

MILDRED LANE KEMPER ART MUSEUM

Educator's Guide

Design with the Other 90%: CITIES

September 14, 2012–January 7, 2013

ABOUT THIS GUIDE

This guide is designed as a multidisciplinary companion for educators bringing their students to view *Design with the Other 90%: CITIES*, on view at the Mildred Lane Kemper Art Museum from September 14, 2012–January 7, 2013. Our intent is to offer a range of learning objectives, gallery discussions, and postvisit suggestions to stimulate the learning process, encourage dialogue, and make meaning of the work presented. Teachers at all grade levels should glean from this guide what is most relevant and useful to their students. Vocabulary words that appear in **bold** are defined at the end of the guide.

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ABOUT THE EXHIBITION



Favela Painting. Praça Cantão, Favela Painting Project. Artists: Jeroen Koolhaas and Dre Urhahn, Haas&Hahn, with Santa Marta favela community youth. Santa Marta, Rio de Janeiro, Brazil, 2009-10. Photo: © Haas&Hahn for favelapainting.com.

In 2007, the Smithsonian's Cooper-Hewitt, National Design Museum launched the groundbreaking exhibition *Design for the Other 90%*, which explored **innovative** product designs offering solutions to the needs of the 90% of the world's population not traditionally served by the design community. Building on the exhibition's success, the Cooper-Hewitt explored the complex issues arising from unprecedented urban growth in the exhibition *Design with the Other 90%: CITIES*. The Kemper Art Museum exhibition features objects and images from both *Design for the Other 90%* and *Design with the Other 90%: CITIES* that celebrate the extraordinary efforts in urban planning, **sustainable** design, affordable housing, **entrepreneurship**, informal education, communication, food security, water and sanitation, and public health happening in these communities to ensure for their residents a brighter future.

INTERDISCIPLINARY CONNECTONS

Architecture, Art, Art History, Business, Chemistry, Design, Engineering, Global Studies, History, Horticulture, International Studies, Political Science, Social Studies, Social Work, Science, Urban Design, Urban Studies

LEARNING OBJECTIVES

- **All grade levels:** Students will discuss the prevalence of **poverty** around the world and the efforts being made to eradicate it through innovative products and **urban design**.
- **All grade levels:** Students will consider issues of sustainability in design and in lifestyle, both in developing countries and in a Western context.
- **Middle and high school levels:** Students will examine the conditions of **informal cities** nationally and internationally and consider the ways in which their needs are being addressed.

This guide was prepared by Allison Taylor, manager of education programs, and Stephanie Ruse, school and community programs assistant. Contact Allison Taylor at allison.taylor@wustl.edu or 314.935.7918 to schedule a visit to the Museum.

BEFORE YOU VISIT

Suggested topics to explore, research, and discuss before visiting the exhibition.

ALL GRADE LEVELS

Poverty

Those who lack a certain amount of money or material possessions are said to live in **poverty**. The concept of poverty varies between cultures, and the degrees of poverty can range from relative poverty, where one can provide basic needs for him- or herself but lacks what that society deems to be socially acceptable resources, to absolute poverty, where a person lacks the basics for daily living such as clean water, nutritional food, and access to health care and education. Research the prevalence and causes of poverty around the world. What information surprises you the most? How does poverty in the United States compare to poverty elsewhere? Is there absolute poverty in the United States?

Urban Design

More specifically within the field of architecture, which focuses on individual buildings, **urban design** focuses on the whole city, addressing issues of scale and the grouping of buildings, public spaces, and neighborhoods. Urban design can be used to increase the functionality of these spaces while also making them sustainable and aesthetically engaging. **Innovative** urban design is needed now more than ever as countries tackle growing informal cities and exploding populations. Consider a neighborhood or city that is familiar to you. What are some aspects of the neighborhood that are well-designed? What areas could use improvement? What ways is your city or neighborhood embracing sustainability?

MIDDLE AND HIGH SCHOOL LEVELS

Informal Cities

In today's vernacular, **informal cities** is a term used to refer to slums, shanty towns, squatter settlements, and ghettos. These cities, particularly in emerging or developing countries, lack elements of formal **infrastructure** such as water and sewage pipes, electrical and telephone lines, paved roads, and sidewalks, and they also lack services such as schools, hospitals, markets, and retail stores. Almost one billion people live in these informal settlements, and their growth has exploded in recent decades as more people leave rural areas for urban areas in hopes of a better life.¹ Research the growth of informal cities. What are some of the reasons people choose to leave rural areas for informal cities? What are some moments in history when this has happened before?

IN THE GALLERY

Ideas to consider when visiting the exhibition.

ALL GRADE LEVELS

Gallery Interaction: **Guangzhou Bus Rapid Transit System**

One of the biggest issues facing rapidly-growing urban areas is a need for public transportation, particularly in cities like Guangzhou, China, whose population has increased by 3 million in just one decade. The Guangzhou Bus Rapid Transit system (GBRT) demonstrates an extremely effective model for tackling these pressing transportation needs. The GBRT system includes a 4.3-mile dedicated bus corridor that links the city center to outlying areas, integrated scheduling with subway lines, a bike parking and sharing station, multiple large doors and flush platforms that reduce boarding time, and preticketing options such as smart cards. The GBRT model, built very quickly and with minimal

¹ See Pietro Garau, Elliott D. Sclar, and Gabriella Y. Carolina, *A Home in the City: UN Millennium Project, Task Force on Improving the Lives of Slum Dwellers* (London: Earthscan, 2005), 12.

infrastructure investment, has cut carbon emissions, increased bus speed by 30%, reduced gridlock, and reclaimed residential public spaces. The GBRT system has been replicated in Bogotá, Mexico City, Seoul, and Johannesburg. Do you have access to public transportation? If you were to rely on public transportation every day, what areas of the city would you need it to connect to?

Gallery Interaction: **Digital Drum: Free-Standing Internet Kiosk**

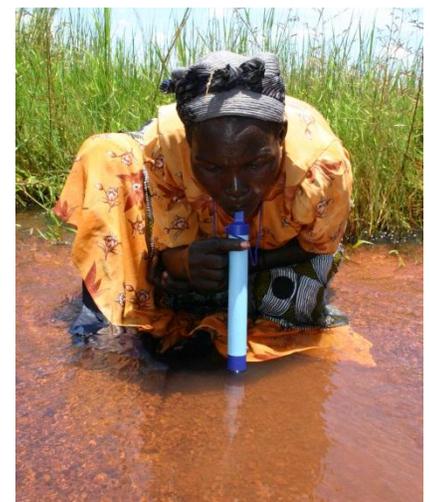


Today's world is increasingly more interconnected and interdependent, but there are still segments of society—generally the poorest and most remote populations—that lack access to technology for information, education, and national services. One way this need is being met is through UNICEF's Digital Drums, cost-effective, simple computer kiosks set up in places like the Treasure Life Youth Center in the Kamwokya neighborhood of Kampala, Uganda. Built from repurposed steel oil drums, the Drums are solar-powered and serve as an access point to underserved youth throughout Uganda. Equipped with educational, teacher-centered videos and classroom lessons provided by the top teachers in Uganda, these Digital Drums help fill the void in areas where classroom teachers are absent or where children are not attending traditional schools. Imagine a world without technology and the Internet. How would your life be different without access to a computer? What difference does it make that the Drums are solar-powered?

Digital Drum. Concept: Khalid Arbab (Sudan), UNICEF. Prototype 1: Jean-Marc Lefébure (Belgium), UNICEF, and Grant Cambridge (South Africa), Council for Scientific and Industrial Research Meraka. Prototype 2: Jean-Marc Lefébure, UNICEF. Prototype 3: Seth Herr (USA) and Jean-Marc Lefébure, UNICEF. Fabrication: Jean-Marc Lefébure, Grant Cambridge, Emmanuel Ezabo, Seth Herr, Islam Khairul, Cissy Majoli, Malik Abdul, Abdul Ahmed, Francis Ssemukte, Hamid Bbossa, Jacob Odere, Amos Okello, Fred Kiyemba, Charles Mubiru, Fred Ssenyimba, and Henry Samula. Partners: UNICEF, Motor Care Clinic Ltd. Kampala, Uganda, 2010-present. Steel oil drum, steel bar stock, steel sheet, threaded bars, Plexiglas, sealant, nuts/bolts, bicycle inner-tube (seal), car inner-tube (laptop fastening), weatherproof keyboard, laptops, solar panel (3x55W), charge controller, and battery. Photo: © UNICEF Uganda/2010/Jean-Marc Lefébure.

Gallery Interaction: **LifeStraw**

About half of the world's poor lack access to safe drinking water, leading to thousands of deaths each day from waterborne diseases such as typhoid, cholera, dysentery, and diarrhea.² LifeStraw, a personal mobile water purification instrument, has proven to be effective against these diseases and can turn any water source into clean, safe drinking water. Through this device, millions of people in Africa, particularly in Nigeria and Ghana, now have access to purified drinking water, which reduces the widespread negative economic effects of drinking contaminated water such as reduced personal productive time. How much water do humans need daily? Where does your drinking water come from, and how it is purified?



LifeStraw®. Designer: Torben Vestergaard Frandsen. Manufacturer: Vestergaard Frandsen, S. A. China and Switzerland (current version), 2005. High-impact polystyrene (outer shell), halogen-based resin, anion exchange resin and patented activated carbon (interior), 10 x 1" diameter. Photo: © 2005 Vestergaard Frandsen.

² Cynthia E. Smith, *Design for the Other 90%* (New York: Cooper-Hewitt, National Design Museum, 2007), 106.

Gallery Interaction: **Moneymaker Hip Pump**

The Moneymaker Hip Pump, an invention designed and manufactured by KickStart International, has helped to lift thousands of African farmers out of poverty. Launched in 2006, this lightweight pressure pump pulls below-ground water to **irrigate** almost a full acre of farmland in an eight-hour period. Users of the Moneymaker Hip Pump have increased their net farm income by an average of \$125, tripling the amount of their initial \$34 investment in the cost of the pump in just three to four months' time. KickStart's fundamental principle, as stated by founder Martin Fisher, is "to have a significant impact on ending poverty." In order to do so, "we need to focus on developing innovations that can be used directly by the poor to generate new income. In other words, the devices have to be used to produce goods or services that can be sold on the local market. In this way, whoever owns the device can use it to make money."³ How is this approach to ending poverty more effective than simply distributing money or food?



MoneyMaker Hip Pump. Designers: Martin Fisher, Alan Spybey, Mohamed Swaleh, and Frederick Obudho. Manufacturer: KickStart International. Kenya and China, 2005. Mild steel, PVC, and HDPE (high density polyethylene), 32 x 14 x 27". Photo: © Allison Jones Photography.



Gallery Interaction: **Big Boda Load-Carrying Bicycle**

This load-carrying bicycle, the Big Boda, enables people to carry large loads (two passengers or two hundred pounds of cargo) at much lower costs than other human-powered vehicles. For **entrepreneurs** and consumers in developing countries, these bicycles allow easier transport of goods to and from markets. Developed by Worldbike, an organization "focused on designing innovative bicycle prototypes to advance development in poor countries,"⁴ Big Boda load-carrying bicycles are changing the lives of the rural poor by providing a faster, more convenient way to conduct business. How are goods usually transported in the United States? How efficient would *your* bicycle be in carrying heavy loads?

Big Boda Load-Carrying Bicycle. Designer: WorldBike, Adam French (first phase design), Ed Lucero with Paul Freedman, Matt Snyder, Ross Evans, Moses Odhiambo, and Jacob (second phase). Manufacturer: WorldBike and Moses Odhiambo's workshop. Kenya, 2002-05 (first phase), 2005 (second phase). Mild steel, woven papyrus passenger cushion, 84 x 48 x 24". Photo: © 2006 Ed Lucero.

MIDDLE AND HIGH SCHOOL LEVELS

Gallery Interaction: **Mahila Milan Savings Book, Shack / Slum Dwellers International**

Shack / Slum Dwellers International (SDI) was formed in 1992 to give voice to the millions of people around the globe living in slums. Members of this organization share the belief that cities have neither the capacity nor the strategies needed to deal with current slums and the increasing number of unskilled, poor individuals moving to urban areas. SDI, currently in thirty-four countries, facilitates dialogue among slum occupants, local government chapters, and public and private agencies about safety, basic **amenities**, and livelihood in a spirit of collaboration instead of fear and hostility. One of SDI's initiatives is a savings and loan program, which helps participants learn to manage money and establish rules for lending to each other. Participating families and individuals receive a savings book that is both functional and symbolic of their membership in the program. How is learning to manage money empowering? Who manages the finances of your household? Do you have your own bank account?

³ Martin Fisher, "Design to Kickstart Incomes," *Design for the Other 90%*, 34.

⁴ See www.worldbike.org.



Incremental Housing: BEFORE (left) and AFTER (right). Architects: Alejandro Aravena, Tomás Cortese, Emilio de la Cerda, Andrés Iacobelli, and Alfonso Montero, Elemental (Chile). Engineers: José Gajardo and 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, and wood panels. Photo: © Elemental.

Gallery Interaction: Incremental Housing

Low-cost subsidized housing tends to be poorly constructed and far from amenities like public transportation, work, education, and health care. In addition, these types of homes are usually not built to appreciate in value. Countries such as Chile and Mexico, working with the Chilean architecture firm Elemental, are trying a new approach to low-cost housing called Incremental Housing. Architects construct the more costly half of the home, including the bathroom, kitchen, and roof, leaving the residents responsible for adding to the home when they are financially able. Incremental Housing provides quality, safe housing with a possibility for increased market value for their homes in the future. What’s the relationship between safe housing and improving other aspects of life? Would the Incremental Housing model work in the United States?

COLLECTION CONNECTIONS

Explore these connections to artworks on view in the Mildred Lane Kemper Art Museum’s permanent collection.



Dan Peterman, Accessories to an Event, 2006

Like many of the designers in *Design with the Other 90%: CITIES*, artist Dan Peterman (b. 1960) uses the process of adaptive reuse, or altering postconsumer materials, to create something new and functional. The six benchlike units on the Florence Steinberg Weil Sculpture Plaza are made of reprocessed plastics and stainless steel hardware. Situated among other sculptures, the benches are three-dimensional art objects, but their title, *Accessories to an Event*, implies that they are meant to be used and enjoyed for a larger purpose involving the community. For what “event” could they be used? In what ways could museum visitors and the local neighborhood interact with these sculptures? What role do community spaces play in urbanized areas?

Dan Peterman, *Accessories to an Event*, 2006. Postconsumer reprocessed plastics and stainless steel hardware, dimensions variable. Mildred Lane Kemper Art Museum, Washington University in St. Louis. University purchase, Bixby Fund, and with funds from the Weil Family, 2006.

David Goldblatt, *Abandoned farmhouse near Molteno, Eastern Cape* and *In the KatKat Valley, near Fort Beaufort*, both 2006

David Goldblatt (b. 1930) is known for his photographs of South African landscapes documenting economic hardships and racial inequality. These color photographs, which depict rural landscapes with such details as barbed wire fences, abandoned farmhouses, and a political poster for the African National Congress, hint at the complexities of postapartheid politics. Many townships (the South African term for slums) and informal settlements still exist from the apartheid era, and families often rent out their backyards to squatters in crowded areas.⁵ While there are no figures in these photographs, what do they communicate about the people who live or work in these areas? How can art be used to advocate for social justice? How might the challenges of rural poverty be similar to and different than urban poverty?



Left: David Goldblatt, *Abandoned farmhouse near Molteno, Eastern Cape*, 25 February 2006. Digital print on 100 percent rag cotton paper in pigment inks, 2/10, 36 x 44". Mildred Lane Kemper Art Museum, Washington University in St. Louis. University purchase, Yalem Fund, 2006.

Right: David Goldblatt, *In the Katkat Valley, near Fort Beaufort*, 23 February 2006. Digital print on 100 percent rag cotton paper in pigment inks, 2/10, 31 1/2 x 39 3/4". Mildred Lane Kemper Art Museum, Washington University in St. Louis. University purchase, Yalem Fund, 2006.

IN THE CLASSROOM OR AT HOME

Follow your visit to the Museum with one or more of these suggested activities.

- Watch either the film *Urbanized*, a 2011 documentary about the design of cities, or *The End of Poverty?*, a 2008 film on the causes of poverty, and discuss what you learned from the film.⁶
- Research local poverty. What are causes and effects of poverty in your area? What efforts are being made to eliminate it?
- In teams, research and design a product that could help those living in poverty. Be sure to factor in costs, accessibility, and maintenance of the product. What challenges did you face? What role can design play in addressing social issues such as poverty and the global depletion of resources?
- Research the history and effects of urbanization in your area.
- Research local homelessness and informal settlements. In teams, come up with a list of practical ideas to improve the lives of the homeless in your area. Make plans to activate at least one of the ideas.
- Consider the design elements in your own home and work space. Are they sustainable?

⁵ Cynthia E. Smith, *Design with the Other 90%: CITIES* (New York: Cooper-Hewitt, National Design Museum, 2011), 24.

⁶ *The End of Poverty?* is available in full at <http://www.imdb.com/video/hulu/vi1501497113/> courtesy of Hulu.com.

VOCABULARY

1. **Amenity** – a feature that provides comfort, convenience, or fulfills a basic need.
2. **Entrepreneur** – a person who organizes and manages an enterprise, especially a business, usually with considerable initiative and risk.
3. **Informal cities** – term used to refer to slums, shanty towns, squatter settlements, and ghettos; almost one billion people live in these informal settlements.
4. **Infrastructure** – the basic physical and organizational structures and facilities, such as buildings, roads, and power supplies needed for the operation of a society or enterprise.
5. **Innovative** – featuring new methods; advanced and original.
6. **Irrigate** – to supply water to land or crops to help growth.
7. **Poverty** – the state of lacking sufficient money to live at a standard considered comfortable or normal in a society.
8. **Sustainable** – conserving an ecological balance by avoiding depletion of natural resources.
9. **Urban design** – the process of designing and shaping the buildings and public spaces of cities, towns, and villages.

ADDITIONAL RESOURCES

Books

- Cynthia E. Smith, *Design with the Other 90%: CITIES* (New York: Cooper-Hewitt, National Design Museum, 2011).
- Cynthia E. Smith, *Design for the Other 90%* (New York: Cooper-Hewitt, National Design Museum, 2007).

Films

- *The End of Poverty?*, directed by Philippe Diaz, 2008.
- *Urbanized*, directed by Gary Hustwit, 2011.
- *Koyaanisqatsi: Life out of Balance*, directed by Godfrey Reggio, 1982.

Online

- *Design with the Other 90%: CITIES*, <http://www.designother90.org/cities/home>.
- "Resources," *Design with the Other 90%: CITIES*, <http://www.designother90.org/cities/resources>.
- KickStart International, www.kickstart.org.
- WorldBike, www.worldbike.org.
- Shack / Slum Dwellers International, <http://www.sdinet.org/>.
- "LifeStraw," Vestergaard Fransen Disease Control Textiles, <http://vestergaard-frandsen.com/lifestraw>.

Design with the Other 90%: CITIES is organized by the Smithsonian's Cooper-Hewitt, National Design Museum's curator of socially responsible design, Cynthia E. Smith. It is adapted for the Mildred Lane Kemper Art Museum by Peter MacKeith, adjunct associate curator of architecture & design at the Mildred Lane Kemper Art Museum and associate dean and associate professor of architecture at the Sam Fox School of Design & Visual Arts. The exhibition's presentation at the United Nations was sponsored by Citi. Generous support was provided by The Rockefeller Foundation. Additional funding was provided by Procter & Gamble, Deutsche Bank, Smithsonian 2.0 Fund, the Albert Kunstadter Family Foundation, and Smithsonian Institution's Research Opportunity Fund.

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