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Sustainable Development Goals Series

Connecting the Goals

Anna Rubbo  
Juan Du  
Mette Ramsgaard Thomsen  
Martin Tamke *Editors*

# Design for Resilient Communities

Proceedings of the UIA World Congress  
of Architects Copenhagen 2023

 Springer

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Editors

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*Editors*

Anna Rubbo  
Columbia Climate School, Center for  
Sustainable Urban Development  
Columbia University  
New York, NY, USA

Juan Du  
John H. Daniels Faculty of Architecture,  
Landscape, and Design  
University of Toronto  
Toronto, ON, Canada

Mette Ramsgaard Thomsen  
CITA—Centre for Information  
Technology and Architecture  
The Royal Danish Academy—  
Architecture, Design, Conservation  
Copenhagen, Denmark

Martin Tamke  
CITA—Centre for Information  
Technology and Architecture  
The Royal Danish Academy—  
Architecture, Design, Conservation  
Copenhagen, Denmark

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Mette Ramsgaard Thomsen, Professor and Head of CITA (Centre for Information Technology and Architecture), The Royal Danish Academy—Architecture, Design, Conservation

Martin Tamke, Associate Professor, CITA (Centre for Information Technology and Architecture), The Royal Danish Academy—Architecture, Design, Conservation

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### Panel Chairs

#### Panel 1: Design for Climate Adaptation

Billie Faircloth, Research Director KieranTimberlake, Adjunct Professor University of Pennsylvania

Maibritt Pedersen Zari, Educator and Researcher. Associate Professor, Auckland University of Technology

#### Panel 2: Design for Rethinking Resources

Carlo Ratti, Professor and Director of the Senseable Lab, MIT, Founding Partner of Carlo Ratti Associati

Mette Ramsgaard Thomsen, Professor and Head of CITA (Centre for Information Technology and Architecture), The Royal Danish Academy—Architecture, Design, Conservation

#### Panel 3: Design for Resilient Communities

Juan Du, Professor and Dean of the John H. Daniels Faculty of Architecture, Landscape and Design, University of Toronto, Founder of IDU\_architecture

Anna Rubbo, Senior Researcher, Center for Sustainable Urban Development (CSUD), The Climate School, Columbia University

#### Panel 4: Design for Health

Arif Hasan, Chairperson Urban Resource Center Karachi, former Visiting Professor NED University Karachi, former member of UNs Advisory Group on Forced Evictions (PA)

Christian Benimana, Co-Executive Director and Senior Principal MASS Design Group

**Panel 5: Design for Inclusivity**

Magda Mostafa, Autism Design Principal Progressive Architects, Professor of Design at the Department of Architecture, The American University in Cairo

Ruth Baumeister, Associate Professor of Theory and History of Architecture, Aarhus School of Architecture

**Panel 6: Design for Partnerships for Change**

Sandi Hilal, Co-Director DAAR (Decolonizing Architecture Art Research), Lise Meinert Visiting Professor, Lund University

Merve Bedir, Fellow at BAK (Basis voor Actuele Kunste) Utrecht

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**Special Advisors**

Katherine Richardson, Professor in Biological Oceanography and leader of Sustainability Science Centre, University of Copenhagen

Chris Luebke, Leader of the Strategic Foresight Hub, Office of the President, ETH Zürich

Thomas Bo Jensen, Head of Research, Aarhus School of Architecture

Camilla Ryhl, Research Director, Bevica Fonden

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# Preface

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## Introduction

*In the autumn of 2022, as part of the preparations for the UIA World Congress of Architects 2023 Copenhagen, we invited Panel Chair and MASS Design Group architect Christian Benimana to Copenhagen to speak to our collegiate and students. In his introduction, he outlined the dramatic land use change in Rwanda following the country's population growth over the last 50 years. Pointing to the maps, he argued that we have passed a tipping point, and that our given societal infrastructures cannot simply be extended or optimized to support this new situation. We cannot build 500 universities or 600 hospitals, he said; instead we need systemic change to rethink what a university is, what a hospital can be. We need to question how our institutions, infrastructures and communities can change in the way they address those in need and what access can be, and therefore also how architecture, its practices, embedded knowledge and products can be methods of instigating change.*

The present proceedings presents six volumes examining the knowledge foundation for such change. As proceedings for the Science Track of the UIA World Congress of Architects 2023 Copenhagen Sustainable Futures—Leave no one behind, they contain a total of 296 papers investigating, show casing and arguing for how change can be imagined across the built environment. By asking how architecture can help achieving the UN Sustainable Development Goals (SDGs), the presented papers collect the research- and practice-based results of a global community. Together they ask what the future of the built environment can be and how design as action and as knowledge can create new roles for architecture and the communities it serves.

This preface starts with the articulation of our profound gratitude to the Scientific Committee and the community of submitting authors and peer reviewers that have been part of this effort. During the last two and half years, we have worked together with the Scientific Committee's Panel Chairs and Special Advisors to form a vision for the Science Track. The process has been an education. Not only in our understanding of the SDGs, the transformative power of design creation or the wider societal role of the built environment but also in keeping our minds open to the many positions that architecture can be thought through and its critical role in engaging—interfacing, informing and developing—different knowledge cultures and perspectives. We therefore

start by thanking the 17 members of the Scientific Committee, the contributing 656 authors of the 296 accepted papers, the 1486 authors of the more than 750 paper submissions and the 536 peer reviewers that have all made this project possible. For this volume 'Design for Resilient Communities', we extend special thanks to Honorary Associate Professor Glen Hill of School of Architecture Design and Planning, University of Sydney, who has been instrumental in supporting the review process.

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## Platform

The UIA World Congress 2023 Copenhagen starts with an ambition. Pitched in 2017, only one year after the launch of the UN Sustainable Development Goals, the central nerve is the articulation of the profound agency of architecture and how it plays an acute role in achieving the SDGs. In the congress, the Science Track is given a particular role. Initiated early in the planning process, the aim has been to place the Science Track at the heart of the congress in order to collect its underpinning knowledge foundation and shape its criticality through a broad outreach to a global community. Sustainability, like architecture, is a wicked problem. Its solutions are dependent on the way we ask, the methods we use and the contexts in which we work. To ask how architecture can be part of the dynamic fulfilment of the UN SDGs is to ask: who are the communities we design with and for, what is the knowledge we draw upon and how can its sharing change how we think about what our built environment can be.

One of the central drivers in our preparatory work for the Science Track has been the realizations of the blindness of the UN SDGs to the agency of architecture. The SDGs seek to steer behaviour both through impacting legislation as well as wider societal value sets. They establish priorities and galvanize efforts across communities by identifying targets and providing shared yardsticks in the form of indicators. In doing so, they inscribe a world view of its defining actors: the governmental bodies, industries and communities that can be leveraged upon to instigate change. And in this world view architecture is strangely absent. At present, none of the UN SDGs declare targets that directly articulate architecture as a driver for change nor are there any indicators that evaluate its role. The built environment is only mentioned as a driver for resilient communities but without real value setting of the role of planning and design. This despite the extensive and complex impact architecture holds on human and non-human well-being: the way we live our lives, shape equity and use our resources.

For us, this realization has led to the overarching aim of using the congress to build awareness. To argue for and demonstrate how architecture has the ability to afford change in the way we understand and construct the world around us and therefore how it as a situated practice engaging directly with both legislation, industry and the communities in which architecture *takes place* can become a direct way of effecting change.

## Vision

The Science Track is formed around six panels of which this volume is one. The vision of the six panels is to articulate six differentiated perspectives onto how architecture can be part of achieving the SDGs while reinforcing their interconnectedness. The panels are in part mapped to existing fields while at the same time suggesting new. By bringing together otherwise fragmented knowledge across the breadth of architecture's research and practices, the aim is to bring together knowledge across research, practice and education to provoke new perspectives, new alliances and concrete action. In articulating the panels, the Scientific Committee asks pertinent and provocative questions that challenge the field and position the SDGs as active goal posts. These questions form the chapters of each volume asking how architectural knowledge creation can innovate the thinking, design and making of architecture.

– ***Design for Climate Adaptation***

With profound urgency, global communities are acting and adapting to the earth's changing climate. Our built environment, the most common habitat of humans, should interact with the earth's ecosystems and climates in a sustainable and regenerative way. 'Design for Climate Adaptation' emphasizes people, multiple forms of research, knowledges and action for high and low-tech solutions that make buildings, neighbourhoods, landscapes, cities, and regions regenerative, resilient and adaptive to climate change impacts.

– ***Design for Rethinking Resources***

Design shapes our world, from the places we live in to objects we use every day. As we grow more aware of the limits of our planet's resources shifting from an exploitative to a restorative, regenerative and circular design ideology becomes fundamental. 'Design for Rethinking Resources' examines approaches to resourcefulness in architecture, how sustainability challenges the foundations of our material practices, and how they can change with it.

– ***Design for Resilient Communities***

A resilient community anticipates, adapts to and recovers from adversity. Climate change, the global pandemic and political upheavals in many countries have revealed social, economic and environmental inequalities that threaten communities worldwide. These fault lines disproportionately impact the poor, people of colour, the racially or ethnically marginalized and women. 'Design for Resilient Communities' encourages innovative solutions and facilitates the development of knowledge and skills necessary for adaptation and recovery.

– ***Design for Health***

Architecture and health are inseparable. From the direct design of hospitals and places for healing to the strategic design of infrastructures and city planning, architecture affects physical and mental health of individuals and communities. 'Design for Health' asks how architecture can reconceive health as a design issue. How land rights impact healthy

living, how legislation, planning and building impacts inequality and access to water and how single buildings and the civic construction of hospitals, health clinics and community buildings can operate in unison with local environments and ecologies to create a safe and healthy space for all.

– ***Design for Inclusivity***

No individual deserves to experience space in a manner that is less safe, less comfortable or less accessible as a result of their identity or challenges. Sustainability, in its most holistic definition, cannot be achieved without a collective act. ‘Design for Inclusivity’ aims to critically define the constructs and categories of who exactly we are excluding, and why, in order to mindfully develop strategies to mitigate this exclusion.

– ***Design for Partnerships for Change***

‘Design for Partnerships’ is about recognizing the asymmetrical relationships between states, public spaces, civil societies and private domains to find new balances for the existing power structures. By challenging the ontology of universalism, it examines how architecture and the built environment can play an essential role in creating a ground for care through local governance, spacemaking practices, imaginaries and scenarios of plural(istic) political, socially and ecologically sustainable futures.

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## **Critical Positions**

The two and half years of preparation have been an inspiring experience through which we have witnessed the power of architectural thinking in action—its interweaving of the critical and the creative ideation as well as its inherent inventiveness orientation towards the future. As part of the curation of this work, we have defined a series of critical positions by which to understand the correlation between architectural thinking and the UN SDGs. A first position has been to challenge the inherent anthropocentrism and perceived lack of hierarchy between the goals—the Tabula Rasa effect as Johan Rockström names it (Rockström 2016). The SDGs have been criticized for failing to recognize that planetary, people and prosperity concerns are interconnected (Kotzé 2022). In forming the six panels of the Science Track, we seek to position a rupture to the modernist axiom that the environment is situated outside of us. Instead, we understand the SDGs as a balancing between planetary and human needs which needs to be holistically addressed.

A second position is the critical appreciation that the SDGs retain an adherence to an underlying model of growth. The Science Track asks what the future practices of architecture can be, what the ethical roles of architectural design are and how architecture knowledge can create change in how architecture is produced both within and without of models of growth. It seeks to identify who the partners of architecture practice can be both through grassroot community action and through industry-based models.

A third position is the challenge of the embedded universalism within the SDGs. The SDGs maintain a universalism that is common to the UN system and underlies much of UN's work. However, this fundamentally modernist position of understanding sustainability as 'a problem to be solved' and placing agency with legislation leaves questions of agency, voice and power unchallenged. The Science Track seeks to incorporate this criticism through the panel calls and their associated sub-questions by provoking reflection on the perceived neutrality of architecture's own humanist traditions and insist on the query of how architecture is produced, by people and for people.

The challenge to universalism has also led to a review of the scientific practice of knowledge dissemination. The call for papers deliberately encourages exchanges and learnings across different knowledge and practice silos. This is effected through differentiated publication formats that include scientific knowledge production as well as design-based knowledge production, narrative formats such as oral history, visual essays, as well as dialogue based exchanges and argumentative essays. The aim of these formats is to expand the possibility of transdisciplinary knowledge exchange and include voices that are not commonly part of academic and professional discourse.

The fourth and final position is to understand the SDGs as part of a changing world. The SDGs set out a 14-year-long project. Any project of that length needs to build in methods of reviewing its own fundamental value sets and core conceptual foundation. The intensifying and accumulating effects of climate change, the aftermath of the COVID-19 pandemic, the continued stress on the world's resources and the increasingly multi-partisan war in Ukraine have deep and unequal repercussions on global communities. To engage with the SDGs is to correlate the goals to a changeable understanding of both needs and means. It is to commit to a continual address of both the contexts and instruments of change-making. In the Science Track our focus on the concrete and the actionable through presentations of cutting-edge research, real world case studies and near future focussed arguments, argue for a situated understanding of the SDGs. This emphasis contextualizes the SDGs within the multiple and diverse practices of architecture as well as the disparate places in which architecture takes place. The perspectives, methods and means are purposefully broad. They seek to represent the breadth of the solution space needed for the systemic change needed. They also purposefully include different voices and different styles to make present the different actors, different knowledge streams and different institutions that create this change.

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## Perspective

The result is a six-volume proceedings tracking a wide and multifarious interpretation on how architecture can be part of achieving the SDGs. Across their individual chapters, we see a breadth of enquiries asking who the communities are, who the actors are and what the means of architectural production are. They ask how we can shape the methods of architectural

thinking as well as their associated technologies, how they can be distributed, and what is the consequence of their sharing.

The proceedings instantiate a moment in time. As research strands, they are part of larger trajectories of knowledge creation. Where our aim for the World Congress is to facilitate new discussions and exchange enabling synergy across silos and geographies, it is clear that the full potential of this conversation is only just beginning. The World Congress coincides with the halfway mark of the SDGs. Launched in 2016 and with a projected completion date of 2030, we need to transition from a place of planning and speculating to one of action. The work of the Science Track is therefore marked by a sense of urgency. The desire is to define the effort of this work not in terms of their individual results, but more as a launchpad for future exchange and collaboration. We hope that what is created here is a community of dedicated actors all with a shared stake in the well-being of future generations. Our hope is that the legacy of this project will be that we can retain this commitment and grow its stakeholders to mature these propositions into actionable change.

*We profoundly thank the Scientific Committee for their immense effort and profound engagement in shaping the Science Track. Thank you to: Billie Faircloth, Maibritt Pedersen Zari, Carlo Ratti, Anna Rubbo, Juan Du, Arif Hasan, Christian Benimana, Magda Mostafa, Ruth Baumeister, Sandi Hilal, Merve Bedir, Katherine Richardson, Chris Luebke, Thomas Bo Jensen and Camilla Ryhl.*

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Mette Ramsgaard Thomsen, General Reporter  
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## Editorial

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### Design for Resilient Communities

Climate change, the global pandemic and political upheavals in many countries have revealed social, economic and environmental inequalities that threaten communities worldwide. These fault lines disproportionately affect the poor, people of colour, the racially or ethnically marginalized, and women. A resilient community is one that anticipates, adapts to and recovers from adversity, whatever form it may take.

Adopted in 2015 by 193 nations, the United Nations' Sustainable Development Goals (SDGs) offer a roadmap to a more sustainable future. While the built environment is only briefly addressed in the SDGs and their associated targets, it is important to remember that the product of architecture and planning practices is responsible for 40% of annual CO<sub>2</sub> emissions. *Design for Resilient Communities* seeks to encourage familiarity with the interconnections between all SDGs and targets, and how—through education, design, and planning—the SDGs can enhance community resilience for specific localities and people. It also requires interdisciplinary approaches to articulate these cross-sectoral issues, as well as informed co-design partnerships to achieve community-driven solutions. In addition to the actions of design professionals, a key concern of this book is the role of research and its dissemination in accessible forms, and how architectural education can best prepare tomorrow's professionals to Design for Resilient Communities. Through multiple scales and perspectives, texts in this book share knowledge about design research and practices that contribute positively to building resilient communities—with and for people.

'Leave no one behind', the theme of the UIA World Congress of Architects Copenhagen 2023, is timely and inspired. 'Leave no one behind' invited design professionals, researchers and educators to address the needs of excluded peoples of the world, while the Congress's ambition for architecture to contribute to the UN SDGs offers a way to 'leave no one behind'. To address the UIA World Congress of Architects CPH 2023 theme comprehensively, the UIA World Congress Scientific Committee created six Panels, whose task it would be to help generate content for the Congress, as

papers presented in Copenhagen and for six proceedings that would provide an enduring UIA World Congress of Architects CPH 2023 legacy. Through a call for papers, the six panels—*Design for Climate Adaptation*, *Design for Rethinking Resources*, *Design for Resilient Communities*, *Design for Health*, *Design for Inclusivity* and *Design for Partnerships for Change*—attracted over 750 submissions from 77 countries.

This proceedings volume, *Design for Resilient Communities*, reveals multiple ways by which, through theory and practice, design educators, researchers and practitioners can help foster community resilience. Beyond the individual building and the design of the spaces in between, the studio course or the research project, designing for resilient communities prompts a rethinking of the nature of cities, and what Lefebvre’s ‘right to the city’ means in 2023. Potential solutions to these problems at a macro- and micro-scale are embedded in the SDGs and the New Urban Agenda. Thus, the entry of the SDGs into the mainstream of architectural discourse as a counternarrative to developer-led, profit-oriented planning and design is welcome. At the UIA World Congress of Architects CPH 2023, the Union of International Architects invited the global design community to engage in the UN’s ambitious plan of action for people, planet and prosperity. Already the UIA has signalled its commitment to the SDGs, through its partnership in 2021 with UN Habitat to offer a biannual 2030 Award for built work that contributes to SDG design,<sup>1</sup> the UIA award for Innovation in Education with a focus on the SDGs,<sup>2</sup> and the founding of the UIA Sustainable Development Goals Commission.<sup>3</sup>

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## **The SDGs, the New Urban Agenda (NUA), the ‘Open City’ and Resilient Communities**

The Sustainable Development Goals (SDGs), also known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that, by 2030, all people enjoy peace and prosperity. The SDGs framework has a total of 17 interconnected goals, 169 targets and 247 indicators; 92 of the indicators are environment-related. The New Urban Agenda (NUA), developed by UN Habitat in parallel with the SDGs, calls for sustainable, inclusive and resilient cities and communities that provide opportunities for all. The New Urban Agenda was adopted by 167 nations at the Habitat 111 Conference in Quito in 2016.

Most of the 17 SDGs are directly or indirectly associated with the challenges of climate change, poverty and inequality, and the loss of biodiversity and natural resources. Goal 11—sustainable cities and communities—is the goal the design professions gravitate towards, but many of the

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<sup>1</sup>UIA 2030 Award- <https://www.uia-architectes.org/en/competitions-and-prizes/uia-2030-award/>.

<sup>2</sup>UIA education award: <https://www.uia-architectes.org/en/award/the-uia-award-for-innovation-in-architectural-education-focus-on-un-sdgs-2nd-edition/>.

<sup>3</sup>UIA SDGs Commission: <https://www.uia-architectes.org/en/commission/sdgs/>.



goals are of critical importance in cities. Several goals stand out when thinking about designing for resilient communities. For example:

**SDG 1: No Poverty**—Reducing poverty and inequality can help to build more resilient communities by ensuring that everyone has access to basic needs such as food, shelter, healthcare (Goal 3) and education (Goal 4).

**SDG: 7: Affordable and Clean Energy**—Architects can design buildings that are energy-efficient, use renewable energy sources and incorporate smart building technologies that contribute to community resilience.

**SDG 11: Sustainable Cities and Communities**—It focuses on making cities and human settlements inclusive, safe, resilient and sustainable. The design of safe and affordable housing, accessible public transportation and resilient infrastructure (Goal 6) contribute to resilient communities. Target 11.3 aims to mitigate urban sprawl. Target 11.7 addresses green and open public spaces for all members of the community including people with disabilities, different age groups and cultures and can also address biodiversity loss.

**SDG 13: Climate Action**—Climate change is one of the biggest threats to community resilience. SDG 13 aims to strengthen the ability of communities to cope with the impacts of climate change by reducing greenhouse gas emissions, increasing the use of renewable energy, and promoting sustainable practices. Architects can design buildings and spaces that are resilient to the impacts of climate change, such as rising sea levels and extreme weather event, as well as designing for natural ventilation and lighting, green roofs and rainwater harvesting.

**SDG 17: Partnerships for the Goals**: Achieving the SDGs requires cooperation and partnerships between governments, the private sector, civil society, and individuals. Architects, academics and researchers can collaborate with other professionals and disciplines, community members and stakeholders to develop solutions that are sustainable, inclusive and resilient.

The NUA goes hand in hand with the SDGs and provides guidance for designers. With a focus on the 21st-century city, the NUA introduced a new paradigm or manifesto for urban development. Significantly, the ‘Open City’ paradigm reorients the priorities of the 1933 Athens Charter that continue to influence urbanization, and that in their current form too often pander to corporate profits as opposed to the needs of everyday citizens. The Open City embraces design principles that are inclusive by race, class, ethnicity, and culture, are culturally and gender aware, non-hierarchical, non-deterministic and fluid. The Open City embraces informality; it promotes mixed-use, social-mix, and bottom-up approaches. And it promotes partnership with local governments. With effective local partnerships, people can be partners in their own development and exert their right to their city. The values of the Open City differ in relation to some key Athens Charter priorities. For example, top-down zoning involves the separation of land uses into residential, commercial, recreation and industrial areas, and the privileging of the private car over public transportation.

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## Background to the SDGs and the NUA

The 2000–2015 Millennium Development Goals (MDGs) preceded the SDGs and contributed significantly to reducing poverty levels. The MDGs were developed in a top-down fashion. They paid little attention to cities but did address the question of how to improve the lives of slum dwellers.<sup>4</sup> In contrast, the SDGs were the result of extensive global engagement and consultation. Ironic as it may seem, the inclusion of Goal 11 was a hard-fought battle, especially considering the role cities play: as the engines of economic growth, as major contributors to greenhouse gases, and as the places the majority of the world’s people now live. Consider that in 1950, approximately 30% of the world’s population was urban and 70% was rural, and that by 2050, these figures will be almost exactly reversed. Consider also that cities consume around 75% of the world’s energy and produce more than 70% of greenhouse gases. Projections (in 2012) were that 60% of the area expected to be urban by 2030 had not yet been built, meaning that the human spatial footprint will more than double by 2030. As argued in a UN Habitat White Paper, given the rate of decline in natural habitats, spatial development decisions must retain biodiversity; to that end, the White Paper recommends four spatial actions.<sup>5</sup> With the predicted amount and rate of future urbanization, it is obvious that cities and their design will play an outsized role in achieving the SDGs. How

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<sup>4</sup>In 2002 the UN established 10 task forces to accelerate the MDGs. Over two years an international, interdisciplinary taskforce investigated how the lives of 100 million slum improving the lives of slum dwellers could be improved. By and large slum dwellers said the urban professionals don’t listen, an issue that designers would do well to reflect on. See Garau, P., Sclar, P, and Carolini, G., *A Home in the City* London: Earthscan, 2005: 92. A subsequent educational program, Global Studio (2005–12) attempted to address the ‘they don’t listen’ issue.

<sup>5</sup>*Cities and Nature: Planning for the Future* White Paper UN Habitat, 2022, coordinated by Rudd, A. <https://unhabitat.org/cities-and-nature-planning-for-the-future>.

will architects step up to the plate? As UN Secretary General Antonio Guterres has often said, ‘cities are where the climate battle will be largely won or lost’.<sup>6</sup>

As the SDGs were being developed, UN Habitat—the organization with responsibility for cities and human settlements—embarked on the drafting of the New Urban Agenda. Its main purpose was to assist in achieving the cities goal. To understand how the SDGs and New Urban Agenda are connected, go to <https://www.sdgnewurbanagenda.com>.<sup>7</sup> The main function of the NUA is to guide policymakers, planners and other stakeholders in creating cities that are inclusive, safe, resilient, and sustainable, and to bring a fresh approach to urbanization—one that looks forward rather than backward. As noted above, the NUA calls for an Open City based on integrated processes that place people, and especially the disadvantaged, at the centre of urban development.

This new paradigm is described in *The Quito Papers: Towards an Open City*,<sup>8</sup> the result of a research collaboration which accompanied the development of the New Urban Agenda. With an emphasis on embracing informality in all its dimensions and putting people first, *The Quito Papers* spells out a theoretical foundation for the Open City. Reviewing the book, Edgar Pieterse, the director of the African Center for Cities in Cape Town, applauds this forward-looking approach and doesn’t mince words when speaking about the prevailing ‘moronic’ state of urbanism:

(The Quito Papers) is an anti-manifesto manifesto in that it confronts innate urban complexity and open-endedness, whilst holding on to a resolute belief in the power of thoughtful design as a passageway to generative urbanism. This book is a masterclass in how to provoke, animate, and curate persuasive arguments to dismantle moronic urban templates that are all too prevalent in favour of contextual invention. It is an indispensable read for urban activists, scientists, creatives, leaders, and of course, argumentative citizens.<sup>9</sup>

For those who may have difficulty accessing *The Quito Papers*, a short film featuring authors Richard Sennett, Saskia Sassen and Ricky Burdett, as well as longer discussions, provide access to the ideas advanced in this paradigm shift.<sup>10</sup> The Open City is one that accommodates the layered, less orderly but more human aspects of the urban experience; it embraces informality instead of rejecting it. Unlike modernist planning, it doesn’t focus on a final object but recognizes that the city is constantly evolving, and changing as peoples’ needs and use of space changes. Habraken’s ‘loose fit’ in housing design may

<sup>6</sup>Speech at C40 Mayors Summit 2019. <https://unfccc.int/news/guterres-cities-are-where-the-climate-battle-will-largely-be-won-or-lost>.

<sup>7</sup><https://www.sdgnewurbanagenda.com>.

<sup>8</sup>Sennett, R. Burdett, R., Sassen, S. in dialogue with Clos., J. *The Quito Papers and the New Urban Agenda*. Routledge, 2018.

<sup>9</sup><https://www.lse.ac.uk/cities/publications/books-and-chapters/The-Quito-Papers-and-the-New-Urban-Agenda>.

<sup>10</sup>The Quito Papers: Towards an Open City (15 minutes, 2017). <https://www.youtube.com/watch?v=B4sJzJxXmNw>. For a longer discussion hosted by UN Habitat with an introduction by Dr Joan Clos (2017) see <https://www.youtube.com/watch?v=nNtuGsfjL4U>, or the discussion at the London School of Economics (2017). <https://www.youtube.com/watch?v=VgjBkYh1k-8>.

be a useful analogy for designers.<sup>11</sup> The Open City argues for the restitution of the commons (aka public space), much of which has been privatized. It proposes planning for integration rather than segregation and takes issue with the economic, social and racial segregation the gated community represents. At its core is the desire to create intensely human, equitable and resilient communities in all their messy diversity. In other words, meaningful sustainable places where all citizens can realize their potential.

*The Quito Papers* is not without its critics. Philip Lawton says the Athens Charter has become the authors' 'bête noire' and writes that 'the predominant observations of the Quito Papers are made through a decoupled reading of spatial form, rather than a longer-term analysis of everyday lived experience. The challenge is to understand how different sets of urbanism ideals within deeply uneven processes and outcomes, and how to promote ways in which truly alternative approaches can be promoted to oppose them'.<sup>12</sup>

Regardless of this critical observation, the Open City approach (which underpins the NUA) is in stark contrast to the current neoliberal planning environment that prioritizes economic growth and profits over social and environmental concerns and mostly benefits the better off. It should be noted that these priorities have also helped create a class of (mostly) male star architects (starchitects) who make their names with iconic cultural or commercial projects, while most architects spend their careers in the private sector, often designing houses for the well off, or projects that are of most benefit to the privileged. Sadly, too little of the work by architects improves the lives of the poor, and the days of governments maintaining progressive design and planning offices responsible for housing and public buildings such as schools have largely disappeared.

Too little attention has been given to public transportation, mixed use and social mix, and the creation of diverse neighbourhoods that might enhance community resilience. The rise in gated communities ensures a segregated city, and a lack of funding and political will has led to a global affordable-housing crisis. The very wealthy may also create ways of co-opting government gatekeepers, sometimes bypassing planning regulations and even the results of design competitions as seen in the Barangaroo development on the shores of Sydney Harbour. The winning design for this important CBD site offered mixed use, an affordable housing component, commercial development and public open space; instead, there is a casino, some high-end commercial and residential development with a reduced amount of public space. Forensic research by Rogers and Gibson reveals the mechanisms by which one attempt at a more open city were foiled, mechanisms they say could be exported to other countries.<sup>13</sup> With policy settings more in line with the Open City, this may not have happened.

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<sup>11</sup>Habraken, J. *Supports: An Alternative to Mass Housing*, Architectural Press, 1972.

<sup>12</sup>Lawton, P. 'Tracing the Provenance of Urbanist Ideals: A Critical Analysis of the Quito Papers'. *International Journal of Urban and Regional Research*, 2020: 741.

<sup>13</sup>Rogers, D. and Watson, C. 'Unsolicited urbanism: development monopolies, regulatory-technical fixes and planning-as-deal-making'. *Economy and Space*, Vol 53(3) 2020.

Between the 1933 Athens Charter and the 2016 launch of the Open City, there have been significant challenges and disruptions to the Charter principles, and progress made towards more liveable and less deterministic cities. They began when cracks appeared in the vision of the city as a ‘machine for living in’. In the 1960s, Jane Jacobs, Rachel Carson and Christopher Alexander stand out as ‘disruptors’ that had an outsized impact. Jacobs argued for mixed-use neighbourhoods, vibrant communities, and pedestrian-friendly streets, while Carson highlighted the harmful effects of pesticides in an expose which led to more sustainable environmental laws in cities. In his 1965 article ‘The city is not a tree’, Alexander conceptualized the city as a complex organic semilattice, and fundamentally changed thinking about cities.<sup>14</sup> In 1977, his *Pattern Language* electrified design thinking worldwide. Following an epiphany about cities as places for people, in the 1960s (after an architecture education that didn’t talk about people), Danish architect Jan Gehl successfully pioneered a people-centred approach in dozens of cities worldwide, reclaiming streets from cars and improving people’s experience of the city.<sup>15</sup> His principles, like those of Jacobs, Carson, and Alexander, are as relevant today as they were when first enunciated, and relevant to the global north and south. Alexander’s thinking has become relevant again with the publication of *A New Pattern Language for Growing Regions* (2020), which offers 80 patterns for a new generation of urban challenges.<sup>16</sup>

There are other ‘disruptors’ we could mention, including the architects-turned-politicians Jaime Lerner from Curitiba in Brazil and Enrique Penalosa in Bogota, Colombia. In different ways, they reinvigorated a ‘right to the city’ by implementing projects that improved the lives of working people. They, and many other city mayors, have shown how important local government partnerships are to making progress. Colombian sociologist Orlando Fals Borda introduced Participatory Action Research as a research method, and it became hugely influential in securing a voice for the disadvantaged. Brazilian educator Paulo Freire promoted radical change and societal transformation through education grounded in local knowledge and lived experience. For Freire, education was a means of building a critical consciousness (conscientization) that would empower people to change their lives. Influential in many fields, his ‘education for liberation’ and his critical pedagogy stimulated developments in participatory planning and design and gave weight to the ‘people as partners’ model.<sup>17</sup> The intellectual and practical

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<sup>14</sup>Jacobs, J. 1961. *The Death and Life of Great American Cities*. New York: Random House; Carson, R., *Silent Spring*, Houghton Mifflin, 1962; Alexander, C. “A City is Not a Tree.” In *A City is Not a Tree: 50th Anniversary Edition*, edited by Michael W. Mehaffy. Portland: Sustasis Press, 2015. See <http://www.sustasis.net/ACINAT-LR.pdf>.

<sup>15</sup>See Gehl Architects. <https://www.gehlpeople.com>, and <https://www.youtube.com/watch?v=v9RMJfAFL84>.

<sup>16</sup>Mehaffy, M. Aalingaros, Y. Rudd, A. et al. *A New Pattern Language for Growing Regions: Places, Networks, Processes*, Sustasis Press 2020.

<sup>17</sup>Freire, P. *Pedagogy of the Oppressed*, New York: Continuum, 1970; *Education for Critical Consciousness*, New York: Seabury 1975.

achievements of these Latin American change agents remain relevant for achieving resilient communities and are helpful in orienting architects towards more just outcomes.

The humanistic and radical thinking we have mentioned began in the 1960s and took root in the research and teaching of architecture, and to a degree in practice. Exciting progress towards a more equitable and socially concerned profession has been made in recent decades with women playing an important role and introducing new perspectives. We can point to co-design and collaborations with communities, to the development of theories about agency, and to new ways of practicing architecture.<sup>18</sup> The ‘live’ project has become common in design studios<sup>19</sup> and international projects with a social and environmental justice agenda have increased.<sup>20</sup> We can point to experiments of collaborations between schools and global design practices that explored the SDGs.<sup>21</sup> We see methods that facilitate participatory design and planning, as well as ethnographic and culturally appropriate approaches have been employed.<sup>22</sup> Seemingly simple concepts like ‘listening’ and the development of ‘trust’ and working with ‘people as partners’ have achieved results. In many cases, the local communities have demonstrated powerful lessons of community organization and sustainable development to designers and planners.<sup>23</sup> Harvesting the power of the digital in service of inclusion has been a significant development, including multidisciplinary mapping for strategic planning purposes.<sup>24</sup>

These efforts to better respond to people, place, nature, climate change and inequality have attracted idealistic young people to architecture, and increasingly the social impact of design has been foregrounded. These efforts in practice, education and research have provided a counterbalance to the architect-as-hero

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<sup>18</sup>See Spatial Agency: <https://www.spatialagency.net>. Also Awan, N. Schneider, T., Till, J. *Spatial Agency: other ways of doing architecture*, Routledge, 2011; and Harris, H. Hyde, R. Maraccio, R. *Architects After Architecture: Alternative Pathways to Practice*, Routledge 2021.

<sup>19</sup>Dodd, M., Harrison F., Charlesworth. (eds), *Live Projects: Designing with People*, RMIT Press, 2012.

<sup>20</sup>Rubbo, A. “‘They don’t listen’: The Urban Professions, Education and the Urban Poor” in *Non-Standard Architectural Productions Between Aesthetic Experience and Social Action*, Lösckhe, S. (ed.) Routledge, 2020.

<sup>21</sup>Local Project Challenge: Mumbai. <https://localprojectchallenge.org/mumbais-port-lands-re-imagined/>.

<sup>22</sup>Du, J. “Where ‘City’ Meets ‘Village’: Contesting Public Spaces during Shenzhen’s Urban Renewal.” In *Public Space in a Chinese Megaregion: Contemporary Urban Practices and Design Strategies of the Greater Bay Area*, edited by Miodrag Mitrasinovic and Timothy Jachna, Routledge, 2021.

<sup>23</sup>*Cities and Nature: Planning for the Future* White Paper UN Habitat, 2022, coordinated by Rudd, A. <https://unhabitat.org/cities-and-nature-planning-for-the-future>.

<sup>24</sup>Du, J. “Project Home Improvement: Movable Upgrades and Community Engagement in Hong Kong’s Subdivided Units”. *Domus China*, (2018): 90–99.



model mythologized in the public imagination by Ayn Rand,<sup>25</sup> elements of which have often been present in the socialization of student architects.<sup>26</sup>

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## Design for Resilient Communities Themes

It was with many of these ideas in mind that we developed the *Design for Resilient Communities* call for papers. Through an international symposium held at the University of Toronto's John H. Daniels Faculty of Architecture, Landscape, and Design, we launched a public call for contributions.<sup>27</sup> Design professionals, academics and researchers around the world were invited to reflect on the intersection between the SDGs and resilient communities through their own work and experience. We asked questions related to design and resilient communities organized through the following topics: The SDGs and Everyday Life; People as Partners; Global Crises/Rising Inequality; Local Practices/Global Corporations; Digital Democracies for Equitable Communities; Housing and the Right to the City; Design Education and Resilient Communities.<sup>28</sup> The call for papers attracted an extraordinary response, with 176 submissions from Asia, Europe, South America, Africa, North America and Oceania. Upon a double-blind peer review process, and further editorial reviews, 65 papers have been included and organized into five thematic parts.

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## Part I: The SDGs and Everyday Life

We argue that the SDGs and the NUA should contribute to the resiliency of communities through engaging the experiences of daily life. Empowering the capacity to adapt and recover from adversity begins with improving the everyday lives of community members. Contributions in this book expand thinking on this topic, as theory, through research or practice case studies, as well as any critique of the potential of the SDGs to positively impact daily life.

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<sup>25</sup>See Duggan, L. *Mean Girl: Ayn Rand and the Culture of Greed*, University of California Press, 2019, and her account of the influence past and present of Rand's individualistic philosophy in her novel, *The Fountainhead* (1943).

<sup>26</sup>This form of educational socialization, in an environment where misogyny is sometimes present, may have largely disappeared but effects may remain. Elements may include sexism, individualism, a focus on form not end users. For the student, unconstructive studio crits, lack of courses about cultural, social or economic diversity as they apply to design; design ethics; little experience in collaboration, group projects or understanding the social impact of design.

<sup>27</sup>See Design for Resilient Communities International Symposium, program April 8, 2022. <https://www.daniels.utoronto.ca/events/1649426400/design-resilient-communities-international-symposium>. Video: [https://www.youtube.com/watch?time\\_continue=1&v=aKRup\\_49yKo&embeds\\_uri=https%3A%2F%2Fuia2023cph.org%2F&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=1&v=aKRup_49yKo&embeds_uri=https%3A%2F%2Fuia2023cph.org%2F&feature=emb_logo).

<sup>28</sup><https://uia2023cph.org/design-for-resilient-communities/> and <https://unesdoc.unesco.org/ark:/48223/pf0000380519> visited March 2nd, 2023.

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## **Part II: People as Partners**

The literature has numerous examples of the failure of top-down design and planning in education as well as practice when policy makers or design professionals do not properly engage the impacted residents. We argue that participatory planning and inclusive design is one of the most important factors in ‘Design for Resilient Communities’. Do the SDGs and/or the NUA encourage or support a people as partners model? Contributions demonstrate how in a given context, a ‘people as partners’ model is implemented and how it can be improved, scaled up, or introduced into education or practice settings.

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## **Part III: Global Crisis and Designing Resilience**

Climate change, the global pandemic and political upheavals have been cited as sources of inequality. While much of the crisis is global in scale, resources and capacities for response and recovery vary greatly from region to region. Remote communities and refugees rely on digital access for their well-being. Digital equity must be adapted as a necessary infrastructure for all future resilient communities. Taking these or other factors that contribute to systemic inequality that impact community resilience around the world, contributions address specifics and offer lessons for education and practice that will encourage design for resiliency in particularly impacted or overlooked regions and communities.

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## **Part IV: Housing and the Right to the City**

Affordable housing is a global challenge, in metropolises from New York, Sydney, London, and Mumbai, to Nairobi and Kabul. Short-term rentals, long commutes, subdivided units and informal settlements have become common compromises and reprieves by those unable to afford home ownership in different cities around the world. For communities in their social, cultural and economic specificity to flourish, affordable, safe and environmentally sustainable housing must be an ambition in the Design for Resilient Communities.

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## **Part V: Architectural Education in a Global Habitat**

*Design for Resilient Communities* requires agile professionals, capable of meeting the challenges as they emerge. Tomorrow’s leaders are being educated in today’s schools. Future professionals require interdisciplinary knowledge and skills, including abilities to address climate change and work collaboratively with communities. Curricula that promote new modes of

cross-disciplinary professionalism with the knowledge of socially and environmentally sustainable developments are required for the design disciplines to stay relevant into the future.

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## Conclusions

The papers included here cover a lot of ground, share ideas, and suggest new directions for teaching, research and practice. The methods are diverse, from the more scientific to storytelling modes. They range from the research project to the studio experience and the built project—or, as in the case of papers addressing Ukraine, they adopt an advocacy position. All take on the questions of inclusion, social and environmental sustainability. What is abundantly clear is that there is a huge amount of intellectual and creative energy devoted to creating more sustainable and resilient communities, and for putting people at the centre of these efforts. There is much to learn from these papers.

However, there is also much further work to be done to address inclusion and to think through what that means in Design for Resilient Communities. In countries with a colonial legacy, how can education and practice be decolonized? What is an appropriate architecture curriculum in schools that have been dependent on coloniser models? How can the trauma of marginality and exclusion be healed? How can design professionals truly start to understand the meaning of the land to indigenous communities? And how can urban priorities change in market-driven development that privileges the well off?

A central question we need to address is: ‘Is a focus on the SDGs productive for the design community?’. After all, sustainability imperatives are built into education, practice and even design awards. Despite this, we would argue ‘yes’. The SDGs and the NUA offer a way for the design community to be part of an urgent global conversation about social and environmental sustainability. The SDGs provide a shared language and framework for stakeholders from different backgrounds to collaborate towards a common goal. Using the SDGs framework, designers can incorporate community and indigenous values and viewpoints while also promoting sustainability, social justice, and inclusive development. The SDGs remind and require us to be inclusive of all people—men, women, children, the elderly, those with disabilities. They require us to think more about retaining biodiversity. The other reason why we answer ‘yes’ to our question is because of the fraying of democracies in many parts of the world, and the rise of right-wing populism. This is occurring as we experience ever higher rates of economic inequality. There is a real benefit in forming partnerships, especially if the liberal principles of the Open City, the SDGs and the New Urban Agenda come under fire. It is sobering, for example, to

witness the demonization of wokeness<sup>29</sup> in public discourse but also in schools and, in the case of Florida, a university. The culture wars, and their manipulative use in politics, may just be getting started.

Designing for resilient communities should produce innovative solutions and facilitate the development of knowledge and skills necessary for adaptation and recovery. In addition to the actions of design professionals, a key concern is the role of research and its dissemination in accessible forms, and how architectural education can best prepare tomorrow's professionals to Design for Resilient Communities. Solutions should draw upon research, professional practice, education, participation in local government or NGOs or their experiences as members of communities. Some perspectives to further explore are: design for self-sustaining communities, promoting responsible land use, transformation of existing building stock, innovations in affordable housing, reshaping community economies that allow long-term benefits for all inhabitants, how design of the public realm—both physical and digital—affects inclusiveness and the way we live in our communities, how augmenting our lives with smart technologies can provide insight into wide-scale patterns changing ways of occupation and interaction within the built environment, how community infrastructures can be shaped to reduce carbon footprint and allow green living, and more. Designing for resilient communities must address the globally shared challenges of how to strengthen community resilience and the crucial maintenance of biodiversity through design of the built environment. Sustainable and resilient cities require thoughtful engagement in the design of communities. And as rapid urbanization and high-density developments place unprecedented and increasing pressures on the global habitat and the way we live, it is of paramount importance that architectural practices and research develop synergetic potentials linking the design of resilient communities to the ambitions of the SDGs.

Anna Rubbo  
Senior Researcher  
Center for Sustainable Urban Development  
The Climate School  
Columbia University  
New York, USA

Juan Du  
Professor and Dean  
John H. Daniels Faculty of Architecture  
Landscape and Design  
University of Toronto  
Toronto, Canada

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<sup>29</sup>Wokeness. A 'state of being aware, especially of social problems such as racism and inequality'. Cambridge Dictionary. Woke capitalism, portfolios that are built around environmental, social and governance issues like climate change or diversity. Merriam Webster Dictionary.

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# Tactical Urbanism: Training Course for Multipliers Local Agents

# 61

Adriana Sansão Fontes, Rodrigo Rinaldi de Mattos, Maini de Oliveira Perpétuo, and Inês Domingues Maia e Silva

## Abstract

This work presents a community outreach course to develop skills for participants to become multipliers of solutions for adapting public spaces in different contexts, using Tactical Urbanism as a Social Technology. Tactical Urbanism is an approach to activating neighborhoods using short-term, low-cost and scalable interventions that allow the immediate redesign of public space, targeting future transformations. Creating a network of local agents is essential to building agile and replicable responses to new demands and creating resilient communities. Thus, we propose the concept of “multiplication of knowledge”, considering: the community of learners; the need to master processes and reciprocity. The first idea resides in the formation of multidisciplinary groups in search of knowledge that enables the recovery of public spaces; the second is based on the dissemination of tools for citizens to become agents of change and the third refers to feedback: knowing how to reevaluate solutions. The

course offers contemporary content that criticizes the car-centered paradigm of Brazilian cities and helps to propose changes in daily life with a focus on people and on strengthening communities. It is organized on three levels: the proposing team trains tutors (officers from the public sector, architects, NGOs, neighborhood associations), who interact with local agents (citizens), promoting capillarity so that Tactical Urbanism interventions take place. Divided into three modules—discover (case presentations and theoretical content); design (development of solutions); and prototyping (testing of proposals)—the course combines recorded classes that allow replication with face-to-face workshops and DIY interventions.

## Keywords

Community outreach course · Local agents · Social technology · Tactical urbanism

A. Sansão Fontes (✉) · R. R. de Mattos · M. de Oliveira Perpétuo · I. D. Maia e Silva  
Universidade Federal do Rio de Janeiro, UFRJ,  
PROURB, Rio de Janeiro, Brazil  
e-mail: [adrianasansao@fau.ufrj.br](mailto:adrianasansao@fau.ufrj.br)

## 61.1 Introduction

The onset of the COVID-19 pandemic reinforced the importance of greater resilience to confront new contemporary challenges in different fields, whether economic, social, environmental or urban. Notably, in the global South’s cities, historically defined by the State’s inefficiency to supply basic citizen demands, communities were

compelled to propose local actions, as a reaction to the difficulties in obtaining swift official responses. In matters of architecture and urbanism, some of the main communal requests were agile, effective solutions and methods in urban design to adapt public spaces to minimize the disease spread.

In this context, different cities around the world implemented Tactical Urbanism guidelines to transform public spaces. Tactical Urbanism's approach has as its main features low-cost, rapid execution, local scale, scalability and shared responsibility among different stakeholders (Lydon and Garcia 2012). Such qualities led to ample adoption of Tactical Urbanism' methodology in various world regions, aiming to adapt public spaces to promote active mobility and outdoor activities. Among the main measures were: provisional bike lanes, extension of sidewalks and street closures for vehicles, incentivizing open space use and relying on walking and cycling as priority means of mobility (NACTO 2020).

In the case of Brazilian cities, the logic of car-centered urbanism still exerts a great influence on road design, turning public spaces intended for mobility into extremely hostile sites for the circulation of pedestrians and cyclists. This is clear by observing the high rate of pedestrians' run-overs, the poor maintenance of sidewalks and at intersections, the lack of safe crossings (Malatesta 2017). Even in this stern scenario, there were few official Tactical Urbanism solutions implemented by Brazilian governments, at all levels, to adapt public spaces, evidencing a lack of formal initiatives seeking to make public spaces safe for people (Sansão Fontes et al. 2021). In general, the pandemic challenging context merely pointed to Brazil's lack of policies devoted to prioritizing safer cities, with better active mobility infrastructure and suitable public spaces for its citizens, leaving the responses, by and large, up to the communities and their local solutions.

Faced with this question, this article brings as a proposal a "Training Course for Multipliers

Local Agents",<sup>1</sup> a practice articulated as a Social Technology (Dagnino 2014). The course is framed in the public university's scope in its community outreach<sup>2</sup> and dialogic dimension, with the goal of enabling citizens to develop skills so that they become multipliers of solutions to adapt and reactivate public spaces in different contexts. Thus, we embrace the hypothesis that Tactical Urbanism is a form of Social Technology.

We start from the premise that urban resilience is strongly bound to the ability of communities to act together and effectively (Walker and Salt 2006), or, in this sense, qualifying networks of local agents is fundamental to building agile and replicable responses to new urban demands, enabling to transform public spaces into safer, more inclusive, accessible, green and quality environments (UN HABITAT 2019). Yet, we start from the understanding that pedagogical approaches aimed at creating resilient communities should promote and encourage experimentation, also offering training and tools so that communities themselves can be promoters of change in their territories.

From this perspective, the course articulates two important themes addressed by the Sustainable Development Goals (SDGs) of the United Nations (UN), namely: (1) "SDG 4—Quality Education", by promoting collaborative learning

<sup>1</sup> The course was developed in response to the challenge placed by "Ideatón Volver a la Calle" idea contest, launched in July 2020 by the Inter-American Development Bank (IADB), in its Ciudades division, together with Ciudades Comunes, an Argentine NGO. The competition aimed to select innovative solutions for the fight against COVID-19 in Latin America and the Caribbean. The LabIT-PROURB proposal competed against 485 entries, earning a "Special Mention" award. Furthermore, the proposal participated in the Exhibition "Architecture's new direction as expressed in academic practices and student projects" of the 27th World Congress of Architects (UIA 2021 Rio Expo); and obtained third place in the category "training researchers' work", in the 2021 Arquisur Research Award (Asociación de Facultades y Escuelas de Arquitectura de Universidades Públicas de los Estados Unidos del América del Sur). The proposal also received financial support from the Special Projects Program of the UFRJ Technology Park.

<sup>2</sup> Teaching, research and community outreach experiences are an inseparable tripod in Brazilian universities.

opportunities, which spread knowledge and tools in favor of more resilient communities and (2) “SDG 11—Sustainable Cities and Communities”, by promoting the dissemination of solutions to transform public spaces as the first line of change, but capable of generating next long-term transformations.

The proposal also draws strongly from the commitment established by the New Urban Agenda<sup>3</sup> (UN HABITAT 2019) to expand the offer of well-designed networks of safe and inclusive streets and public spaces, that encourage people to use and to appropriate spaces (such as streets, sidewalks, bike lanes, bike paths and squares), promoting better pedestrian and bicycle mobility and urban life quality. It also lines with the proposal of the New Urban Agenda to expand civic participation and collaboration between the various stakeholders in identifying opportunities for urban space development that respond effectively to existing and emerging urban challenges.

The course was developed by the Temporary Interventions and Tactical Urbanism Lab (LabIT-PROURB/UFRJ)<sup>4</sup> and will be made available by an online platform, free of charge, to public agencies, architects and urban planners, students, community associations, NGOs and local agents engaged in community change. In order to test the course’s feasibility, a pedagogical experiment of the proposal was carried out through a university community class using a remote workshop format, entitled “Projeto da Rua” (“Street Design”), enrolling students of the architecture and urbanism program at FAU-UFRJ and participants from outside the institution.

<sup>3</sup> The New Urban Agenda was adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III), held in Quito (Ecuador) in 2016, and was approved by the United Nations General Assembly (UNGA) on December 23, 2016.

<sup>4</sup> Research and Community Outreach lab tied to the Graduate Program in Urbanism (PROURB) of the Faculty of Architecture and Urbanism at the Federal University of Rio de Janeiro (FAU/UFRJ), dedicated since 2014 to the study and implementation of temporary and tactical urbanism as modes for the positive transformation of cities. For more information: <http://intervencoestemporarias.com.br/>.

This article is structured in four sections. First, in the **Introduction**, it addresses the theoretical-pedagogical framework used to formulate the scope of the course, considering the importance of the university community outreach social role in broadening the engagement of different stakeholders in the construction of fairer and more resilient cities, added to the understanding of Tactical Urbanism as a Social Technology. The **Methodology** section presents the proposal and the course’s methodological structure, designed to maximize the reach and dissemination of collective solutions to reactivate public spaces, taking into account the different realities of Brazilian and Latin American cities. Later, in the **Results** section, we report on the pilot course’s experience, built during the remote workshop and directed to develop proposals to adapt streets in school surroundings within the public network of municipal education in Rio de Janeiro,<sup>5</sup> based on the concept of schools as priorities for taking action aiming pedestrian safety and creation of better public spaces intended for flow and permanence. Finally, the **Discussion** section presents a reflection on the course’s contribution toward a dialogic construction of new knowledge and the consolidation of Tactical Urbanism as a Social Technology.

### 61.1.1 Theoretical-Pedagogical Framework: Toward an Extramural University

Education, as one of the pillars of the 2030 Sustainable Development Agenda, plays an extremely important role in addressing emerging urban challenges (UNESCO 2022). The COVID-19 pandemic demonstrated the haste for higher education institutions in architecture and urbanism to rethink their methodologies and learning spaces, in order to expand their capacities for action and cooperation building fairer and more resilient cities.

<sup>5</sup> The activity was held in partnership with the Network of University Professors for Complete Streets (WRI-Brasil) and the City Hall of Rio de Janeiro.

From that perspective, we found that many of the traditional teaching practices, based on a vertical structure of knowledge dissemination, have proved to be insufficient to deal with the contemporary city's new demands. Often, academia moves through an alleged linear chain of innovation<sup>6</sup> (Dagnino 2010, p 64), where the university is solely responsible to produce knowledge for society, thus reinforcing the aforesaid vertical structure.

It is therefore a challenge to review the concept of where and when learning takes place, opening a breach for a wealth of new possibilities in an “educating city” (UNESCO 2022, p 104).

The City becomes educational to fill the need to educate, to learn, to teach, to know, to create, to dream, to imagine that all of us, women and men, imbue its fields, its mountains, its valleys, its rivers; impregnate its streets, its squares, its fountains, its houses, its buildings, leaving in everything a stamp of a certain time, the style and taste of a certain epoch. The City is us and we are the City (Freire 1993).

In pursuit of this educating city, teaching and learning opportunities must be promoted to reduce barriers between the classroom and the outside world, and to dialogue more poignantly with the city and its citizens. However, a greater articulation between the university and the city demands more participatory and collaborative methods, where students become knowledge multipliers, conveying acquired skills to their homes and communities.

In this regard, university community outreach programs<sup>7</sup> in Brazil have been gaining

ground in recognition of the social role provided by the extramural university (Gordilho-Souza et al. 2020) and the need to include other agents and stakeholders in the production and dissemination of knowledge. Especially in the field of architecture and urbanism, as disciplines that act directly on the human-built environment, this extramural expansion is pressing, in order to capture the significance of the collective and collaborative construction in public spaces.

According to Nóvoa (2009), contemporary schools need to contribute to the construction of an “educational public space”. In this sense, we understand that they hold the conditions to support or promote adapting public spaces to new pressing needs, turning the city into a school. To learn is not to copy, but to know how to confront new issues critically.

Therefore, we understand that the university's role must be established, leastwise in the field of applied social sciences, through teaching and researching, but mainly through community outreach experiences. Community outreach is the open channel to experiences bound to the demands of those who experience the city's daily life. According to Dagnino (2014), the university community outreach experience is key to the Brazilian public university sphere in helping to promote scientific-technological development directed to social issues. To turn this into reality is to dialogue with society about its priorities and social issues through what he calls “Social Technology”, in contrast to conventional technology. The main differences between them, following Dagnino, lie in the fact that conventional technology tends to be segmenting, productivist, alienating, elitist, hierarchical and concentrated or monopolized, while Social Technology tends to be easily adaptable, empowering, horizontal, autonomous and autochthonous or locally oriented.

There is a parallel between Social Technology and Tactical Urbanism when compared with traditional urbanism. While the latter has a top-down thought process, a macroscale vision, linear logic, inflexible path, slow and high-cost implementation, the former follows a more

<sup>6</sup> The search for innovation in the field of science and technology must draw from the needs of Brazilians, leastwise in public universities. It is necessary to develop innovations to build a Social Technology within the perspective of a Solidarity Economy. It is not just about combating scientific backwardness, regarding the perspective of hegemonic countries, but noting populations' priorities. In this sense, the role of governments should be to support micro policies that embody this emphasis.

<sup>7</sup> The university community outreach experience is written in the Brazilian Federal Constitution of 1988 and is understood as an academic activity where teaching and research are inseparable features, in order to enable a transforming relationship between the university and society (Gordilho-Souza et al. 2020, p 11).

inclusive and horizontal path of action, a microscale vision, interactive and cyclical logic, flexible and responsive path, fast and low-cost implementation (Sansão-Fontes et al. 2020), substantiating Tactical Urbanism as a form of Social Technology. In such context, we argue that Tactical Urbanism is a more adequate approach, allowing it to combine into the same purpose technological, social and pedagogical dimensions, usually disconnected, collaborating to bring the “educating city” into reality.

We argue that should be considered as learning content, in all age groups, “all those contents that enable the development of motor, affective, interpersonal relations and social insertion capacities” (Zabala 1998, p 30). Thus, we must include teaching practices that integrate the four contents proposed by Zabala—conceptual, related to facts, principles and concepts; factual, related to surveys and empirical observations; procedural, essentially methods, techniques and procedures; and attitudinal, linked to values, norms and attitudes.

We start from the premise that the post-COVID-19 transition needs, in response to the virus, a “positive contamination”: it must be simple in structure, have rapid and autonomous incubation and unfold over time in a large number of cases. The course concept, therefore, is based on knowledge multiplication, considering three aspects: the learner’s community; the need to master processes, not just results; and reciprocity. The first concept lies in organizing multidisciplinary learning groups to search for a collective knowledge that overcomes the challenges to the safe use of public spaces in the post-pandemic transition; the second is based on sowing tools and processes to turn citizens into transformation agents; the third refers to feedback: the capacity to propose viable paths and to know how to reevaluate decisions.

Next, we present the methodological pillars developed to achieve our goals and to enable greater reach and dissemination of collective solutions so as to reactivate public spaces in the context of Brazilian and Latin American cities.

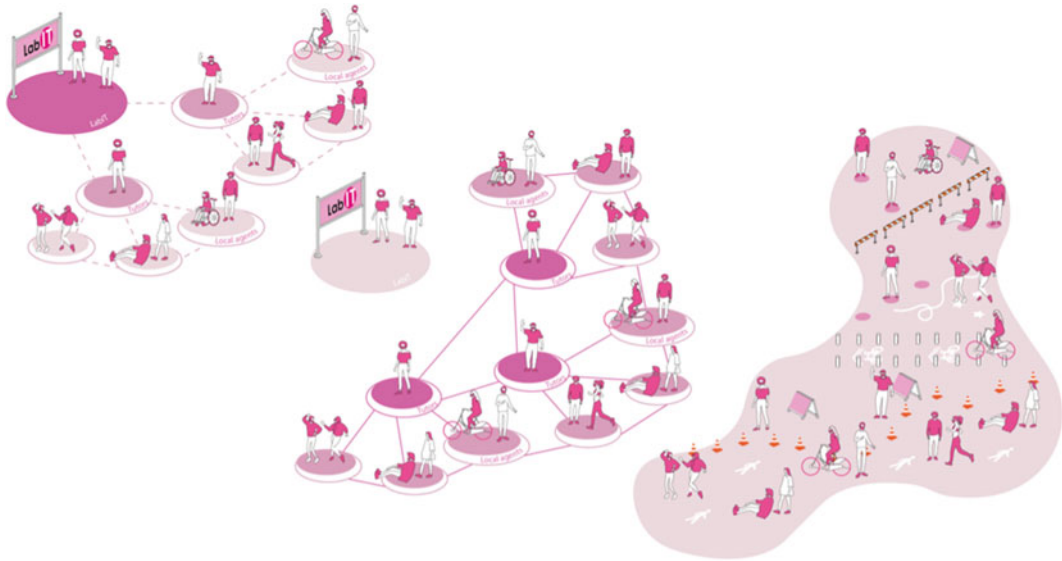
## 61.2 Methodology: Training Course for Multiplier Local Agents

Based on the theoretical-pedagogical framework we described, the course’s goal is to contribute to the building of urban intervention’s collaborative practices that help to activate public spaces in order to make them safer and more accessible. Particularly, the course aims to train<sup>8</sup> those who effectively participate in the reactivation of urban life, since local agents are better skilled to identify specific needs and prioritize resources to adapt spaces in their own contexts; to advance the proposal’s scalability to reach comprehensive results, since every local agent is a potential future tutor; to minimize costs, as the course operates mainly in the volunteering dimension, rewarding local agents with the knowledge they acquire through experience; to work with local stakeholders acting on a human scale, empowering, including and emancipating agents during the process of urban transformation.

The course focuses on training multipliers to adapt and reactivate public spaces with the Tactical Urbanism approach, and it was conceived on three levels: the university (LabIT-PROURB), backed by multidisciplinary consultants, contributes to training tutors (such as public agencies’ officers, urban planners, students, NGOs), that in turn interact with local agents (citizens), promoting capillarity to carry out the necessary interventions (Fig. 61.1). Mainly, it is a pyramid type organization gradually transformed into a non-hierarchical network, turning the university’s original role as a promoter into a contributor’s role in the process of network building.

In line with the International Commission Report on the Futures of Education (UNESCO 2022), we deem the course can generate opportunities for different stakeholders to interact and learn from each other, opening space for different voices and perspectives in a decision-making

<sup>8</sup> The course understands training as a way to present tools that allow participants to solve everyday situations, as well as to promote creative solutions for each case. The training aims to expand the participants’ knowledge and skills, in order to build their skills in applying collaborative actions of Tactical Urbanism.



**Fig. 61.1** Multiplier agents' network concept. Authors (2020)

process intended to be more cooperative and solidary. As proposed by the university community outreach guidelines, derived from the interaction between professors, tutors, students and other actors external to the university, it is possible to create a suitable environment to experience knowledge and practices shared and inspired by the experiences of each part involved, adding to elaborate a Social Technology.<sup>9</sup>

The course structure is designed to achieve the greatest reach and diffusion of collective solutions to reactivate public spaces, considering the diverse realities of Brazilian and Latin American cities. Thus, it is organized in prerecorded video classes hosted on a digital platform, presenting theoretical and practical content on related topics, complemented by collective workshops held on virtual collaborative platforms, where participants develop intervention proposals. Thus, it is

possible to ally theoretical and practical knowledge by combining emerging solutions with the advantages of traditional teaching, in a feedback process where teaching is developed along with each place's particulars and absorbing varied local agents' knowledge.

Regarding dynamics, the course is divided into three units: (1) Discover, (2) Conceive and (3) Prototype, displayed in Fig. 61.2.

Unit 1: **Discover** presents a theoretical and informative approach, aiming to share contemporary content related to the theme of tactical intervention in public spaces. Therefore, it relies on asynchronous video classes presented by professors and experts in various knowledge fields. This unit works with the main contents related to the themes: Tactical Urbanism; Social Technology; Walkability and Traffic Engineering; Civic Designs and Processes; Complete Streets<sup>10</sup>; Data collection Methodology and

<sup>9</sup> According to Mattos (2022), the collective dimension inevitably passes through the opportunity for innovation, the mainspring of societies containing a development bias, though placing most emphasis on Social Technology. Challenges established in field practices make it possible, pedagogically, to lead the discussion beyond the walls between the university sphere and schools. Plunging in the problems of particular cases enables redirecting initial method forms and allows for better solutions.

<sup>10</sup> The concept of Complete Streets proposes to reassess road design, subverting the logic of solutions aimed alone at vehicle traffic and expanding a vision of urban roads as vital spaces for the use, conviviality and safe mobility of all people (WRI BRASIL). The Network of University Professors for Complete Streets aims to engage professors and students to exchange experiences and good practices on complete streets, contributing to train qualified





**Fig. 61.2** Three units proposed for the course. Authors (2020)

Budgeting of Tactical Interventions; Guerrilla Landscaping and Urban Furniture. Based on the content of each video lesson, there are debates and further exploration of themes, followed by synchronous workshops carried out on collaborative platforms, where teams develop a preliminary version of a tactical intervention in a particular public space chosen by the participants.

Unit 2: **Conceive** presents a practical, design-oriented and synchronous approach, relying on the course’s professors and tutors to introduce technical content and guide teams to develop an intervention proposal. In this unit, teams must recognize the problems and potential of their chosen area, identify local agents and interlocutors, carry out data collection, measurements and cartographies of the intervention site, so as to, based on these surveys, develop a tactical intervention proposal.

Finally, Module 3: **Prototype** presents a practical approach, with professors and tutors offering content related to execution, so that teams can develop an intervention prototype. The idea is to select the prototype among the proposals prepared by the course group, considering the best criteria to fit deadlines, resources and relevance among the proposals set. Meaning that when the enterprise scales up and lab mentors lessen interactions, there will always be a store of experiences accomplished by local agents in previous course editions, in partnership with the

professionals on planning and designing safer, healthier and fairer streets (WRI BRASIL). Available at: <https://www.wribrasil.org.br/projetos/ruas-completas> Accessed 28 Aug 2022.

community and in accord with public agencies. Thus, the original pyramid organization format turns into a non-hierarchical network that can function autonomously, multiplying collective solutions to adapt public spaces, using local agents as a convergence point for society’s needs.

To test the course’s feasibility, we first put it into practice through a community outreach class offered as a remote workshop, titled “Projeto da Rua” (“Street Design”). This pilot edition was held in 2021, opened both to students of the Architecture and Urbanism program at FAU-UFRJ and to outside participants. We will present it next.

The pilot edition was aimed at school surroundings and its goal was to train participants in developing projects that adapt streets to a human scale. Rio de Janeiro has a network of 1500 public schools, presenting an opportunity to start transformation processes. Thereunto, based on criteria such as: the school’s interest to enter the project and its insertion in the city, i.e., in the most disadvantaged areas, six school surroundings in the city of Rio de Janeiro<sup>11</sup> were selected, in different neighborhoods, upon which six mixed groups developed analyses and adaptation proposals (Fig. 61.3).

<sup>11</sup> The choice of schools was based on a survey carried out by the research and community outreach project “MoBoo” (Mobilidade por Bambu, or Mobility by Bamboo, in English), which listed eleven municipal schools in the city of Rio de Janeiro. To support the choice of schools and future studies, it was researched the number of students, age group, school building occupancy rate, land use, road width, sidewalk width, road speed and accident rate in school surroundings was studied.



**Fig. 61.3** Location of selected schools in Rio de Janeiro, Brazil. Authors (2022)

### 61.3 Results: The Remote Workshop Trial Experience “Projeto Da Rua”

The community outreach course “Projeto da Rua” aimed to develop proposals to adapt streets in the surroundings of schools belonging to the municipal public education network in the city of Rio de Janeiro (Brazil), using Tactical Urbanism as the main approach. It arises from the understanding that schools are priority spaces for action directed at the reassignment of public spaces, prioritizing pedestrian safety and creating better public spaces for flow and permanence. It was held as a four-week intensive remote workshop, between September 8th and October 6th/2021, averaging three weekly meetings. In addition to the LabIT-PROURB team, a group formed by university students was selected to provide support and technical backing to the activities. Experts were invited to give lectures and advice during the course. The activity was open to external participants from different cities and areas of occupation, such as public sector

officers, architects, urban planners, undergraduate and graduate students (Fig. 61.4).

As an entirely remote course, it allowed participants from different cities, granting chances for cultural and experience exchanges arising from diverse localities. The workshop had a total of 32 participants, from 7 Brazilian states (Alagoas, Minas Gerais, Pará, Rio de Janeiro, Rio Grande do Norte, Santa Catarina and São Paulo), besides a student from Aveiro, a city located in Portugal (Fig. 61.5).

Using the methodological structure of the Training Course for Local Multipliers Agents, in Unit 1: **Discover**, the workshops’ first week was devoted to introducing the course and its participants; to training in the use of digital tools and collaborative work platforms (such as Miro); and to present intervention areas in the previously chosen school surroundings (Fig. 61.6). Synchronous and asynchronous contents related to Tactical Urbanism and active mobility were presented and debated, in order to instrument groups regarding the main concepts and forms of tactical action to adapt school surroundings.

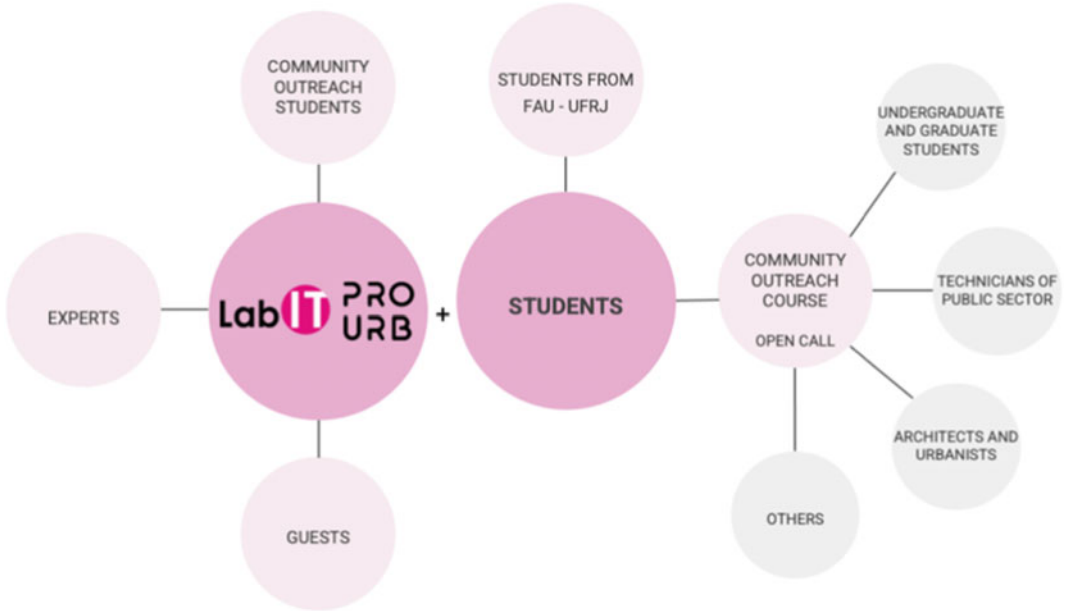
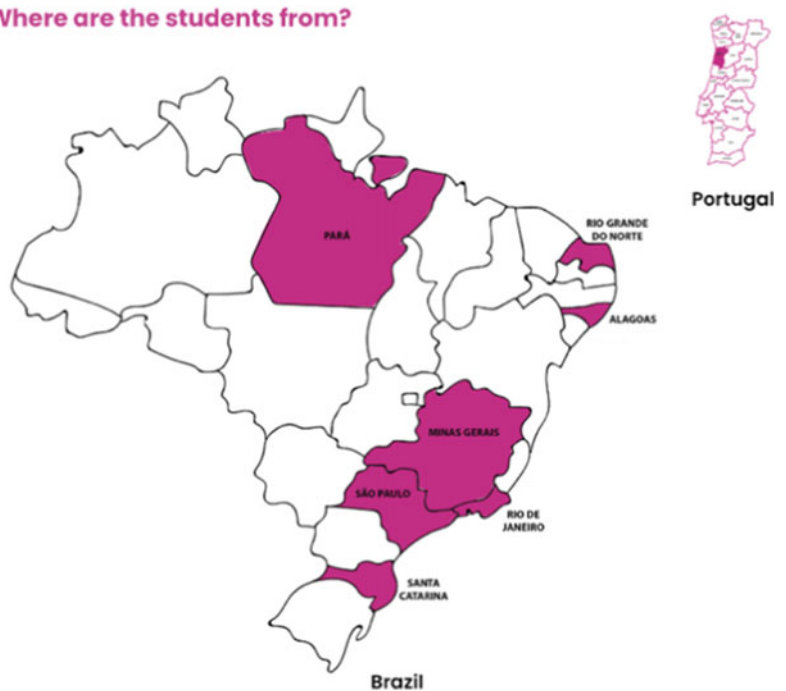


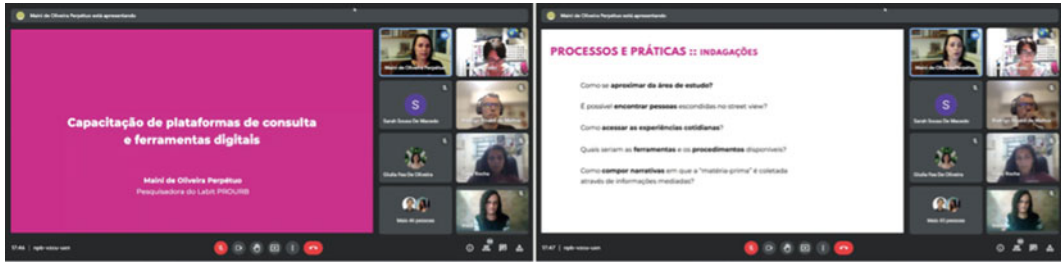
Fig. 61.4 Diagram of course proponents and participants. Authors (2022)

Fig. 61.5 Map of Brazil and Portugal, marking the participants' locations. Authors (2021)

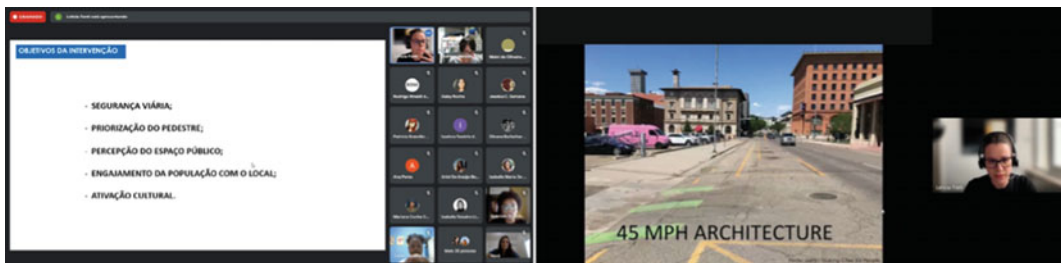


In this unit, guest experts also presented lectures about case reviews that are central to the Brazilian urban space design, still based on a car-centered

pattern, showing possible paths to transform these spaces into ones that provide people with better sociability, comfort and safety (Fig. 61.7).



**Fig. 61.6** Training class print screens on query platforms and digital tools. Authors (2021)



**Fig. 61.7** Print screens from the lecture by Leticia Fonti, architect and active modes manager at CET-Rio (Traffic Engineering Company of Rio de Janeiro). Authors (2021)

In the following week, in Unit 2: **Conceive**, participants were divided into six multidisciplinary groups, where each group was responsible for one school surrounding located in the city of Rio de Janeiro, thus, enabling them to start formulating analyses and proposals to adapt public spaces in these areas. Thereunto, they had access to maps and images of each school's surroundings, plus specific information about each school, such as student count and age group, building occupancy rate, land use in the neighborhood, street width, sidewalk width, road speed limit and lastly an accident rate in the vicinity. Using Miro and Google Meet platforms, each group shared its design process, feeding meetings' exchanges about analyses and intervention proposals formulated by each of them. During this week, LabIT-PROURB members together with Rio's city hall guest experts also oriented groups (Fig. 61.8).

Finally, Unit 3: **Prototyping** was dedicated to collaborative work, putting into practice conceptual and procedural contents learned during the course, welding and presenting intervention

proposals formulated remotely by each group. The groups presented solutions for road redesign, bike lane creation, sidewalk extension, street closures and Parklets setup (Fig. 61.9), improving conditions in the six chosen municipal schools' surroundings.

The exchanges between local agents, held during the workshop, led to developments in the direction to implement and scale proposals. One example came from the presentation of projects developed by groups working at the Traffic Engineering Company of Rio de Janeiro (CET-Rio), which has adopted as a tactic implementing bike lanes and road safety actions in school surroundings. This articulation has allowed direct cooperation between the university and public agencies. Another example came during the presentation of proposals in two of the schools chosen as action focal points: Von Martius Municipal School and Alphonsus de Guimaraens Municipal School (Fig. 61.10), which showed new paths devised together with the school community to implement proposals, teaming with the agents involved.



**Fig. 61.8** Online platforms and workshop roundtables' print screens held during Unit 2. Authors (2021)

If implemented, tactical intervention proposals can directly benefit school surroundings, reducing road accidents, improving environmental quality and encouraging walking and cycling, among other indirect benefits. However, based on our analysis, the workshop results go beyond the outcome of projects developed by participants, especially regarding the potential to train local agents in multiplying innovative solutions for public spaces. The involvement between students and professionals from different areas, both related to the design of transportation systems (motorized and active) and the design of open spaces (landscape and furniture), plus the additional interlocution with education professionals linked to schools, creates a multiplier layer sourced on different fronts: from the reproduction of knowledge to project execution, capable of producing physical marks on the modified surroundings.

## 61.4 Discussion and Conclusions

Based on the results and developments of the Training Course for Local Multiplier Agents' trial experience, we can identify sensible university contributions in the context of restrictions imposed by the COVID-19 pandemic, both in the pedagogical and urban design spheres. At the same time that it was necessary to reinvent teaching and learning methods for the remote environment, it was (and continues to be) essential to adapt the city itself and its public spaces. Thus, the course operated as a device to test both adaptations, through its form as well as its content, contributing and innovating to current pedagogical practices.

In this particular point, we emphasize the course's role as a "bridge" to reduce barriers between the classroom and the outside world, not

### ESCOLA + PRAÇA + RUA Projeto de acessibilidade urbana em Campo Grande

À direita: área de intervenção delimitada em função do Campo Grande, no lado leste do Rio de Janeiro, no bairro das Freguesias. À esquerda: área de intervenção delimitada em função do Campo Grande, no lado oeste do Rio de Janeiro, no bairro das Freguesias.

O projeto tem como objetivo melhorar a acessibilidade das crianças, a segurança dos pedestres, a qualidade do espaço público e a integração com o transporte público. O projeto prevê a criação de uma praça pública, a melhoria da infraestrutura urbana e a criação de um espaço público de qualidade.

Mapas de localização e planejamento urbano detalhados da área de intervenção, incluindo ruas e pontos de interesse.

Seis fotos de rua que mostram o estado atual, o planejamento e o resultado final da intervenção.

Seis cortes de rua que mostram o estado atual, o planejamento e o resultado final da intervenção, com legendas para: Rua Amélia, Rua João, Rua José, Rua Maria, Rua Pedro e Rua Teresa.

### Cidade de Deus: possibilidades de requalificação viária

A Cidade de Deus, também conhecida pelo apelido de Cidade de Deus, é um bairro de favela localizado no lado leste do Rio de Janeiro. Este projeto de requalificação viária tem como objetivo melhorar a infraestrutura urbana e a qualidade do espaço público.

A Rua Edgard Werneck tem 4 faixas de trânsito motorizado, sendo a faixa central utilizada para o trânsito de ônibus. Este projeto prevê a criação de uma praça pública, a melhoria da infraestrutura urbana e a criação de um espaço público de qualidade.

Segundo o planejamento de longo prazo, a requalificação viária será realizada em etapas, com a prioridade para a Rua Edgard Werneck e a Rua Amélia.

Assim, propomos intervenções que melhorem a infraestrutura urbana e a qualidade do espaço público, com foco na requalificação viária e na criação de um espaço público de qualidade.

1. Fomento local de comércio, com pontos comerciais em frente à praça e à rua Amélia, criando uma praça pública e melhorando a infraestrutura urbana.

2. Alargamento de passagens (lado de rua), criando espaço para ônibus e ciclovia de outro lado.

3. Passagem alargada, criando uma praça pública e melhorando a infraestrutura urbana.

4. Cuidado ao passar a calçada de calçada para calçada, criando uma praça pública e melhorando a infraestrutura urbana.

5. Proposta de utilizar uma área comunitária para criar uma praça pública e melhorar a infraestrutura urbana.

cut 1 - via arterial - antes / cut 2 - via arterial - depois

### O NÍVEL DO CAMINHAR

O nível do caminhar é o nível de rua que permite a circulação de pedestres de forma segura e confortável. Este projeto prevê a criação de uma praça pública, a melhoria da infraestrutura urbana e a criação de um espaço público de qualidade.

Mapa de localização e planejamento urbano detalhados da área de intervenção, incluindo ruas e pontos de interesse.

Seis cortes de rua que mostram o estado atual, o planejamento e o resultado final da intervenção, com legendas para: Corte A e Corte B.

Seis cortes de rua que mostram o estado atual, o planejamento e o resultado final da intervenção, com legendas para: Perspectiva Interior da Rua e Perspectiva de Aplicação das Calçadas e Mobiliário Urbano.

### IAPI - Intervenção Apta Para Indivíduos

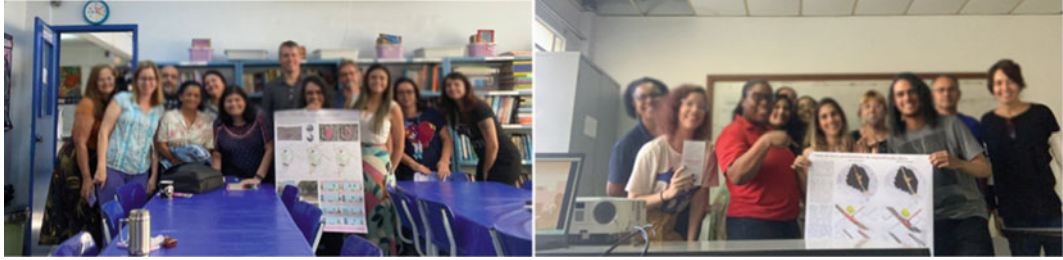
O IAPI (Intervenção Apta Para Indivíduos) é um projeto de requalificação viária que visa melhorar a infraestrutura urbana e a qualidade do espaço público. Este projeto prevê a criação de uma praça pública, a melhoria da infraestrutura urbana e a criação de um espaço público de qualidade.

Mapa de localização e planejamento urbano detalhados da área de intervenção, incluindo ruas e pontos de interesse.

Seis cortes de rua que mostram o estado atual, o planejamento e o resultado final da intervenção, com legendas para: Corte 1, Corte 2, Corte 3, Corte 4, Corte 5 e Corte 6.

Seis cortes de rua que mostram o estado atual, o planejamento e o resultado final da intervenção, com legendas para: Corte 7, Corte 8, Corte 9, Corte 10, Corte 11 e Corte 12.

Fig. 61.9 Final boards presented by four of six participant groups. Authors (2021)



**Fig. 61.10** Proposal presentations' images at municipal schools. Authors (2022)

in a rhetorical way, but effectively bringing together different stakeholders, age groups, professional qualifications, backgrounds, social contexts and even nations, in a collaborative working mode enveloping real case studies. This dialogic collaboration flattens the learning process and the dissemination of knowledge, allowing greater capillarity and possibilities to multiply good practices.

The completion of the three modules was satisfactory, and their execution not far from the course's goals. Although not one of this workshop's assumptions, it is notable that "Module 3: Prototyping" would have been even better at training local multiplier agents if we had had a chance of at least one ephemeral intervention in the vicinity of an enrolled school. In this pilot course, this turned to be unfeasible given the choice to favor participants from different locations, making it difficult to mobilize them for actions in Rio de Janeiro. Reflecting on what to emphasize in a next workshop edition, we ask ourselves: to focus on dissemination or on a more immersive experience in training local multiplier agents. In relation to "Module 3: Prototyping", we note that recurring difficulties in financing it hinder its fulfillment. Although its proposed actions are low-cost, they demand financial support, be it from the State, NGOs or private money.

However, gaps remain to arrive at the educating city, largely due to the pandemic itself, which hindered the school community's enjoyment of its surroundings and delayed its engagement in the process, since schools themselves were also limited to remote teaching. The involvement with these specific local agents has

been happening in a belated way, however, still on time for them to contribute to the review and refinement of proposals, since they are the ablest to identify specific needs and prioritize resources for adapting spaces in each context, triggering local solutions that will make cities more resilient, especially those in the peripheral contexts.

Solutions need to be advanced together with those who demand them through the construction of a Social Technology: adaptable, empowering, non-hierarchical, autonomous and autochthonous. Tactical Urbanism's actions developed for school surroundings can be summed up as a form of Social Technology, as they are derived from reflections on the action process, allowing permanent revisions and feedback. Paradoxically, Tactical Urbanism is a methodology originally conceptualized in the global North, despite seeming that it is most powerful in non-hegemonic countries. Therefore, the course contributes to individuals' empowerment and emancipation, so urgently needed in the process of urban transformation.

Decentralizing decision-making power allows citizens currently excluded from political and economic processes to be willfully included in the future (Arnstein 1969). This course's proposition is precisely to offer a chance for social inclusion, by providing participants with the tools to initiate "bottom-up" transformation processes in their territories, empowering and giving voice to local agents and, thus, multiplying good practices in public spaces.

We recognize there is still room for a more pointed dialogue with the city and its citizens based on direct contact with the real city (in this workshop pilot, hindered by the COVID-19

pandemic), allowing the four contents proposed by Zabala (1998) (conceptual, factual, procedural and attitudinal) to be contemplated. Thus, the course will effectively contribute to the formation of a local agents network that can operate in the transformation and construction of nimble and replicable responses to old and new demands imposed on public spaces.

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