and product-oriented delivery. He also oversees end-to-end implementation of sustainable design in Serotiny's delivery process to ensure that cost، schedule، and performance opportunities are realized at every stage، from concept to production to operation and maintenance.

Danial Hadizadeh

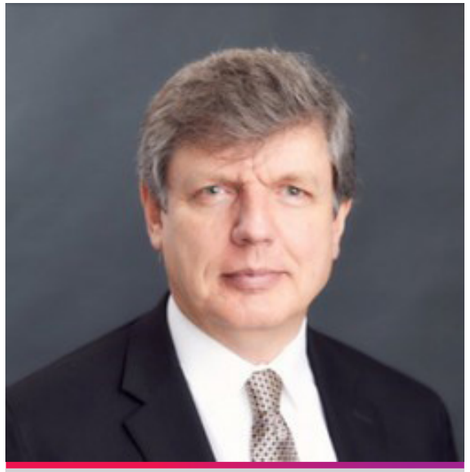
CEO، Mitrex



Danial is the CEO of Mitrex، a leading company in energy generating materials، especially high performance solar integrated building envelops that generates solar power from any surface. With over 19 years of experience in the construction industry and an MBA from Harvard Business School، he has a deep knowledge and passion for creating sustainable and energy-efficient building materials.

Andrew Martschenko

Principal, Parataxis Design and Development & President Parity Fund for Sustainable Development



Andrew Martschenko studied architecture at the University of Waterloo. Andrew Founded Urban Proportions - a residential design firm, specializing in the design of homes designed specifically to the needs of each individual client and the unique character of each site, designing projects in Canada, the USA and the Caribbean. He became heavily interested in Traditional Neighborhood Development (TND) as an alternative to predominant Conventional Suburban Development (CSD). Started attending TND design workshops, first as an observer, and then as a member of the design team.

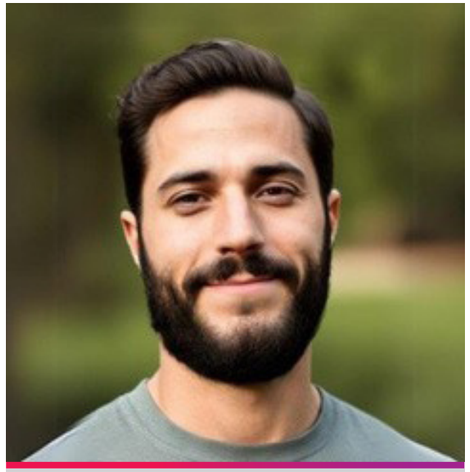
Andrew became increasingly frustrated with the loss of quality, energy and momentum of exemplary TND projects, that, despite well intentioned owners, designers, planners, developers and builders, were failing at buildout.

He then formed Parataxis Design and Development Corporation, providing comprehensive design and management continuity and integrity for TND projects, from land ownership, to urban design, planning and approvals, to development, to architecture, to marketing, to buildout. Once again became increasingly frustrated with the lack of appropriate funding available for the development of TNDs, despite having both the access and opportunity to proceed with a few exemplary projects with immense potential.

To find a solution to his frustrations Andrew formed the Parity Fund for Sustainable Development, structured specifically to fund the design, permitting and development of TNDs. Andrew's responsibilities are project origination, and then managing the Urban Design and Architecture in each project undertaken. He has since created and maintained a pipeline of project being pursued in Canada and USA.

Oren Singer

CEO & Co-Founder, Sparrow



Orren is the Co-Founder & CEO at Sparrow. Sparrow is a purpose-led home-sharing platform and community tackling two of the largest problems of our generation - housing affordability and loneliness. With over 12 million empty bedrooms across Canada, and a growing loneliness epidemic, the time to reimagine how we use and share our housing space is now.

Their vision is a world where people live better together. They plan on bringing Sparrow to all neighborhoods in need of new housing opportunities, stronger financial stability, and greater social connection. Our world is changing fast, and the way we live will change with it.

Eduardo Moreno

Co-Director,
World Urban Pavilion

Eduardo Lopez Moreno, is an architect from the University of Guadalajara with more than 25 years of academic and professional experience in the areas of urban development and housing policy, poverty reduction, governance and institutional analysis.

His studies include a Doctorate in urban geography at the Sorbonne University in Paris, France and a master's degree in urban sociology from the University Paris, Saint Denis, France. Eduardo Lopez Moreno has five books on issues related to social housing, land policies, urban development and urban history.

His book "The Grid in the Development of the Hispano- American City" received the Jalisco Research Award and has been published in several editions. He has published more than 30 articles in national and international magazines on urban policies, urban history, poverty and housing financing.

Doug Farr

Farr Associates Architectures &
Urban Design

Doug Farr is a nationally-recognized architect, urbanist, and author. He leads Chicago-based Farr Associates, a pioneering, sustainability-driven architecture and urban design firm that plans and designs lovable and aspirational buildings and places. The firm was recognized by the New York Times as "the most prominent of the city's growing cadre of ecologically sensitive architects." Doug was personally deemed one of Plane Tizen's 100 Most Influential Urbanists of All Time.

Doug Farr is a leader of the sustainability movement, having delivered keynote speeches in more than 37 states and at all major relevant professional conferences. He co-chaired the development of the U.S. Green Building Council's LEED for Neighborhood Development (LEED-ND) and has served on the boards of urban sustainability organizations including the Congress for the New Urbanism, Bioregional, Eco Districts, and Elevate Energy. Based on his pioneering sustainable design practice, Doug authored the urban planning best-seller Sustainable Urbanism: Urban Design with Nature (2008) and Sustainable Nation: Urban Design Patterns for the Future (2018).

In 2020 Doug launched Carbon Free Chicago, a 30-year campaign for the equitable transition away from fossil fuels. In 2022, Doug Co-Curated the ENERGY REVOLUTION exhibit at the Chicago Architecture Center. At any given time, the firm's current projects represent the state-of-the-practice in high-performance buildings and walkable urbanism.

James Donovan

Co-founder and CEO,
ADEC Innovations and
Chairman,
Global CEO Alliance

Mr. James Donovan is the Co-founder and CEO of global business services company, ADEC Innovations, focused on Sustainability, Environmental, Social and Governance (ESG), Resiliency, Adaptability and Impact. He has more than 25 years of dedicated experience and expertise in global business services, sustainability, impact investment and finance. Under his strategic guidance, ADEC Innovations has grown to encompass 4000 workers across 5 continents. Committed to promoting sustainable development and ensuring meaningful impact on a global scale, he consistently demonstrates the harmonious balance between achieving business success and upholding environmental responsibility in both his professional and personal endeavors.

Alice Xu

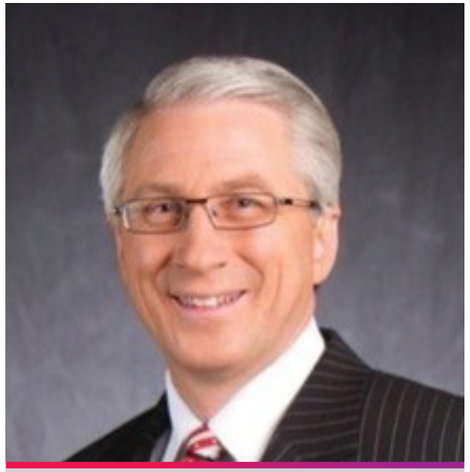
Digitalization,
City of Toronto

Alice Xu is the Manager of the Connected Community/Smart City program at the City of Toronto's Technology Services Division. The Connected Community team is committed to delivering broader quality of life value as a City through the use of data, technology and processes.

Prior to joining the Connected Community/ Smart City team in 2019, Alice spent over 10 years cutting her teeth in the vehicle and business licensing and regulatory world in Municipal Licensing and Standards, where she navigated regulatory challenges like ride-sharing and rooming houses. Alice studied Electrical Engineering at the University of Toronto. Upon finding her passion in public service, she completed post graduate studies in Public Administration and Governance at Ryerson University.

Don Simmonds

Founder and
Chief Executive Officer،
CitiIQ



A Canadian executive leader and serial entrepreneur، Don is the founding CEO of CitiIQ. He is also Chairman of Blyth Group، the Chancellor of Crandall University، a member of the Canadian Telecommunications Hall of Fame، recipient of the Queen's Jubilee medal، and a Director of Baylin Technologies (BYL: TSX).

CitiIQ has developed a global standard for city measurement. Using evidence-based methodology the CitiIQ measurement system scores 35 essential city Considerations out of 100 to be easily understood and readily comparable with other cities. CitiIQ is acquired through a cloud-based annual license making it easy to use، economical and effective.

In April 2020 as the pandemic was expanding globally، UN- Habitat commissioned the CitiIQ platform to provide daily COVID-19 data updates at a city level for 2600 global cities.

Mark Fox

Director،
Urban Data Center،
School of Cities،
University of Toronto

Dr. Fox received his BSc in Computer Science from the University of Toronto in 1975، and his PhD in Computer Science from Carnegie Mellon University in 1983. Fox received his BSc in Computer Science from the University of Toronto in 1975، and his PhD in Computer Science from Carnegie Mellon University in 1983. In 1979 he was a founding member of the Robotics Institute of Carnegie Mellon University as well as the founding Director of the Intelligent Systems Laboratory within the Institute. He co-founded Carnegie Group Inc. in 1984، a software company that specialized inartificial Intelligence-based systems for solving engineering، manufacturing، and telecommunications problems، and was its Vice-President of Engineering and President/ CEO. Carnegie Mellon University appointed him Associate Professor of Computer Science and Robotics in 1987 (with tenure in 1991).
In 1988 he was the founding Director of the Center for Integrated Manufacturing Decision Systems at Carnegie Mellon. In 1991، Dr. Fox returned to the University of Toronto where he was appointed the NSERC Research Chairholder in Enterprise Integration، and Professor of Industrial Engineering and Computer Science. In 1992، he was appointed Director of the Collaborative Program in Integrated Manufacturing. In 1993، Dr. Fox co-founded and was CEO Novator Systems Ltd.، a pioneer in E-Retail software and services. From 1994-98 is represented Canada on the Intelligent Manufacturing Systems Global Program Scientific Committee. In 2013 he was appointed a Senior Fellow of the Global Cities Institute at the University of Toronto، and an Academic Advisor to the iCity Lab، Singapore Management University. Dr. Fox received his BSc in Computer Science from the University of Toronto in 1975، and his PhD in Computer Science from Carnegie Mellon University in 1983. In 1979 he was a founding member of the Robotics Institute of Carnegie Mellon University as well as the founding Director of the Intelligent Systems Laboratory within the Institute. He co-founded Carnegie Group Inc. in 1984، a software company that specialized in Artificial Intelligence-based systems for solving engineering، manufacturing، and telecommunications problems، and was its Vice-President of Engineering and President/CEO. Carnegie Mellon University appointed him Associate Professor of Computer Science and Robotics in 1987 (with tenure in 1991). In 1988 he was the founding Director of the Center for Integrated Manufacturing Decision Systems at Carnegie Mellon. In 1991، Dr. Fox returned to the University of Toronto where he was appointed the NSERC Research Chairholder in Enterprise Integration، and Professor of Industrial Engineering and Computer Science. In 1992، he was appointed Director of the Collaborative Program in Integrated Manufacturing. In 1993، Dr. Fox co-founded and was CEO Novator Systems Ltd.، a pioneer in E-Retail software and services. From 1994-98 is represented Canada on the Intelligent Manufacturing Systems Global Program Scientific Committee. In 2013 he was appointed a Senior Fellow of the Global Cities Institute at the University of Toronto، and an Academic Advisor to the iCity Lab، Singapore Management University.

Emmanuel Serunjoji

Mayor of Kawempe Division،
Kampala Municipality،
Uganda

Dr. Emmanuel Serunjoji is a distinguished Ugandan politician، urban development expert، and a dedicated advocate for the advancement of African cities. With over 22 years of experience in public service، Dr. Serunjoji has made significant contributions to the transformation of Kampala and other urban centers across the continent.

Paul Mugambe

Mayor of Nakawe Division،
Kampala Municipality،
Uganda

Paul Mugambe is my name، currently the Mayor of Nakawa and a member of LAVRAC. Hold a Bachelor degree in Business administration. Am passionate about a better climate.

Opening Remarks

Ehsan Mokhtari

Chief Technology,
Chargelab

Ehsan Mokhtari has a diverse work experience in the technology industry. Ehsan is currently serving as the CTO & Co-Founder of ChargeLab, where they have successfully raised $30M in VC funding and built a team of 60 people, including a 35-person engineering team. At ChargeLab, they have developed event-driven micro- service-based software to connect and manage thousands of EV chargers across North America.

Prior to ChargeLab, Ehsan worked at Nielsen as a Technical Lead from 2017 to 2019. Before that, they co-founded and served as the CEO of Sentrant Security. Under their leadership, they led business strategy, execution, fundraising, operations, and sales activities, ultimately selling Sentrant Security to Nielsen in 2017. Additionally, as the CTO of Sentrant Security, they were responsible for leading the engineering team and building digital ad-fraud and click-fraud detection systems in the cloud. Ehsan also played a significant role in recruiting and engineering management, co-authoring two US patents.

Ehsan's career began at the Canadian Institute for Cybersecurity, where they worked as a PhD Candidate, Cybersecurity Researcher, and Developer from 2010 to 2013. Prior to their cybersecurity research, Ehsan worked at AmaajSystem Corporation in various roles, including Chief Software Architect, Software Architect, and Software Developer. Ehsan was involved in software development and architecture from 2003 to 2009.

Reza Pourvaziry

Chair of
Urban Economy
Forum

It's with great honor that I welcome you as chair of the Urban Economy Forum. At this world summit of SDG's cities and urban finance, our gathering here signifies not merely a meeting of minds but a convergence of aspirations for better and more sustainable urban finance. I appreciate each and every one of you for joining this crucial conversation. I would like to express my gratitude to our colleagues in Aragon for their close collaboration with the Urban Economy Forum on a joint Glocal Platform for Urban Finance. The Urban Economy Forum and UN-Habitat are striving to exchange knowledge and innovation at the World Urban Pavilion in this place, powered by Daniels. The challenges facing our cities are immense. Yes, so are the opportunities as we navigate the complexities of urbanization. We must remember that sustainability is not just a word. Our cities are at the forefront of this transformation and it is imperative that we engage in meaningful dialogue to drive sustainable change. Central to this dialogue is the issue of urban finance. Without adequate financial resources, our aspirations for sustainable urban development remain just that dream. But finance should not be seen as a barrier. Rather, it's a tool for unlocking the potential of our cities. We need innovative solutions that leverage public and private capital to drive investment in sustainable infrastructure, affordable housing, renewable energy, and inclusive economic growth.

Creating a dialogue on sustainability and urban transformation requires us to speak a common language. One that resonates with citizens, policymakers, and investors alike. It's about translating complex concepts into tangible practical actions that improve lives and protect the planet. Whether it's investing in public transportation to reduce carbon emissions, promoting green-building practices to enhance resilience, or empowering local communities to participate in decision-making. Every step we take towards sustainability is a step towards a bright future for all But let's not forget that the path to sustainability is not one size fits all. Each city has its own unique set of challenges and opportunities shaped by its history, identity, geography, and socio-economic dynamics. Therefore, our dialogue must be inclusive, ensuring the voices of all corners of the globe are heard and respected. Only through collaboration and cooperation can we achieve the ambitious targets set forth in the Sustainable Development Goals.

In closing, let us see this as an opportunity to catalyze action and drive meaningful change in our cities. Let us embrace sustainability as not just a goal, but a way of life, a legacy that we can be proud to pass on to future generations. Together, we have the power to transform our cities into beacons of hope, prosperity, and resilience. I hope we have a wonderful conversation. I emphasize about conversation and I believe that through an interactive collaboration, we can realize sustainability for development folks. Good luck.

David West

Mayor of
Richmond Hill

I agree with Reza Pourvaziry 100% that the vision of cities in the future is really exciting. And that, I think, provides inspiration for the representatives of cities like myself each and every day. Getting there is going to be a difficult challenge, I think. And one of the things I would add to what Reza Pourvaziry was saying is that I think that urban politicians, for the most part, really want to get to that destination. One of the barriers that we have right now is finding the money to do it. And it's a real barrier. And I think in Ontario right now, and across Canada, we are in a time where we're looking to other levels of government to help us get there and get to that vision that we all have for our cities. But anyway, I just wanted to provide a real quick overview of Richmond Hill and some of the things that we're doing in the time that I have. Richmond Hill, as probably most of you know, is a growing city. We are currently around 210,000 but we're expected to be around 320,000 by 2051. We are really lucky in many ways that our population lives on a good part of our city on the Oak Ridges Moraine which is a really lovely area of the province that is for the most part protected from development and that is a great thing. It also provides some challenges, but we are certainly committed and have been committed for a really long time to harness the powers of a healthy natural environment and really be in a good position to be able to do that. We are in an engaged community to build a really sustainable and resilient city. Given our location, we are really at the geographic center of the Greater Toronto Area (GTA) in many ways, so the growth pressures on us are quite significant and right now we are in a situation in Ontario and many places in the world where we need to build a lot of housing in the next of the while and housing that's affordable to more people. And that provides opportunities, but it also provides challenges. We really do have an interesting economic base. Professional, scientific, and technical services account for about 20% of Richmond Hills businesses and with the majority concentrating on computer systems and related services. So that seems to be the path that we are heading in regarding our economy. In our strategic plan, building a green and sustainable city has been and will continue to be one of the most important pillars of our plan. We are really trying hard to make sure that we are building in a sustainable way. We are building with public transportation, firmly in mind, reducing greenhouse gases and respecting the green spaces that we have in Richmond Hill. And in the time that I've lived in Richmond Hill, which is most of my life, I think we've done a very good job and kept that very closely in mind. We have many areas in Richmond Hill, though, that are designated for significant intensification and development - and in all of those cases - we are trying very hard to make sure that we're building the city of the future and we're building it in a way that's very green and sustainable and again, walkable cities with great public transportation. So, people do have the option of getting out of their cars, which in a suburban context is a bit of a radical idea. Not so much in an urban context, but certainly in a suburban one. And I think that this is a really exciting opportunity because I think we have the opportunity to get it right. As our late mayor, Dave Barrow used to say, and I always used to appreciate this, our goal in Richmond Hill in many ways is to build a city

inside of what used to be a town. And I think we have the space and the plan to do it. One of the things that we have that I think is really important and will guide us in the next while is our Community Energy and Emissions Plan. And we have boldly looked to have zero net emissions by 2051. That's not going to be an easy task. I think it's a pretty bold goal. But clearly in order for us to achieve that, we're going to have to look at our transportation system to really decarbonize that. We're going to have to be looking at our own buildings that the municipality owns, but also private buildings. And help to give the incentives and the things that they need in order to make them as green as possible. We're looking at renewable energy, and district energy systems. And I think that in my view there's a lot of opportunity in the coming days and future to be able to do that. We're trying to make sure that we protect our natural heritage. One of the things I always try to remember in Richmond Hill is many of the rivers that ultimately flow into Lake Ontario and provide drinking water for us all, in the GTA, start right on the Oak Ridges Moraine in Richmond Hill. So, I think we have an extra obligation to be more than just good stewards of our natural environment and green stewards and we're really trying to do that. To do all of this stuff, we've estimated that our total investment by 2050 is going to be somewhere in the range of $8.6 billion. Clearly, we cannot do that on the backs of a property tax-based system. So, we are really going to be seeking partnerships and support from other levels of government. I seem to be spending a lot of my time since becoming mayor two years ago talking to other levels of government on that theme, and I think that's really important. But at the end of the day, we will see significant savings from the action that we've been doing. One of the things that's important from the water and flooding perspective is making sure that we're investing in flood mitigation strategies. And because we have many of these, well, in Richmond Hill or the creeks where they get down here in the rivers, but during large storm events, we do have a real important obligation to make sure that we're doing everything that we can to make sure that our natural infrastructure and our storm ponds can handle flooding so that we're protecting our infrastructure and our homes and businesses. So, we are doing that, we've got a number of award-winning projects that we've done in Richmond Hill right now including a Rumble Pond Adaptive Stormwater Infrastructure which we say stormwater infrastructure piece that, you know, now that they revitalize that pond from what it used to be, its way better at protecting us from flooding. It is also the water quality that comes out of that pond is way better than it used to be with a number of new technologies that are working and we are winning awards for that type of thing and we're planning on doing those types of technologies in other places as well and we are monitoring that to make sure our effectiveness is right there. But we're also trying to leverage a number of natural systems that we can do and promote that with our community. I think education with our community members and frankly, our partners in making sure that we have a great natural environment is important. So, we're spending a lot of time and energy and some resources on making sure that our public education programs around what citizens can do to help, you know, not make the flooding problem worse, and in many cases we, you know, potentially make it better in a large storm event. We have increased our forest canopy in Richmond Hill and we continue to do that and this is despite some real significant challenges in our urban forest, probably one of them being in the invasive species the emerald ash borer which has basically wiped out all of our ash trees in the in Richmond Hill and but we still managed to increase the canopy overall which I think is really important. So, in the time that we have left, I just wanted to touch on a couple of things that I think are really important going forward. I think whenever you're talking about building sustainable communities, also financially and environmentally sustainable communities, I think one of the most important things that we need to do is make sure that our community members come along with us for the ride. And I think, increasingly over in my lifetime, the whole idea of being gentle on the planet and doing the things that they need to do to have a cleaner future, in many ways, there are some changes that we all need to make, and some of those changes are seen by some of our citizens as sacrifices. But I think more and more we're seeing people buying into that program. I think it's very important from a municipal point of view that we have conversations with our community, explain to them what the implications of not doing anything would be, and frankly, explain to them some of the benefits of making some of these changes. Living in a more urban, denser environment that's more transit-friendly and human-centric, I think, is important. From a suburban perspective, we're used to living in a very suburban environment. We are increasingly needing to live in a greener way, which in many ways does mean that we need to live in a more compact, urban environment. So, I think that's important. Citizens' participation, I think, is really important. It's always been something that I've seen in my political career. Doing the right thing is one thing, but helping to explain to the residents who may not be used to that way of doing things, and again, getting them to come along and be a partner in that and be willing to pull on the same rope in the same direction, I think is really, really important. So, I really am very appreciative to be a part of this forum today. I looked at the speakers list and the bios, and I really think that we have a great deal of mental energy in this room and in forums like this that are going to help us get where we want to go. And I'm certainly proud of the work that we're doing in Richmond Hill, and I'm sure, in the future, I'm going to see work that makes me even more proud than what we're proposing today, and I think that that's really the purpose of a forum like this, is to reach for the higher goal as opposed to continue doing what we're doing. So, I thank you very much for the invitation, and I look forward to being a part of this today. Thank you.

Amir Hossein Kashfi

Managing Director، Aragon

Ladies and gentlemen، esteemed guests، partners، and collaborators، welcome to the World Summit on SDG Cities and Urban Finance. It is an absolute pleasure to have each and every one of you join us today as we delve into the critical conversation surrounding sustainable urban development.

I want to take a moment to express my sincere appreciation to all of you for your dedication to this important cause. Your presence here signifies your commitment to creating thriving، resilient، and inclusive cities that serve as beacons of sustainability for generations to come.

Today، we come together with a shared goal: to explore the intersection of partnership and financing in advancing the Sustainable Development Goals (SDGs) within our urban environments. We understand that achieving these goals requires collaborative efforts، innovative solutions، and strategic investments. And central to this endeavor is the vital role of the private sector، financial institutions، and investors. It is imperative that we engage these key stakeholders in our discussions، forging partnerships that leverage their expertise، resources، and influence to drive sustainable urban growth. By working together، we can unlock new pathways to financing and accelerate progress towards our shared objectives.

The importance of private sector involvement in sustainable urban development cannot be overstated. Through their investments، innovations، and commitment to corporate social responsibility، ESGs، and other global sustainability agendas، businesses play a crucial role in driving positive change within our cities. From green infrastructure projects to sustainable transportation initiatives، the private sector has the power to catalyze transformative solutions that benefit both communities and the environment.

Similarly، financial institutions play a pivotal role in shaping the future of our cities. By providing capital، expertise، and support to urban development projects، these institutions enable cities to access the resources they need to thrive. From municipal bonds to green financing mechanisms، financial institutions offer a range of tools and solutions to support sustainable urban development efforts.

As we gather here today، it is essential that we recognize the interconnectedness of our cities and the global community. The challenges we face—whether they be climate change، inequality، or resource scarcity—are inherently interconnected، requiring collaborative، cross-cutting solutions. Through partnerships that span borders، sectors، and disciplines، we can harness the collective wisdom and resources needed to address these complex challenges and build a more sustainable future for all.

In addition to our focus on partnership and financing، this summit will also showcase the remarkable progress being made in cities، and much of the innovation we will hear from today is from Toronto. From innovative urban planning strategies to large scale public-private partnerships for infrastructure development، cities are leading the way in pioneering solutions that enhance quality of life، promote social equity، and safeguard the environment. From smart cities to circular economies، the examples abound of cities embracing sustainability as a pathway

to prosperity. And through platforms like this summit, we have the opportunity to learn from one another, share best practices, and collaborate on innovative solutions that drive meaningful impact in cities across the globe. To support our work, we were pleased to partner with the Urban Economy Forum back in October 2023 to launch the Glocal Platform for Urban Finance. The Glocal Platform represents a groundbreaking approach to connecting cities with the resources and support they need to drive sustainable growth. Serving as an intermediary between cities, financial institutions, and other key stakeholders, the platform will facilitate dialogue, foster collaboration, and provide technical advisory services to localize global and national agendas. By leveraging the collective expertise and resources of its partners, the Glocal Platform will empower cities to access innovative financing mechanisms, implement evidence- based solutions, and achieve their sustainable development goals. Through the Glocal Platform, we have the opportunity to create a cohesive ecosystem of support that transcends geographic boundaries and sectoral silos. By bringing together diverse perspectives, knowledge, and resources, we can unlock new pathways to financing, drive innovation, and accelerate progress towards a more sustainable and resilient urban future. Together, let us embrace the vision of the Glocal Platform and work collaboratively to build cities that are not only thriving and prosperous but also inclusive, equitable, and environmentally sustainable. In closing, let me extend my heartfelt gratitude to each of you for your commitment to this important cause. Together, we have the opportunity—and the responsibility—to shape the future of our cities for generations to come. Let us seize this moment, harnessing the power of partnership and finance to create cities that are not only sustainable but also prosperous, inclusive, and resilient. Thank you.

SDG Cities Initiative: A Global Perspective

SDG Cities Initiative: Empowering Cities to Achieve the SDGs

Douglas Ragan

Programme Management Officer &
SDG Cities Initiative،
UN-Habitat

Hi، my name is Douglas Regan. I work with UN-Habitat. Arrived from Nairobi sometime last night. I kind of hazy about when and really honored to be here. I mean، big thanks to our partners' Urban Economy Forum to the Daniels Corporation، and to the World Urban Pavilion and all the work we're doing. I think it's really exciting and we've been on this journey for about 4 years now. And، really looking forward to another 4 or 5 years to go. One of the anchor programs of the World Urban Pavilion is the SDG City Global Initiative. It's a global initiative of UN-Habitat. If you haven't heard of UN-Habitat، we're the UN agency charged with sustainable urbanization. We're not really big enough to do all that. There are so many cities globally. But we really work and one of the things that's different about us is that we are mandated to work with cities and what we would call in UN parlance sub-nationals.
The United Nations is just one big N.G.O. with a board of directors of 193 countries. We're very national-focused، but what we have a mandate to do is go beyond just working with national governments and work with cities، which makes it both exciting، yet quite crazy and very complex because there are so many cities in the world، they're all conformed and configured differently politically in every different country. So، I mean، it takes a lot to put it all together، but what really has helped us in the last few years is to move to take the Sustainable Development Goals، which was basically adopted in 2015 by all 193 countries. It is our roadmap to sustainability، our roadmap to equality، a roadmap to equity، and a roadmap to a better world. It's a well-designed 17 of them that cover every different homeowner aspect of urban sustainability or sustainability in general and urban sustainability. And it's done up in nice، pretty boxes and really nice colors. So، everyone can take it on and enjoy it. So، I'm assuming you may have heard of the SDGs. But basically، what is it? 17 goals as I said 169 targets what's really interesting is that we're actually able to measure sustainability

globally now. So that's kind of what the core of SDG cities is to help and work with cities to align themselves with the sustainable development goals and thus become more sustainable. We had a midterm last year. So، every year the General Assembly has a different mandate and، a different focus. Last year was the SDGs، and we looked at it due to COVID-19 and، the multiple wars that are happening globally، we're kind of on our back foot. The SDGs are supposed to be achieved by 2030. But what we found is that only 12% of them are on target، almost 50% progressing، but way off target and 30% have no progress at all. This kind of rang bells in the whole of all the countries in the world and also the cities. Because، really، are we going backward?
Is it becoming a less sustainable world and it's kind of hard to tell، especially with things like climate change، which are kind of a complete game changer in terms of how we even create policy anymore، whereas before the policy was built on years upon years of knowledge and data collection and how we're going to do this، and now things are moving so quickly. We don't have the ability to gather data on it and create a policy. Quick enough to be able to address، for example، though I live in Nairobi، I'm from British Columbia، from Vancouver، when you have forest fires، on top of forest fires، you no longer have a forestry policy.
The policies are gone. We have to make new ways and such to do it. And one of the things that is critical and the core of SDG Cities and، is the core of what our agencies mandate is what we call localization. We need local data and not local data that's disaggregated from a national data set، but local data is actually real-time. That's actually gathered over a period of time and such that's what SDG cities is about. Taking the 17 sustainable development goals، taking the 170 odd targets، and trying to kind of make that into something that we can measure at the local level. That's what we're trying to do and that's where we're moving.
And just in case you didn't know، the world will be urban. I come from Africa which is a very lowly low urbanization، not many cities in Africa yet، but it is one of the fastest-urbanizing continents in the world. Canada، as again، I'm sure you know، is 80 plus percent is cities. So، cities are critical. Before international development was in big theory، keep them home on the farm. The idea of the whole concept of international development was not about let's make cities more sustainable and having people move into sustainable cities. It's like how can we keep people out of cities? We realize a that's impossible. Bright lights، big cities; Why do people go there? If you ask again، I work with a lot of young people. If you ask young people، they are like، the reason I go to cities is education، the reason I go to cities is employment، and this is common across the world. But what it's doing in places that have very، very large populations، a lot of poverty is making megacities. And so، cities like، if you look at Nigeria، cities like in India are massive. They're city-states.
And the challenge is when you hear about things like informal settlements or slums that's where people end up، so we have to figure out how we can create a way to create a sustainable city and how we can use these goals، these very lofty goals and their targets to try to help cities do that in a very rapid manner، and that's again what we're trying to do here. And، cities are very central to the SDGs، also we can't leave out the rural areas as well. We kind of seem to want to split them politically often trying to split mode two، we say، Oh! 1. Those are the rural people، usually conservative، 2. This is the liberal people، those are usually cities، and we never the twin shows me. But we know that's

not what happens: The links between the rural and the urban world are very strong and if you look at just all the statistics around where the populations are? How is the GDP? How much climate change? Gases and such are coming from cities? and the impact of cities on climate change? It's all very large, so we have to do something with cities. And by mentioning 80% of the world's economy, 70% of the world's greenhouse gases, and 70% of the world's waste, you can't deal with cities and expect to get to sustainability.

We have to change that concept but again it's quite complex, especially for a place like the United Nations which is a member state-based agency. So, when we go to some countries and we say: Oh! we want to work with cities. They're like, no! That's not your mandate. Keep back, so we're trying to educate and figure out how to do that we have concepts called multilevel governance in many different ways, but that's critical. So, we have the SDG cities, which is a flagship program of UN-Habitat, and which is we have a kind of a theory of change. And you also have your little folders in front of you. There's a little bit deeper dive if you really want to get into the nuts and bolts of it, but the basic first off is: We need data. We need localized data. We just have to have it. We can no longer sit and just use census data or data generated out of a capital. Doesn't work, it's very unprecise, so we need to figure that out. Next, the data has to drive planning and strategic planning, not only just planning in terms of immediate and general urban planning, but also beyond it, really looks strategically because again the policy world is moving so quickly especially due to climate change. We have to be strategic and fast to come up with multiple ways of looking at things updated. And then the strategic planning leads to local plans and regulations. I mean, if you have some great data, you're doing some great planning, then you have to create plans and regulations. And then from that, then this is the kind of interesting part of SDG's cities and why it works here is that if you have all that, then you should be able to get financing. Then it's back to the kind of the old triple bottom line, which people say: finance exists and it doesn't exist. But most people are derisking. It means that basically, as people who are financiers, you're looking at banks and such like that. Yes! you want the economy. We know that 1. You have to make it economically viable, but 2. Everyone also knows you need to have it socially viable and 3. You need to have it environmentally viable. You don't. Have all three, you're going to get crossways a just on the general sustainability but as well as politically and such. So, what our program is trying to do is kind of build again, I'll go back to the triple bottom line approach because it's something we've known for many decades.

But really trying to do that and trying to create a full scope and full understanding of sustainability, and then that would of course impact the SDGs, which again back to 17 SDGs and 179 targets. The SDGs cover everything. SDG 1 is poverty. SDG 11 is sustainable cities. We have an SDG on climate change. We've got everything covered under 17 SDGs. So, it's kind of a value chain, I've said this already, but I'm not going to go into a deep dive on it: if you have data, you do a baseline assessment, and you can create an inclusive strategic planning process. So what this would mean is if a city was interested in being onboarded, becoming part of the SDG's cities program? and becoming more aligned and engaged with the sustainable development goals. It would come to us, and we have the tools and such, and say: Ok! Well, do we have a baseline? In Canada? The concept of SDGs in most cities is doing something. I mean, whether they've organized themselves in such a way, whether they create another way that they're looking at metrics that they have another way of measuring sustainability. And, we're not trying to enforce our way either. We're really open to wherever people want to go.

Then, if you need data, you have strategic planning and we have something called firstly 1. a voluntary local review, which is linked to the UN in New York. 2. We have set specific 2030 SDG targets and an SDG strategic plan, that's the second. Then, 3. local systems and capacity: we have to build the systems often, or enhance the systems and make them work, and then we have the investment again. If you get all this right, if you get the triple bottom line piece and, everything, that should make whatever you're doing more financial or you can get money for it. That's what our hope is. This is kind of a more fine-grained. Look at the data set! The track one we call the data section: a big credit is the global urban monitoring framework. What's important about this is we've never been able globally to track where cities are going. We needed a baseline. We needed a data set. And it's always been a problem of UN-Habitant way back since the dawn of time. Yet, we've never been able to track where cities are going globally and even nationally. So, now we have something that's been approved by the UN statistical division and such and so we have a global urban monitoring framework, which is a subset of the targets of the SDGs. Again, kind of boring but exciting for us because finally, we've been able to actually measure, because before it was just Oh! this is a good idea, let's try to do this, and try to convince people. But after measuring the monitored data now actually people can say, look! this is a data set and it works. Again, strategic planning and visioning: I mean obviously, in Canada, you have your community plans. There are many different forms of planning. This is just kind of amping it up. It's trying to not just look at kind of a political process around community planning, but a process that is data-driven, and that goes back to Facebook. The first track is if you have the data, then you can do better strategic planning and you can plan in the short-term, medium-term, and long-term. But again, the short-term is so critical right now because things are moving so quickly.

So, about voluntary local review, I won't go into deep on that, but that's just countries reporting out what they're doing locally in the cities. And about the strategic planning: these are different areas of the urban monitoring framework: Culture, economy, society, environment, governance, and what we're oftentimes looking at is kind of a way of going to a city and saying, what do you do great? and oftentimes, for example, in a Canadian context, oftentimes environment is a very big thing. Cities are very good in environments but in terms of society or cultural stuff, they might be less so depending on what part of the country you're in, so this kind of gives you a chart that allows you to understand where you're doing well and where you're not.

But looking at it holistically that's kind of what this strategic planning part is. Then if you're going to do it right, you got to have good governance, and we kind of lost this somewhere along the line, at least to the UN and such, we kind of went to impact and output and whatever, we can lose the process point: The process point is we have to define good governance, not everyone defines this anymore, but we define good governance as inclusive governance. Governance involves everybody so that it has the greatest impact as possible, but also looking at how the government is accountable to its people and

how the government is able to bring that about when they see what we do as UN-Habitat work with cities. We do capacity development, digital health checks, and such again, trying to kind of look at how the institutions are doing, and we do a lot of training of technical staff.

We have a number of tools that we can use, and I think we'll touch on those later on, but that's also exciting. Again, this is an e-surveying tool we come to use, which looks at the 10 themes covering good governance, institutional fiscal sustainability, and so on. We're able to kind of give people a global view on how they rate or rank globally in doing these kinds of work. I mean, we're not trying to have cities competing against one another. So, maybe that works around how sustainable they are and such, but we find it really critical to do a deeper dive into good governance. Another planning e-survey tool. These are all? If you're interested in them, we'll share the slide deck and I can get back to you about urban planning and delivery

You're like, for example, multilevel planning frameworks. One of the biggest challenges when you work with cities is that they are multilevel governance. It's not one sanitation or housing. Housing could be the domain of 3 levels of governance, plus the private sector and many things. So, it's really trying to first recognize the different levels of governance about housing and then try to deal with local authorities, civil society, and planning professionals have been very leaning and engaging in those.

One of the things that we found, and this is, again, it's very important when we're working with cities in the developing world, but it's also important in the developed world is where is your revenue coming from and what can you do better. So, we have a tool that kind of analyzes where our own source revenue is happening and tries to figure it out which, if you put in x into this revenue stream, like parking violations, is that going to increase you enough? Or can you reallocate your resources to where you'd have better revenue streams? and such. So, that's another tool that we work with and such, and we find it interesting that in the developing world, yes! this is a critical piece because how do cities finance what they're doing? It's very complicated, but we also find it here in the developers in Canada and such that people don't really necessarily understand their revenue streams and where they're coming from and how to do that and this tool helps them.

And then you look at infrastructure, development, and such, one of our financing platforms, we're using. Another one, that I know raising money is developing, and the Urban Economy Forum is developing again, we don't want to say it's everything, but it's really important. That you're able to finance, you're able to raise money to make sustainability happen. And, that's what this all is about and that's what you guys are going to be talking about and exploring here in the Canadian context but what we're also exploring globally. You know U.S. 3.2 trillion annual infrastructure financing gap that we know about. So, there's a real need to make sure of this. But not financing, that is delinqued from sustainability, but financing that uses sustainability as a way to move forward and as a way to make a better world. And this is a random 4.2 billion people living in cities today. Again, it's just the need for this, and the gap is going to grow unless we address it, and this is one of the ways SDG's cities are attempting to do.

So, you go through the last four, you go through the data phase, trades, and strategic planning, and so on the different tracks that we've gone through what we do is we award or we give people recognition in the silver, gold, platinum, and diamond. It's kind of a way of people being able to celebrate or cities being able to celebrate what they're doing, but it's also a great way to promote and advance sustainability. We're one part doing it technical and, we're one part promotion and education. We want people to understand this. And that's where this silver, gold, platinum, diamond we were thinking about making it much more sustainable wood stones, I don't know whatever we were going to do but that didn't really sound very sexy, so we thought that we'd just stick with the minerals. If they're done sustainably, I guess, but it's not a really high bar to become part of SDG cities. The silver level; And you only have to go to the silver level, I mean, we would obviously think that you should try to go all the way to diamond, where you're getting financing and having the measuring projects, but the silver level is basically a political commitment to implement the SDGs; understanding it and educating it.

And then we've seen this a lot, in a lot I mean, for example, I know Kitchener is very big, and I know Toronto has done a lot of things in the Ontario context. We're supposed to have a speaker from Gibson, from British Columbia, unfortunately, it's a Covid case. But again, these are just ways for people to be recognized for the amazing work they're doing and going through this process. And again, the silver recognition is not that hot. I mean gold is the planning piece. Platinum is the strengthening of local institutions again; you can follow the tracks that we had before. And diamond is the city's investment. Those are the four levels. And what we're trying to do with the city investment side and the diamond level is to try to create marketplaces in which people can engage in cities and try to get resources for their projects.

Got a great video in SDG's cities, and hubs, what we're trying to do is because it's very complicated to work with all these thousands we've been approached and, by thousands of cities to do this. We've created hubs. The first hub was here again, financed by CMHC in partnership with UEF, and partnership with Daniels to create the first global hub, which is kind of where we built all this. This is what we did: Working in supported by the Canadian government. What we're doing now is creating hubs all over I got this fun and funky video. What we're doing in Turkey, for example, right now. We're doing one in Istanbul and, we're doing one in Colombia and Bogota. And again, trying to increase the capacity of those hubs to be able to service their areas so that it's not just all happening in Nairobi, Kenya which isn't going to work very well, so we've got regional support hubs. We've got this as the global knowledge hub and such. So that's just a methodology. And this is where we're engaged: Canada, Mexico, Costa Rica, Columbia, and Ecuador. And these are all the different cities. All the different countries are fully engaged. We expect to do at least 1000 cities by the time our strategic plan ends, which is now 2026, I think. But an impact, a billion lives, but we think we'll go well beyond that as long as we can keep the capacity to do so.

We have online tools and resources. I've mentioned some of them, and we have hubs. So that's again, something that we're doing to try to make this program go. And this is who we are. Where you can contact us at SDGcities.org and you can look at our LinkedIn and such. Yeah? So anyway, thank you so much.

Jennie Moore

Director,
Institute Sustainability,
British Columbia Institute of Technology

I am coming to you from Vancouver, and I am really excited to share with you today some of the exemplary city case studies that we are finding from this report. Although the report is behind schedule, it wil l be coming very shortly now. I would like to recognize Mayor West's, from Richmond Hill, observations. I think that the experience that he described about everything that they are working on, really resonated with me as a researcher and what I found from cities across Canada that we've been exploring.

So, today we'll talk a little bit about the challenges for Canadian cities that have been coming up in some exemplary cities, and I want to just be clear in the interest of time. I've condensed this list, but Toronto could be on it. I know the conference is happening there today. So, I've chosen to bias a little bit towards the West Canada, but there are just so many great examples, and it's giving me a lot of hope. Right now, through the SDG cities initiative, as Douglas Ragan mentioned, we're looking at the analysis through the urban monitoring framework, which really goes through SDG 11, with the focus is on cities. Nevertheless, it covers all of the SDGs, and we're looking at it in various domains to see whether or not cities are making progress around the objective to be safe and peaceful, inclusive resilient sustainable across the domains of society, economy, environment, culture, as well as governance and implementation, which we know is a key piece.

So, challenges for Canadian cities, I'll go through each one of these in a little bit more detail. First and foremost, it's access to adequate affordable housing, so I would like to give big shout-out to the research funders, Canada Mortgage and Housing Corporation (CMHC). This is a fantastic organization. For myself as a planner over 20 years in Canada, I can attest to how much we rely on CMHC's data and excellent resources and tools. Despite

challenges, progress was being made. But then Covid followed by interest rates that have been increasing at a rapid scale, and have now finally stabilized, have really exacerbated this issue for many cities. So, in the rural areas, it's not quite as dramatic, but many cities now are facing real challenges, with one-fifth, to one-third of households across Canada paying more than 30% of after-tax income on housing, which is the threshold for affordability. And in some of the larger cities, it's above that, 40, 50% or more. We are also seeing a proliferation of tent cities. The UMF looks at slum population as an indicator, and we translate that into unaffordable and inadequate housing in the report. But we're starting to see increasing amounts of people who are choosing to try to survive in super informal settlements in Canada as well. I wanted to also mention access to transit. This is an area where Canada has made excellent progress. You cannot have affordable housing in cities without access to transit. These things go side by side. So, when we're thinking about investments wherever the affordable housing gets located, it has to be in a place that's already well-serviced by transit. Food insecurity is another big challenge that again is exacerbated by rising prices, but it has also been a long-term prediction for people studying sustainability challenges associated with land-use change, soil desertification, and climate impacts. One of the greatest challenges for us in the global economy is that we've never fully factored-in the long-term ecological costs and the social impact costs in our pricing mechanisms. So, this is a major challenge for us going forward within the global economy in order to address sustainability. We're seeing in Canada now rapidly increasing food prices and concomitant food insecurity, again partly exacerbated by increasing interest rates, but much more also around supply chain challenges, and long-term challenges with soil fertility and agriculture land availability.

Another challenge is health care coverage in terms of access to service providers and the opioid crisis. Canada's ambitions in this area are looking at wellness, both mentally and physically, trying to be preemptive in our healthcare solutions, but we still have big challenges, and universal health care is one of the pride and joys of Canadian society.

So, overall, Canadian cities are still doing well today, but we are seeing challenges. Another one that is important to mention from the findings in the report is climate change impacts, especially for Canada as a northern latitude country. We experience many impacts sooner and potentially in greater degree change, especially in the north. For example, thinking sea ice and snow-pack melt, but now, as was also mentioned earlier, we're starting to see increasing and recurring forest fires that are impacting cities directly, and people are losing their homes.

And there are other impacts, one of which is drinking water availability. Canada has historically had good drinking water supply to most municipalities, particularly in the lower latitudes. Recently, Canada's ambition of advancing drinking water services to Indigenous communities across, the country that have historically had lesser water services, is also being realized. Now, we're making progress there, but at the same time partly due to climate impact, we're seeing increasing water shortages or scarcity advisories in urban areas that had traditionally been well serviced. So, these are some of the big-picture challenges that when we're thinking of an investment in urban infrastructure, we have to be very astute

about how we move that investment forward. And the last challenge I'll cover is with regard to social inclusion. In cities we see polarization of wealth and poverty. So, increasingly we're seeing challenges, where the "super have" and the "super have not" are coming to grips with this reality. And, the voice of the people who are really struggling with all of the issues, that I've just mentioned, is becoming much louder and stronger. It is becoming increasingly urgent to figure out ways to start to address this because people's struggles are starting to manifest through more crime, more petty thefts, shoplifting, et cetera.

So, we are making progress in this area, but for Canada, in cities where the wealth is polarized, it is really a big concern. This also reaches the edge of social cohesion and social inclusion around ethnic diversity in gender identification; the whole gamut. So, we will take a look from the report at some exemplary cities and how they're addressing these issues. We'll go through some examples using the SDGs to inform strategic plans, leveraging local, social assets, and developing nature-based solutions. I can already see there's a bit of a theme coming out from the morning presenters at today's event. So, a few great examples, again, focusing mostly on the west Canada because I understand you've got some good eastern coverage where you're at now follows:

1. Our Winnipeg 2045: The City of Winnipeg has a development plan that expressly was informed by the SDGs and localizes them to address 6 goals. The core objective is to serve as an urban lens to analyze and evaluate community needs and help prioritize city services. So, you can see, reflecting what Douglas Ragan's comments were, leadership and good governance is important and increasingly we're seeing this trend, along with environmental resilience which is also increasingly important. Economic prosperity, not necessarily growth, is good if it benefits everyone, but sometimes growth exclusively benefits those who have more rather than those who have not. And, so we're really looking at prosperity as an important term that is inclusive for everyone and still acknowledges ecological resilience, good health, well-being, social equity, and city-buildings. By city-building, I mean along the lines of the SDG objectives.

A similar approach to use the SDGs to inform the strategic plan for 2019 and 2020 was adopted by the City of Kitchener. Kitchener is also moving forward as a real leader in this space. Their plan links local action statements to relevant SDGs and provides valued services that have proven importance through active engagement and listening to what residents expect. Kitchener's really has engaged their community and again, they're looking at five priority goals. For example, people-friendly transportation. This is designed for the human body that enables people to access public transit, but also looking at compact dense development where it's just easier to get around by walking, rolling or strolling, and you don't need a car to transfer you across those big distances that you get in sprawling cities. Other goals are environmental leadership, vibrant economy, caring community and great customer service.

Moving on to looking at leveraging local assets, the city of Kelowna has partnered with the local libraries to use their loan services to loan-out something new: infrared cameras. Citizens can use those cameras to identify where their houses are losing energy, in the form of heat, and associated greenhouse gas emissions. The objective is to educate and encourage homeowners to seal the leaks in their homes, help them save money, and it helps the city reduce greenhouse gas emissions. The city also provided a draft proofing kit available to residents who sign-out the infrared cameras, and they encourage residents to also take advantage of formal home energy audits: through market and subsidized energy efficiency services, and government grants. Interestingly, this program became oversubscribed with 500 people wanting those home draft kits within the first month that the program opened.

Another example of leveraging local, social assets, comes from the District of Saanich, also in British Columbia. I'll give a shout-out to Vancouver City Savings Credit Union, who helped fund the One Planet Saanich initiative that helped the District of Saanich collaborate with non-government organizations, community groups, local businesses, schools, church groups, among other participants. The District of Saanich is engaging with local schools, businesses, religious and civil society groups to promote sustainable lifestyles. The core objective is to develop a shared commitment and language regarding sustainability, and to really educate themselves on what that means at a deep level. The next step is to develop "One Planet" action plans that enables businesses, schools, and community groups to work together, provide those training sessions, annual challenges, and networking events, and track how they're moving forward and reducing their carbon footprint. They have ten sustainability goals, based on the Bio-Regional principles for One Planet Living. The slide is too small to see them individually listed, but they deal with the classic sustainability objectives, and you can align these with the SDGs around sustainable food, transportation, consumables, health and well-being, et cetera. And finally looking at natural assets, the Town of Gibsons has adopted a comprehensive asset management strategy which is exciting because it actually includes natural assets as part of the accounting on the books for their capital assets as well. This means that the services provided by natural ecosystems in Gibsons are financially recognized. Investing in natural assets means investing in the protection and regeneration of ecological services, and related natural resources that provide ecosystem services to benefit municipalities. So, Mayor West from Richmond Hill mentioned, for example, drinking water with the ecological systems of restoring streams and aquafers to really help us be more resilient. And this is exactly what the Town of Gibson is doing. They're tracking their forests, their streams, and their aquafers. They're looking at how these can become less costly than physical assets to maintain over the long-term and also increase their carbon neutrality. So, there's definitely managed care, but the core objective is to manage risk, reducing costs, maintain a healthy ecosystem and safeguard assets for future development instead of degradation. Gibsons shifted their natural assets from the periphery of municipal decision-making to the core with bylaws in place to protect them, financial planning to account for them, and government departments working together more effectively to maintain them.

Now, this is just a brief example of how the SDGs are being localized and where some of the investment opportunities could be in some of those broad categories and how municipalities are seeking opportunity and taking advantage of it locally. I could also mention Thunder Bay in Ontario also looking at natural infrastructure development to complement their built

capital infrastructure, again to improve their stormwater management, another important issue for cities that Mayor West also mentioned.

So, I will stop there. I don't want to go over time. The QR code can take you to more information about UN Habitat's SDG Cities, and I'll turn it back over to Doug Ragan from UN Habitat before we go on to the next speaker. Thank you again for your time and attention.

SDG Cities Initiative: A Global Perspective

Financing Sustainable Urban Growth and Development

John Safrance

Founding Partner،
EMIF Group

I am John Safrance، a co-founder of EMIF Group. Douglas Ragan introduced the SDG cities platform as one of the stages he touched upon as the investment and implementation stage. But that stage is often akin to the proverbial sausage factory if you will، it's not pretty in person. EMIF Group is an asset management platform focused on the development and implementation of infrastructure in low and middle-income countries in their cities. The platform we're about to discuss catalyzes infrastructure projects that lend themselves to public-private partnerships and to help address and ameliorate many of those challenges you encounter at the factory. I'll be discussing this group's role and approach within this platform and the platform itself.

The Sustainable Infrastructure Preparation Fund or، the SIPF fund، is a rather unique offering within the development finance community. Sustainable Infrastructure Preparation Fund (SIPF) provides the funding and preparation support for subnational infrastructure sub-cities، initiatives that may otherwise find it challenging to attract private interests and funding. This is one of the toolboxes within the UN-Habitat's Cities Investment Facility program، or CIF، which has been created to catalyze investment in cities throughout the global south and UN-Habitat SDG cities within the key targeting program. The CIF program is designed to cultivate shovel-ready projects that are suitable for public-private partnership by tendering out to interested international private capital providers and the program's expectation is that it produces projects that can be built and operated for less while helping achieve and catalyze SDGs.

So، "The Gap" may be a term many of you are familiar with. According to the Impact Taskforce، for example، there is simply just not enough public money available through product development institutions. For the development banks and the multilateral development banks to achieve the UN's SDGs and ensure the Just Transition while pursuing the one-and-a-half-degree temperature goal، $60 trillion is needed over the next five years alone to catalyze and catch up to the Action Agenda. At the same time، institutional appetite for ESG and impact investment is growing. But paradoxically، the same Impact Taskforce study concludes that for every public dollar that's spent by these development banks، less than $1 private capital is actually capitalized.

There are many projects in secondary cities، throughout the globe، that have difficulty in attracting private capital، private partnership and structure initiatives. Often the results of perceived development risks and small project size - in the absence of private development - the cities sometimes look to go it alone. In many cases there's a lack of local institutional knowledge from a development perspective and access to funding in order to develop projects، international financing standards by these government proponents، so nothing actually is built. 40 billion is the amount of private investment catalyzed by public development banks in 2021. This is less than what the development banks invested themselves، as I mentioned before، that ratio of public to private should be much better، and it's not.

Aim of CIF: Cities Investment Facility is designed specifically to catalyze a much greater level of private capital participation in low and middle-income regions with the support of development banks to ensure that they touch on a much larger number of products themselves. It's a shift in thinking for development banks away from a project-by-project approach and more through a programmatic approach.
How does the City Investment Facility work? It's a multi-stage and multi-stakeholder initiative. There's a lot of word soup in there but basically، it takes a blended finance approach to get more projects developed to international finance standards.

So، we initially start with the project selection process، which is really just open calls looking to attract projects and cities into the program. From there، projects are selected through that process، receive some early preparation internally from a number of stakeholders called Cities Investments Advisory Platform partners. These are groups، such as Gensler and RCC، (Resilient Cities Catalyst)، spend the first half million dollars، which is provided by an internal fund within the program to ensure that governments understand what's needed of them – what's needed to facilitate the early development. Why do you need capacity building? Governments need to understand what they need to facilitate to ensure the projects are developed efficiently.

And once those projects have demonstrated viability from that perspective، as well as financial and UN SDGs and ESG impact perspective، they're considered ready for the mid-late preparation stage with the Cities Investment Vehicles. Our SIPF fund is the mid to late-stage preparation vehicle. It provides the typical 2 to $3 million of additional development capital that's required in order for those projects to go from that mid-level development through to financial close. And then once we've done our work in terms of ensuring those projects are developed to international and financial standards، and ensuring all of the feasibility، technical،

financial, land acquisition, etc... are developed to international preparation standards, the project will then be opened up for tender to public-private partnership to interested parties - for the equity and the debt. And once the tender finance stage is completed, development fees are paid back to EMIF which are then passed back down the line to all of the stakeholders that have contributed to the development of the project.

So, I'll give you a sample of what the historical interest has been in some of these open calls. There have been three rounds that have been held geographically, if you can see that on a screen, it's been quite well-dispersed with the four primary regions of Latin and Caribbean, Asia & Pacific, Africa, Europe and Arab states, and Western Asia. From an actual asset perspective, it's also been quite well-dispersed with waste management, water sanitation, transport & mobility, urban infill in public spaces, affordable housing and so on, being well represented. And then from a UN SDGs alignment perspective, we've been tracking how projects tap into the various 17 SDGs. Sustainable cities and communities is very well-represented. So are climate action, good health and well-being, and several other SDGs. There are some that we could do better on, but these are projects that are shown to us, and are not representative of the projects that we've actually accepted into the program, but it gives you a decent look at some of the UN SDGs touched upon.

Once the infrastructure preparation funds the value proposition - how does it fit in the overall SIPF process? SIPF project manages and finances the late-stage development. It does take on that good work that's been performed by our upstream partners on the initial derisking and then engages with expert parties to ensure environmental and social plans, project agreements guarantees and so on and so forth have been adequately prepared. However, before we actually engage, we will perform a complete analysis of the work that's been done to ensure that the work has been done by our upstream partners to demonstrate significant net social benefit and support amongst the government stakeholders.

Ultimately, though, the goal here is to catalyze overlooked infrastructure opportunities while reducing development costs and risks, producing turn-key projects suitable for private investment that otherwise would not undertake the development risks in these regions without established frameworks that typically lack a strong record as development partners.

The conventional structure - in terms of what makes us different - PPP initiatives typically are bilateral in nature. The ultimate owner and operator in a public private partnership is also usually the developer, and that development risk is taken on by the ultimate owner of the project. Technical assistance facilities provide some funding for preparation here and there for government and project proponents, but often are unable to completely ameliorate the risk from the funding perspective or fully really appreciate, I think some of the intricacies and capacities of developing a project. From the EMIF Group perspective, we provide all of the project funding from that mid to late stage in advisory work, and we removed as much preparation risk from the project, both for the government and the ultimate set project owner themselves, and we take this right through to financial close.

So, we think this attracts ultimately a greater number of quality equity, potential equity and debt providers, and improves the project's financing options. And SIPF is a private investment vehicle, yet remains aligned with cities and is incented to develop projects efficiently.

Final thoughts, as mentioned, both the city investment facility program and our Sustainable Infrastructure Preparation Fund prepares projects through a blended finance approach and - in particular - leverages its historical private development expertise to produce bankable and financeable projects to international financial standards.

Yet, unlike the traditional modalities, we are not adversaries to the process, but rather a partner for the city project proponents, and we make sure that the projects are developed as efficiently as possible, reduce risk and ultimately, the cost that is borne by the project beneficiaries, those who actually use the projects. We are for-profit to our limited partners, and this is necessary to support both the upstream preparation activities performed by some of our partners in CIF and to ensure our approach is sustainable from a private investment perspective. We're talking about taking public funding and really turning that into a much higher multiple than what currently exists with the private investment side.

EMIF Group partners have extensive development backgrounds. We all have strong track records in driving and catalyzing private investment in low and middle-income regions. We're certainly excited to be partnered with UN-Habitat's City Investment Facility in SDGs Cities, and, of course, the cities themselves, to ensure that projects that traditionally struggle to transition from concept to reality are supported in a way that benefits all stakeholders. Thank you.

Andrew Apampa

Content Manager،
Convergence

I am a Manager on the Content Team at Convergence Blended Finance، a global network dedicated to advancing blended finance initiatives. Our focus involves generating comprehensive data، insightful intelligence، and facilitating deal flow to bolster private investment in developing economies. In this discussion، I will explore some of the prominent opportunities and challenges within blended finance، drawing upon insights and exemplifying transactions from our database aimed at urban transformation and developing economies.

Blended finance harnesses catalytic capital from public or philanthropic sources to boost private sector investment in developing countries، aiming to achieve the SDGs and climate objectives. This approach enables organizations with diverse goals to collaborate in investments، whether prioritizing financial returns، social and environmental impacts، or a combination of both. Blended finance tackles significant investment hurdles for private investors، such as perceived and actual risks، as well as subpar returns compared to similar investments. Convergence، as an organization، monitors four prevalent blended finance models.

To begin، concessional debt and equity are provided by public and philanthropic investors at below-market terms، embedded within the capital structure. This aims to reduce the overall cost of capital or offer an additional safeguard to private sector investors. Subsequently، public or philanthropic investors may offer credit enhancement، such as guarantees or risk insurance، also at below-market terms. Another avenue involves Technical Assistance (TA) facilities، where transactions are linked to grant-funded TA initiatives. These initiatives can be utilized before or after the investment to bolster its commercial viability and developmental impact. Lastly، there's design-stage funding، where the transaction's design and preparation are grant-funded، including through project preparation or design-stage grants.

Convergence maintains the largest globally available database of historical blended financial transactions. For inclusion in our database، transactions must possess three attributes: involvement of at least one private-sector investor، incorporation of a concessional below-market component، and alignment with the SDGs in developing countries.

I will now showcase some charts extracted from our latest State of Blended Finance report، unveiled in October 2023. Our database encompasses over 1000 transactions، with 485 focusing on climate-related initiatives. The cumulative transaction value we've documented amounts to $198 billion. Over the last decade، the blended finance landscape has averaged around 77 deals annually. A critical observation emerges، despite a comparable deal count in 2022 relative to 2021، Convergence noted a staggering 45% decrease in total deal volume in 2022. Notably، most private financing originated from investors in the Global North. These trends underscore broader macroeconomic challenges، including those stemming from COVID-19، inflationary pressures، and rising interest rates in the Global North. However، we، as an organization، perceive these trends as indicative of fundamental obstacles to scaling blended finance. Current flows in blended finance have hovered between $8-15 billion annually over the past decade، significantly below the levels required to realize the "billions to trillions" agenda proposed in 2015.

Now، let's examine some of the primary challenges identified by Convergence in the blended finance market through recent research. Convergence has pinpointed several obstacles hindering the scalability of blended finance، and I'll outline three of them here.
Firstly، there exists a notable absence of a private sector mobilization strategy and action plan، particularly within the donor community. Blended finance serves as a pivotal tool in the development toolkit aimed at augmenting the financing for SDG projects in developing nations. While donors constitute the primary source of catalytic funding that stimulates private investment، they have yet to prioritize and allocate resources towards mobilizing third-party private sector involvement to significantly narrow the SDG financing gap. This aspect is frequently highlighted in our research publications. The mobilization of private investment remains a peripheral concern for development organizations، with only a meager 2 to 3% of official development assistance being earmarked annually for private sector mobilization. Moreover، this issue lacks prominence among Multilateral Development Banks (MDBs) and Development Finance Institutions (DFIs)، with few of them having concrete mobilization targets and initiatives، barring entities like the Multilateral Investment Guarantee Agencies، which expressly focus on this aspect. It's crucial to bear in mind that without a mobilization strategy prioritizing and funding increased cross-border investment into developing countries، private capital will not flow to SDGs projects within these nations، given the sovereign risk ratings often falling beyond the criteria of many investors in the Global North.

The second challenge we've identified echoes a point previously discussed، focusing on

data and transparency. Concessional capital providers refrain from publicly disclosing financial terms or post-development outcomes، thereby constraining the evidence base for blended finance as a developmental tool. Conversely، private investors withhold financial performance data due to confidentiality concerns. Consequently، the dearth of publicly accessible information on blended finance transactions poses a significant barrier to its scalability and adoption. This lack of evidence regarding development impact and subsidies hampers the extent of concessional financing that donors، MDBs، and DFIs can provide، as they require such data to demonstrate the efficacy of utilizing official development assistance for blended finance. While each donor، MDB، or DFI collects this information confidentially، there exists no meaningful feedback loop among them. However، access to benchmarking information on the utilization of concessional financing by their counterparts would enable more efficient assessment of operations، ensuring that the private sector is not over-subsidized and that concessional resources are allocated appropriately.

The final challenge we've identified pertains to the lack of financial intermediation in the blended finance market. Essentially، this highlights an underdeveloped ecosystem for blended finance. There is a notable absence of financial intermediation، both within the blended finance market itself and in addressing the broader SDGs investment gap. On one hand، we observe donors and investors eager to channel significant capital towards SDG-aligned market opportunities. However، these projects are often small in scale، and there are few intermediaries equipped to efficiently channel these flows. Even when blended finance successfully aggregates pools of cross-border investment، there remains a scarcity of intermediaries capable of effectively directing these flows. We've witnessed limited replication and scaling of structured blended finance products، despite their initial success in attracting large institutional investors.

Convergence، as an organization، has long advocated for practitioners to prioritize proven approaches. This entails developing structures familiar to private sector investors، simplifying them for easy replication. Additionally، there's a call to prioritize collective investment vehicles such as funds، which offer scalability through aggregating smaller deals and are widely comprehended in the markets. Now، I'll briefly discuss some of the key recommendations put forth by Convergence to address the challenges we've identified، focusing on three of them.

Our first recommendation underscores the importance of donors instituting a strategy whereby a set amount of development funds is earmarked annually for blended finance transactions. It's imperative to prioritize private sector mobilization within this strategy and designate it as a key performance metric for recipients such as MDBs and DFIs. Secondly، all practitioners، with a special emphasis on donors، should prioritize transparency by publicly disclosing blended finance data at the transaction level. Lastly، practitioners should facilitate scalability by concentrating on proven and replicable blended structures. Additionally، they should finance standardized and simplified fund structures and explore the creation of aggregated vehicles، as previously mentioned.

Let's delve into some of the transactions within our database، which have been dedicated to SDG 11: Sustainable Cities. Within the Convergence Historical Deals Database، we've documented 119 transactions targeting SDG 11، amounting to a total deal volume of $31 billion. To reiterate، for a transaction to be included in our database، it must involve a private sector investor، focus on SDGs in developing countries، and incorporate some form of concessional or below-market element. Of these SDG 11 transactions، 31% have been structured as projects، with 45% exceeding $100 million in size.

One notable example is the Urban Resilience Fund (TURF)، launched in 2023 to aid large and emerging cities in Africa and parts of Europe in addressing urbanization challenges and fortifying their defenses against climate change. Collaborating with city authorities، the fund identifies challenges and devises infrastructure solutions. Its blended structure encompasses a first-loss equity tranche، funded by donors including the government of Luxembourg، to mitigate risks for senior shareholders. Additionally، the fund incorporates a technical assistance investment sleeve، the Catalytic Capital Fund (CCF)، aimed at supporting cities through capacity building and enhancing investment readiness.

Another example is the Dakar Bus Network Upgrade. The European Investment Bank (EIB) and a group of investors collaborated with Senegal، investing over €320،000،000 to modernize Dakar's public transport network. This initiative aims to assist Senegal in addressing environmental challenges by offering safe and affordable public transportation. The upgrade entails procuring 318 natural gas buses، constructing two bus depots، establishing 30km of roads for 14 priority routes، and implementing modern ticketing، network management، and control systems. Financially، €270،000،000 in loans were provided for this endeavor: €167،000،000 from the European Investment Bank، backed by the European Commission through the European Fund for Sustainable Development (EFSD) Plus with an additional €15 million، and €100 million from the French Development Agency (FDA). Furthermore، €53.5 million in grants were allocated to this project، including €20 million from the European Commission، €30 million from German KfW، and €3.5 million from the French Development Agency.

I encourage everyone to explore Convergence Blended Finance online. We offer a wealth of resources، reports، and publicly available case studies that delve deeper into the intricate structures of particularly innovative blended finance transactions in the market.

Dyfed Aubrey

Inter-Regional Advisor،
UN-Habitat & Co-director،
World Urban Pavilion

It would have been wonderful to attend، but my colleague Douglas Ragan is there، along with some of our partners' collaborators، including John Safrance.

While the Sustainable Development Goals are intended to be implemented locally، various challenges must be addressed to enable this. In numerous countries، local authorities face restrictions on obtaining financing. Sometimes، regulations hinder finance from reaching the local level due to concerns about adding to national credit risks. Additionally، there is often a lack of capacity at the local level to structure projects for financing. Even when projects are well-structured and financially viable، they may still struggle to secure funding. Furthermore، in line with the Addis Action Agenda، there has been significant emphasis on channeling private capital and other forms of funding into sustainable and local development.
However، it is crucial to take a step back and understand more comprehensively how cities are financed. City infrastructure and projects typically rely on various funding sources.

In our observations، aligned with the Addis Action Agenda، there has been significant attention on directing private capital and other forms of funding toward sustainable and local development. However، it's crucial to take a broader perspective and gain a deeper understanding of how cities are funded. City infrastructure and projects typically rely on various funding streams.

One such stream is national transfers، which often constitute the majority of local budgets. Additionally، cities can generate revenue locally through property taxation، business licensing، and other means. At times، cities may also access debt financing، equity financing، and blended financing mechanisms.

Recently، we had a meeting with a county governor situated on Lake Victoria. They have conceptualized a mixed-use development project incorporating affordable housing and commercially utilized public spaces. In theory، this project could attract private-sector financing، possibly through a blended approach. However، as she engages with the investment community، she encounters requests for a substantial amount of land as collateral. She faces the challenge of evaluating whether this proposition is advantageous or not.

Amidst the need to prioritize crucial issues such as food security، waste management، public transport، and the welfare of vulnerable populations، she finds herself lacking the bandwidth and expertise to assess the fairness of the offers on the table.

City leaders come from diverse backgrounds، often rising from grassroots levels، with limited urban planning or finance experience. Additionally، some city leaders، enticed by the prospect of external financing، may neglect efforts to enhance local revenue and public financial management. This neglect can potentially burden future local administrations with debt repayment issues.

Moreover، we've observed that only about 10% of prepared projects in the global South actually secure financing. This realization has prompted us to consider the necessity of developing an analytical framework. Such a framework would determine the most suitable approach and pathway to finance projects، considering the available sources and mechanisms of local finance، as well as the financial position of the city. We are now embarking on the journey of creating a Local Finance Framework to fulfill this need.

We understand that not every urban project yields a return on investment، despite its critical importance، and not every city is positioned for financing، even with bankable projects. Our proposed framework incorporates Project Revenue along one axis. At the highest end of the spectrum، there may be projects like local energy provision، which can generate revenue through user fees. Slightly lower on the scale، there could be initiatives like bus rapid transit systems، capable of attracting user fees but possibly requiring some subsidy. Moving further down، affordable housing projects may be situated، and towards the lower end، local road construction projects may not offer immediate returns on investment، although they could foster long-term local economic development.

On the other axis lies the creditworthiness of the city. This entails assessing the city's reliability as an investment partner. Factors such as land registration، the presence of a robust legal framework، and effective public financial management come into play here. When viewing these factors in a two-dimensional manner، it becomes apparent that a project generating significant revenue in a creditworthy city may attract private-public partnership (PPP) instruments. In the same city، affordable housing projects might utilize blended finance، while road construction projects could be financed through loans. Conversely، in cities with weaker creditworthiness، revenue-generating projects may necessitate blended finance solutions to mitigate investment risks. Projects with lower revenue potential may require grants.

Dyfed Aubrey

The essence of our proposal is the development of an analytical framework capable of swiftly determining the appropriate instrument or course of action for financing urban development, particularly in the global South. Such a tool could potentially incentivize cities to enhance their creditworthiness before seeking external investment.

As we develop this framework, UN-Habitat possesses technical and convening capabilities. However, we are eager to collaborate with companies, investors, and financiers to co-create this framework. We strongly believe that once established, this framework can be transformed into a digital tool for swiftly determining the optimal strategy for financing local SDG impact projects.

We envision that this tool will significantly reduce the wastage associated with projects developed for financing but failing to achieve financial closure. Moreover, it will prove invaluable for local authorities evaluating their capital investment priorities, guiding them on selecting the appropriate financing instrument for their plans and enhancing their investment readiness.

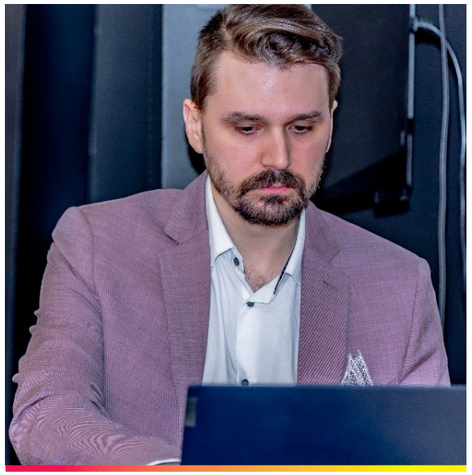
That concludes my presentation. If anyone is interested in participating in a peer review group or contributing to the development of this framework, we would be delighted to connect with you. The effectiveness of the framework hinges on broad buy-in from stakeholders across the finance industry, academia, and local government.
Thank you.

SDG Cities Initiative: A Global Perspective

The World Urban Pavilion: A Global Hub for Knowledge and Best Practices

Alex Venuto

Acting Deputy Director، World Urban Pavilion



We're currently at the World Urban Pavilion in Regent Park، powered by Daniels. This expansive space spans approximately 4000 acres. The purpose behind organizing this world summit is to foster connections between finance and sustainable urban development projects. Crucially، the pavilion serves as a global knowledge exchange hub for sustainable urbanization and best practices، a collaborative initiative between UN-Habitat، the Urban Economy Forum، the Canadian Mortgage Housing Corporation (CMHC)، and the Daniels Corporation. Our collaboration with UN-Habitat focuses on implementing SDG cities and understanding how to finance impactful global pilot projects.

By leveraging models such as the UMF and other discussed tools، we aim to involve financial institutions، private-sector developers، and innovative ideas in this endeavor. Our objective is to contribute to the sustainable development goals، serving as a global platform to inspire action، utilizing urban data، and prioritizing people-centric solutions.
The pavilion operates within three critical domains:
Knowledge: This entails comprehending city data، trends، challenges، and opportunities associated with sustainable urban development.

Connectivity: Here، we focus on linking previously disparate aspects within our cities for more impactful outcomes. For instance، we explore how Canada's national housing strategy can drive climate action or how public transportation can enhance public participation in city decision-making processes.
Innovation: We concentrate on gen
erating solutions and implementing global pilot projects that address urban challenges effectively. Throughout the day، we'll showcase tangible ideas that have already been implemented within cities، such as Noventa Energy's groundbreaking wastewater management system.

Before we go further، let's gain insight into how the Pavilion is equipped to fulfill its global role. Launched on April 21، 2022، the pavilion has made significant strides، evident from the positive impact showcased in our first impact report shared with Premier Douglas Ford. This year، our focus is on partnerships، collaborations، and exhibitions، aimed at enhancing the pavilion's capacity.

Our international board، comprising ministers، mayors، and private-sector leaders from various regions globally، extends our reach and amplifies the dissemination of innovative ideas. Additionally، the pavilion serves as a hub for implementing diverse programming، including the World Summit on SDG Cities and Urban Finance، while also accommodating partner initiatives focused on accessibility، quality of life، and exhibitions.

Additionally، through initiatives like the Virtual Pavilion، developed in collaboration with Harvard University، we aim to promote urban innovation and address challenges effectively. Furthermore، our efforts extend to positioning Toronto as a frontrunner city in sustainable development، with a focus on global pilots at the community level.

As we navigate these endeavors، technical expertise from our partners plays a crucial role. Finally، I'd like to highlight the 100+ Canada initiative، which identifies and assesses innovative urban approaches across the country. This initiative aims to scale and replicate successful urban innovations nationally and even globally. Examples include the Regent Park revitalization project led by Toronto Community Housing and Toronto's green development standards، which incentivize private-sector organizations to prioritize sustainable development.

In conclusion، the Pavilion stands as a testament of our commitment to collaboration and partnership، offering a platform for collective action and impact across the globe.

SDG Cities Initiative: A Global Perspective

Building Resilient Cities: The Toronto Experience

Fernando Carou

Manager, Renewable Energy & Net-zero Development, City of Toronto

Thank you for inviting us and providing us with the opportunity to discuss the City of Toronto. Joining me are David MacMillan from our Environment and Climate Division, where we oversee innovation and project programs, and Dennis Fotinos from Noventa Energy, our valued partner.

Our climate plan is geared towards achieving net-zero emissions by 2040, a mere 15 to 16 years from now. As is typical for most major urban centers, the bulk of emissions in Toronto stem from buildings, followed closely by transportation, with a smaller contribution from waste decomposition. It's no surprise that these two areas are the primary focus. The three critical steps in our transformation plan align with expectations. First, we're scrutinizing the carbon footprint of city operations to enhance accountability. Second, we're dedicated to expediting the phase-out of fossil fuels in both buildings and transportation, and third, we're establishing performance standards. You may be familiar with the Toronto Green Standard, which applies to new developments. However, we're taking inspiration from cities like New York City and Vancouver to set minimum carbon requirements for buildings, a move that will catalyze significant investment.

It would be contradictory for the city to propose ambitious plans without following through ourselves, wouldn't it? Therefore, our efforts must begin at home, setting an example for others to follow. For instance, the Toronto Transit Commission (TTC) boasts the largest fleet of electric vehicles and electric buses in North America, thanks in part to federal support. Additionally, our endeavors to decarbonize city facilities primarily revolve around innovative approaches such as harnessing solar energy. We'll delve further into our infrastructure initiatives momentarily. We're particularly emphasizing solar energy and storage, not only on rooftops but also exploring ground-mounted solar installations at facilities like our wastewater operations at the Toronto Zoo and incorporating battery storage technology as well.

One aspect worth highlighting, perhaps not widely known, is Toronto's innovative approach to leveraging its city assets. This encompasses both soft and hard assets. On the soft asset side, a notable example is the utilization of aerial photography and light detection and ranging (LiDAR) data to offer a free-of-charge mapping service accessible to all residents. This tool allows anyone in Toronto to input their address and receive a comprehensive business case within seconds, detailing the solar potential of their roof along with associated costs and payback periods. Currently, solar penetration within the community stands at a modest 1%, with approximately 3,000 rooftop solar PV systems installed on homes and smaller commercial properties. However, there's substantial room for growth, with the potential to increase penetration to 30% or even 40%.

One innovative strategy we're pursuing, starting with city buildings, involves integrating solar installations with roof replacements. Typically, residential roofs have a lifespan of around 15 years, resulting in approximately 7% of roofs in Toronto being replaced annually. By offering residents the option of combining a roof replacement with a solar installation, we aim to significantly boost adoption rates to 5%, 10%, 20%, or even 30% over the next decade. This approach capitalizes on the natural re-roofing cycle to accelerate the transition to solar energy across the city.

Another interesting aspect to consider is Toronto's renowned deep-water cooling system, which has been a hallmark of the city's infrastructure for the past 10, 15, or even 25 years. This is a testament to how the city has leveraged its resources to unlock value and innovation, particularly in the realm of drinking water management. Dennis Fotinos, a former leader at Enwave, can provide deeper insights into this system, which is currently undergoing expansion to meet the increasing demand for cooling services.

Building on the success of this approach in the drinking water sector, Toronto is now applying a similar strategy to wastewater management. Picture the city's trunk sewers as the backbone of this system—a network that can be tapped into for energy purposes. One groundbreaking initiative, spearheaded by Noventa Energy and Dennis Fotinos will elaborate further, involves harnessing the thermal energy from sewage to decarbonize a major hospital campus, effectively reducing fossil fuel usage by a staggering 90%. Just a few years ago, such an endeavor would have seemed unimaginable. This project underscores the importance of collaboration between local entities, with the hospital serving as a crucial partner in purchasing the energy generated, while the city facilitates its availability. Without further ado, I'll let Dennis Fotinos delve into the details of this groundbreaking endeavor. It's worth noting that this type of infrastructure is no small feat—it involves a 30-foot diameter, 165-foot deep wet well, interfacing with the city's major trunk sewers, which collectively serve over a million residents in Toronto and process millions of liters of wastewater per minute.

In essence, the city's ability to harness both

its tangible and intangible assets for climate action holds profound significance. Consider Toronto, but this applies to any urban center worldwide—cities serve as custodians of extensive infrastructure encompassing everything from roads and parks to buildings and utilities. By embracing this stewardship role, cities are uniquely positioned to drive climate action through the utilization of these assets.

Our approach in Toronto follows a dual strategy. Firstly, there's the pivotal step of initiating the first project, which often involves considerable effort. Take, for instance, the collaboration between the University Health Network and Noventa Energy to decarbonize wastewater—an undertaking that represents a significant milestone. Secondly, embarking on this journey is only the beginning. To truly maximize impact, scalability is imperative. This is where the concept of "one-to-many" comes into play. We're currently spearheading numerous projects, each with the potential to serve as a template for others to follow suit. From York University to Exhibition Place, there exists a wealth of opportunities to replicate and expand initiatives aimed at decarbonizing wastewater infrastructure.

Furthermore, from an investment perspective, Toronto has historically employed two deliberate models. Firstly, there are initiatives that the city can undertake directly, such as investing in buses and facilities. However, to magnify impact, the city focuses on fostering partnerships where it acts as the facilitator and host of projects, leaving the investment component to the private sector or government entities.

Expanding on this approach, Toronto is actively seeking to leverage various city assets, including:

- Installing publicly accessible EV charging stations at libraries and civic buildings.

- Providing electric outlets to eliminate the need for diesel generators at popular film locations, given Toronto's rising status as a prominent film destination.

- Mapping aquifers within the city to encourage investment in open-loop geothermal systems.

- Conducting tests, such as drilling a 2 km deep hole in Port Lands, to assess the economic viability of deep geothermal energy.

- Exploring opportunities to harness energy from the lake shore, particularly shallow lake energy, for various applications.

These examples illustrate the abundant investment opportunities available. To put it into perspective, we estimate a minimum of $145 billion in new capital will be required over the next 10 to 15 years solely for the transition process. This figure represents just a fraction of the trillions of dollars set to be attracted and invested in the city over the next decade and a half, with at least $145 billion earmarked for green initiatives.

Essentially, Toronto's approach involves implementing policies, taking tangible actions, and creating early demand for green services and products. Additionally, the city aims to incubate local companies to ensure a steady supply of goods and services, ultimately scaling these efforts significantly to make substantial reductions in carbon emissions.

David MacMaillan

Program Manager،
City of Toronto

I would like to touch on the importance of partnerships for climate action، a term that encompasses various collaborative efforts. Our partnerships span a range of methods، including financial contributions، but as a local government، we also play a vital role in enabling initiatives. As Fernando Carou highlighted، we lead by example، but the majority of our endeavors rely on partnerships to be successful.

Collaboration is crucial because approximately 95% of emissions are beyond the direct control of the City of Toronto. Therefore، achieving decarbonization necessitates collaboration with entities like GPUF or UEF. In terms of our approach، we prioritize the utilization of thermal energy to aid in decarbonization efforts by displacing natural gas in buildings، which represents our largest emission source. Notably، due to the lack of regulations governing technology mandates on private properties in this province، our approach reflects this constraint.

Once again، our collaboration with the private sector entails a three-pronged strategy. Firstly، we regulate within our jurisdiction، particularly concerning land ownership and development processes. Secondly، we lead by example، as demonstrated by Fernando Carou، and I'll delve further into this aspect، which includes forming partnerships. Lastly، we strive to engage the broader industry by fostering encouragement، incentives، and facilitation. Allow me to elaborate on each approach and provide some examples.

Regarding regulation، the city exercises significant control over land usage and development through its approval processes. This is particularly evident in new construction projects. You may be familiar with various green standards implemented in different regions. Alex Venuto highlighted the Toronto Green Standard as a noteworthy innovation.

Established over a decade ago، this standard is poised to guide us toward achieving nearly zero-emission buildings by 2028. Within less than five years، all new buildings in Toronto، based on the timing of their development applications، must be fully electrified، eliminating the use of natural gas for space or water heating. This requirement is firmly in place، and we remain committed to enforcing it while collaborating with industry stakeholders to ensure its feasibility.

Moving swiftly، I want to touch upon ongoing initiatives that are currently underway. We are in the process of establishing requirements for existing buildings، known as Emissions Performance Standards. While these standards are already implemented in several regions worldwide and in a few jurisdictions within Canada، we are now advancing toward mandating the decarbonization of existing buildings. Failure to meet specified carbon targets may result in penalties، although this is still a work in progress and extensive consultations are yet to take place. The objective here is to drive the adoption of specific technologies and solutions، as compliance with these standards will be necessary to obtain development permits or avoid significant charges for existing buildings. This regulatory approach plays a significant role in shaping the market and is a fundamental aspect of governmental action.

In addition to focusing on individual buildings، we also engage in large-scale planning endeavors where significant transformations are occurring. Fernando Carou mentioned the Port Lands، which represents a vast tract of land primarily owned by the City of Toronto. This post-industrial site is undergoing a transformation into a mixed-use neighborhood. I encourage you، if possible during your visit، to explore the Villiers Island site، where efforts are underway to fill a man-made river with water. This is a remarkable undertaking، and due to the city's ownership of the land، we have set ambitious targets for decarbonization in this area.

We are actively engaged in planning a district energy system in the Port Lands area. As Fernando Carou mentioned، we are conducting a deep geothermal test borehole. Incidentally، we are currently facing a shortfall of approximately $2 million in capital for this project. For interested investors present here، I would be delighted to discuss this further during lunch and provide more details on potential investment opportunities.

We also collaborate with the private sector on large-scale developments. Later، you will hear from the team at Northcrest who are spearheading the development of the Downsview Airport Lands. This site، no longer functioning as an airport، presents a significant opportunity for development. Northcrest has its own aspirations، and we aim to assist them in aligning their plans with our vision، particularly regarding the implementation of district energy and electricity infrastructure focused on long-term decarbonization goals. These partnerships involve close collaboration to ensure alignment with our broader objectives for these areas.

Additionally، we engage in direct partnerships. For instance، in the district energy sector، we have a partnership with a local company called Enwave. As Fernando Carou mentioned، Enwave is responsible for delivering the

thermal network on city-owned land. Situated at the heart of this site is our new civic center, and below grade, the energy center is located through a lease with the city. This energy center will provide low-carbon heating and cooling to all the affordable housing blocks surrounding the civic center, totaling approximately 3 million square feet, primarily consisting of affordable housing units. This partnership with a private sector entity exemplifies our commitment to decarbonization and is a clear demonstration of successful collaboration with the private sector. The project is currently in the construction phase, and progress has been promising thus far.

In terms of development projects where the city owns land and seeks to provide affordable housing, we implement specific requirements. Examples include initiatives such as mass timber pilots and the intensification of small-scale neighborhoods, known as the missing middle. The key objective is to collaborate with development partners to achieve these goals. Our approach involves taking the lead, facilitating the process, and eventually transferring responsibility to a partner who can execute the project cost-effectively. Given the critical importance of housing and the pressing need for affordable options, it's paramount that we closely collaborate with the industry to ensure successful outcomes.

Regarding wastewater initiatives mentioned by Fernando Carou, and which Dennis Fotinos will further elaborate on, we also strive to facilitate projects where the private sector may lack the resources or expertise. For instance, we proactively assess the city's wastewater resources, investing our own funds and efforts to identify opportunities for deployment by companies like Noventa Energy. Through our public website, individuals can access information on available heat resources, such as those found in the nearest manhole to their location. Initiatives like these significantly lower entry barriers and enhance accessibility to innovative solutions. We have similar initiatives in place for solar energy and are exploring opportunities in various other technological domains.

Then there are simpler measures like offering incentives to the private sector, as there's often a green premium associated with new developments. One example is encouraging the implementation of geothermal systems. By allowing additional units to be built in the freed-up space of mechanical penthouses, we achieve both more housing and a low-carbon building—a win-win scenario. This adjustment merely requires a tweak in our zoning bylaws to make it more financially feasible for private sector involvement, constituting a less formal yet effective partnership.

Lastly, I'd like to emphasize the emergence of intriguing business models in Toronto that present investment opportunities. You may come across concepts such as "energy as a service," where energy developers undertake large, capital-intensive projects. While these companies drive such initiatives, there's still a need for financial backing to move them forward. Furthermore, Ivan from Serotiny Group will elaborate on the notion of "design for manufacturing and assembly." This approach revolutionizes housing delivery by integrating design and construction processes, particularly for mass timber and low carbon/zero carbon buildings. These ventures represent the future of construction, but they require significant upfront support, presenting an enticing opportunity for investors to contribute to their success. Thank you for your attention.

Dennis Fotinos

CEO,
Noventa Energy

Before I begin, I would like to express my gratitude to the City of Toronto and individuals such as Fernando Carou, David McMillan, Lou Di Gironimo, and others who have championed renewable energy initiatives and supported ambitious endeavors. I've had the privilege of being involved in two such successful ventures.

The first venture was Enwave, which I co-founded in 1997 with the support of Omerse. With a $38 million capital infusion from Omerse and in-kind contributions from the city, we revitalized a struggling nonprofit district energy company known as the Toronto District Heating Corporation (TDHC). Through innovative strategies, we transformed TDHC, implemented projects like deep lake water cooling, and ultimately sold the business in 2013 to Brookfield for a substantial sum. The city wisely utilized its share of the proceeds to fund transit expansion.

In 2018, I felt the entrepreneurial drive once again and made the decision to depart from Enwave to establish Noventa Energy, focusing on renewable energy solutions centered around wastewater energy transfer. Approaching the City of Toronto Water Department, led by Lou Di Gironimo, I proposed the idea of utilizing wastewater as an energy source, building upon our successful collaboration with Enwave that utilized drinking water supply. Lou Di Gironimo embraced the concept, reminiscent of our partnership in 1997-1998, and provided unwavering support for our inaugural project. While wastewater energy projects had been implemented in Europe and elsewhere, none had achieved significant environmental impact on a large scale. Fortuitously, we forged a partnership with the University Health Network (UHN) to undertake the world's most extensive raw wastewater energy endeavor. Phase 1 of the project, set to generate 19 MW of thermal energy, is nearing completion, with Phase 2 slated to commence shortly. Phase 2, integrated into the new patient care tower, will contribute an additional 19 MW, bringing the total thermal energy output to 40 MW. This groundbreaking initiative solidifies our project as the largest raw wastewater energy venture globally, with Phase 1 expected to be operational by June 2024 and Phase 2 scheduled for operation in 2026.

It requires bold and visionary municipal leaders to drive such transformative initiatives forward, resisting the temptation to overcomplicate projects. The concept of deep lake water cooling had been under consideration long before my involvement, dating back to the 1980s when Omerse and the late Jack Leighton, along with other visionaries like Bob Camplin, explored the idea of sourcing water from Lake Ontario. Despite numerous rounds of redesigning and cost escalations, reaching as high as $600 million, we initiated the program in 2002 with the backing of Robert F. Kennedy Jr., during a period overshadowed by the Walkerton water scandal. Amidst the crisis of water contamination in Walkerton, Toronto decided to proceed with deep lake water cooling, a groundbreaking endeavor of unprecedented scale.

Similarly, in 2019-2020, the City of Toronto demonstrated its boldness once again with the launch of the UHN wastewater energy transfer project. Not only did the city permit access to its sewers, but it also granted access to one of the four interceptor sewers responsible for collecting wastewater from across the city and channeling it to Ashbridges Bay.

I want to emphasize the strong support and interest within our city to drive forward innovation. However, what we truly need is to find financiers who are willing to support these innovative endeavors here in Toronto. While there's no shortage of support for project finance, with many eager to finance ventures boasting a 12% or 15% Internal Rate of Return (IRR), there's a distinct lack of support for working capital. It seems that while everyone is enthusiastic about financing projects with promising returns, there's a reluctance to finance the essential working capital. This creates a challenge, as it assumes that these remarkable projects will somehow come to fruition without adequate financial backing for their day-to-day operations. Personally, I was fortunate enough to have accumulated sufficient resources during my tenure at Enwave to fund Noventa Energy. However, without the support of institutions like CIBC and the infrastructure bank, which stepped up to fund some of our exploratory third-party engineering design, we wouldn't have been able to kick-start initiatives like the geotechnical work at the Toronto Western Hospital.

I believe we have a wealth of people, talent, and interest right here in the city of Toronto, all poised and ready to contribute to the decarbonization of our building stock. However, we need the financial community to step up and not only support project finance but also provide funding for working capital. There are some exciting announcements on the horizon. We've recently expanded our operations to Scotland, where we've established a partnership with Scottish Water. Additionally, we have a couple of projects underway in the United States, and we'll soon be announcing nine more wastewater initiatives right here in the City of Toronto.

SDG Cities Initiative: A Global Perspective

Micro
Vision on Urban
Finance

Eduardo Moreno

Co-Director،
World Urban Pavilion

Extremely happy، and extremely honored to have today among us the most important people in this country and in many other countries. This is the case of Mr. Frank Stronach، who has a very astonishing career with multiple achievements and the most astonishing progresses that I have seen in my life.

Mr. Frank immigrated to Canada from Austria in 1954. And as he said himself، he was having a kind of suitcase but he was also having with him a dream of a different society، a different model، a different world، and a different way of doing things. Three years later، in 1957، he founded Magna International and that happened in the garage of a house، I would presume a friend's house، only three years later of coming with one suitcase to the country. And then he became in a few years، one of the most diversified automotive parts suppliers in the world with more than 170،000 employees in 34 countries. He was selling at a time over 40 billion Canadian Dollars.

Mr. Frank is currently the founder and chairman of a strongback international company that is enhancing societal values، and environmental considerations، trying to do micro-mobility transportation and organic agribusiness. Those are two of the fastest-growing economy trends globally. Mr. Frank is pushing all these global changes in the economy today. We are extremely proud، as you can see of having a person like him is not in the CV that was given to me because I need to say: I've not had the pleasure of introducing someone like him. He's not only a businessman. Mr. Frank introduced a different management philosophy of doing things that is called fair enterprise and this happened in 1971 with Magna، based on a business chapter of rights that predetermines the annual percentage of profits that is shared between employees، management، investors and society.

I would say، after I worked 25 years in the UN that your work was an anticipation to the fundamental idea of corporate and social responsibility management with the introduction of your Chart and we were following at that time this philosophy of work in which despite the fact of being one of the richest men in the world - the 31st in Canada - his most important idea was how to create a right that can become a corporate institution. Mr. Frank himself is a corporate constitution، a corporate institution person. He notes that when Magna employees participated in profit sharing، profit went up to 40% up only in the first year، 100% in the second year، and up to 200% in the third year.

So، the idea of not retaining gains only for the company، but establishing a chain of internal benefits is fundamental for the philosophy of work that we are doing. It's fundamental because it's teaching us that the real philosophy of things is to know when and how you can earn، and when and how you can compete، and when and how you can share and distribute. And this is، in my view، the way Mr. Frank is doing these things. He said and I quote: "Employees basically become our business partners. We give them a profit; a portion of this profit. These profits - in fact we gave them - are incentives. We gave the possibility to do better products or better price."

In addition to serving on corporate government university boards over the years، he was working in the Nasdaq stock exchange. And of course، this comes with success and he was the recipient of numerous honorary doctorates and awards، including his nomination in the Canadian business Hall of Fame، the Automobile Hall of Fame in the US، and a member of the Order of Canada. Mr. Frank is the author of The Magna Man published in 2012 which tells the life story of his career. Today، as a philanthropist، he has provided assistance to a wide range of charity and community organizations over many decades.
Sorry for being too long in this introduction، but considering the number of years and achievements of Mr. Frank، it is in reality just a second of his life. We are، Mr. Frank extremely proud of having you here in the World Urban Pavilion. Thank you.

Frank Stronach

Founder،
Magna International

I trust that some of my remarks will prove beneficial to you and align with your objectives. As someone who oversees the global landscape from an economic perspective، I firmly believe that all stakeholders، including politicians، businesses، and individuals، recognize the paramount importance of a functioning economy. Without a robust economy، essential needs such as food security and care for the most vulnerable members of society، including the elderly، sick، and disabled، cannot be adequately addressed.

Regrettably، there is often insufficient discussion regarding the vital role of the economy. It is propelled by three key forces: entrepreneurs، diligent workers، and investors. My message is unequivocal: each of these stakeholders deserves a share in the resulting profits. Without the dedication of employees، profitability would be unattainable. However، it is disheartening to observe the prevailing disparities in wealth distribution، particularly evident in countries like the United States، where a mere 2% of the population possesses half of the total wealth، leaving the remaining 98% to contend for the remaining half. Such an imbalance is unsustainable، as the laws of nature inherently dictate the need for equilibrium. Achieving balance is essential not only in the natural world but also in our societies and lives.

I've reflected extensively on many aspects of life. I've been fortunate to possess a sharp mind and good health، yet I've always acknowledged the importance of having the right circumstances in place for success. My journey began in a humble setting – a garage. Starting as the sole employee، I arrived in Toronto without knowing anyone. However، after a few years، I managed to save $5،000. With this، I rented a garage and began hustling، offering my problem-solving skills to nearby factories. I had a simple proposition: if I couldn't solve their problems within a month، they wouldn't owe me anything. Slowly but steadily، I began to make connections. Within a year، I had met around ten people; after two years، that number doubled to twenty.

Life is an ongoing evolutionary process. When we reflect on history، we see the progression from cavemen to hunters، kings to servants، and bosses to disgruntled employees. This dynamic presents a significant challenge. If employers become disgruntled، they risk losing their workforce. My success story is unique. Few individuals have started from such humble beginnings – a garage – and built a company that spans 34 countries، with 180،000 employees and over 430 factories. As I transitioned from being a hunter to overseeing operations with about 20 employees، I encountered a significant juncture. One of my foremen approached me، expressing a desire to venture into his own business. Acknowledging his ambition، I pondered the implications of his potential departure. It dawned on me that his leaving would pose challenges to our growth trajectory، a scenario I found concerning. Moreover، I realized that should he depart، the workload would fall entirely on my shoulders، a prospect I found unappealing. Additionally، the prospect of hiring a replacement foreman who might not meet expectations was daunting. Contemplating these factors، I devised an alternative strategy. I suggested to him the idea of jointly establishing a new factory، with him owning one-third and myself the remaining two-thirds. We agreed to split the profits accordingly، reinvesting some and withdrawing some. His response was one of disbelief and gratitude. Together، we formalized the arrangement legally، granting him ownership of the factory. He embraced the opportunity with enthusiasm، working tirelessly to ensure its success. This approach proved successful، and I replicated it with another foreman and another foreman، ، gradually expanding our operations and accumulating resources.
After a period of reflection، I recognized the immense potential of a market worth millions in our industry. It dawned on me that I needed to create a system that not only benefited me but also empowered my employees. Drawing inspiration from this I formulated a corporate constitution، with the primary focus being on profit distribution. One key principle was allocating 10% of profits to employees beyond their wages. Upon implementing this constitution، our profits surged remarkably. In the first year alone، profits increased by 40%، followed by 100% in the second year، and an astounding 200% in the third year. This initiative ignited a surge of energy within the company، demonstrating the transformative power of employee participation in profit-sharing schemes.

In regard to societal challenges، I recall the words of the esteemed statesman، Winston Churchill، who commented on the inefficiencies of politics and advocated for a chamber of citizens to counterbalance politicians. Drawing inspiration from this، I devised a system independent of politics. I firmly believe that progress is hindered when we resort to blaming political entities for societal issues.
There are seven basic principles that countries should adhere to. The first principle involves the elimination of national debt within a reasonable timeframe، perhaps over the course of 20 years.

The second principle is the proliferation of bureaucracy، which poses a significant

obstacle to progress. As exemplified in my own experiences, bureaucratic red tape hampers innovation and economic development. I firmly believe that in a civilized society, every individual should have the opportunity to secure employment without undue bureaucratic hindrance. Therefore, I propose a systematic reduction of bureaucracy by 50% over a span of five years. This reduction can be achieved through a phased approach that prioritizes efficiency without resorting to mass layoffs. It's important to note that the burden of bureaucracy is not solely the fault of bureaucrats but is symptomatic of systemic issues. Therefore, our approach should be guided by a sense of fairness and pragmatism. A comparative analysis reveals that Canada harbors a disproportionately high number of bureaucrats compared to other developed nations. For example, Canada had 100 bureaucrats per thousand people. The United States had 70 bureaucrats per thousand people, and Japan had 40 bureaucrats for 1000 people. I think for society to function, there has to be a relationship with how many bureaucrats balance the population.

The third principle pertains to our tax system, which has grown excessively complex over time, with thousands of convoluted paragraphs. During my tenure at Magna, I had a team of lawyers and financial experts dedicated to navigating this intricate system. When considering business transactions, we would first consult the lawyers to ascertain legality, followed by the financial experts to assess tax implications. Often, we encountered gray areas that required further consultation with specialists. The complexity of the tax system arises from its catering to special interest groups, a phenomenon that needs addressing. Historically, society has been governed by the golden rule: those with the most wealth wield the most power. This paradigm persists today, albeit in different forms. The challenge lies in breaking free from this cycle of domination, not through violent revolution, but through a revolution of the mind—a shift in perspective. Therefore, the proposed solution is to simplify the tax system, making it clear-cut and devoid of loopholes or special interest concessions. This approach aims to promote fairness and transparency, aligning with the broader goal of fostering a more equitable society.

The fourth principle, arguably the most crucial, pertains to the classification of businesses based on their size. Small businesses, defined as those with fewer than 300 employees, would operate under the principles of free enterprise without constraints. They would have the liberty to implement profit-sharing schemes and other initiatives as they see fit. However, they would be required to adhere to two fundamental rules: workplace safety regulations and environmental protection measures to prevent the dumping of harmful chemicals. By granting small businesses this level of autonomy, we effectively remove the bureaucratic chains that hinder their growth and innovation. Small businesses have historically served as the backbone of any nation's economy, and ensuring their success is paramount for the overall prosperity of the country. When small businesses thrive, the entire nation benefits, as they contribute to a level playing field where competition is fair and opportunities abound. Therefore, this principle advocates for the establishment of a framework that fosters a climate of unrestricted free enterprise for small businesses.

The fifth principle advocates for a transition for companies as they grow beyond the threshold of 300 employees. According to this principle, once a company surpasses this employee count, it would be mandated by law to allocate a portion of its profits to its employees, ranging from 10% to 20%.

The sixth principle suggests implementing changes in the educational system, particularly in high schools. Instead of following the traditional path until grade 12, students should start exploring trades from grade 10 onwards. This initiative benefits both students and society. It broadens students' horizons and knowledge, which is advantageous for their personal growth. Additionally, it addresses a societal need by emphasizing the importance of practical skills in an economy that has shifted towards a heavy reliance on regulations and a financial economy rather than on the production of tangible goods. Therefore, while students can still pursue higher education after being exposed to trades, it is essential to incorporate vocational training into their educational journey to prepare them for a variety of career paths.

The seventh principle emphasizes the importance of ensuring that no Canadian child goes to school hungry. This entails providing breakfast and lunch for every student, with the additional stipulation that the food served must be organic as mandated by law. This principle extends beyond Canadian children and applies to all children worldwide, advocating for a fundamental aspect of civilization where no child should experience hunger while at school.

But what's truly fascinating about this journey is that, due to my significant success, there has been a demand for my insights. I've lectured extensively, from Harvard University to various locations across the United States, Canada, and Europe. However, in recent years, I've pondered a fundamental question: What should be the core purpose of a university? Essentially, universities boast esteemed faculties in medicine, technology, and numerous other fields. Yet, the crux of the matter lies in defining what a university should strive to impart to young minds: how to foster a more civilized society. This, I believe, is paramount. We must consider the structures necessary to guide us toward an ideal society. I hope my thoughts have provoked your mind. Should you have any questions, I'm happy to answer them. Ultimately, fostering economic cooperation among individuals can pave the way to eradicating poverty, which serves as the root cause of many societal issues such as crime and hatred. By eliminating poverty, we can work towards improving the world. Thank you.

Urban Finance Solution for Sustainable Cities

Localizing the SDGs: A Collective Responsibility

Jennifer Hutcheon

Vice-President,
Vancity Community
Investment Bank

Hi, my name is Jennifer Hutcheon and I'm the Vice-President at Vancity Community Investment Bank (VCIB). It is a pleasure to be here with you today.

We know that Canada's major cities are facing an affordability crisis. And it starts with the availability of affordable homes and rental units. Widespread gentrification, evictions, and a rampant cycle of rent increases has left many people feeling anxious about the future of their neighborhoods. It's extremely difficult to build new affordable housing with today's high cost of construction and the interest rate environment that we're in. But it's also a challenge that we see in preventing existing affordable units from being lost. We see private developers who can swiftly react to opportunities in the real estate market. But by comparison, land trusts and nonprofits struggle in terms of having to secure government funding, raise money from investors, and put all their pieces together before they're able to make an offer on a property. And that's one of the major barriers identified for affordable housing providers - competing with private developers - to try to obtain key properties in a competitive real estate market.

At VCIB, we have a strong track record of supporting affordable and community-led housing projects from land trust to cooperatives and nonprofit community housing providers. Our aim is not only to increase the housing supply but also to preserve the affordable units that we have. One example of this is our partnership with the Parkdale Neighborhood Land Trust (PNLT), Ontario's first-ever community land trust. Land trusts are still small-scale in Canada but are a tried and tested model in other jurisdictions such as the U.S and Germany. Here in Toronto, PNLT was created to preserve land for affordable housing as well as affordable working spaces. VCIB worked with PNLT in 2019-2021 to finance two building purchases in the west end of Toronto, in the Parkdale community, which preserved 51 affordable homes. Later on, a partnership between VCIB and CMHC helped the Land Trust acquire another 153 units across 81 different Toronto properties. And just this past fall, VCIB replicated the success of this original partnership by working with the Ottawa Community Land Trust to finance the purchase of their first building, preserving affordability in a six-unit rental property in Ottawa.

The same vision is guiding our partnerships with co-ops and community housing providers. Specifically, there are many Canadian housing providers that are set up as co-ops from the 1970s through to the 1990s. Now, these housing providers are finding their original operating agreements are coming to an end with their financing options being quite limited. VCIB is working with these co-ops to help them refinance their mortgages in a way that really helps them stay affordable and ensure long-term sustainability. Phoenix Housing Co-operative Inc. is one example of a co-op we've worked with recently to refinance their mortgage. They have 59 three-bedroom townhouse units in London, Ontario which they' are now able to continue providing as affordable and safe family-oriented housing. And because we're an impact-driven lender, we're very familiar with the granting process and the nonprofit and affordable housing landscape.

These types of deals can be a lot of work for a lender and we don't see every lender in that space. And it's often because nonprofits and co-ops need smaller more individualized attention and the loan sizes tend to be smaller but they need to work with a financing institution that is willing to put in the extra effort to make that happen. VCIB does that. We are willing to work directly with government funders and the housing providers to get to the solution needed. And because of this willingness, we're able to make multi-way partnerships come together to assist housing providers preserve existing units as part of the affordable housing stock while contributing to new units as well.

One of the properties in Toronto we recently collaborated with is St. Jude Community Homes. They discovered their building was in jeopardy when the landlord decided to sell. However, with support from the City of Toronto and the partnership formed with VCIB, St. Jude managed to acquire ownership of their building in the autumn of 2023. This action safeguarded 20 units of affordable housing for individuals in Toronto coping with mental illness.

By securing these urban spaces and shielding them from market forces, land trust co-ops and community housing providers are the ones contributing the most to longer-term affordable housing. We have also partnered with innovative climate-focused projects, such as Noventa Energy, where thermal energy is extracted from underground sewers. This project has the capacity to produce 1.8 billion kilowatt-hours of low-carbon energy, fulfilling approximately 90% of the hospital's heating and cooling needs. This achievement is truly remarkable and highlights the significant impact of such initiatives. As such, public-private partnerships like theis hold significant promise for municipal utilities and public institutions to diminish their emissions, minimize energy wastage, and cut costs.

Another climate-focused project is our partnership with Seven Generation Capital, also known as 7Gen. About a year and a half ago, we financed a project with 7Gen to help electrify last-mile delivery. Something we know that all of our cities need and our financing and our support for their new out-of-the-box business model is helping 7Gen and their commercial clients decarbonize their delivery fleets. We are also active in other partnerships that support clean energy and much-needed alternative energy solutions. There is great opportunity for financial institutions, such as VCIB and others, to support these types of alternative clean energy and distributed energy resources within urban settings.

Another example comes from Vancity Group Company which is our Credit Union Vancity. It pertains to the climate crisis, which we recognize impacts each of us. However, its effects are disproportionately felt by certain groups. In 2021, the province of British Columbia went through an unprecedented heat wave. More than 600 lives were lost directly from heat impacts. Socially isolated and economically marginalized seniors and people living with disabilities were particularly vulnerable during this extreme heat event. The reason was simply because the affordable housing stock where many vulnerable people live was not climate ready. Without sufficient insulation, ventilation, and cooling, many apartments became intolerably hot with residents having nowhere else to go. As a result, Vancity Credit Union launched the nonprofit housing retrofit program in 2022. This program provides $5 million in grants to help nonprofit housing providers and housing co-ops in BC tackle deep energy retrofits. The program has funded nine housing organizations to date with another ten set to launch their projects in early 2024. An example is Vancouver's Aboriginal Housing Management Association which has benefitted from funding and in-kind support through this initiative. This assistance has enabled them to carry out energy retrofits for 432 households with another 191 underway. Another recipient of the grant, the China Creek Housing Co-op, is striving to make all their units net-zero, enhancing resilience to extreme heat and making their accommodations more affordable and comfortable for the 35 households they serve. By enhancing their climate resilience, housing providers can ensure their occupants are comfortable and safe in their homes. Financial institutions can play a significant role by investing in line with their climate commitments.

VCIB stands out among federally regulated Canadian financial institutions due to its triple bottom-line approach, prioritizing the positive impact on both people and the planet. The examples I've highlighted today demonstrate how this approach can be effectively implemented in practice. We are always open to exploring new and innovative financing partnerships in Canada. The models showcased here are replicable, and with financial institutions and local changemakers collaborating and being patient, meaningful change can truly happen.

The SDGs present an ambitious vision for a sustainable world that prioritizes people and their needs. VCIB and the Vancity Group, along with everyone here, are inspired by this vision. Making this vision a reality requires systemic change, and this change begins at the local level, one project at a time.

The opportunities for all of us to affect change are right in front of us. We need to identify them and we need to facilitate the right partnerships. VCIB is at the table. We can all contribute to solutions and together we can make great achievements. Thank you.

Jeff Ranson

Director,
Responsible Development,
Northcrest

For those unfamiliar with Northcrest Visitors, we are a real estate development company. Our current project involves the Downsview Airport Lands situated in the northern part of Toronto. While I will talk about the intricacies of city building shortly, my primary focus today is discussing the financial implications of how you do city building and some of the challenges experienced. But first I will talk about the project in more detail.

The Downsview Airport Lands was a former airplane manufacturing site previously utilized by Canadian companies like de Havilland and, more recently, Bombardier. Many are familiar with Bombardier Global Manufacturing Company, which has relocated to a new facility at Pearson Airport in Toronto. The blue-marked lands were acquired by our parent company, the Public Service Pension (PSP) fund, which manages funds for the federal government. This area spans 370 acres and includes manufacturing hangars, administrative offices, and a sizable runway. The red-marked lands are being jointly developed within the block and are owned by the Canada Lands Corporation (CLC), a Crown corporation tasked with redeveloping surplus federal government lands. Additionally, CLC owns the greenlands, including Downsview Park, one of Toronto's largest urban parks, which has recently been completed.

The 500-acre site is strategically adjacent to three TTC subway stations, providing seamless connectivity to downtown Toronto, Vaughan, and beyond. Moreover, the green line running through the middle represents a railway corridor on our regional rail network, further enhancing our accessibility. Geographically, we find ourselves at the heart of the Greater Toronto Area, which is experiencing rapid growth, welcoming approximately 100,000 new residents annually. Additionally, our location is just one block north of the 401 corridor, a vital highway linking Montreal in the east to Detroit in the west, known as the busiest highway in North America. In fact, the stretch of highway adjacent to our property is the busiest section of this thoroughfare. With such regional connectivity, this project aims to accommodate over 80,000 residents and create 40,000 job opportunities in the future. Currently, we're embarking on a 30-year development journey that kicks off this spring 2024 when Bombardier formally vacates the premises. The overarching vision entails transforming the employment lands into a sustainable urban landscape, with the focal point being the Hangar district located to the south. Here, we envision repurposing the existing manufacturing structures to accommodate a blend of mixed-use communities, urban green spaces, commercial hubs, offices, and retail establishments—a holistic community concept grounded in principles of urban sustainability. Our initial focus lies on the Hangar district, spanning approximately 4 million sq ft. We're set to commence planning and designing this district within the current year, with the goal of welcoming residents by 2029 or 2030. Notably, this district's blueprint involves repurposing around a million sq ft of existing structures to house offices, residential units, and institutional facilities.

We aim to capture the essence depicted in the renderings and articulate a vision for these spaces, primarily comprised of 1950s and 60s industrial buildings. Our goal is to transform their character, positioning them as the heart of the community within a distinctive and unique section of the city—a place that currently remains largely unexplored by many. Central to our approach is the innovative concepts in urban design, where we integrate the urban landscape with nature in functional and meaningful ways. Nature becomes more than just a backdrop; it becomes an active participant in delivering essential infrastructure services, promoting health and wellness, and enhancing the aesthetic appeal of the surroundings. We prioritize urbanism that revolves around people, reshaping the fabric of the community within this classic 1950s North American suburb. This entails a shift in cultural norms, redefining how people move and live, and moving away from the conventional status quo. Implementing such changes is not easy, and we draw inspiration and insights from urban development worldwide, seeking to create environments that foster vibrant human-scale density.

The cornerstone of our portfolio, which I oversee, is aimed at shaping our vision for responsible development. As a developer entrusted with the task of transforming 370 acres, we inherit a rich tapestry of heritage, encompassing both the tangible industrial legacy of the site and the profound ecological heritage spanning thousands of years, marked by the presence of First Nations communities. This endeavor unfolds amidst Canada's ongoing journey of reconciliation, presenting us with a significant responsibility, but also a unique opportunity to chart a new course and deliver an innovative outcome.

As a private sector entity, we are driven by various factors. Naturally, our aspirations as developers and our desire to uphold ethical standards move us forward. However, external dynamics, such as evolving regulations and industry norms, as well as the expectations of our stakeholders, including commercial and residential tenants, exert considerable

influence. Additionally, we must navigate community engagement and negotiate the complex landscape of urban development in a city like Toronto. In Canada, property ownership does not equate to absolute autonomy; rather, it requires a collaborative approach wherein the community's interests are integral to the decision-making process. As such, fostering a participatory development model is imperative to ensure that our initiatives align with the aspirations of the broader community.
We are aware of the profound shifts occurring in global systems, such as climate change and the affordability crisis, which are fundamentally reshaping the market landscape. As developers, it is imperative that we remain responsive and proactive in addressing these challenges.
While the concept of Environment, Social, and Governance (ESG) is widely recognized, our vision for responsible development extends beyond this framework, particularly within the context of urban environments. Cities represent intricate systems, characterized by multifaceted interactions across social, economic, and environmental dimensions. In light of this complexity, we have developed our approach into five key pillars that captures our aspirations for the Downsview development project:

1. Climate Excellence: We prioritize climate resilience and sustainability in all aspects of our development efforts.

2. City Nature Integration: We seek to seamlessly integrate nature into the urban fabric, leveraging its inherent qualities to enhance environmental performance and aesthetic appeal.

3. Sustainable Urban Mobility: We aim to optimize mobility patterns, considering land use planning and accessibility to promote sustainable modes of transportation.

4 Inclusive Prosperity: We believe in the principle of inclusive development to ensure the benefits of Downsview's growth extend to communities and thereby foster shared prosperity.

5. Quality of Place: We are committed to creating vibrant and livable spaces. By prioritizing the quality of the built environment, we aim to cultivate a sense of belonging and well-being among residents and visitors alike.

These pillars serve as guiding principles to realize a vision of responsible and transformative urban development.

Essentially, this involves reimagining the abundance of resources at our disposal. To begin with, let's consider some fundamental aspects. Our historical manufacturing and innovation heritage, coupled with the available space, presents numerous opportunities. We're actively exploring avenues to infuse forward-looking economic activities into these areas, thereby fostering community growth. This could entail advanced manufacturing for construction, modular construction techniques, cutting-edge material science, and the integration of components for the ongoing transportation revolution focused on vehicle electrification and healthcare services. With diverse processes set to take shape within these spaces, we're also grappling with material considerations. For instance, the sizeable two-kilometer concrete runway poses a challenge in terms of material utilization.

Our focus is on transforming these raw materials into valuable resources that drive the development's progress and sustainability. We recognize the abundance of resources at our disposal. I'll begin by discussing some simpler aspects. We are examining various ways to integrate innovative, forward-looking economic activities into our available spaces, leveraging our manufacturing and innovation legacy. This includes advanced manufacturing for construction, modular construction, new material science, and assembling components for the evolving transportation industrial revolution focused on vehicle electrification and health services. These processes will be incorporated into our spaces, addressing materiality challenges such as those presented by the expansive concrete runway depicted in the aerial shot. We must determine how to effectively utilize raw materials and convert them into productive resources for our new developments.

Additionally, when considering community-scale development, we can approach everything from a systemic perspective. This involves thinking about decarbonization in a comprehensive way. While Canada excels in certain aspects of decarbonization, such as building energy efficiency and operational emissions, we must also address embodied carbon, which encompasses not only building construction but also infrastructure and transportation emissions. This requires effective land use planning. We must consider emissions related to natural ecosystems and approach these challenges holistically, recognizing both the opportunity and challenges they present. As part of our project, we are implementing significant strategies to address these challenges.

Our approach to stormwater management centers on blue-green infrastructure, utilizing landscape features, parks, as well as green architectural elements like roofs and walls. This not only enhances our stormwater capacity but also considers future climate conditions, particularly the increasing heat and rainfall in our region. By prioritizing climate resilience, we're implementing efficient natural systems that also elevate the quality and aesthetic appeal of our community. This initiative embodies the concept of a sponge city, setting a groundbreaking precedent for Toronto's stormwater systems.

Another critical focus for us is enhancing efficiency, particularly in land use planning. We understand that a significant hurdle in achieving sustainable development in North America is the undervaluation of space. Often, we allocate more space than necessary, resulting in bloated infrastructure and unnecessary expenses. Our research demonstrates the advantages of reducing road surface area by 35%, which leads to decreased paving and maintenance costs. This adjustment enables the addition of 5% more housing units to the market without requiring height increases, achieved by expanding blocks to utilize available space. Additionally, it allows for the incorporation of 10% more green space throughout the community, benefiting both financially and aesthetically. These straightforward yet effective strategies not only save money but also enrich the overall community experience. Therefore, it is crucial that we carefully consider and implement such measures to advance our sustainable development objectives.

So, within our comprehensive framework plan for active mobility, we're prioritizing the reconnection of this urban area to the broader city grid, which has long been fragmented. Our approach extends beyond just reestablishing roads; it's about integrating people with high-quality transit options, prioritizing pedestrians, embracing various forms of active and micro-mobility, and facilitating the transition to electric transportation.

Thermal energy management is another significant part of our strategy, considering it's the largest source of greenhouse gas emissions in the building sector. Recognizing this, we're committed to eliminating new fossil fuel connections on our site and exploring alternative technologies for all new developments. Our focus lies in reimagining our thermal energy systems, which currently rely heavily on natural gas baseload. This involves exploring geothermal systems and district energy networks to reduce our carbon footprint and promote sustainability.

Regarding our operational procedures, under business as usual (BAU), the carbon footprint associated with this development is substantial. Addressing this carbon footprint is paramount in our journey towards achieving zero carbon emissions. Our analysis indicates that addressing carbon emissions during the construction phase can be financially effective. Utilizing the Toronto Green Standards Tier 3 as our baseline, which includes all-electric buildings and an ambitious embodied carbon target of 250 kg/meter per square, we've identified significant challenges. The chart illustrates the breakdown of emissions, with the solid green column representing embodied carbon emissions and the lower emissions representing operational carbon. Despite the challenges, we have found that we can significantly reduce emissions at an approximately 15% construction cost premium. Achieving zero carbon within the market is attainable, and when considering the total cost, it essentially pays for itself. However, a significant hurdle lies in reconciling utility bill payments. While most of the cost savings are passed through to various entities, this assumes a built-to-rent model. In scenarios where there are diverse tenures and structures, such as units being sold, retained for rental, or allocated for commercial or vulnerable housing, the opportunities to recoup costs may not always align. As such, we must explore alternative approaches to overcome these challenges. We've identified five primary financial barriers to city building that must be addressed, particularly from the perspective of a private developer.

The first barrier pertains to infrastructure carrying costs. While opportunities for efficiency in infrastructure, such as district energy systems, are substantial, the challenge arises when considering the upfront construction and the subsequent 20-30 years of maintenance. Particularly in a high-interest rate environment with reduced price depreciation compared to previous years, innovative financing solutions are crucial to support this infrastructure. When we consider the breadth of infrastructure required, including roads, sewers, electrical systems, thermal networks, and data infrastructure for smart buildings and wireless technologies, the burden on even well-funded, patient funds is considerable until substantial sales per site are achieved.

The second challenge relates to the green premium mentioned earlier, representing an average upfront cost increase of 15%. While this investment eventually pays off, there's a need to create avenues for market flexibility in terms of buying, selling, and renting to recover these green premiums. It's not always feasible to recoup these costs at the point of sale. This issue is particularly pronounced in markets like the condominium sector, where developers, such as Daniels in this neighborhood, face complexities. In markets where units are primarily sold to investors who subsequently rent them out, the disconnect between who benefits from energy savings and who bears the initial costs is evident. Therefore, exploring innovative financing mechanisms, such as local improvement charges linked to property and repaid through property taxes over 30 years, offers flexibility in recouping upfront investments regardless of eventual ownership structures. These mechanisms play a vital role in addressing this challenge.

The third barrier is financial scale, especially in the context of building cities of this magnitude, particularly when dealing with large-scale investors like patient funds, known for their long-term investment approach. While these investors prefer sizable projects with assured returns over time, their capital may not align with every aspect of creating a dynamic and inclusive community. Therefore, it's essential to complement this patient capital with funding sources focused on driving innovation and embracing new technologies, where there's a higher tolerance for risk in pursuit of potentially greater returns. While patient capital excels in this higher return sphere, it's less inclined to evaluate numerous smaller ventures. For genuine economic participation, attention must be given to financing options tailored for small businesses and micro-enterprises. Therefore, a layered approach to financing is necessary, ranging from large-scale capital for major projects to easily accessible and flexible funding tools to foster innovation and entrepreneurship for cultivating a dynamic and self-sustaining community.

The fourth aspect I'd like to address is the concept of "growth pays for growth," which is particularly emphasized in Toronto. While there's room for debate on whether this approach is ideal, as a developer, I must acknowledge the significant rise in development charges and carrying costs due to prolonged approvals and permitting processes market have gone up about 900% in the last decade or so, to the point where your typical one-bedroom condominium is carrying nearly $100,000 in fees and taxes in its base cost which is part of construction. Regardless of one's stance on this matter, the fundamental question remains: How do we collect these funds to finance infrastructure and services upfront, adhering to the growth pays for growth model? This model only functions effectively if future developments generate enough wealth to sustain the infrastructure and investments made. It's imperative to recognize that cities require ongoing maintenance; they are not one-time projects. This issue becomes pronounced when developments fail to generate sufficient taxable property value to cover the infrastructure costs they're obligated to shoulder. In such cases, the burden falls on future property buyers, leaving the city grappling with an infrastructure deficit. This pattern is observable across North America. Therefore, it's crucial to scrutinize development approvals to ensure that the

projected value generated aligns with the infrastructure demands imposed.

The fifth barrier is tax productivity, where property value is taxed in Canada, but this doesn't always align well with the cost of providing services. Consequently, there are few financial incentives to develop properties more efficiently and sustainably. For instance, one can observe a stark contrast between a million-dollar condominium situated on a one-acre shared site with 300 other units and a $1 million house with only 40 feet of frontage elsewhere in Toronto. Despite the significant difference in public burden between these properties, they are subject to the same tax rate. Therefore, until there's a reallocation of development charges and property taxes based on the actual cost of providing services and the public burden associated with supporting these properties, the right financial incentives for desired development won't be established.

Finally, it's essential to align the scale and appropriate financing or fiscal policies with their impact. By addressing these issues, we can achieve more effective outcomes aligned with our goals. Thank you.

Ivan Vasyliv

Chief Design Officer،
Serotiny Group

I am Ivan from Serotiny Group. Our mission involves expediting the uptake of sustainable and cost-effective construction practices. One approach we employ is to streamline the highly fragmented development process، characterized by numerous isolated decisions. As depicted in this image، over time، we've observed inefficiencies in these processes. Moreover، they often fail to acknowledge the substantial investment potential inherent in real estate، which stands as one of the most significant avenues for investment، growth، and urban impact.

Before going into our discussion، it's crucial to acknowledge the prevailing cognitive dissonance surrounding these issues. While there's widespread acknowledgment of modular construction as a pathway to sustainable urban development، this awareness often fails to translate into practical implementation. Consequently، stigmas persist، and many projects encounter setbacks or outright failure.

There exists a notable disparity between the perceived opportunities by developers and those recognized by urban designers. Traditional construction processes often reveal the financial unviability of many projects، leading to their abandonment. One of the primary challenges stems from misconceptions about modular construction and its potential. Today، I will aim to shed light on our perspective of modular construction، revealing how it aligns with the overarching goal of fostering sustainable urban growth and development.

One of the primary challenges we've identified lies in the evaluation of these projects. There seems to be a misperception of risk associated with sustainable development، stemming partly from its novelty and partly from its off-site fabrication nature. Unlike traditional construction، where on-site assets can be securitized، off-site fabrication lacks this tangible asset، complicating financing alignment and hindering widespread adoption of sustainable practices.

In traditional projects، budget and schedule adherence are persistent issues، despite claims to the contrary. The fragmented nature of the process often leads to extensive rework and ultimately، a product that deviates from the initial vision. This fragmentation is inherent in the industry's project-based approach، which involves assembling teams، creating concepts، and building projects، only to dismantle everything once completed and start anew with each subsequent project. This approach results in unnecessary redundancies، both in terms of human resources and costs، as highlighted by Jeff Ranson's observations regarding bloat in the system. Our aim is to challenge this inefficiency by treating development as a product، starting with a systematic approach to streamline processes and reduce bloat across the board.

Serotiny Group is proud to be a licensed partner of CREE Buildings، an Austrian prefabricated construction solution. This innovative system، known for its hybrid timber technology، has been successfully implemented worldwide. In adapting it to Canadian regulations and specifications، we ensure its compatibility with our codes and energy standards. What sets this system apart is its hybrid nature، combining elements of concrete، blue lands، and wood columns. This hybrid composition allows for simplified manufacturing processes، making it feasible for small-scale production in decentralized facilities across Canada. Unlike traditional construction methods that rely on large factories taking years to set up، our system enables immediate deployment across North America. Another notable advantage is the seamless integration of envelope and panels، providing unobstructed، column-free interiors. As the building progresses، it becomes fully enclosed، facilitating prompt interior fit-out. Furthermore، our efficient approach significantly reduces labor requirements، with sites typically operated by just five or six individuals over a span of weeks، not months. This accelerated construction timeline was exemplified in the completion of the building showcased in the earlier time-lapse footage، finished within approximately eight weeks from start to finish.

Furthermore، it's worth noting that unlike products like Cross-Laminated Timber (CLT)، which are custom-manufactured، our system relies on commoditized components. This means that these panels and products can be standardized and readily available، reducing supply chain risks. For instance، our pilot project in Toronto، notably 1925 Victoria Park، is currently undergoing approvals and is slated to commence later this year. Through collaboration with David MacMillan and others، we've not only achieved exceptional sustainability standards in the city but have also recently been honored with the Wholesome Award for our innovative approach to sustainable construction in North America. We're incredibly excited about this recognition، but more importantly، we want to emphasize that our project showcases a new paradigm in urban construction، offering a transformative approach for cities across North America.

Aligning investment with the values of designers، users، and developers is key to achieving the city's goals while creating an

investable product. Rather than retrofitting a construction system into a project, our approach at Serotiny Group entails building an entire process around the construction system itself. This involves creating a range of products, panels, and building typologies and designing accordingly. By incorporating manufacturing, design, and financing expertise early in the process, we avoid costly revisions later on. This approach significantly reduces rework and waste in construction, resulting in project timelines that are approximately 50% faster. Additionally, by eliminating the need for extensive rework, projects can be executed more efficiently and with lower risk. Serotiny Group manages all aspects of the project, from design and procurement to manufacturing and assembly, ensuring that the benefits of prefabrication are maximized and costs remain competitive with traditional construction methods. Through the development of standardized products and typologies, we can scale our approach across multiple development sites, accessing economies of scale typically reserved for larger projects. Furthermore, we address the challenge of an inconsistent supply chain in modular construction by upskilling local manufacturers and wood processors, enabling them to produce the system rapidly and efficiently. This decentralized manufacturing approach allows for the swift production of panels, ensuring the scalability and sustainability of our projects.

Typically, in construction projects, you often find yourself in a situation where you have to revisit certain aspects either a few months or a year into the project. By adopting a model that eliminates the need for revisiting, we are establishing a development pathway that instills confidence from the outset. There are several evident advantages to this approach for all stakeholders involved, particularly developers and investors. One major benefit is the enhanced certainty in costing early on in the process. Since our costing is trade-based and tied to prefabricated components, the contingency is relatively low, providing a precise understanding of production timelines and capital distribution throughout the development. Moreover, our system meets key sustainability criteria, qualifying it for major funding programs and local incentives such as Development Charge Rebate. This allows us to incorporate additional benefits from programs like MLI Select into our proposals. For investors, the reduced project timeline is advantageous, resulting in less exposure to market fluctuations and higher Return on Investment (ROI). Additionally, our approach significantly reduces operational costs for property owners and developers. For instance, operational costs for projects like 1925 Victoria Park are halved compared to traditional construction projects, leading to higher Net Operating Income (NOI) and increased mortgage loan opportunities. Furthermore, with the removal of the Harmonized Sales Tax (HST) on rental development, there is a compelling case for investing in sustainable and affordable housing for long-term benefits.

There's an intriguing dynamic unfolding in our industry where we have a proven product that meets the requirements of the city, lenders, and SDG funds. However, there's a significant disparity in how these projects are assessed, primarily due to the prevailing model of costing based on cost per square foot. This metric serves as a common denominator for comparing different projects, teams, and products in both traditional construction and our approach. The challenge lies in the fact that many benefits of modular and sustainable construction extend beyond the construction phase. For instance, the expedited construction timeline translates to savings on financing and interest costs, as well as reduced general conditions expenses such as site manpower, equipment, and heating. Additionally, lower operating expenses contribute to improved securitized ratios, enabling us to secure larger mortgages with less equity investment from owners. This shift in dynamics underscores the significant advantage of sustainable affordable buildings, particularly in accessing high-ratio mortgages based on their low operational costs. Moreover, incentives provided by organizations like CMHC and the city, such as development charge discounts, further incentivize the construction of sustainable buildings. Another overlooked aspect is the potential for cost reduction in soft expenses across multiple projects by reusing designs, processes, and teams, which is often disregarded in project-based evaluations. Recognizing and incorporating these overlooked benefits into our analysis can lead to more informed decision-making and greater efficiency in project execution.

Lastly, one of the most exciting aspects of our approach is its scalability, a feature lacking in traditional construction methods, which are labor-intensive and see increased complexity and costs with larger projects. Conversely, with our modular system, scalability works inversely: as projects increase in scale, efficiency in design and manufacturing processes improves, and costs are spread more evenly over time. When we contemplate bridging the gap of three and a half million housing units, it's not about constructing one or two projects but about establishing a process capable of delivering dozens or hundreds of buildings annually, a feat currently unattainable with the current allocation of resources in the city. Despite boasting one of the highest numbers of cranes in North America, we're still falling short of our housing targets, indicating a need for better resource allocation and productivity optimization. The root of this disparity lies in the failure to address the "why" at the beginning of projects. While questions about who, how, and what are commonly asked, understanding the underlying reasons behind design choices and objectives often gets overlooked. To bridge this gap, we've initiated workshops spanning six to eight weeks, delving into all aspects of modular and sustainable construction and tailored to individual project needs. As exemplified by a pro bono workshop conducted with the City of Toronto and Le Centre francophone du Grand, we demonstrate that sustainable housing can be achieved swiftly and efficiently. In just six weeks, we delivered a comprehensive development report covering zoning requirements, panel specifications, assembly strategies, and more, ensuring qualification for government funding programs. By realigning everyone's values from the outset and considering all elements of the design process, viable, affordable, investment-worthy, and sustainable products can be created expeditiously. This underscores the notion that sustainable buildings can indeed be investment products, not just limited to government or financial institutions. Our ultimate aim is to empower developers, mid-market developers, and nonprofits to produce investable sustainable buildings, thus driving widespread adoption without the need for mandates or coercion. To achieve this, we

must shift towards a system-wide approach, scaling portfolios of projects and unifying specifications across multiple sites to capitalize on economies of scale and streamline design, coordination, and soft costs. By standardizing and spreading out these costs, we can deliver buildings faster, cheaper, and with consistent sustainability standards, ensuring a more equitable and sustainable future for all.

Furthermore, it circles back to the importance of financial products because none of this is truly scalable without supportive financial mechanisms. While CMHC and certain private lenders offer programs for such projects, the current administration of these programs tends to hinder the entire process. Often, administrators who are not directly involved in managing or validating the requirements of these programs, such as MLA Select's benchmarks for affordability, sustainability, and energy efficiency, end up diluting the initial high-performance vision of projects. We advocate for financial plans based on these programs to be administered by groups like ours or similar entities, as we are best positioned to uphold and execute the original vision. By shifting the frame of reference from individual projects to product development, we can combine multiple developments into a unified process. Leveraging similar designs and configurations, we can utilize centralized management of logistics and components while delivering customized products across the city, thereby capitalizing on the benefits of both centralized and decentralized systems.

Our vision extends to the multisite assembly approach, exemplified by our project at 20 Lower Spadina, where decentralized manufacturing sites in close proximity to the city enable just-in-time delivery, minimizing on-site disruption. By grouping sites together and unlocking previously unviable development opportunities, we can expedite the construction process and transform irregular sites into viable ones. As showcased by our pilot project at 1925 Victoria Park, buildings can be erected within weeks, minimizing disruption to residents and avoiding prolonged road closures. This vision extends beyond Toronto to envision sustainable cities where informed decision-making and proactive planning unlock opportunities for scalable and affordable development across multiple sites. It's through collaboration and a shift in mindset from individual projects to collective benefits that we can truly push the boundaries of sustainable and affordable development at scale. Thank you.

Danial Hadizadeh

Danial Hadizadeh

As the CEO of Mitrex, we've been focused on the development of what we term "energy-generating materials." These materials, ranging from everyday substances like cement, glass, to aluminum, are imbued with a functional twist—they not only serve their traditional purposes but also generate energy. Our overarching vision is to expedite the adoption of these innovative building materials and redefine the role of buildings in our lives. Rather than mere shelters or aesthetic structures, these buildings become active contributors to our energy ecosystem, producing power for our cities. Having successfully harnessed this energy potential, our next milestone is to optimize costs to a manageable scale per watt. Once achieved, our buildings will effectively function as power plants, tapping into solar energy wherever sunlight reaches, converting photons into usable energy.

Initially, we targeted the most accessible opportunities, but our ambitions and roadmap extend far beyond that initial scope. Our objective is nothing short of transforming every construction material into a form of energy storage or generation. This journey commenced in 2015 with our dedicated research and development efforts on various materials. At the time, we pondered how we could engineer aluminum and glass to produce electricity through photovoltaics. Our aspirations were set against a backdrop where sustainability wasn't as prevalent a topic in industry discussions and global discourse. Moreover, with the onset of Donald Trump's presidency in the US, we anticipated challenges in securing funding for such groundbreaking projects. Nevertheless, undeterred by the obstacles, we rose to the occasion, recognizing scalability as a pivotal factor. Although the technology for developing these products existed, achieving cost efficiency and seamlessly integrating them into construction materials necessitated scalability.

Just a short distance away in Toronto, Canada, Mitrex has established the world's largest integrated photovoltaic manufacturing facility. With a capacity to produce approximately 25,000 square feet per day of these energy-generating materials, this plant serves as Mitrex's prototype facility, demonstrating our scalability and viability in the construction industries of North America and the Middle East, where opportunities abound for the deployment of Building Integrated Photovoltaics (BIPV).

So, what exactly do we manufacture? Our current product line includes sustainable building materials and building envelopes designed to be integrated beneath the facade. These products essentially shape the exteriors of our buildings, whether in the form of facades, building envelopes, or entire wall assemblies. They are seamlessly integrated into the glazing or directly installed onto the facade itself. We deliberately focus on vertical facade areas rather than roofs, strategically utilizing the larger surface area of facades for energy generation, unlike standard solar panels typically installed on roofs. Our products comprise multiple layers and laminations, housing solar cells within them. While the visuals may simplify the structure, in reality, a substructure supports these panels, capable of spanning distances of up to 20 or 30 feet. These materials boast high versatility in size, with no restrictions on color or shading, thanks to our innovative coating technology.

Driving construction forward requires aligning cost, architecture, and the owner's needs, which we all recognize as crucial. This necessitates effective communication and understanding among all stakeholders, even when they speak different professional languages—a fundamental principle guiding our product design. When conceptualizing our products and designing the factory, we prioritized factors such as cost-effectiveness, speedy delivery, and the elimination of limitations in sizes or colors. Taking this comprehensive approach is essential, rather than solely focusing on creating small-scale models often depicted in online images.

In 2015, we posed a critical question to ourselves: "Why isn't all our glass solar-powered? Why don't we see hundreds of buildings in Toronto with this capability?" The answer lies in making it a reality.

To materialize this vision, Mitrex offers a diverse range of capabilities, as evidenced by our successful projects in industrial buildings and high-rises. Notably, we've contributed to the construction of North America's tallest energy-generating building. One of our groundbreaking innovations is the energy-generating brick wall, providing cost-effective solutions comparable to traditional paneling. Additionally, we take pride in supplying several hospitals in western Canada and the U.S. with our sustainable products.

When considering energy-generating materials and Building Integrated Photovoltaics (BIPV), it's essential to not only focus on their technical capabilities but also on their seamless integration into construction processes. Merely producing electricity isn't sufficient; we must ensure that architects, developers, and General Contractors & Builders are comfortable incorporating these materials into their projects. To address this challenge, we've developed and standardized

integration systems known as the 'installation system.'

Our installation systems include a range of options such as the typical rainscreen system and our UL-rated wall assembly, which offers 2-hour fire resistance. Additionally, we've developed a system comparable to precast, aiming to replace this carbon-intensive material with a more sustainable alternative. We are proud to announce that within the next two years, at least 22 towers in the Greater Toronto Area (GTA) will be constructed using our materials, replacing precast elements. This underscores our commitment to providing innovative solutions for sustainable construction. Furthermore, we've introduced new capabilities such as building facade integration, railing applications, and glass integration for electricity production. These advancements are already being implemented in projects like the retrofit of Saint Mary's University building and new construction projects. Our glass integration technology is slated for deployment in Toronto by 2027 and 2028, with plans for expansion into the Middle East and the US.

Central to our service is our role as consultants at the project's outset. We ensure that architects, developers, and owners receive comprehensive information about the true cost of our products. This includes not only the initial cost but also the expenses related to permits, connections, and other fees. By providing transparent information about the projected energy generation or offset, we empower our clients to make informed decisions about integrating our products into their buildings and projects.

Broadening our vision beyond manufacturing was a pivotal step in our journey. While we may shift towards a more streamlined manufacturing approach in the coming decade, our immediate focus remains on educating and supporting the market. This is imperative given the groundbreaking nature of our product, which has understandably sparked hesitation among many consultants and industry professionals. Therefore, it's crucial for us to address every question and thoroughly test the material within the financial constraints of potential adopters. By doing so, we aim to build confidence in our innovative material and facilitate its widespread adoption in the construction industry.

An example comes from Saint Mary's University in Halifax, where an Eastern Canadian retrofit project unfolded. Facing a need for electricity, university staff initially contemplated establishing a solar farm off-site. Seeking alternative perspectives, they turned to us. After assessing their options, three paths emerged: rooftop solar panel installation, solar farm creation, or integrating our energy-generating material into the building retrofit. The collaboration with the University, EllisDon as the developer/builder, and DSRA architects proved highly fruitful, with all parties deeply invested in the project's success. This partnership marked one of our earliest engagements involving all three stakeholders, setting the stage for numerous university projects ahead. Initially, the idea of installing conventional solar panels on the roof was explored. However, this approach incurred additional roof-related costs and necessitated separate investments in solar panels. The concept of establishing a solar farm on land faced challenges due to space constraints and panel spacing requirements, challenges that are mitigated when integrating panels into building materials.

Ultimately, the chosen approach was to incorporate our energy-generating material into the building's retrofit. This decision was guided by the goal of maximizing energy efficiency. Not only did this method save on overall construction expenses, but it also offered a more seamless solution compared to building a separate solar farm and retrofitting walls with standard panels. Covering approximately 8000 square feet, the project boasted a straightforward integration process. The installation, including silicon cells in the windows, was executed without requiring our direct involvement, underscoring the simplicity of the process. Utilizing a typical rainscreen system with 4 inches of insulation, the system enhanced the building's energy efficiency and overall performance.

Throughout the engineering and design stages, we prioritized ease of installation, ensuring that our system could be installed with basic guidelines by installers worldwide. This project effectively showcases two pivotal materials in our innovation. Its purpose is to demonstrate that our technology is not just conceptual; it's tangible and actively being implemented. Unlike some high-cost materials, this project is budget-friendly. While we engage in projects of varying budget scales, this particular endeavor serves as a practical demonstration of our capabilities and our commitment to integrating our technology into numerous buildings in the future.

In this demonstration, we spotlight our rainscreen system, providing architects with the vital information they seek. A common challenge, particularly among companies in Silicon Valley, San Francisco, and Europe, is the gap between material development and practical implementation. This disconnect often arises between material production, design, research, and real-world application. Without a clear roadmap for implementation or opportunities for testing, many innovative materials remain confined to university libraries or labs, lacking real-world scalability. Hence, we prioritize offering technical insights into architecture, accompanied by actual project visuals. Additionally, our products boast a lightweight design, making them ideal for retrofit applications. Their manageable weight facilitates easy application over existing layers in rental buildings and retrofit projects, eliminating the need for infrastructure removal. Our commitment to sustainability extends to retrofitting existing buildings, which offers a significant impact, considering their embodied carbon is already offset. While sustainability

is also imperative for new constructions، retrofitting existing buildings takes precedence in our approach. The rising number of retrofit projects in North America is instrumental in reshaping the perspectives of developers and owners toward sustainability.

Concerning the integration of our technology into windows، our process involves supplying the glass to the window company responsible for integration and wiring connection.

The selection of colors is a critical aspect of our projects. Architects collaborate with us to choose patterns for cladding materials and wall panels، which can significantly impact the energy output of each panel. As architects experiment with colors and shapes، the output of each panel can range from nearly 300 to 350 watts per panel. These selections are meticulously outlined in our final submissions to clients، showcasing the desired lines، grading، and windows with voltage or semi-opaque areas.

As evident، every day the sun shines، buildings equipped with Mitrex technology offset carbon emissions equivalent to that of multiple houses' electricity consumption. Over the decades ahead، these buildings will continue to generate energy، a feat not commonly associated with traditional materials like aluminum. This is a truly unique aspect of our technology.

In one of our projects، we've implemented a groundbreaking feature: a wall that directly charges electric cars without relying on batteries or the grid. Residents can conveniently plug their LED car ports into the wall، and the cars are charged directly by sunlight hitting the wall. This innovative functionality demonstrates the potential of building materials like ours to power various functions within buildings. While our current products، including these walls and windows، represent straightforward applications، we're actively developing a diverse range of projects and products. These forthcoming solutions will not only enhance existing applications but also replace conventional materials like concrete and wood، thereby broadening the horizons of sustainable construction.

Our chart outlines the value proposition of our projects، delineating the benefits and incentives for architects، general contractors، and building owners. It serves as a valuable tool for both internal discussions and external presentations، highlighting the advantages our building materials offer to architects keen on designing sustainable buildings.

Moreover، we have secured patents for the world's first non-combustible photovoltaic material، a groundbreaking achievement that ensures its safe utilization in buildings worldwide، irrespective of height or location. This innovation has proven especially advantageous for projects globally، where traditional solar solutions failed to meet stringent fire safety standards. Our certifications in fire safety have enabled us to supply materials for such projects، addressing a critical aspect often overlooked by other companies. This underscores the importance of our focus and the potential limitations of competitors' products over the past two decades.

At Mitrex، we envision a future where cities are transformed into showcases of sustainable architecture. In this future، every building، from iconic structures like the upcoming stadium in New York featuring our materials، to residential and office buildings، will be equipped with solar systems. It's a vision where every surface touched by the sun becomes an opportunity to harness its energy، creating a world where solar power is indispensable.

Investment Opportunities in Sustainable Urban Development

Andrew Martschenko

Principal، Parataxis Design and Development &
President Parity Fund for Sustainable Development

My name is Andrew Martschenko، principal of Parataxis. We do urban design and development. And what I'm going to be presenting quickly. So، if you look at the UN-Habitat، New Urban Agendas that they have، there are a lot of points، but if you focus on the one that deals with neighborhoods and communities، I am part of a group called the Congress for the New Urbanism (CNU). And، if you look at the goals of both organizations، they align very closely، and you can literally say we dedicate ourselves to reclaiming our homes، blocks، streets، parks، neighborhoods، districts، towns، cities، regions، and environments.

And so، in a nutshell، the whole point is to design towns and villages، basically settlements in such a way that we're providing an incredible range of urban spaces for people to use and meet each other. And then create engaging safe streets where those themselves become public spaces that connect those public spaces and so in that way، you're basically creating the armature on which neighborhoods and community grow، and so that's the focus. So، there's a short run of the traditional neighborhood development، and slowly، as we go through، you'll see more and more examples.

But، there's another presentation on all the sustainable aspects. So، I'm going to use this example a little bit more thoroughly than the rest. It's Harbour Village at the Narrows، which is just north of Toronto by an hour and a half and it's a project that was initially done as a subdivision for 576 units and I've redesigned it to be this، which is 1678 homes. But it's done as a village، and so the whole idea here is to look at figures of this village from a financial standpoint. They're great from a standpoint of what it gives back to the town، and what it gives residents. But this is the key where if you look at this:

It is on the water، but the value is not being drawn on this project from it simply being on the water. In other words، it's not a thin little ribbon of development right on the water whether it be 500 or 5000ft deep، the value would be roughly the same. It's an idea of being able to draw the water back and then create a whole series of public spaces around there، and that's the value. And once you create those spaces، then you can start talking about density because if you have density and nowhere for people to go، it's a failed project because people are tripping over themselves. They can stay in their unit because it's too small and go stir crazy like we found out through COVID-19. But once you go outside، you should be able to not go to the same place over and over and over again، no matter how beautiful it is. You have to have a range and so this project was all about creating that range، and it started away. So، the range of spaces takes precedence from all over the world. As to the typology in other words، how is the scale of place، and how this scale performs the space، but the architecture and the material is taken locally. So، it's of place and then back further، where all of a sudden، it's not as active، and it's toned down. If you start analyzing it، the buildings are pretty simple، and pretty straightforward، with noble materials، and noble proportions. But it's a space that it creates that character where somebody here feels comfortable throwing a frisbee at the dog or the friend، as opposed to the hectic and very active other centers.

Once you have the team that does this، so I'm going to keep coming back to investors because you've probably seen a lot of beautiful pictures but how is this? If we're trying to convince investors to put money in، how is this different? So، the approach we took is we've approached a smaller group of investors that aren't necessarily developers or real estate funders. Because what we found is the guys that have been doing this for a long time. They're machines and if you try to change even one little aspect of that machine، and finally they turn away. And so، we have a whole group of investors that have put anywhere from 140،000 to 700،000 into the project، which has allowed us to take a piece of land and do the current market study on it، which is looking for a latent market، as opposed to just looking at what else everybody else is doing، and then redesigning it، and reengineering it during a performa. And now we have something to sell because we know what we have، how much we can sell for، and have political support all the way through. And that's done.

So، the confidence of investors isn't in one developer being، is in our funding group. Who can then say I was in Puerto Rico last year، and I want to either do white tiles and clay walls! We have a team that knows what they're doing in this. Have done multiple projects، and that's where the confidence lies. Alliances Mike Holmes (principal of the Holmes Group) was a kind of barrel-chesting his way through walls that weren't built properly، but they also wanted to be - as I say here - the good house compute seal of approval of all things sustainable. And they've done developments there and we started working with them، they were going to now take this project and broaden our reach by doing to all shows on the birth and construction of a village. And this is you'll see at 09:00 tomorrow morning، that's Doug Farr، so won't dwell on it but he is the guy who literally wrote the book and then another one on sustainable urban design. So، we're working with him to create a smaller carbon footprint as we can. So again، this will be there. But if you look at what is to an investor، they're looking for us to decrease risk in everywhere you can. And so، here are a whole bunch of lists where in the permitting and looking at what our competition is: getting municipal support، making sure that that team is competent، and how we're structuring our funding. Everybody's out there giving us money، but if that money is making it either AI - that can't sleep or putting the project in danger

if there's - something that is out of my control, in this situation then I'd rather go for equity, and make a little bit less, but then the project goes through.

Differentiation; So, it's really easy to look down the street, and figure out that if you provide 16 more sqft of marble, for you are a better project. And we say, look! we've got all the kitchens, all the appliances, and everything else, but we're also selling neighborhood and community. And that is rare at any project we do; we usually completely differentiate ourselves from our competition and do not weigh alone it.

And sustainability again in a whole presentation: but the idea of imagine in a sustainable way, means if you're designing a whole development, and you're designing the buildings by type, not by use. So, in the last presentation of Danial Hadizadeh (CEO, Mitrex), it was talked about how retooling and rebuilding a building rather than demolishing it. And about the amount of its energy - even if the building is super-efficient - you still use the energy or dump the energy of the last building. So here, if the buildings can be as they were historically multipurpose, it could be a storefront that changes into an office, that changes into residents, and then kidneys back into a storefront. If you can design that way, the key is then those buildings that characterize and form the spaces - spaces that we're creating - stay. Despite the use changing, those spaces stay valid.

So, here's the master plan of what I just showed you. It's showing the Harbour Village. There's a bit kind of an island with a hotel where all the cars are parked underneath. So, truly the core is walkable. And if you notice that every linear foot of waterfront is public - as opposed to privatizing it - which is a complete flip of what they had before, where only the 4800ft of waterfront was available and that was all privatized. But if you move that a little bit to the side and look across the street. We're now tying that up and doing an agricultural neighborhood. So, the idea there is to imagine if you were to say - although look that's too dense for me -but you know in this area, there is an incredible agricultural culture, and so to be able to capitalize on that. And somebody could live there and work there or live there, then open their window and saying I love living on a farm, then work either at home, or in Aurelia, or you walk over for five minutes specifically, because you're in a dense urban setting. So, those two benefits each other, on the one hand who are providing food security to the whole project. And, also with that, you can start doing the co-generation using farm waste. More than it we're digging down an extra 2ft in the harbor, and laying pipe as a heat sink for heat exchange.

So, this is something that I came up with and have now made into a presentation. So, when you look at a TND, through the performance that is here, we own money, and usually, that ends there in our case but we're also making it one of the nicest places on earth to live. It's providing the municipality not just an economic bump, but also in the cultural, recreational, and social benefits that the whole area gets. Alike to working with Doug Farr, but also on how you orientate your houses from a site plan on to architecture, and keeping a smaller footprint as possible. And lastly, by using renewable energy, and by providing it, people who live here have the core area, have retail in the bottom office and the top second floor, then residential on top. So, we're truly providing fewer car trips. And lastly, from a standpoint of - like I said - reusing the buildings. It becomes self-sufficient, not everybody has to drive for every single thing that they need.

So, this is a thing that I was saying: I came up on the fly, imagine a father saying to his son or daughter: Do you see the beautiful land down there, to the left of the river surrounded by trees, blades, and the specific nature. Well! we're going to buy it, bulldoze it all down flat, and then build hundreds of soul-sucking characteristics boxes there and give it all a nice name! We'll make lots of money. You should be proud. I know I am. Have you ever seen or heard that discussion? So, for me the thing that I presented to a few investors a while back, and their point was: that gives you and your family pride in what you're investing, and that's pretty rare because a lot of the guys look - I know a couple of builders and you're there often enough - then their kids don't talk about how dad made his money because they're embarrassed about how monotonous, characterless and all the things that are stereotypical developers. So, this is different that matters for investors.

The second project I just came back from here, is in the state. If you look right down the middle, there's a road that separates it, and that's a huge causeway that goes across a place called Albumaro Sandy which is in the state, the outer banks. This is the body of water that comes back. So, it's a three-and-a-half-mile bridge. On the left side, you have 1100 units which are already urban residential. On the right side, it's 500 units that's mixed in with farmlands that are also farmlands to the north and east of here. And so that's all the statistics, again separate presentations. But the key is the entitlements that were done, and this was designed 20 years ago. The entitlements that arrived here, allow you to have a unique relationship to the water. So those spaces I was talking about and how they're characterized is something that - through Parataxis' project - actually was rejected by the EPA, but the municipality of the county and the state went to the federal government and said, you got to let this go ahead.

This is going to revive the whole area and the project needed to be started in partnership with a fellow who could just write checks. So, there's a story where they sent a bill. We need 250,000, and they were given a check for two and a half million. It was just back is a billionaire writing check. We couldn't do it that way and when they sold it, they couldn't find someone to just simply replace it. So again, what we've done here is what I told: we got a lot of smaller investors, redid the market plan, redid the design, and reengineered it to take out a lot of assumptions that were.

Then again, looking at the statistics, incredible statistics for a development project, and this is what makes it unique. This is the value in that project where you'll never be able to live it. Now, this is far enough inland, so our tides sometimes go 6 inches. But, if there's a strong wind, water levels can come up 3ft, but the majority of our land is 12ft above. Good news and bad news; this land with 12ft above water will never get flooded that means we need to dig down 12ft just to get to water level and then we're digging down another 8ft. So, over a 41-acre harbor, you have 1.1 million cubic yards of dirt that you have to do something with. So, this again is unique. This has never been opposed at this scale where there are 143 homes where we're allowed to put the boats right underneath. And again, the plan we now have revised deals with all the things that either because of the market study, or the economy's changed, or the kind of clay that we found out that we can do anything. And tightening down on what we're providing in phase 1, all these are reasons for the changes that we've made and redesigned.

So, in a nutshell, we're now at a point where we have the new performance and have large funding partners who want to come in, large infrastructure partners who want to come in to develop it. And that's a detail now of the harbor where we've made it much tighter, brought the

harbor around. So, there's shelter, and really made a special place that you just don't get which is car-free. In other words, a place that you just really want to go to and that's very important. In the days of old, you were able to say: hey! we're going to do the community center. In a further phase, are we going to do that really special place in a further phase. But today's consumers are saying no! no! no! We may not last till the second phase or third phase. We want to know that this is all being done in phase one. So, for this, very carefully from the market study, we've got seven different housing types that are being tried in those waterfront units. We have a trial of four of them going in.

So, every single the advantage to this type of development is because that: if you did a subdivision, the banks need to know that you're 85% resold. And the reason for that is when you get to 85% normally - in a standard, conventional subdivision -sales plateau out. And that's why you hear 15, 20 years ago, a developer was giving away. Instead of it, Fiero car is in the driveway, just you'd buy their house. And now you hear? hey! giving away appliances or something and if that's what makes you decide to live in a community. Good for you, but for me there's a little bit more advantage of that is once you build that there, there is and people come to visit you. They're not going to look at any other development, you've just raised the bar because you're providing way more than simply a place to be in your house to house you. You're providing a home, you're providing a neighborhood, and you're providing community. You don't need to presell. So, you do a very tight phase where you're building - not on one side of the street and back into another house - but you're building on both sides of the street. So, when you buy a house there, when you look out, you're not looking at a construction site and you build one or two or three of those key public spaces that starts eating and we're normally in a subdivision; sales take off and then plateau off. Through this type of project, usually keeps going up and up, and if the economy changes, investors or builders can now change their lot types. And that's a key thing that you're keeping is flexibility that helps investors are not worried about they not being able to carry through the project.

And lastly, this is one of the projects in the pipeline I worked on this six years ago. And what happened is if you look at, kind of at the bottom, just to the right on the screen, there's a large park in Savannah, Georgia. If you go towards the top, you'll see little green spaces and that's what Savannah is known for a whole series of squares that have little kind of local roads around them. And then one away, there's a larger fast-speed road. And because of that, there's been a huge public outcry with anything of a larger scale. So, a hotel, and a convention center comes in and in fact, what the town decided to do is they built the arena and destroyed one of those squares. And now they're taking that arena down and building a new arena. So, that's one where to put it.

Secondly, if you look at it, this is a canal. If you take a look at this, that's that canal, this whole area over here floods repeatedly. So, imagine my delight when I went down there and I was doing already two communities, with harbors and canals. And it city says the Savannah Canal and Arena district. In this context, we have to move our arena, and we have to build a canal. So, I'm spending tens of millions on digging canals and the city has to do it. That's fantastic. So, I very excitedly went to the presentation to find out that they were doing the most underutilized project by doing a canal as one project, and because there's lots of land and it's not affecting the city fabric, they're putting the arena there. And then they're talking to a family. So, that family can simply get parking right next to the arena. Hora! That's the extent of their foresight and so imagine if you can talk to them and convince them to change arena's logo and have it with the canals; leading through and basins.

What you have here, is an ownership map where you have the arena which the city is going to build, right next to you, it has own city property, and then we talk to this family and the city owns that. Those two properties are right beside the arena. So, the idea there was, how do you work with them to work their land? So, I sat there, and it was an engineer who was heading up the project, and I asked him a simple question. I said: so, you're telling the canal. Do you need that for flow or capacity? And he said: oh! no, it's for capacity. There's no problem dividing that 100-foot canal. Now, if you think about Venice or Amsterdam, there is no canal there that's 100 ft wide, except for the major, major ones to have an intimate canal and it's 50 ft, 45 ft. So, that's why I was asking, but he said, well, of course, you do, but that's double the cost. But you've just created double the waterfront real estate with the same cost.

So, out of that, we started talking to the family. And the city kept begging for them to provide the parking. They're very civic-minded. So, at the end of this huge presentation, they said, we're going to go with the town. And I said, if you go with the town, you're going to be sick of paying your rent. Answered that we ask the town to buy the property. I said city wouldn't do that and well.

Anyways, long story short. Two months ago, I visited Savannah, this is built and you can see the edge. And the city is threatening eminent domain. So, all of a sudden, the family says we'll give our land to the city to develop it. But the cities one half of that has already built the parking lot. And there is the saddest thing. They built this building, so they could have the opportunity to build incredibly, beautiful public spaces around it. When I got there, a security guard told me to park elsewhere because in the middle of the parking lot, they set up cones and the radio station was holding an event for kids. And so that's the biggest problem, you have the buildings, you have the materials, and you're already spending redesigning the building in such a way that the building forms public spaces. It costs you very little more if anything at all. But it could anchor a whole bunch of activities that the city is holding, but they're still having located in the parking lot but as somebody has to deliver Johnny-on-the-spot! and that's what they did. So, here this was the essence of it, right? Where, if you look at that, canal down the middle. What I was proposing is making a second canal and then closing the blocks off, where you have parking on the inside, and in doing so, you create a neighborhood. Now, parking we're proposing on the other land. So, imagine this if you were in an environment well north of here, you probably wouldn't want to walk a long distance from parking to the arena, but you have a couple of hundred thousand people constantly arriving throughout the year. If you separate the parking, and in between that existing parking and the arena, you take an incredibly beautiful space where people, there are buskers there, there are galleries, restaurants, cafes there, and all of a sudden, all those people are supporting that. They're supporting it because the people will live above there or work above there, have this incredible amenity and the whole place rises up into a 24-hour community but the town only settled on parking.

So, we've been talking to the town manager and to the town planner, and as of right now, they're in agreement to stall this and move parking further ahead. So, we can develop half the property. Thank you for your attention.

Oren Singer

CEO & Co-Founder، Sparrow

It is a privilege to be here today on behalf of Sparrow. Sparrow is a home-sharing platform developed in collaboration with the CMHC، and our aim is to tackle our housing crisis by optimizing supply through home-sharing. Moreover، our mission is to create exceptional shared living experiences.

I want to begin by examining the untapped potential within Canada's housing market. While it is widely recognized that we are facing a housing crisis، what may not be as well-known is the staggering number of empty bedrooms across the country. There are over 12 million vacant bedrooms in Canada، left unused and unoccupied. Our approach to addressing this issue involves tapping into a fraction of this available housing supply، with the aim of making meaningful strides towards resolving our housing crisis. Quebec، and British Columbia have the highest volume of empty bedrooms. This trend is particularly noteworthy when compared to the US market، where the number of spare bedrooms has reached unprecedented levels. From the 1970s to the present day، there has been a notable increase in the proportion of households with two or more spare bedrooms. This presents us with a significant opportunity to explore the whereabouts of these unused bedrooms and the dynamics of the households they belong to. We have observed that opportunities are primarily found in the residences of seniors who wish to age in place. Consequently، there is a growing proportion of these units، particularly spare bedrooms in homes of seniors، which form a significant audience that Sparrow serves. These seniors may be living alone، including many empty nesters، who could potentially benefit from sharing their space and living with others، gaining both financial and social advantages that home-sharing offers.

Home-sharing emerges as a remarkable solution that can create a win-win situation for both renters and homeowners across Canada. Renters benefit from gaining access to affordable housing، typically below market rates، while homeowners enjoy the advantages of generating a passive income stream. Additionally، for many who live alone، home-sharing fosters the development of social connections. On a broader scale، Canada benefits from better utilization of housing space، resulting in numerous social، economic، and environmental advantages.

Sparrow prides itself on being the safest and most convenient platform for sharing living spaces and finding compatible housemates. Here's a brief overview of our process: Both renters and homeowners create profiles، join the community، and undergo identity verification. They provide details about the space they are offering or the type of person they wish to live with. Our matching algorithm pairs compatible individuals and facilitates communication through our platform. Prospective tenants can view the space and meet each other before committing. Once both parties agree، our team assists with background and credit checks، home-share agreements، and tenant insurance. Our platform also handles rent payments monthly and reports them to credit bureaus to help renters build their credit history. Moreover، our team provides ongoing support to address any issues that may arise.

We have established an efficient system for unlocking the vacant housing supply in Canada، with the average cost of unlocking and occupying a room being approximately $500. Although not directly comparable to the cost of building housing، this figure highlights the efficiency of introducing units to the rental market that were previously unavailable. On average، it takes about three weeks to unlock and occupy a room.

To summarize the social impact of our efforts، each aspect is aligned with a sustainable development goal. In terms of vacant rooms، previously underutilized housing resources، or latent supply، have now been occupied to provide housing through Sparrow. We recently surpassed our 450th room milestone in just over two years. Regarding total rent savings for renters across Sparrow، relative to average market rental rates، we have facilitated savings of over a million dollars. For homeowners، many of whom are struggling to afford their households due to rising inflation or interest rates، we have cumulatively enabled them to earn over $2 million.

The demographics of the individuals we serve primarily consist of vulnerable populations، including seniors، students، and newcomers to Canada، accounting for 90% of our user base.

Our differentiation lies in our data-driven matching system، which has created a flywheel effect. As we accumulate more data through Sparrow، we can make more informed and compatible matches within our pool. With a larger matching pool، we increase the likelihood of creating successful matches، leading to better lived experiences through home-sharing.

Positive experiences result in referrals and drive network effects within the communities we serve. This، in turn، leads to increased awareness and overcomes any stigmas associated with sharing space، ultimately expanding our supply of housing options at budget-friendly rates and attracting more housemates and renters.

Presently، our main focus areas are the Greater Toronto Area and the Greater Vancouver Area، but we have ambitious plans to extend our reach and activate this flywheel across numerous communities in Canada. Regarding our community impact and recognition، we

have acquired outstanding reviews and have been highlighted in various media outlets. Publications such as Maclean's and The Globe & Mail have delved into the human stories behind Sparrow and explored the experiences of individuals engaged in home-sharing.
Now I want to share with you a short 2-minute video clip

My name is Travis Nashby. My husband died six years ago. So, it gets a little difficult being lonely. And the extra income actually helps too but it's nice to have another person there. I had Gabriella get in touch with me. And she sounded great. She's from Peru and she's studying graphic design and the school that she was going to actually isn't too far from where I am. And you can get there on the bus. She's very nice. She's quiet. She comes and goes. I have no rule just clean up after yourself. Don't leave messes. It's gotten really well. The one thing that I have difficulty with, I need someone to clean my bathtub because I can't get down to clean the bathtub. It's the one thing I can't do in the apartment when you're an older person like myself, it's nice to have someone else there. Well, I think it not only venerates the host, also benefits the person that's moving in too. You have a nice home. You basically have everything set up when you move in. It's been very positive. It helps you mentally because you can get lonely and being alone after my husband died, I was alone for a long time. I was sort of like even going out with friends and doing stuff, when coming back and walking in, you don't say hello, nothing! And I said it's nice to have someone there that you talk to because that's a big thing. It's hard when you get older and you're alone all the time. It's nice to have that additional extra income because it helps you, not only help you pay your rent, but different bills that you have. And it's nice to know that okay? I have this much extra money a month that is disposable to me. Oh, yeah! I would recommend it to a lot of people. I mean if you have a bedroom that's not being used, these students need it. Seriously, these people that are coming here to Canada to go to school. A lot of times you can't stay on campus. Those places are all taken up. There is no place to stay, as far as trying to rent an apartment by yourself. You know those can't do that. It's just too much money, and it's like there's so many people that have the space and it's like, if you've got the space, do it.

As we move forward with the expansion of Sparrow, we are actively seeking investment to extend our reach to multiple communities across Canada. If there are any individuals interested in discussing this investment opportunity, we are aiming to secure between $500k to $2 million to achieve specific target milestones. These milestones include: obtaining just under 2000 agreements by 2025, reaching a designated threshold or surpassing it in monthly revenue, streamlining manual processes across our platform to reduce our cost by 70%, and expanding and nurturing partnerships with various channels such as universities, colleges, financial service providers, and community organizations within the next 18 months. Thank you.

Presentation on Glocal Platform for Urban Finance

Eduardo Moreno

Co-Director،
World Urban Pavilion

This wrap up is about the launching of the Glocal Platform of Urban Finance that we did last year، during the UEF 5. I would like to start making reference to two of the presentations that were made in the course of the day. I remember، when I was in UN-Habitat، we tried to do the same thing، meaning to estimate the cost of putting a remedy to all problems blocking city sustainability. In terms of cost، I remember، we came up with a cost or investment of 3 to 4 trillion US Dollars. However، in this estimation، we did not include in the equation the cost of infrastructure، and additional costs of institutional and capacity buildings، and other things like this. And at the end، I realized all these numbers were too abstract. I remember many years ago the first small calculators can only accept six digits، and to some extent، my brain operates somehow like that، it is difficult to process the meaning of too many digits، I have difficulty understanding what represents 3 or 4 trillion Dollars. In solving this abstraction، in fact، what we need to do، is to think in terms of local responses adding to the 3 trillions. And this is what the Glocal Platform of Urban Finance is trying to do، to think in terms of commensurate local responses to commensurate local situations، bringing investors and financers to specific innovative projects. In other words، the Glocal Platform prepares simple solutions that add to the complexity of major global solutions.

Again، a second reflection، when I was in UN-Habitat، and I don't exaggerate، we used to have something like 30 requests for support to the Agency every month، almost once per day. Mostly city representatives demanded some kind of technical or financial support for housing، basic services and transport projects. Obviously، we tried to prepare some responses to these requests، but it was so overwhelming that many remained unanswered; still، after two or three years، we did an evaluation of those that we provided a response، and we found out that for nearly 320 responses for project preparation، only five were implemented until full completion. Only five! and why this happened? It was because of the lack of finance mechanisms and products. When I left UN-Habitat، and came to work into this wonderful place that is the World Urban Pavilion، I realized that we need to think differently، we need to connect، and we need to become connectors or bridges between all those cities making everyday requests and real local finance investors. Otherwise، we will continue to study and prepare projects or actions that remain without finance. This bridge is what the Glocal Urban Platform for Urban Finance is about. It has been created to establish a critical، organic، and serious connection between the demands from cities to the financial packages and innovative funding mechanisms to support city transformation.

Third reflection، I think we have not overcome the situation of thinking and implementing projects based on sectoral approaches. As we saw in the presentations، too many cities are compelled to operate by sectoral project-based interventions. And، as important as these interventions could be، they appear often ineffective and with low impacts، this is why at UN-Habitat and the Urban World Pavilion، we always spoke about the need for integrated approaches that tend to be more impactful. These approaches can connect city demands and projects to largest financial solutions. But the reality is that perhaps something in between، it means some critical interventions، as the one that Andrew Martschenko just presented with important design and transformative ways of looking at buildings and spaces in a more integrated manner with financial solutions integrated to them. In other words، an effort of the Global Platform of Urban Finance is trying to connect these projects - that are transformative in nature، and have the seed to look at things differently - to finance with the possibility to integrate capacity building mechanisms to inspire others، not only with real spillovers in terms of actions، but also، as I mentioned before، with the necessary capacity to find the best practices that eventually get finance and make impactful solutions. This is what we would like to think that the Glocal Platform of Urban Finance is going to do.

As a last point before I conclude، and this is a very interesting memory that I narrate، when I was young، one of my uncles was a sailor، and he was lost around one week in the sea. I remember he told us that one of the worst things، as bad as feeling thirsty and hungry، was not to know where he was in the immensity of the sea. Some years later، I read a very beautiful book by Umberto Eco، 'The Island of Day Before' (1998-2000)، in which Eco was narrating in fictional terms the beginning of sailing discoveries in the XVI Century، where he explains that the first clocks، were created not to measure time per se، but distance and location، in other words، it was a history of how to locate yourself in the immensity of the sea in terms of time and space.

This is connected to our work taking into account the mid-term Review Report issued by the UN Secretary-General called Rescue Plan for People and Planet in which he mentioned that 65% of cities do not have adequate data، or in other words، they are like my uncle in the sea، without clarity where they are، lacking the necessary parameters to measure what is happening in them، planning almost blindly، which is extremely costly، not only in terms of

resources that are consumed but also in terms of accountability and political relevance. And this connects directly to what the Glocal Urban Platform offers to cities and development partners، which are the adequate navigation parameters، connecting in a creative manner data to knowledge، to policy formulation and to actions. This comes as a response to the fact that 65% of cities don't know what are the best options in terms of policy، and what kind of impacts generate with different policies. These cities might be like my uncle! going around in some places without knowing whether you are going to reach or not a good port at the end. We believe that Global Platform for Urban Finance would like to put a remedy for all these people and cities.

And I conclude with four points:

1. The first one is about the innovation. At one of the last conferences that I attended in Dubai (Expo Dubai) to represent UN-Habitat، a participant asked a government official، what is innovation for you? And he said something very simple and practical that still resonates on me. He said، when many dots – for some reasons – are disconnected، and someone comes to connect them with a clever idea or mechanism، and this brings an added value، that is innovation. So، in the same sense، the Global Platform for Urban Finance is innovative، in the sense، it reestablishes critical connections of systems، institutions and people، and particularly articulating local needs to global solutions and the opportunities they generate. The platform performs this function of connecting dots data، policy and finance to where higher impact can take place; and there were very interesting presentations about this matter. Establishing these connections، for instance، to climate change issues، the possibility of having blending financial mechanisms is very critical، even more considering that only 5% of all financial mechanisms allocated to climate action go to the city، as analyzed by UN-Habitat. So، it means there is a plethora of possible financial mechanisms with very little connection to local areas، where the impact to climate change can take place. So، these relationships is exactly what the Glocal Platform for Urban Finance would like to do، and this is why it's called glocal.

2. The second one is Cities. The UN Secretary-General mentioned some years ago that one of the most transformative phenomena was urbanization and the role that cities play. However، still something like 70% of mayors in the world express that it will be desirable to stop urbanization، which means that these local leaders do not understand the force of economies of scale، economies of agglomeration، density and proximity that can contribute to achieve many goals and targets and that is about the innovative role of the Global Platform، helping us to understand the power of the city، the power of finance، and the power of transformative organizations.

3. The third one، relates also to another report from the UN Secretary-General about a mid-term review of the SDGs with only 10% of realization of expected targets after seven years that the agenda 2030 started. Subsequent evaluations indicated that only 9% of interventions were across different disciplines، and the involvement of multiple actors. In other words، a high degree of sectoral implementation is very possible one of the reasons of this low performance of targets. Success entails strategic partnerships with different modalities of Public-Private Partnership (PPP)، mobilizing blended investments and deploying innovative financial mechanisms، this is a real win-win solution that the Glocal Platform can put in place. We have the convening capacity to gather different actors together. Resource mobilization is critical for the work of the platform.

4. The fourth one، and I will conclude with this. While global agendas continue to be a global compass for the sustainability، resilience and prosperity of the world، it is true that the localization of these agendas to accelerate delivery continue to be a challenge. As we mentioned، these agendas are poorly connected، however، the space has the capacity to bring them together in specific territories with adequate data and methods، and the Global Platform of Urban Finance has the creative capacity of connecting these agendas and localizing them with specific projects and investments in a way that this can make a change.

In that sense، I wanted to say that the relationship of the Urban Economy Forum and Aragon is really welcome in the Pavilion because it represents the opportunities for financial experts، innovators، urban planners، and trainers to work together by using as a common glue that is knowledge، capacity building and expert innovation in finance. Glocal can help cities to do things differently. This is my view for transformation and this is what we are looking in meeting like this. Thank you.

Communal photo at the end of the first day's World Summit

Urban Resilience, Climate Action, and Inclusive Growth

Cities as Vectors for SDGs and Quality of Life

Doug Farr

Farr Associates Architectures & Urban Design

Good morning. I regret not being present with my fellow Canadians, but I am honored to follow Mayor David West's gracious remarks. Today, I will discuss sustainable urbanism from the perspective of a practitioner. While there is plenty of high-level discourse on the right course of action, the real challenge lies in implementation. To illustrate this point, I've included an introductory image from my favorite movie, which depicts human ingenuity through the discovery of a tool - in this case, a bone repurposed as a hammer. Delivering the kind of urbanism needed to tackle the climate crisis, promote equity, and address global needs is undeniably difficult. However, there has been some progress over the past two decades.

Based in Chicago, our practice specializes in delivering buildings and spaces. As architects and urban designers, we navigate between different scales, recognizing the critical interplay between architecture and urbanism. For practitioners and financiers alike, it's imperative to understand that achieving effective urbanism requires harmony between architectural design and urban planning. Both elements are equally vital in shaping our built environment.

In 1998, we began with a simple drawing for a redevelopment site on Chicago's west side, situated in a lower-income neighborhood and served by our transit line - what we call a Transit-Oriented Development (TOD). While initially uninspiring, the site had potential. Subsequently, our firm was tasked with designing the world's third LEED platinum building, the Chicago Center for Grain Technology, championed by former Chicago Mayor Richard M. Daley. This commission introduced me to a whole new vocabulary of concerns, as the mayor was a staunch advocate for green buildings during his 22-year tenure.

The LEED system provided a valuable framework that guided our design process. As an example, we undertook a rehabilitation project, transforming an existing building into a new residence, not for a private individual but rather as a collective endeavor toward environmental stewardship.

Architecturally, this project could be categorized as environmental expressionism, showcasing how urban constraints can lead to innovative solutions. While the building may pose stylistic challenges with its modern aesthetic, these concerns transcend architectural style. Our approach is tailored to each context and client's needs, prioritizing functionality over adherence to a specific style.

During that time, I had the privilege of touring Europe through the German Marshall Fund, an experience that allowed me to visit some of the continent's best projects. Holding in my hand a book authored by my friend and mentor, Timothy Beatley, titled "Green Urbanism" (2000), I embarked on a journey of exploration. Traveling by train, I would consult the book's index to determine our next destination. This proved to be an eye-opening experience, as we witnessed the best examples of what would later be termed sustainable urbanism in Europe. Our work was profoundly influenced by these encounters. For instance, in Freiburg, we encountered pioneering projects like the solar-powered neighborhood of Vauban. Although it was not yet fully developed at the time of our visit, the sight of attached townhomes generating their own power by facing south was revolutionary. This experience, over 25 years ago, was a precursor to the increasingly commonplace sustainable practices we see today, marking a significant shift in the built environment.

Going into more architectural detail, it's worth noting that while our projects adopt a modern aesthetic, it's important not to become overly fixated on this style. Many modern buildings feature excessive glass, which incurs an energy penalty. Traditional architecture, with punched windows and less glazing, tends to perform better in terms of energy efficiency.
Returning to the neighborhood on the west side, after our exposures, including the trip to Europe, we revisited our designs. Armed with more colorful markers, our drawings became vibrant representations of our ideas. For instance, rooftops were envisioned as spaces for solar energy and vegetated roofs. Beneath the surface, we reimagined infrastructure, such as proposing a geothermal heating and cooling system beneath a central park. While we were proud of these innovations and presented them to our clients, not all were enthusiastic. One project, completed around 2000, was designed as a transit-oriented development, promoting walkable urbanism with sustainable features like greenery and solar panels. However, the client was not initially receptive. Despite our conviction that we were presenting the future, they requested changes, preferring a more conventional approach. In response, we removed the colorful elements from our drawings and adjusted our presentation accordingly. This experience illustrates the challenge of integrating ecologically aligned building designs, which were not universally embraced at the time. However, over time, attitudes shifted, reflecting a growing recognition of the importance of sustainability in architecture.

One of our exemplary projects shows the potential of sustainable urbanism in the town of Normal, Illinois. When your town bears the name "Normal," there's an added pressure to excel. Named after a type of school, Normal faced a unique challenge. The project involved creating an edge of a circle, envisioning a common public space where the park itself would serve as a stormwater treatment facility. Surrounding buildings were designed to be LEED-certified, a groundbreaking concept in 2002. Consequently, Normal became the first municipality worldwide to mandate LEED-certified buildings, marking it as a beacon of progressive development. This initiative was championed by Mayor Chris Koos and a supportive city council. Success in such projects, whether undertaken by private entities,

planners, or architects, is based on strong leadership - individuals committed to advocating and supporting exemplary endeavors that inform our future projects. An example of this leadership is evident in the water treatment aspect of the project. Despite initial concerns about safety and legal implications, the design created a natural gathering place, attracting diverse individuals from across the region. Overcoming obstacles such as opposition from the National Highway Works Administration, which resisted the idea of human presence within the traffic circle, the project ultimately received recognition for design excellence. Despite initial opposition, the project earned the Design Award for High Design Excellence from the Federal Highway Works Administration, showcasing its transformation from controversy to commendation.

In essence, there exist both visible and invisible barriers to implementing the aspirations we collectively strive for, extending beyond financiers to encompass regulators, common sense perceptions, and various other factors. Consequently, I assumed the chairmanship of LEED for Neighborhood Development (LEED ND). Recognizing the transformative power of LEED for buildings and its impact on the marketplace, I advocated for the creation of a similar tool to inform the design of cities and master plan developments. Thus, LEED ND was established and has since grown across numerous countries worldwide.

I also recommend two influential books: "Sustainable Urbanism" (2008) and "Sustainable Nation" (2018), which serve as valuable resources for case studies. One project that left a significant impression on me was BedZED, located in the south of London. This pioneering development was the world's first net-zero development, featuring attached townhomes equipped with south-facing solar panels, vegetated roofs, and innovative wind veins that facilitated natural ventilation. Designed by Bill Dunster, BedZED showcased integrated systems, including vehicle charging, setting a precedent for sustainable design nearly two decades ago.

Another exemplary project, Dockside Green in Victoria, BC, stands as a testament to sustainable development. Each building in the project achieved LEED Platinum certification, with innovative features such as district energy and district sewage treatment. Rather than simply discharging sewage into the ocean, the developer implemented an onsite waste treatment system, ensuring environmental responsibility and enhancing the project's sustainability branding. This investment paid dividends through a market premium for townhouse units, demonstrating the economic viability of sustainable practices.

Let me quickly share a couple of our projects. First up is Jazz at Walter Circle in East St. Louis, a topic that aligns with our discussions today revolving around sustainable development goals, particularly bringing this vision to communities with fewer resources. East St. Louis perfectly exemplifies this, and Jazz at Walter Circle represents a new 74-unit senior building. I'd like to highlight a specific detail that underscores the importance of getting policy right at the macro level and ensuring meticulous attention to detail at the micro level. In this project, we've designed a system where water from the roof is directed into a small pocket and then transported under the sidewalk via a runnel. This design not only manages rainwater effectively but also integrates humans into the experience, making it enjoyable to be outside in the rain while also being transparent about where the water flows.

Another project, also in a lower-income community, involves a pocket neighborhood infill of approximately 30 to 40 units, focusing on missing middle housing. These are two to six-unit buildings, ranging from duplexes to courtyard buildings. I take immense pride in this project, as it draws inspiration from my visit to Bonn, Germany, and aims to recreate its essence in a missing middle format in rural Illinois. It's a testament to what's achievable when guided by a clear vision.

Lastly, I'd like to mention our most recent major undertaking in Austin, Texas: Colony Park, spanning 208 acres. This project, planned for five neighborhoods, is set amidst a landscape reminiscent of Salvador Dali's surrealistic imagery, featuring deep ravines and sharp hills. It serves as a sustainable urbanist model, showcasing the potential for creating pocket neighborhoods at a large scale. Despite being an infill site surrounded by Austin's sprawling development, achieving such projects is feasible albeit requiring considerable time and effort. The more innovative your approach, the lengthier the approval process tends to be in regulatory and financial spheres. While this may not be the news anyone wants to hear, I've witnessed it firsthand and can substantiate it with case studies. Now, onto my latest passion project: the climate action museum. I'd like to challenge all of you in the room to explore how to establish a climate museum in your own town, especially considering that Canada currently lacks one. This presents a unique opportunity, my friends! The museum, situated in downtown Chicago, occupies a pop-up space made available due to the economic impact of Covid-19. Operating in free space within the lobby of a well-located downtown building, the museum is accessible to the public five to six days a week.

We organize events aimed at educating school children about climate action, with a particular focus on land use and locality. This ties into the discourse on sustainable cities, highlighting the concept of blue zones—places where the healthiest, most prosperous, and contented individuals reside, living locally and surrounded by family and friends, with a lifespan often exceeding 100 years. In contrast, modern humans frequently travel and consume vast amounts of carbon in pursuit of happiness. The museum embraces local living and fosters strong connections within one's community. Additionally, the museum underscores the significance of buildings, particularly in cities like Chicago and Toronto known for their architectural prowess. Surprisingly, the most energy-efficient buildings in Chicago date back to the 1880s, surpassing the energy efficiency of structures built in subsequent decades. Even newer buildings have yet to match the efficiency of those constructed over a century ago, though the best-in-class buildings today can achieve two to three times greater efficiency than the older average. This highlights the ongoing work of our firm in advancing sustainable building practices.

I encourage everyone in the audience to contemplate the importance of high-performance buildings coupled with urbanism, a concept we should all strive for. It may seem incredulous, but the scale of conversations required for this endeavor is immense. From my experience curating and hosting exhibits, I've found that the primary obstacle to building electrification lies in people's regional preference for cooking with gas stoves. Many individuals simply cannot fathom that food can taste delicious without being cooked over a gas flame. It's a peculiar notion, but it underscores the need for conversations about the practicalities of cooking methods, down to the details of pots and pans. Addressing this issue is crucial, as it represents the primary hurdle preventing people from relinquishing their gas connections.

I wish I could be there with you all, and I'm confident that the conversations will be inspiring. I hope my insights have contributed to the discussions. Thank you for your attention and consideration.

James Donovan

Farr Associates Architectures & Urban Design

In 2021, we had the honor of collaborating with UN-Habitat to develop the SDG Cities platform and diagnostic tools. This partnership aims to harness the strengths and expertise of both parties, fostering a sustainable value chain for cities. With over 30 years of experience in delivering impactful insights through data, we are confident that the provision of SDG cities as a global initiative can be optimized and interconnected. I firmly believe that the establishment of the coordinating hub here, in partnership with UN-Habitat, which will hopefully be replicated in the United States in the near future, signifies a significant step forward.

The complex challenges faced by cities require comprehensive solutions. Our collaboration with UN-Habitat seeks to address these urbanization challenges by breaking them down into manageable components and offering modular solutions. By developing thematic diagnostic tools, we assist cities in understanding their current status across vital domains such as governance, urban planning, revenue generation, and urban basic services including mobility, waste management, water, and sanitation. After considerable effort and collaboration with our colleagues at UN-Habitat, we are delighted to announce the launch of the first iteration of the online city self-assessment platform late last year in 2023.

While I advocate for digital solutions as part of our offerings, it's important to emphasize that digital tools alone cannot solve all challenges. However, we believe that these solutions should be actively leveraged, especially considering the advancements in generative AI and emerging capabilities in the digital landscape.

Addressing systematic problems within cities demands systematic solutions. Through our collaboration with UN-Habitat, our aim is to break down these urbanization challenges into manageable components and provide integrated solutions. Our approach begins with the development of thematic diagnostic tools, enabling cities to grasp their current standings across key domains such as governance, urban planning, revenue streams, and essential urban services encompassing mobility, waste management, water, and sanitation. After extensive collaboration with our partners at UN-Habitat, we are delighted to announce the launch of the inaugural iteration of the online city self-assessment platform in late 2023.
As professionals in this field, it's imperative for us to embrace the best practices already emerging from various sectors of society. We firmly believe that digital tools play a pivotal role in the broader context of sustainable urban transformation. It's not just the responsibility of the public, private sectors, and civil society groups, but also the SDGs Cities hub, to effectively coordinate efforts globally, ensuring that transformative initiatives are directed towards constructing inclusive, safe, and resilient cities and communities.

Data-driven digital tools, adhering to a specific framework, facilitate the connection of the value chain, bridging the gap between data ecosystems and the physical environment. These digital tools are versatile, applicable not only to policy formulation but also to enhancing supply chains and fostering broader economic development through financing mechanisms. The absorptive capacity of each stakeholder involved in this process significantly influences the outcome of transformation. The SDG City hub is ideally positioned to furnish the necessary enabling tools for capacity building.
In conclusion, it's evident that the dynamics of urban economics are intricate and multifaceted, shaped by a complex interplay of various factors. Through fostering collaborations between public and private stakeholders, embracing innovative solutions, and empowering local communities, we have the opportunity to cultivate a flourishing urban ecosystem. This will not only position our cities as pillars of prosperity, equity, and innovation but also pave the way for a brighter future for generations to come. Thank you.

Alice Xu

Digitalization,
City of Toronto

Good morning, everyone. As a representative of Toronto University and someone deeply involved in the city's affairs, I extend a warm welcome to you despite the chilly weather. I'm here today with my colleague Dr. Mark Fox to provide some insights into our collaborative work on digital transformation and infrastructure development in Toronto. I serve as the Director of Digital City at the City of Toronto's Technology Services Division. It's a role I cherish, given my love for this vibrant city. I believe this gathering encapsulates the essence of urban innovation in Toronto, and I hope you've had the chance to explore the city's offerings during your visit.

I would now like to shed light on how digital infrastructure and disruptive technologies have reshaped the way we approach city-building. While we're adept at physical infrastructure projects, integrating digital infrastructure that truly serves people and operates from a data-driven perspective presents its own set of challenges. Toronto has encountered various digital issues, including prominent projects like Sidewalk Labs, and more recently, challenges faced by the Toronto Public Library, which is now gradually resuming its services after being under attack for several months.

So, what does it entail to construct a city in this manner? How do we establish a connected community grounded in digital infrastructure that enhances the lives of Toronto's residents? We acknowledge that digital infrastructure is fundamentally reshaping the city's operations and service delivery as the government is closest to the people. Moreover, we're increasingly aware of the pressing issues surrounding digital equity, which necessitates new approaches to our work. Thus, we've formulated a framework that engages various stakeholders locally and globally to address these challenges in the way the city delivers its services. This framework is known as the Digital Infrastructure Strategic Framework (DISF), and its primary objective is to facilitate collaboration based on DISF's principle-oriented approach to leverage technology for enhancing Toronto's quality of life.

Toronto enjoys one of the highest qualities of life among cities worldwide. How does the DISF contribute to further enhancing this quality of life? The DISF is underpinned by seven guiding principles which is derived from input from members of the public, academia, and experts both locally and globally. These principles include:

1) equity and inclusion,
2) digital autonomy,
3) effective governance,
4) societal well-being,
5) economic and environmental sustainability,
6) privacy and security, and
7) democracy and transparency.

The framework's development revolves around these seven principles, with corresponding actions and priorities outlined for each domain. Each principle is also accompanied by a vision statement that articulates how DISF users can facilitate the provision of high-quality, resilient, and innovative public services through the use of data and evidence that will inform decision-making in policy areas associated with that principle.

In my collaboration with Dr. Mark Fox, digital transformation and data governance has been central to our work. I will now give the floor to my colleague who will discuss further digital infrastructure from a data governance perspective. Thank you.

Mark Fox

Director,
Urban Data Center,
School of Cities,
University of Toronto

It's a pleasure being here. I'm just going to dive right in since time is short. What I'm going to do is talk a little bit about the project that we have been pursuing for at least a year and a half, two years with the City of Toronto. I'll call this integrating the city through data. First of all, who am I? My name is Mark Fox. I'm the director of the Urban Data Center within the School of Cities at the University of Toronto. The Urban Data Center is a research center that addresses problems that cities face in the use of data for the planning and operation of cities.
We have been working with the city of Toronto. When I say with, it means with a great deal of cooperation and co-creation with the City of Toronto.

The problem we are working on is an age-old problem that everybody is aware of. Cities are not years old or decades old, they're centuries old. The different divisions, and services that are provided by cities, have grown separately. Over those decades and centuries, they've developed their own language, terminology, and way of viewing things. Consequently, it is difficult to get cities that have evolved as silos, to share information, and to be able to do what we call today evidence-based decision-making and operations because we have difficulty integrating the data and sharing data across these divisional silos. And so, the project that we have undertaken together with the City of Toronto is the development of a common data model which we refer to as the Toronto Common Data Model (TCDM).

So, the challenge is creating a common data model that can be used not only across the city of Toronto, but is also "common" enough to be used across many different cities. Minimally, we'd like this common data model to be used as a basis for communicating information across city silos, and across the different city information systems. We focus initially on inter-system communication because as we know, there are hundreds of millions of dollars already invested over the decades in the development of city information systems in a city like Toronto, and you're not suddenly going to redo all of those information systems. Y2K only comes around once in 100 years for all of us. Maximally, we may influence the design of the information systems across the different services divisions, et cetera, so that they converge to using a shared data model.

How did we do it? As you know, every possible type of data and knowledge that you can imagine is being used in some part of the city, whether it's human services, health, sanitation, water, and transportation. Cities do everything. And so where do you start? Our approach was to take a look at different cross divisional business processes that exist within the city and understand what information travels through those business processes and who are the actors or divisions that are participating in those business processes. The goal is to understand how they work together, how they coordinate, what the role of information is, and what that information is. We then review existing city data standards that have been put in place, we also review relevant international standards such as the ISO 587 series of standards for city data. Next we design the core entities and attributes that are common across and within a business process and across the different processes to come up with a common data model.

One issue that arose is data privacy and data governance within a process. Divisions, departments, et cetera, are reluctant to share information with other departments across the city and even though we didn't plan on doing this. We had to introduce a template that allows for the identification of the business process, its objectives, the participants in the process and the data that must be shared across it. The template is used to extract commitments from the participating departments and divisions to provide the necessary information to used only for the process objectives.

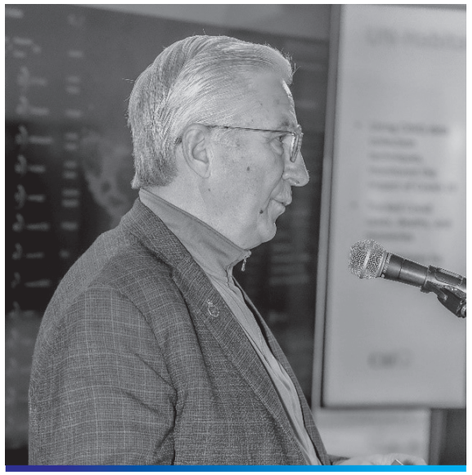
The result of our project is - what we referred to as a Toronto Common Data Model - has a core that identifies very basic types of information. The core contains the foundational elements, entities, and attributes of data that are used across the city. We then extended it on a process-by-process basis to identify core elements specific to a process. So, the data standard has a foundational core and extensions based on the different types of business processes that we were dealing with across different divisions and urban services of Toronto.

The core standard for urban data spans six or seven processes within the city of Toronto including human services, 311 – the city customer service centre, service performance, and financial reporting. We delivered a template for data governance within a process that we didn't know that we were doing at the outset, which was probably was adopted faster by the city than anything else we did.

Cities are huge. It takes time for them to identify and integrate new technology. We are now in that process of socializing the Toronto Common Data Model across the city for adoption. One of the surprising things is we thought we were only creating a standard that would be used as the basis of communication between the various departments, internal and external stakeholders, but it's gone beyond that to providing a goal for how the information systems data models should evolve in the city. Thank you. And thank you, Alice Xu.

Don Simmonds

Founder and
Chief Executive Officer,
CitiIQ



It's a pleasure to be here with all of you today. Actually, CitiIQ originated near Toronto, close to Oxbridge, for those of you who are local. Hence, it feels particularly special to be participating so close to home. My colleague Mackenzie and I often find ourselves travelling the globe, so being here feels like a return to our roots.

CitiIQ is a platform designed to assess the health and well-being of cities objectively and comprehensively. Our mission is to use data science to assist cities because, as the saying goes, "you can only manage what you measure." This principle emphasizes everything we do at CitiIQ. In addition, we are aligned with the overarching goal of localizing the 2030 agenda to drive progress. It's increasingly evident that unless we bring sustainability initiatives down to the grassroots level, by embedding sustainable practices in people's daily lives, we won't achieve the necessary changes. This localization of sustainability typically occurs at the level of government closest to the people—in other words, our cities.

We have established strong partnerships with UN-Habitat, which originated in March 2020 during the Covid-19 pandemic. Recognizing our global city platform's advanced technological capabilities, UN-Habitat approached us to track Covid-19 data at the city level. While institutions like John Hopkins Medical School were proficient at national-level tracking, the impact of Covid-19 varied significantly within countries, particularly across different cities. As a result, we developed a comprehensive capability to monitor Covid-19 data in real-time across 2600 cities worldwide.

We are also proud partners of the SDGs Cities Initiative and actively contributing to its implementation. Our involvement spans various levels of recognition, including the initial acknowledgment and the silver level of recognition, as discussed by Douglas Ragan in yesterday's presentation. I was with Dyfed Aubrey he made an appearance on video yesterday that was from Davos last month when we were together:

By the year 2050, 9.8 billion people will call planet Earth their home. This growth in population will coincide with 65% of the world's people living in urban areas. As the size of our towns and cities continues to grow, enormous pressures will be placed on infrastructure, services, and on the leaders responsible for providing them. In light of this, how can a city or town know it's on the right developmental path, our funds are being allocated in the best possible ways or the toughest challenges evident is the current rate of growth, healthy and sustainable. These are the kinds of questions municipal and national decision-makers face every day that drive the need for understandable data to support critical decisions. But city data poses many challenges either there's too much of it, too little or it's all in different forms. To tackle these challenges, a comprehensive framework that collects measures and compares data is essential but fuse this is have one that's why we created CitiIQ.

CitiIQ's thorough measurement system uses the most accurate and up-to-date publicly available data to create a snapshot of your city. A wide range of data indicators are used to produce floors out of 100 for a city's 35 most important considerations. Taking inspiration from Abraham Maslow's hierarchy (1943), CitiIQ organizes these considerations into five weighted dimensions: basic needs, competitiveness, opportunity, livability, and destiny. A healthy community will score well at all five levels. CitiIQ scores are made available quickly and economically through a cloud-based dashboard updated quarterly, offering you a comprehensive, holistic picture of a city's well-being without the need to hire additional staff. It will soon become your primary reference for measuring progress, setting goals, comparing your city to others, and understanding your city's strengths and weaknesses. Bless the CitiIQ, measure the health and well-being of your city or town. Learn more at citiIQ.com and start a free trial today.

So, this provides an overview of our marketing strategy. I'd like to now talk about what we consider the essential characteristics of our measurement system. It's designed to be scalable, as evidenced by our assessment of over 4000 cities worldwide. The goal is to establish a standardized approach to measurement, using modern technology to democratize the process. This means that cities don't have to develop their own measurement systems or software from scratch. The standardized scoring algorithm recognizes that the fundamental needs of cities and towns are largely similar. For example, we evaluate 35 key elements of any city, and our unique approach involves normalizing raw data into scores out of 100. This simplifies the analysis for city officials, leaders, and stakeholders, allowing them to quickly identify areas of strength and weakness. It's important to note that many city administrators are not data scientists, so our aim is to make this analysis straightforward and accessible.

In addition, our framework ensures comparability across different cities. As highlighted in the video, we adopt a human-centric perspective, focusing on the well-being of residents rather than just the city's wealth or

geographical features like Niagara Falls. Lastly, our assessment covers all four infrastructures, not solely the economic aspect of a city. To talk further on this, I'd like to provide some insight into these concepts. While you don't need to read the detailed list, I want to convey the underlying principles. This slide illustrates the 35 considerations we evaluate, all depicted in the same color. The key takeaway here is that not all aspects of a city carry equal weight. For instance, while a vibrant entertainment district holds importance, it pales in comparison to essentials like clean water, food security, or shelter. Our measurement approach reflects this hierarchy, employing weighted considerations that are nonlinear in aggregation.

Here's a glimpse of the specific considerations:

1) At the basic needs layer: essentials such as water supply, energy supply, waste management, basic education, food security, and housing.

2) Moving to the competitive layer: factors like political stability, investment climate, transportation, smart city initiatives, and connectivity.

3) Once these are in place, the opportunity layer emerges, encompassing entrepreneurship, innovation, higher education, and similar aspects.

4) Subsequently, the livability factors become prominent, including urban design, healthy lifestyle options, entertainment, and social connectedness.

5) The softer measurements, although significant, fall under the destiny dimension, covering aspects like operational excellence, citizen collaboration, and quality of life.

6) And lastly, there's the attribute of hope, which flourishes when all other dimensions are thriving.

Briefly, the algorithm operates by utilizing 107 indicators, which are repurposed to measure the 35 considerations I mentioned earlier. For instance, air quality may be used to gauge various factors such as tourism or public health within the measurement system. While I won't delve into the specifics of each indicator, the mathematical algorithm itself is quite intricate. It involves leveraging these 107 indicators multiple times across different contexts to derive scores for the 35 considerations, organizing them into five dimensions, and ultimately generating a single score. Although I won't delve into the intricacies of this algorithm, cities can access a dashboard over the Internet, offering various measurements and comparative tools displaying the scores. For example, let's take a look at the score for Accra, Ghana, which stands at 44. You can observe the scores out of 100 for the five dimensions. However, it's important to note the three-star rating assigned to Accra. This indicates that while we are committed to scoring any city, we also evaluate the underlying data quality rigorously. If we encounter challenges in obtaining data at a municipal level and must resort to district, state, or provincial data, we may lower the data quality rating accordingly. Therefore, in the case of Accra, it receives a three-star rating for the underlying data quality driving the measurement, which should be taken into consideration. Additionally, there are various drill-down features available, although I won't elaborate on them now.

An important thing to highlight is our inclusion of an SDG tracker within our measurement system. Most mayors do not start their day by considering how they will measure SDGs. Instead, they focus on addressing the operational challenges affecting their city's residents. But our approach is slightly different. We assist cities in measuring their operational performance, which subsequently informs SDG tracking for the city. This is achieved by aligning our 35 considerations with the 17 SDGs. While I won't go into the details, you can observe the alignment of these metrics with specific SDGs, such as SDG 11.

Emmanuel Serunjoji

Mayor of Kawempe Division،
Kampala Municipality،
Uganda

Good morning، everyone. I bring greetings from Kampala، the capital city of Uganda، situated in Africa. I am Dr. Emmanuel Serunjoji، the mayor of Kampala Capital City Authority، Kawempe Division. I also hold the position of chairman of the Lake Victoria Region Local Authorities Cooperation (LVRLAC). Both positions work diligently to safeguard Lake Victoria، which is known as the second cleanest lake in Africa. When discussing the issue of harmful green water، Lake Victoria emerges as a focal point، showing our commitment to its preservation and ensuring its waters remain pristine and accessible to all. Our responsibility، assumed as local government authorities، revolves around preserving the lake's ecosystem and its contents through cooperative efforts.

I am delighted to participate in this gathering، despite the limitations preventing many of our Ugandan and African counterparts from attending. Nonetheless، we are represented here by at least two delegates. Soon، my esteemed colleague، the Mayor of Kampala's Nakawa Division، Paul Mugambe، will join us. Kampala comprises five municipalities، each with its own authority، and I am pleased that we have representation from two of them. Today، I am eager to discuss two key topics: firstly، the Sustainable Development Goals، and secondly، the interconnectedness and responsibilities of cities in advancing these goals.

As a representative of local governments، I share the belief stated by the previous speaker، Don Simmond، regarding the proximity of local governments to the people they serve. This proximity ensures that policies established by local governments are tailored to the specific needs of their communities، much like those of national assemblies and other governing bodies. Furthermore، the effectiveness of these service-oriented policies often hinges on collaboration between cities.

During a previous conference، I emphasized the importance of all cities collaborating to implement sustainable programs successfully. While countries have the United Nations to foster cooperation among nations، the question remains - what mechanisms exist for cities? Cities serve as immediate governing bodies، shaping policies that directly impact the communities they represent. As leaders in local government، we aspire to establish a framework that unites all cities. Through this unity، we can expedite the implementation of sustainable development goals by identifying and addressing the obstacles that hinder progress.

The primary barrier to achieving these goals lies in the fragmentation and isolation of African cities. I urge all members present to consider the plight of Africa and its cities. Together، let us deliberate on solutions to overcome these challenges and foster greater unity among African cities.

During my previous visit to the World Urban Pavilion، I engaged with all its members and signed a cooperation agreement، emphasizing the importance of mutual collaboration and support. This assistance goes beyond financial matters and extends to benchmarking and training initiatives. Given the unique geographical and idiosyncratic characteristics of African cities، it is imperative to leverage African resources، both human and natural، to achieve our shared objectives. Why do I stress this point? Consider the climate of most African cities. Climate change discussions cannot overlook the tropical climate prevalent in many African urban centers. Sustaining this tropical climate requires concerted effort، especially as some African cities are now facing unprecedented phenomena such as winter and snow. We require assistance to maintain the unique climate conditions of African cities.

In addition، our right to request assistance is grounded in democracy and its crucial role in sustainability. By rallying corporations and uniting cities، we not only advocate for our causes but also bolster African democracy. The democratic practices of Western cities have inspired those in Africa. However، when mayors like me advocate for environmental preservation، government leaders sometimes respond with opposition، such as deploying police forces. This underscores the importance of city cooperation in upholding the preservation efforts initiated by local governments. We cannot allow anti-democratic actions to hinder the progress of certain cities or governments. Another critical issue concerns budgeting. The United Nations governments impose specific conditions for budget allocations. For instance، when the central government of Uganda allocates funds for environmental protection، it may not explicitly categorize it as part of climate change expenditure، a scenario common in many cities. Therefore، how can we support cities in aligning their budgets with sustainable development goals (SDGs) when financial resources are scarce? It's essential to prioritize financing. Take Sudan and other African cities، for instance; allocating more funds to combat climate change requires effective budgeting.

We require a collective umbrella under which all cities can work towards SDGs. I am not suggesting that the United Nations extend its responsibilities beyond its current scope، as UN-Habitat already shoulders many programs aimed at protecting African populations.

However, there remains a gap in support for cities. Therefore, African and non-African cities need organizational support to attract investors and elevate African cities to join the Urban Economy Forum. The current tensions in the Saharan region, for instance, could exacerbate geographical dryness, negatively impacting Africa and the global environment. If left unchecked, the entire continent could transform into a desert, eradicating green spaces and exacerbating climate issues. However, the resilient people of African cities are determined to prevent such degradation. So, my goal is to ensure that cities have the strength and unity to combat climate change and achieve development goals. Thank you.

Paul Mugambe

Mayor of Nakawe Division,
Kampala Municipality,
Uganda

Good morning, everyone. My name is Paul Mugambe, the mayor of Kampala's Nakawe Division in Uganda. Kampala city operates like a province and consists of five divisions, with each division overseen by a mayor. Additionally, we have a lord mayor presiding over all five divisions.

It is my privilege and honor to participate in today's gathering, where we engage in dialogue and brainstorm solutions and interventions to expedite the achievement of the Sustainable Development Goals (SDGs) in our cities. My focus today will be on cities as catalysts for SDGs and improving quality of life. I will draw upon my experiences in Africa, particularly in Uganda. Cities serve as pivotal hubs for achieving SDG goals. However, our progress thus far has been modest, with only 12% of the targeted indicators realized—a figure that falls below expectations. The significance of cities in this context cannot be overstated, as many of the barriers to SDG achievement are predominantly urban-centric. Therefore, by initiating proactive measures and addressing key challenges within our cities, I am confident that we can significantly enhance our efforts and make substantial strides towards achieving the SDGs.

Take, for example, the densely populated city I represent, which faces significant urban migration. This influx of people poses numerous challenges that inhibit our progress towards achieving the SDGs. Despite the advantages of urban density, the quality of life for many residents is subpar, with a considerable portion residing in slums. Slums, or ghettos as they are known in some parts of Africa, often accommodate multiple families who share rudimentary pit latrines instead of proper sanitation facilities. Consequently, residents are vulnerable to various diseases, including bacterial infections, typhoid, and cholera, among others, posing a significant obstacle to achieving SDGs related to quality of life.

Also, the waste disposed of in these pits contaminates nearby wells, further compromising the health of those reliant on them for water. As a city, addressing issues such as population growth, rampant unemployment, and inadequate housing—particularly through the provision of affordable housing—would represent significant improvements towards achieving the SDGs.
Cities must innovate and implement policies aimed at generating employment opportunities and facilitating access to credit for residents. Despite Uganda's reputation as having one of the most entrepreneurial populations globally, many businesses fail within two years due to financial constraints and lack of skills. Therefore, it is imperative that we intervene to build the capacity of our people, provide access to credit facilities, and support entrepreneurial ventures to lift individuals out of poverty and foster innovation.

The saturation of densely populated areas has exacerbated domestic violence, disproportionately affecting women and perpetuating gender inequality, with tragic consequences including loss of life. As cities, we bear the responsibility to intervene and address these pressing issues. Additionally, the strain placed on the environment by this population boom has led to the destruction of wetlands, where many have built settlements for shelter. Consequently, floods wreak havoc, resulting in loss of homes and lives. It is imperative for cities like Kampala to implement measures to alleviate this environmental pressure by focusing on local housing solutions.
The transportation system presents another challenge, particularly with the prevalence of gas-powered motor vehicles in rural areas. This contributes to air pollution, particularly in Kampala, where the majority of vehicles are not electric. Cities must allocate resources to address these challenges and seek financing for effective interventions.

Also, industrial activities within cities, rather than in designated areas, contribute to increased environmental degradation. Kampala, surrounded by water bodies, suffers from pollution as waste is discharged directly into these waters, harming aquatic life and degrading water quality. City authorities must take proactive steps to mitigate these risks and align efforts with SDG objectives. Furthermore, the inadequacy of water drainage channels exacerbates flooding issues which impact homes and streets across Kampala. It is crucial for the city to develop a comprehensive master plan to address drainage infrastructure and tackle challenges such as garbage disposal, which often clogs drainage channels due to limited waste collection services.

So, the city acts as a vector for such diseases. Nevertheless, it remains a vector through which we can achieve the SDGs if effectively managed. To conclude, there is significant potential to achieve the SDG goals. Unity is paramount. We possess the drive, enthusiasm, and commitment to make a difference. However, financial constraints, prevalent in many poor and third-world countries, pose a significant obstacle. However, as a collective body, we must unite, extend our hands, and support one another in overcoming these challenges. While these issues may seem distant to some, they impact us all as global citizens. Regardless of geographical location, we all share ownership of this planet. The challenges faced in Kampala are shared by all, as we are all part of the global community. Thank you for your attention.

Impact Investing through Data, Technology, and Knowledge

Ehsan Mokhtari

Chief Technology،
Chargelab

I am very excited to be here. I'm Ehsan Mokhtari، Co-founder and Chief Technology officer at Chargelab. I am going to talk about "how impact investing can drive sustainable development in urban environments"، particularly through the lens of EV charging، which is the focus of our company. Allow me to provide a brief overview of both Chargelab and my background. I consider myself a serial entrepreneur، much like some of my esteemed colleagues here. My journey began as a Ph.D. student here in Canada، a path that seems to be a common thread among us. My entrepreneurial journey officially began in 2014 when I launched my first startup، which gained attention and was featured in reputable publications like the Financial Times and other major media outlets. Eventually، the business was acquired by an SNP 500 company، leading me to contemplate my next steps and the legacy I aim to leave behind.

I made the decision to pursue multiple goals simultaneously. Can I establish a successful business، generate profits، drive positive change، and contribute to a healthier planet? It seems that electrification and immobility offer a promising avenue for achieving these objectives. The shift away from fossil fuels is now imperative as CO2 emissions reach critical levels، and the reality of climate change is undeniable. Witnessing the global impact of these issues compels us to take action. That's why my Co-founder، Zeck، and I embarked on a journey to accelerate the adoption of immobility. Our focus within this realm is electric vehicle (EV) charging. Chargelab، based in Toronto، operates with offices in both the US and Canada، boasting a team of approximately 100 individuals. Our company specializes in software solutions aimed at connecting، managing، and operating EV chargers regardless of their deployment location – whether in residential garages، apartment complexes، shopping centers، office buildings، or along highways. We proudly operate the largest DC fast charger network in Ontario and serve numerous clients across America، with over 10،000 chargers currently in operation.

The profound impact of EV charging on urban development is fascinating. However، as immobility progresses، we must confront various challenges that are prevalent in technological revolutions. This situation parallels the early days of the internet when infrastructural and technological hurdles were abundant. Reflecting on the era of Windows 98 and Windows 95، we recall the limitations of floppy disks and CD-ROMs، which are now consigned to vintage sources. However، technological advancements over two decades have brought us touchscreen phones and seamless internet connectivity – developments scarcely imaginable during the days of Yahoo Messenger and dial-up internet. Yet، such progress calls for a deep understanding of market dynamics، identification of obstacles، and proactive solutions to infrastructural challenges.

The current state of electric vehicles (EVs) is an undeniable reality، evident in the growth rates observed worldwide، as shown in Boston Consulting Group's chart. Projections suggest that by 2030، electric vehicles will comprise 50% of all vehicle sales in America. While there are rumors of a slowdown in adoption، it's actually the growth rate that's leveling off – a logical occurrence as exponential growth cannot be sustained indefinitely over a decade. Nonetheless، the automotive industry، including manufacturers like Audi، Mercedes، and even Toyota، has embraced the shift towards EV production، presenting a significant opportunity. But this transition isn't without its challenges. Inviting everyone to the EV "party" is one thing، but ensuring sufficient infrastructure – tables، chairs، and food، so to speak – is quite another. The absence of adequate infrastructure، particularly DC fast chargers for cross-city travel، is a major obstacle to EV adoption and immobility. This issue is compounded by the fact that our cities are predominantly designed around gas stations، not electric charging points. As we shift towards delivering energy directly to drivers، whether at home in their garage or in parking lots، it represents a revolutionary change in how we distribute energy for mobility. Additionally، this transformation not only impacts immobility but also challenges traditional energy distribution models dominated by gas and oil companies، shifting the focus towards utilities. However، utilities are notorious for their slow pace of change، which underscores the importance of driving impact investment across all stakeholders involved in immobility. This includes regulatory bodies، energy providers، consumers، Original Equipment Manufacturers (OEMs)، and crucially، city planners who dictate how chargers and infrastructure are integrated into urban environments. Articulating the financial benefits of such investments is paramount، yet it's essential to recognize the capital-intensive nature of infrastructure projects، a consideration that often comes to the forefront when discussing such ventures.

The current status of electric vehicles (EVs) is an undeniable reality، evident from the growth rates observed globally، as illustrated in the chart by Boston Consulting Group. Their forecast indicates that by 2030، electric vehicles will constitute 50% of all vehicle sales in America. While rumors suggest a slowdown in adoption، it's important to clarify that it's not the adoption itself but rather the growth rate that is decelerating. This is a logical progression; sustaining a 500% growth rate annually over a decade is simply impractical. Nevertheless، significant strides have been made، with manufacturers such as Audi، Mercedes، and

Toyota overcoming initial reluctance to produce EVs، presenting a significant opportunity.

However، this transition presents its own set of challenges. It's akin to hosting a party and inviting everyone to join in. But، have we considered if there are enough tables، chairs، and food to accommodate all guests? Without adequate infrastructure planning، disappointment is inevitable. This analogy aptly describes the situation surrounding EV adoption worldwide. While individuals purchase EVs، the lack of DC fast chargers for cross-city travel poses a significant hurdle. While efforts are being made to address this، progress seems sluggish. Infrastructure remains a significant barrier to both EV adoption and immobility، largely influenced by the way cities have been traditionally built around gas stations.

Fortunately، there's a shift underway in energy distribution. We're moving from centralized gas stations to decentralized energy delivery، with electricity being provided directly to drivers، whether at home in their garage or in parking lots. This represents a paradigm shift not only in immobility but also in how we perceive energy distribution for mobility.

As we transition from reliance on gas and oil companies to utilities، the pace of change is slower than expected. This underscores the importance of driving impact investment across all stakeholders involved in immobility، including regulatory bodies، energy providers، consumers، Original Equipment Manufacturers (OEMs)، and city planners. The latter holds particular significance as they determine how chargers and infrastructure are integrated into urban landscapes. Articulating the financial benefits of such investments is crucial، especially considering the capital-intensive nature of infrastructure projects، a factor that invariably comes to mind when discussing such initiatives.

That's the nature of the game. If you're aiming to construct infrastructure، it requires investing billions of dollars upfront with the rewards coming in later. It might not be realistic to expect private companies to shoulder this burden alone. Companies operate on a day-to-day basis، with public companies obligated to report quarterly financial gains. Investing a billion dollars now without immediate returns isn't a feasible option for them. Hence، there's a need to reconsider how we attract investment to facilitate the transition to immobility. Can we clearly articulate the financial and environmental benefits? Are there innovative approaches to entice investment? Several success stories demonstrate how people have tackled this challenge and brought stakeholders together to drive infrastructure development.

Norway stands out for its proactive stance on electric vehicle adoption. They surpassed sales of combustion engine cars with electric vehicles as far back as 2008. How did they achieve this? By introducing green bonds to attract investors and mitigate investment risks in infrastructure. Green bonds offered investors a guaranteed percentage of returns، with the remainder allocated to investments in the green economy، such as EV charging infrastructure. This policy proved highly successful. Sweden then adopted and refined this approach، achieving even greater success than Norway in promoting their green economy. Now، it's heartening to witness the European Union committing over 200 billion dollars to similar green bond initiatives. This initiative is garnering interest from entities like Pension Funds، who have environmental، social، and governance (ESG) mandates، as it allows them to invest in green infrastructure، satisfy their customers، and simultaneously drive positive impacts with returns on investment.

Another example comes from Shenzhen، China، which pursued a different strategy. Unlike Europe، China's economic structure is centered around a more centralized government with substantial influence over finance. Leveraging this، Shenzhen's government-backed banks spearheaded infrastructure-driven incentives. They initiated a funding pool aimed at electrifying all city buses، resulting in the electrification of an impressive 16،000 buses within a five-year period. Additionally، a comprehensive EV charging network was deployed across Shenzhen، establishing China as a leader in the immobility sector.

However، attracting investment is just the first step. Once capital is secured، the challenge lies in effectively deploying it to ensure the envisioned impact materializes. This requires leveraging technology، innovation، and data to maximize outcomes. Much like the telecommunications and social media revolutions before it، artificial intelligence exemplifies the potential to achieve more with less، a principle applicable to immobility as well.

Examining the features offered by ChargeLab، particularly its emphasis on smart charging، highlights the company's core value proposition. For instance، in high-rise buildings in Toronto and similar urban settings، accommodating the charging needs of numerous EV owners poses a significant challenge. Smart charging solutions can mitigate these challenges by intelligently managing power distribution، ensuring efficient utilization without overwhelming the grid or the building's infrastructure.

So، how do we address these challenges? This is where companies like ours step in. We utilize cloud-based solutions and apply artificial intelligence algorithms to remotely manage EV charging infrastructure. By understanding the specific needs of drivers within a building، we intelligently distribute power among clusters of EVs. For example، prioritizing a nurse who needs to leave by 03:00 a.m. for a hospital shift، while also accommodating visitors، tenants، or deprioritizing certain vehicles. We ensure that urgent trips and safety requirements are met، allowing individuals to charge their vehicles precisely when they need to.

Furthermore، our systems connect to data sources from the grid to ensure compliance with capacity requirements. During periods of high demand، such as 05:00 p.m.، we limit power draw to alleviate strain on the grid. Conversely، during low-demand periods، like 12:00 a.m.، we optimize power consumption to reduce costs for consumers and alleviate grid burdens. By collaborating with multiple stakeholders، the synergy created allows us to achieve greater efficiency than the sum of individual efforts.
ChargeLab is also spearheading initiatives to differentiate the source of power. For instance، if power comes from solar renewable sources، we prioritize utilizing stored solar energy for EV charging. This optimization extends to energy consumption، storage، and generation، bringing these three elements together seamlessly.

Looking ahead the opportunities are vast. Electric vehicles، like the Tesla Model Y with its substantial battery capacity، present new possibilities. A fully charged Tesla battery can power a typical household for three days. With projections indicating that 50% of new cars in the States will be electric، this translates to a significant stored energy potential. While initially posing a burden on the grid، innovative technologies such as vehicle-to-home، vehicle-to-factory، or vehicle-to-grid solutions allow us to effectively manage this stored energy،

optimizing its usage and contributing to grid stability.

Imagine as part of the educational development plans of cities, the school bus system is subsidized to transition to electric vehicles (EVs). By utilizing EV charging infrastructure, these buses can be charged before 7:00 a.m. and may not require power after 3:00 p.m. once they have dropped off the children. Equipped with sizable batteries, a pertinent question arises - How can we leverage these batteries to provide power, returning excess energy to the grid and potentially recouping the subsidy provided?

Taking this concept further, consider the traditional power plant, where states burn fossil fuels to generate electricity. What if we aggregate these electric vehicles using software to create a virtual power plant? Residents could subscribe to this service, enabling them to purchase energy when needed at market prices. Subscribers would then consume this energy and return any surplus back to the grid. Through this mechanism, governments could potentially retire backup power plants reliant on polluting fossil fuels like coal, transitioning towards a greater reliance on renewable energies due to the availability of additional storage capacity.

This concept aligns seamlessly if various stakeholders collaborate effectively. However, realizing such initiatives necessitates proactive policymaking and planning. A case in point is Ontario's regulatory landscape until recently. Previously, only utilities were permitted to charge electricity, hindering the development of EV charging infrastructure. Lobbying efforts prompted a revision of regulations, enabling individuals to charge based on kilowatt-hour usage, thereby facilitating the possibility of selling excess EV-charged power back to the grid. However, this transition requires meticulous policy formulation and widespread cooperation to ensure its success.

I is imperative that we embrace a culture of learning from one another. If Norway has implemented successful strategies that could benefit Canada, we should take note of their experiences and insights. Similarly, if Canada pioneers innovative approaches that are applicable to regions like the Middle East, Africa, and beyond, we should foster mutual learning and collaboration. Climate change is a global challenge that impacts us all, and we cannot afford to isolate ourselves. If we aspire to achieve widespread adoption of green economy practices and technological solutions, cooperation is essential.

A poignant example of global collaboration can be found in the successful efforts to address the depletion of the ozone layer. The world united to adopt global policies, resulting in significant progress toward repairing the ozone layer. While this achievement may not receive as much attention in the media today, it serves as a testament to what humanity can accomplish when we work together.

The call to action is clear. Let us initiate change within our own spheres of influence. Whether it's engaging with colleagues, local representatives, or government officials, each of us has a role to play in driving innovation and advancing the adoption of sustainable mobility practices. By sharing knowledge and fostering collaboration, we can make significant strides towards a more sustainable future.

Closing Remarks

Reza Pourvaziry

Chair of
Urban Economy Forum

We need to have a global hub to exchange ideas، innovation، and knowledge across the globe. I think we are in the process. I'm not saying that we are at the end of the journey. It's really starting the journey. And I see all the faces and I understand. We have a very strong opportunity; a really strong opportunity to collaborate with all of you. Always، regarding the support of Amir Hossein Kashfi (managing director at Aragon) and Kaz to establish a local platform for urban finance، since the beginning، we have faced lots of new names، ideas، companies، investors، and potential partners. That's amazing.

And، we hope that during the coming months when we organize the second round of this discussion in New York at the headquarters of the United Nations، we see all of you and also، we need your network. I'm sure you have an excellent network and an excellent idea. Bring your network and your ideas to the pavilion. I think these are some things to create synergy regarding sustainable development goals. To realize sustainability، we need to come together. Otherwise، it's just some report present in the General Assembly.

But beyond that، we had a brief conversation with my colleague، Jose Chavez، regarding how we can realize the goal، and do some practice. I believe that through creating pilot project - doesn't matter a small project or a big project - I think we are doing two important things: one is creating dialogue. Another one is creating a hub for partnership and collaboration by doing some pilot projects around the globe. I want to emphasize at the end our great network run by Eduardo Jasso: a Global Solution Nexus. That is an amazing tool for bringing different entrepreneurs، leaders، startups، mayors، governments، and people together.

And soon we will launch our Latin America office in Canc n، Mexico and we will have an amazing journey in Latin America based on our collaboration with the UN Habitat Latin America office in Rio de Janeiro، Brazil. We will organize the first Urban Economy Forum for Latin America in February next year، 2025. That's amazing.

I really appreciate our new colleague، Maurizio for supporting us regarding Urban Economy Forum 6 membership and for a fantastic global pilot that we are starting to establish together. I enjoyed this conversation. I hope we extend our collaboration to all of you and all individuals. I emphasize all individuals of you in the coming days not coming weeks because time is short. The last thing I want to emphasize about World Urban Forum 12 in Cairo، Egypt. We will try to create a Canadian delegation to join the most important urban gathering globally that will be held from November 4 to November 8، 2024. We hope to present a great collaboration with all of you. Different individuals، platforms، and practices at this important gathering. Thank you so much. Good luck.

Communal photo at the end of the second day's World Summit

Conclusion

Reza Pourvaziry

Chair of
Urban Economy
Forum

The concept of development is the most key concept of the contemporary world that manifests itself when we talk about change towards the improvement of human affairs and the effort to move towards the flourishing of prosperity، wealth and happiness of all human beings; A concept in which intrinsically there is attention to the category of quality of life. In other words، it can be said the concept of development is dependent and conditional on improving the quality of life، but at the same time، the other side of the truth of development is that it has been established on reality - and not necessarily the ideals of development - and in this sense، when talking about the possibility of development and in reality، it is the sources of development that become important، therefore developability of development is resource dependent and any capacity for development that is formed in the real world is dependent on the actual resources that are considered or spent on development. From the activities that we do in practice for the development of communities and in the way of reducing inequality، eliminating poverty and deprivation، etc. to ideas about the quality of life and the worthy settlement of the human species on earth، all of them، are located in the distance between the real sources of development and the distant goals of development. So in the first step، although the goal of development is important، the goal of development along with a realistic view of the resources necessary to realize this development، both together define and explain the vision of UEF concerning the concept of development.

In addition، the process of development is multi-layered and multi-dimensional. In fact، human society، city، or any other reality that is developing can be assumed as a living entity and organism. Regarding the totality of the diverse layers biological، social، economic، etc. related to the matter of development - as a whole - now، if the needs of this organism are met in all these layers - then the development of this living organism of society، city or... begins and its development flourish. Therefore، the need for development in its various aspects، layers، and dimensions makes development become one of the most complex human categories، and therefore all the interventions made by governments، UN institutions، local communities، municipalities، etc.، and are carried out for the purpose of development، they become multifaceted and complex in the same proportion.

To simplify and integrate these various aspects and especially for the purpose that the real resources necessary for development are not wasted، and are also comprehensively and optimally spent - SDGs is a global agenda to realize the development goals. In this way، the keyword of the United Nations Conference on Development and Environment; Earth Summit (Rio de Janeiro، 1992) was sustainability that inspired us، as the development soldiers to focus on the sustainability aspect of these 17 goals; Eventually، after 8 years، the foundation of the SDGs - that is، Agenda 21 - in 2000، became perhaps the most important part of the common discourse of all member nations of the United Nations until now. On this ground، in line with the realization of the 17 goals of sustainable development، the main axis on which the UEF was created was the agenda of a global conference called the City Prosperity Initiative meeting on municipal finance and urban economy held in Geneva، the United Nations headquarters in 2016. Through the agenda of this two-day conference، not only development resources were considered but at the same time، measures were taken on how to provide sustainable development resources; What became the basis for the founding of the UEF.

This issue of providing resources for sustainable development is therefore important because through the concept of sustainability which is an inseparable part of sustainable development، I emphasize that comprehensive and multi-layered development - by the resources of sustainable development - must be realized and guaranteed because it is basically impossible to have development with unstable resources; Especially that the experience of the history of development in the contemporary world، and its effects such as climate change، has shown that unstable development، how fragile، and accompanied by environmental risks، increasing inequalities and political and economic disturbances has been and will be in the future. From this point of view، the essence of sustainable development and especially the subject of sustainable development like the organizations and societies with multi-layered and multifaceted needs show all economic، social، cultural، and environmental resources and capitals might be considered and especially about how to turn these untapped resources and unused economic، environmental capitals، etc. into resources in the path of sustainable development.

This type of resource-oriented view is both development theory and is more than development theory، includes UEF's operational and practical solutions as a prerequisite for becoming operational the development plans; Multilateral solutions to meet the multidimensional needs of multi-layered societies، which one of the most important solutions of the UEF is to create a discourse between all different stakeholders

who gain benefit from realizing the goals of sustainable development. The difficulty lies in the fact that the main economic actors، politicians، etc. each have different agendas، but fortunately، all of them resulting from living on a planet with extremely unlimited resources and with increasing risks such as the immigration crisis، energy، etc. consider themselves in need of an interdisciplinary discourse of opinions and solutions of experts and sustainable development specialists، and otherwise and without paying attention to this interdisciplinary discourse، is not hidden from anyone that cannot be expected to form the happiness and high quality of life for our generation and the next generation of our children.

Therefore، a kind of interdisciplinary cooperation among academicians، politicians، owners of financial capital، entrepreneurs، social activists، etc. - toward the common target of the 17 goals of sustainable development - will be formed after the creation of interdisciplinary discourse of sustainable development. So، via this World Summit on SDGs Cities and Urban Finance and، in fact the leading organization of this meeting GPUF، our attention at UEF is and will be on being able to institutionalize this discourse in an active، effective and efficient way; Institutionalizing of this discourse means that all economic، political، social actors are committed to solutions for optimal and profitable spending of the financial resources in the path of achieving sustainable development; Institutionalizing the discourse of sustainable development also includes strengthening، increasing effectiveness، monitoring، and guiding any type of solution that overcomes the obstacles and challenges created in the path of financial investment and provision of sustainable resources to achieving the 17 targets of sustainable development. Therefore، by committing these actors and to these solutions، a synergy will be created among them so that the goals that we، soldiers of sustainable development have in mind can be realized.

Therefore، it is important to build a discourse with the contribution of experts and specialists from different disciplines including entrepreneurs، and experienced veterans of financial affairs. By the way، the dissimilarity of experts from different disciplines until beneficiaries like industrialists، and political and economic actors - ironically can be a motivation for them to help each other by resolving their differences and contradictions and creating synergy amongst them - that in our view as the bearers of the SDGs flag - are accelerating circumstances up to let's all become the driving engine of development together; Synergies on the way to realizing the totality of the development goals but more by focusing on the goal no. 11 of sustainable development that is related to the city and urbanization that we at UEF call the city as the place of emergence and immanence of all the 17 sustainable development goals. Here، emphasizing the concept of urban SDG، the intersection of each of the other 16 goals of the SDGs and the method of their realization، from gender equality (goal no. 5) to the elimination of poverty (goal no. 1)، or clean water and sanitation (goal no. 6) and...، on the context of sustainable cities and societies (goal no. 11) is crucial. Therefore، we at GPUF bring various independent groups، women's rights activists، urban entrepreneurs، pro-environmental groups، developer، mayors، etc. into an all-round dialogue with each other to create a bond of cooperation and sympathy between them. As a result of this bondness، by solving the challenges and problems of life in the city - an interdisciplinary discourse will emerge، in the urban context (context of the goal no. 11) that can contribute to sustainable development. Therefore، in this platform، to create a space for development، infinitely diverse solutions to equipping the resources and capital are practiced in the path of achieving the goals of sustainable development. We are practicing that people، creative individuals، groups، and institutions who have a serious presence in urban life and have solutions to use financial resources and in the path of sustainable development goals، have this opportunity to raise the capacity of their participation in the interdisciplinary discourse of development that means advancing the development program in cooperation with other partners such as investors and urban governance institutions. In this way، the interaction of each of these actors with each other، and all of them with each other، can realize the spatial texture of sustainable development; Such an open، expanded، and embracing space in GPUF provides the possibility of leveraging new capacities for sustainable growth and wealth production for both investors and owners of entrepreneurial ideas، and citizens of urban communities as well.

Therefore، the most key part of the story of development is the construction of its interdisciplinary discourse. It's our will in GPUF to create a dialogical procedure between different groups of politicians، academics، capitalists، developers، etc.. By insisting on this point that although each of them has relative and limited power، their collaboration is for the benefit of all of them. So، as a result of this process، they strengthen each other through supporting themselves with friendship and love، hand in hand، with good thoughts، good saying، and good deeds.

Moreover، providing different and multi-dimensional support، care، and resources for our cities makes the stability and permanence of the unfledged and young sapling of communities and cities such as Regent Park Communities and cities as the accomplished pilot projects of the SDG's no. 11 that have chosen the path of sustainable development; These communities remain as young trees that if they spend a winter successfully while being cared for in different but comprehensive، multi-dimensional and interdisciplinary ways during this winter; The care of a gardener، an agricultural engineer، a financer، an entrepreneur، a passer-by in the park، a mayor، etc. In this manner، these trees، communities، and cities can stay، remain، and transform to the little upper level of self-sufficiency - not with profound roots and thousands of years - but remain and last stable and that's what we here at UEF can do for our cities.

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