

**DESIGN** WITH THE  
**OTHER 90%**  
**CITIES**



Smithsonian  
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"Urbanization in developing countries may be the single greatest change in this century. It is projected that developing countries will triple their built-up urban area between 2000 and 2030—from 200,000 square kilometers to 600,000 square kilometers. These added 400,000 square kilometers, constructed in just 30 years, equal the world's built-up urban area in 2000. **One could say humans are building a whole new world at about ten times the speed, in countries with severe resource constraints—natural, fiscal, administrative, and technical.**"<sup>1</sup>

—H. Suzuki et al., *Eco-Cities: Ecological Cities as Economic Cities*

# Building New Worlds: Design and the Second Urban Transition

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*Design with the Other 90%: CITIES* is being published amid the second urban transition, a sweeping demographic shift from 300 million people living in urban areas in 1950 swelling to 3.9 billion people in the Global South alone by 2030.<sup>2</sup> We find ourselves poorly equipped to come to terms with the ecological, social, and economic implications of this shift. Various development trends and indicators, reflected in various overview reports by the World Bank, United Nations Environment Program, and United Nations Development Program, remind us that radical changes in our quality of life and in our ecosystem are not forthcoming.<sup>3</sup> If anything, our capacity to live with large-scale impoverishment, marginalization, insecurity, violence, and hunger seems endless.

Almost half the global population lives on less than \$2.50 a day. That is more than three billion

people, almost all in developing countries. Even more shocking, the proportion of people below the \$2.50-per-day poverty line has remained more or less constant between 1981 and 2005, if one takes China out the equation.<sup>4</sup> Furthermore, the gap between rich and poor is widening. According to the World Bank, the richest 20% of the world's population accounts for 76.6% of all consumption; the bottom 40% accounts for only 1.5%.<sup>5</sup>

Compounding these trends is spatial inequality—the unequal access that different groups of people in a city have to a range of opportunities and resources. UN-Habitat suggests that the dynamics of land markets and various barriers between the rich and the poor often aggravate urban poverty, creating “a spatial poverty trap marked by six distinct challenges: (a) severe job restrictions; (b) high rates of gender disparities; (c)

1. The ITRUMP project has improved the efficiency and safety of street trading in Warwick Junction, Durban, South Africa.



2 (after)



3 (before)

deteriorated living conditions; (d) social exclusion and marginalization; (e) lack of social interaction; and (f) high incidence of crime.<sup>76</sup> Unsurprisingly, the report finds that in cities with a prevalence of slums, the prospects are very slim indeed for new entrants into the labor market to find formal jobs. In fact, about 85% of all new employment opportunities around the world occur in informal economies, and young people in slums are more likely to settle for informal-sector work than their non-slum peers.<sup>77</sup>

Since these dynamics are concentrated in urban areas, our cities are where the struggle for alternative futures will be fought—and hopefully won—through the efforts of ordinary people as they take control of their lives, neighborhoods, and

resources. This essay attempts to map out the anchors for a cultural transition toward a more just and sustainable society, especially in the Global South. My aim is to provide a larger conceptual canvas for the movements, interventions, and innovations featured in the *Design with the Other 90%*. *CITIES* exhibition. I hope these diverse, ethically connected projects will help readers appreciate their larger significance, and that the seeds of structural transformation of our cities can be gleaned from them.

#### Ethical Touchstone

If we are to make a dent in the amount of deprivation and suffering in the world, especially amidst the rampant consumerism that dominates popular media and culture, it is important to start

2. The Northeast Integral Urban Project upgraded public spaces and walkways in the Balcones del Ajedrez neighborhood, Medellín, Colombia.  
3. Balcones del Ajedrez before the upgrade.

with our shared ethical horizon. It seems to me that a sufficiently far-reaching response to the perfect storm anticipated by prominent urbanist Mike Davis (see his quote later in this essay), as we enlarge our built world depends on a broad-based agreement on the following four key principles:

**1. Resource efficiency through decoupling:** Find more efficient and waste-free means of increasing economic output while decreasing the rate and intensity of non-renewable resource extraction and consumption.

**2. Inclusivity:** Provide every resident in a settlement a fundamental set of rights to healthcare, education, land, and social space to exercise cultural freedoms—a bundle of rights that UN-Habitat invoked, in its 2010 development report on cities, as the “Right to the City.”

**3. Economic opportunity:** Pursue more inclusive and fulfilling forms of economic development and growth to address the labor “excess” of two billion people in the contemporary global economy.

**4. Human flourishing:** Offer a safe and nurturing context within which citizens and social collectives can come into their own cultural fullness—the magic vitality that makes all cities and places unique and connected. Social networks and identities are always simultaneously irreplaceable and trans-local.

These four principles are indivisible. In other words, if a policy or action violates any one of these principles, it damages the long-term effectiveness of the other principles. If trade-offs need to be struck between these principles, they must be subject to impartial scrutiny and oversight as well as time limits.

A compelling example of a city working hard to address these principles in tandem is Medellín, Colombia. Between 2004 and 2008, the city government drove a four-part program of radical urban intervention that dramatically improved the

lives of the urban poor living in crowded barrios on the slopes of the city (figs. 2, 3). The first line of intervention focused on education by vastly improving the area’s libraries and parks—a clear sign of the city’s placing its youth as a priority. The second line of intervention, *Proyectos Urbanos Integrales* (PUI), reconnected the isolated barrios to the city center through a cable-car system, which in turn created opportunities to create high-quality public spaces at the system’s anchor points. The third line of intervention targeted social housing in communities located in hazardous locations. These various actions were then glued together by the fourth line of intervention: the *Walkways* plan, which included the *Emblematic Streets* program and the *Lineal Sistemsto*, aimed at connecting the city across its various lines of division and segregation.<sup>8</sup> *Design with the Other 90%: CITIES* provides further insights into this visionary program, a concrete example of the four key principles mentioned above in action.

To fully appreciate the potential power and relevance of these principles for reimagining the functioning of cities, it is essential to understand that a city’s residents construct it in their own unique way every day through a constant negotiation of aesthetic and functional considerations. Aestheticism signals the ineluctable demands of beauty, desire, and transgression that bubble up from the collective subconscious, regardless of class or location or age, to orient engagement with the world, the city, and its myths. Functionalism denotes the pragmatic requirements of nutrition, dwelling, mobility, sociality, and economy that require urbanites to pursue their livelihood and well-being. These impulses intertwine our interior and exterior worlds. As can be seen in many of the examples cited in this exhibition and book, innovation arises when activists and entrepreneurs respond to very practical needs in ways that allow people to bring their own creativity, cultural ownership, and sweat to the endeavor. (The striking design and building response of communities in Chile to the half-finished houses of Elemental is one



obvious example; fig. 4.) Until we can come to terms with the fact that the poor—with all of their contradictory cultural attachments and desires, who are in most need of urban justice and systemic transformation—are the key to appropriate design solutions, we will miss the unprecedented design opportunity that the second urban transition presents.

### Systemic Transformation

However, culturally resonant design responses for particular households or neighborhoods will not add up to much unless we can also envisage large-scale systemic transformation. In the next thirty to fifty years, a change will need to occur in how we understand the nature of cities and smaller urban settlements. One entry point for this thought experiment is the need to build and retrofit new and existing infrastructures (fig. 5). Various estimates suggest that somewhere in the order of \$40 trillion is required to address the infrastructure of the world over the next twenty to twenty-five years.<sup>9</sup> The past few years have been a watershed in terms of mainstream thinking on urban development, planning, and design premised on the realization that infrastructure imperatives

hold the most promise to advance a fundamentally different approach to city building. This is most clearly manifest in the various development reports of international development agencies such as the Organization for Economic Cooperation and Development, the United Nations Environment Program, UN-Habitat, and the World Bank.<sup>10</sup>

A central trope that arises from these standard setting reports is the link between cities and climate change. For example, the Organization for Economic Cooperation and Development, typically known for its focus on economic competitiveness and state efficiency, published a major report on the pivotal role of cities in achieving the dramatic targets to reduce CO<sub>2</sub> emissions by 2050.<sup>11</sup> This movement was clearly reinforced by the United Nations Environment Program's *Green Economy Report*, published in 2011, which features a special chapter on cities to demonstrate how urban centers anchor and link together the emerging green-economy agendas. Urban-policy considerations such as density, compaction, and energy efficiency are in many ways directly tied to concerns about climate change.

4. Incremental Housing allows residents to expand spaces as resources become available to them. Iquique, Chile.



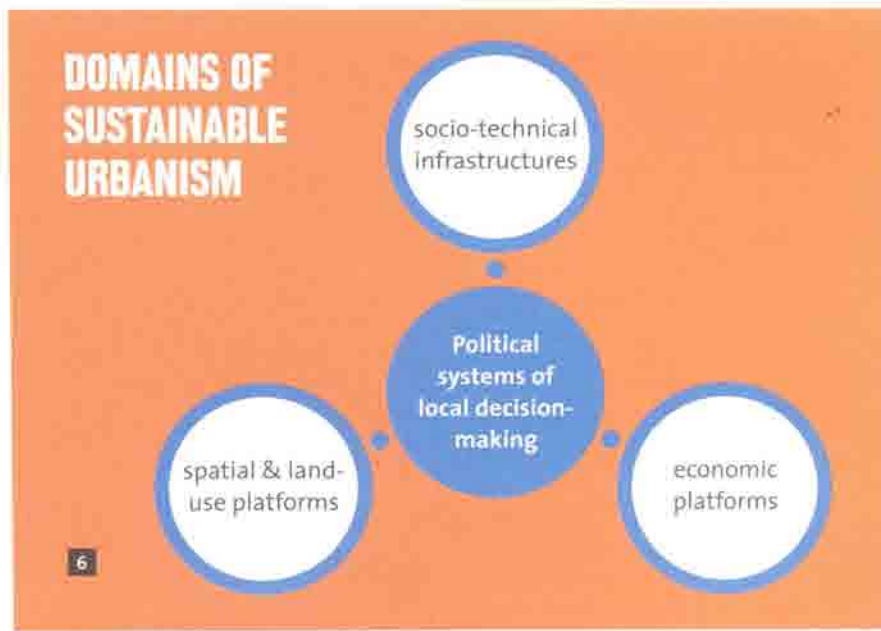
5. The Janmarg Bus Rapid Transit system provides access to improved urban transportation, Ahmedabad, India.

These momentous policy shifts in mainstream urban development approaches hold important implications for thinking about the design nexus between development, planning, management, and sustainability.<sup>12</sup> Keeping in mind the gap between policy intent and actual practice, it is possible to envisage a much more radical urban development and design agenda that can use the imperative for more sustainable lives, livelihoods, urban systems, and outcomes as a coherence point.

My optimism stems from a reading of the “yet-to-be-designed” instruments at the intersection of ecological, infrastructural, and technological imperatives to achieve more efficient systems and ensure more sustainable urban metabolisms, such as from a resource-consumption point of view. I believe that this broader design imperative is as important as the specific innovations catalogued in this publication. But what we need now is the bringing together of the macro and the micro dimensions of sustainable and inclusive urbanism.

This requires a fresh and adaptive conceptual framing.

A robust conceptual framework must tie together three critical meta-domains of urban transition that need to be pursued simultaneously if we are serious about advancing sustainable human







settlements and cities. These domains are: sustainable infrastructure, the inclusive economy, and efficient spatial form, glued by processes of democratic political decision-making (fig. 6).

One way of thinking about cities is that they require various “operating systems,” much as computers or mobile phones do. The diagram highlights three critical operating systems for all cities: i) infrastructural, ii) economic, and iii) spatial form, or land-use. The infrastructural system can be further delineated between social and biophysical infrastructures. The former refers to the social development investments that forge identity and community, such as cultural services, education, health, public space, housing, and the arts; the latter refers to roads, transportation, information/communication technology, energy, water and sanitation, food, and ecological services that make urban life and movement possible. By definition, social infrastructures need to be tailored to local community-scale dynamics, which implies a substantial degree of community involvement and control in their execution and maintenance. The Kibera Public Space Projects (fig. 7) in Nairobi and the *Gimnasio Vertical* (fig. 8) in Caracas are both examples of vital social infrastructures.

The economic operating system involves production, consumption, and market systems that underpin the exchange of goods and services. It is important to note that they span formal and informal institutions, and often involve an entanglement of the two, especially in our era of globalization. However, one of the most challenging problems confronting cities in the developing world is that the formal economy absorbs less than half of the labor force; the rest have to eke out an existence in the informal economy or be completely disconnected from any gainful activity.<sup>13</sup> (fig. 9) Those “lucky” enough to engage in informal work have to put up with extremely low, often irregular income, which puts them in the category of the working poor. In a broader context of deepening global integration of economies and value chains, it is becoming more



difficult for national governments to protect jobs, provide support to the working poor, and induce employment, because such actions are, ironically, perceived as undermining competitiveness. And as long as the monetization of economic value generation continues apace, it will be difficult to promote labor-absorptive and equalizing economic policies.

In the face of these trends, it is essential that cities find creative ways of redefining and boosting local economies in order to broaden the base of those who are included in economic life. A powerful example of this is the Warwick Junction Initiative, part of the iTRUMP (Inner Thekwini Regeneration & Urban Management Program) in Durban, South Africa.<sup>14</sup> (figs. 1, 10) In other words, the challenge is not just about generating more formal jobs. On

- 7. Kibera residents congregate in the Kibera Public Space Project pavilion, Nairobi, Kenya.
- 8. The Vertical Gym, designed by Urban Think Tank, converted a rundown sports field in Barrio La Cruz into a four-story sports facility, Chacao, Caracas, Venezuela.
- 9. A handmade trowel handle made from discarded plastic bags, one of the many informal enterprises in Kibera informal settlement, Nairobi, Kenya.



10

10. Street traders in the Improved Bead Market, Warwick Junction, Durban, South Africa.

the contrary, the biggest, most urgent challenge is to absorb young adults between the ages of fifteen and twenty-nine in activities that can reconnect them to society, nature, and their surroundings. Amongst South Africa's youth demographic, more than 50% cannot access formal jobs, even though they may have completed primary and portions of secondary schooling. At the same time, South Africa has the largest HIV/AIDS rate in the world. In order to contain and manage the scale of the AIDS pandemic, it is vital that a national network of home-based care workers be established. These service workers need formal medical training and must work with affected households to ensure that anti-retroviral medications are taken in conjunction with sufficient nutritional intake, as well as provide psychological support to help sufferers and their families deal with stigma and shame (fig. 11). Another pertinent example relates to various kinds of labor-intensive activities to restore ecosystem services. For example, rivers and canals

in developing countries are often highly degraded because of upstream pollution and downstream neglect, sometimes combined with invasions by alien species. Restoring these systems is a vital part of improving the overall well-being of cities and communities. Also, if done cleverly, it can also be a gateway to reconnect young people in more positive and enriching ways with nature and their peers. There are literally hundreds of examples that one can dream up if this logic is pursued. Until governments and civil groups begin to pay attention to these alternative kinds of economic pathways and identities, we will remain within the deeply unequal and unjust conditions offered by mainstream approaches.

Economies and infrastructures fundamentally depend on land and, more pertinent, land-use systems. The patterns of infrastructural and economic distribution add up to the spatial form of cities. If the spatial form is expansive, marked

by sharp divisions between uses, functions, and population groups, it is likely to be inefficient and exclusionary (fig. 12).

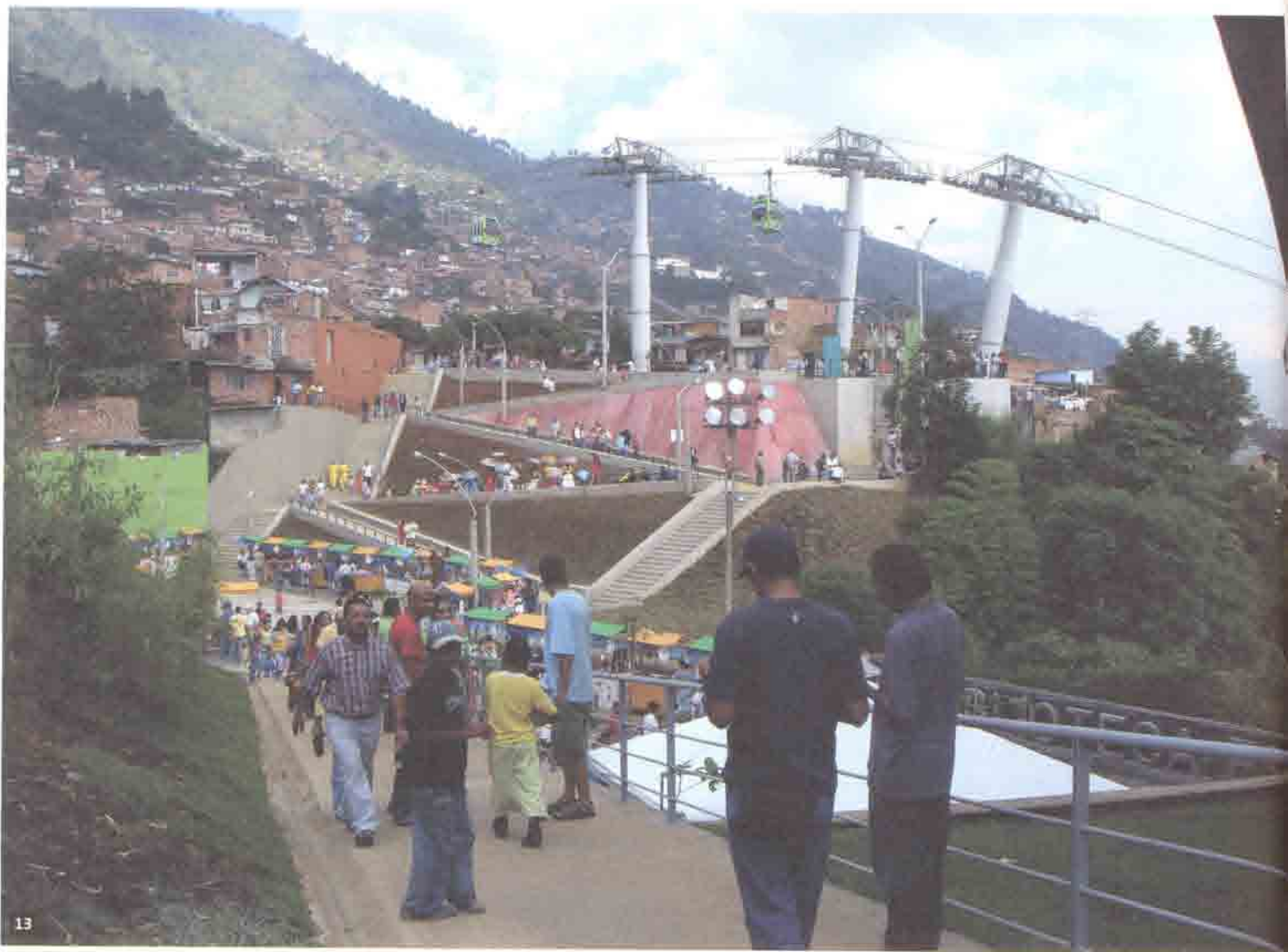
In the vast majority of cities in the developing world, land-use systems further marginalize the urban poor and reinforce privilege for those who control them. It is essential that land use address the imperatives of greater efficiency and access. Ideally, greater density through compaction should be linked with a much stronger emphasis on mixed usage. A public-oriented approach such as those seen in Bogotá, Curitiba, and Medellín is encouraged in the recalibration of land use, which informs a broader agenda to foster greater cultural and social integration.<sup>35</sup> (fig. 13) Many of the projects featured in *Design with the Other 90%: CITIES* illustrate how efficiently the urban poor utilize land, as well as the importance of reclaiming land for greater public use. Since poor people live predominantly in public arenas in order to move about, access services, enjoy cultural practices, and trade, offering them safety, security, and control is vital. However, such a vision often goes against the conventions and rules. It is vital that land-use norms be redefined to support their aspirations and livelihood practices to make our cities more inclusive and resilient. For instance, social-zoning provisions, set up through the "Special Zones of Social Interest" instruments in master plans of municipalities in Brazil, delimit underutilized land and designate it for use by the poor.<sup>36</sup> (fig. 14) In other words, its gets isolated from speculative activity and potentially allows for better urban integration and class mixing.

Finally, these three operating systems depend fundamentally on how power is distributed in society and mediated in political institutions.

**11. As part of reurbanization, community health workers deliver services directly to residents, Diadema, São Paulo, Brazil.**

**12. Poor favela communities formed next to wealthier neighborhoods, Paraisópolis, São Paulo, Brazil.**





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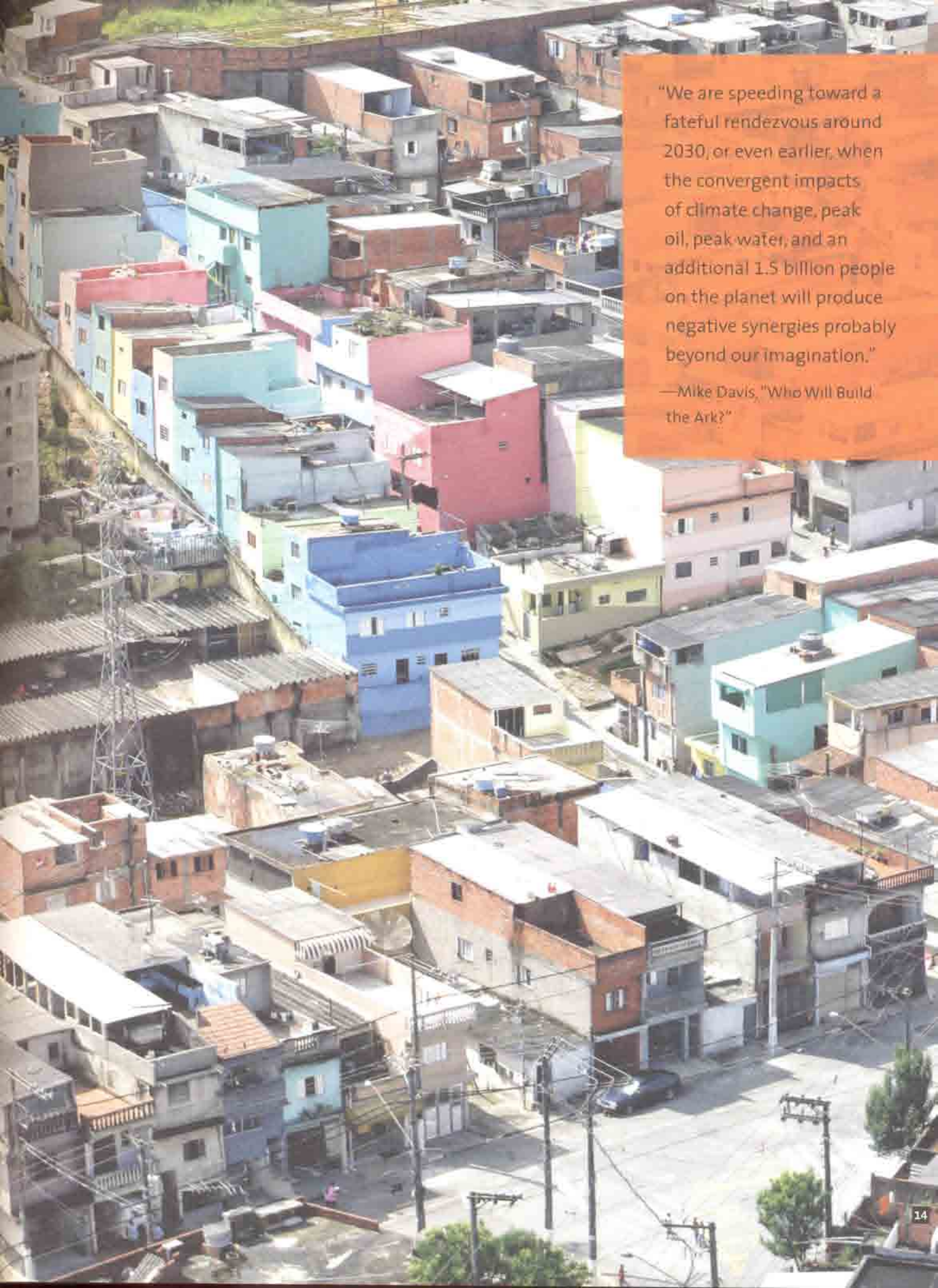
If local governments are beholden to national government for revenue and resources, they will struggle to be responsive to local needs.<sup>17</sup> If local governments act unilaterally, or isolate themselves from the voice and actions of the organizations that represent slum dwellers, such as Slum Dwellers International and its affiliates (fig. 15), they are unlikely to recognize or understand the innovations that come from the citizens themselves. However, although there has been an unmistakable trend towards democracy and decentralization across the world over the past two decades, there are still very few examples where participatory local governance is a vibrant reality. This suggests that political reform and institutional retooling are necessary precursors to systemic change in cities.

### Design Sensibilities for Building New Worlds

At the heart of the challenges facing contemporary design vis-à-vis urbanization is a complex set of sensibilities. On the one hand, for it to be effective, design work has to be done deliberately and cumulatively by organizations and communities working inside the settlements and urban spaces. At the same time, designers in the broadest sense of the term have to be able to connect work being done locally to larger system transitions. This involves a finely honed capacity that can only come from practice—to articulate the sensibilities of art, craft, and science. Management theorist Henry Mintzberg suggests that agents of effective change can discern when they need to draw on and advance scientific knowledge and frames to solve a problem.<sup>18</sup> However, in the real world, with complexities shot through with unpredictable factors, intuition is also critical. One has to draw

13. Medellín's Metrocable and Integral Urban Project provide new public buildings and transportation systems for the poorest parts of city, Santa Domingo Library and Park Medellín, Colombia.

14. Tã Borito upgraded housing, Vila Olinda neighborhood, Diadema, São Paulo.



"We are speeding toward a fateful rendezvous around 2030, or even earlier, when the convergent impacts of climate change, peak oil, peak water, and an additional 1.5 billion people on the planet will produce negative synergies probably beyond our imagination."

—Mike Davis, "Who Will Build the Ark?"



15

on expertise in reading and responding to an emerging situation or context. Finally, complex and intractable solutions often require the passion and determination of the artist, who offers access to creativity that cannot come from either science or craft-based expertise (fig. 16). It seems to me that urbanists of all stripes—politicians, activists, engineers, architects, planners, sociologists, entrepreneurs, ecologists, et al.—need to inhabit this dynamic triad of science, craft, and art to rise to the challenge of building new worlds that are beautiful, just, and exhilarating for all the opportunity they offer everyone, regardless of geography, identity, age, or gender. It may just be that those pioneers celebrated in this exhibition and book may have glimpsed these worlds, and it will serve us well to take them seriously.

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#### Notes

1. 100,000 sq. km = 38,610.22 sq. miles. Emphasis is the author's.
2. The first transition unfolded in the Global North between 1750 and 1950, when the percentage of urban inhabitants increased from 10% to 52%; see UNFPA (2007): 7–8. The Global North refers to Western Europe, North America, and Japan, in the northern hemisphere. The rest of the world, predominantly in the southern hemisphere, denotes the Global South, or what used to be known as the second, third, and fourth worlds in earlier parlance.
3. Examples of such reports are Hassan, Schöles, and Ash, 2005; UNDP 2010; UN-Habitat 2010.
4. Chen and Ravallion, 2009: 41.
5. Source: Shah, 2010.
6. UN-Habitat, 2010: xiii.
7. Ibid., xiv.

15. Mahila Milan architects discuss slum improvements and upgraded housing with the Yerwada community, Pune, India.



8 Echeverri, 2010.

9 BCG, 2010.

10 Kamal-Chaoui and Robert, 2009; Suzuki, Dastur, Moffatt, and Tabiki, 2009; UNEP, 2011; UN-Habitat, 2009 and 2011.

11 Kamal-Chaoui and Robert, 2009.

12. Even though these shifts are a positive signal, it would be naive to ignore a number of concomitant risks: One, these could simply be passing development fashions that achieve little more than becoming “buzz words” in development policies and programs without much regard for their fundamental implications (Cornwall & Brock, 2005). Two, almost all of these new policy agendas are inherently multidimensional and complex, which may mean they are indigestible and essentially not implementable for most governments, marked by capacity limitations and insufficient funds, and often captured by elite interests (Manor, 2004). Three, the mainstream deployment of these overlapping policy discourses could produce a sterilization of transformative ideas and practices, especially once they have been swallowed and regurgitated by government institutions.

13. Renowned observer of informal economic dynamics Marty Chen (2008: 6) points out that “informal employment broadly defined, including self-employment in informal enterprises and wage employment in informal jobs, comprises two-quarters of total employment in development countries; three-quarters or more in South Asia and sub-Saharan Africa; and around 60% in the Middle East, North Africa, and Latin America.”

14. For a full account of this fascinating case study, see Dobson and Skinner, 2009.

15. UN-Habitat, 2009.

16. Rolnik et al., 2008.

17. Manor, 2004.

18. Mintzberg, 2004.

16. As the train, covered with images of the eyes of local women, passes through Kibera, it aligns with portraits on the slope beneath the train. These portraits by artist JR call attention to the central role played by women in informal settlements, Kibera, Nairobi, Kenya.



## Incremental Housing

Architects: Alejandro Aravena, Tomás Cortese, Emilio de la Cerda, Andrés Iacobelli, and Alfonso Montero, Elemental. Engineers: José Gajardo, Juan Carlos de la Llera; urbanization specialist: Proingel and Abraham Guerra. Construction: Loga S.A. Client: Chile Barrio. Iquique, Chile, 2003–4. Concrete, brick concrete, wood panels. **Monterrey** Architects: Alejandro Aravena, Fernando García-Huidobro, and Gonzalo Arteaga, Elemental. Collaborator: Ramiro Ramírez. Construction: Constructora AXIS. Client: Instituto de la Vivienda de Nuevo León (IVNL). Santa Catarina, Gob. Nuevo León, Mexico, 2007–8. Concrete, concrete blocks, stucco, plaster, paint.

Government-built social housing is generally constructed on low-cost land, often far from opportunities for work, education, transportation, and healthcare. Moreover, the value of subsidized social housing tends to depreciate over time. In Chile, where it is projected that \$10 billion will be spent over the next twenty years on housing, the government has hired the Chilean architecture firm Elemental to design a new social housing unit that can increase in value over time.

The architects designed half-built houses, called Incremental Housing, for one hundred families in the poor neighborhood of Quinta Monroy, in Iquique, which they have illegally occupied for thirty years. With only a \$7,500 subsidy to pay for the land, infrastructure, and each housing unit, the architects designed the half of the house (30 sq. m. or 323 sq. ft.) the families would never be able to afford—the structure, bathroom, kitchen, and roof. To allow for expansion, only the ground and top floors are constructed; residents are responsible for the rest (72 sq. m. or 775 sq. ft.).

The government of Nuevo León, Mexico, commissioned Elemental to design a group of seventy housing units for a middle-class neighborhood in Santa Catarina. Adapted for the expanded scenario and local climate, Elemental Monterrey features half-built units with a kitchen, bathrooms, stairs, dividing walls, and roof spanning the units. A subsidy of \$20,000—more than double the cost of the Chilean project due to higher construction costs and stricter local building standards and codes—builds the more difficult half of the dwelling, and an additional investment of \$2,000 by each family, doubling the unit's size, increases its market value to \$50,000. **CS**







A. Incremental Housing with residents' self-constructed expansions, Quinta Monroy, Iquique, Chile.

B. Elemental Monterrey half-built housing units, Monterrey, Mexico.

C. Original living conditions for the Quinta Monroy informal community.

D. Community workshop, Chile.

E. Paper models created by residents in community workshop.