

## GLOBAL POPULATION GROWTH AND URBANIZATION

### 9.3 billion by 2050

Earth will be home to more than 9 billion people in 2050,<sup>1</sup> a jump of 2.3 billion over four decades. This global milestone will have a pronounced urban penchant. Two-thirds of the world's population will reside in "mega cities," urban centers with 10 million inhabitants. These sprawling metropolitan areas will be features in the emerging economies of Asia, Latin America and Africa, with China, India and Nigeria projected to have the highest rates of growth. In China, it is projected that in just over two decades, two-thirds of all Chinese—approximately one billion people—will be living in cities.

Rapid population growth and urbanization will have a dramatic effect on the increased demand for jobs, housing, energy, clean water, food, transportation infrastructure, and social services. It will also be a significant factor in magnifying the impacts of global warming, according to the Sierra Club.<sup>2</sup>

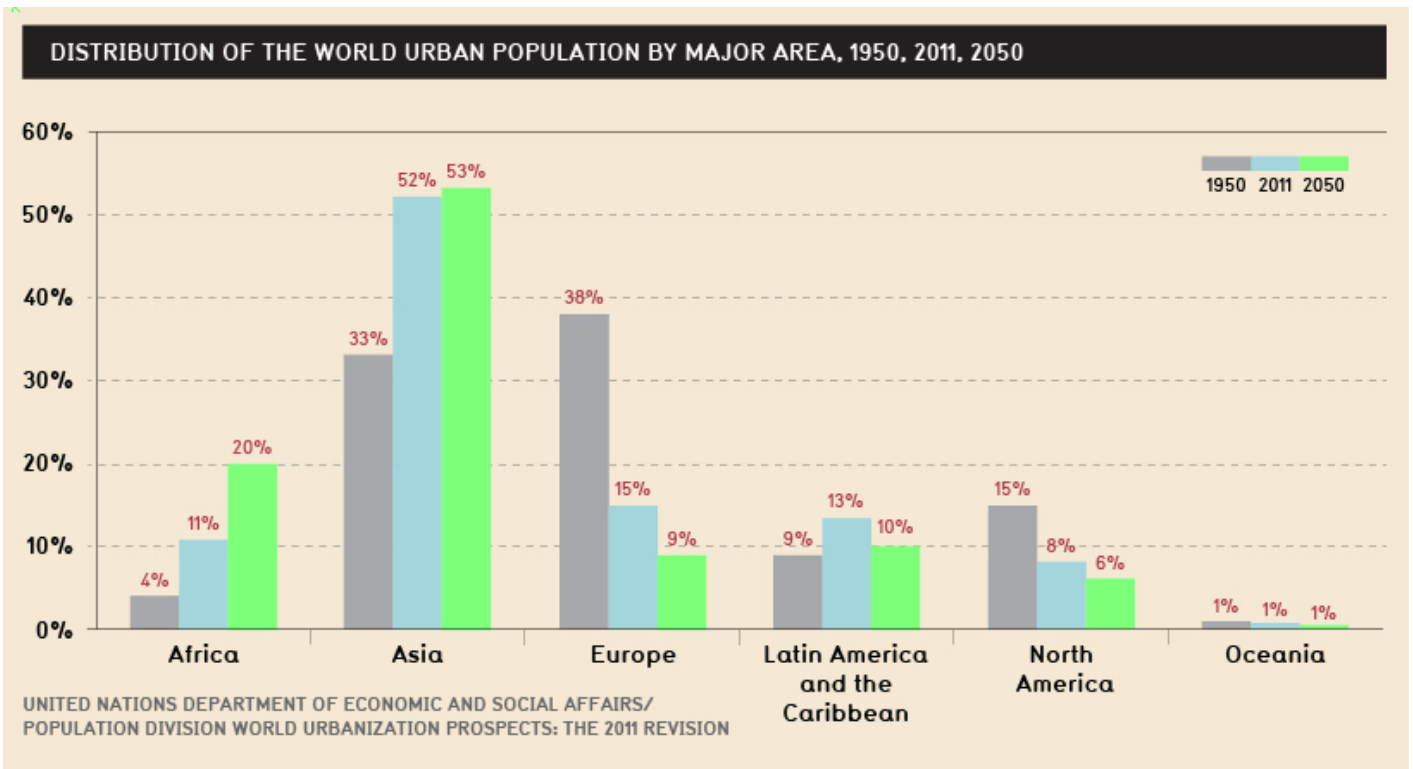
**CITIES**  
 ARE PRECISELY  
 WHERE THE **PRESSURES OF**  
 MIGRATION,  
 GLOBALIZATION,  
 ECONOMIC DEVELOPMENT,  
 SOCIAL INEQUALITY,  
 ENVIRONMENTAL POLLUTION AND  
 CLIMATE CHANGE  
 ALL  
**COME TOGETHER**

JOMO KWAME SUNDARAM,  
 UN ASST SECRETARY-GENERAL  
 FOR ECONOMIC DEVELOPMENT.

### Sustainable Solutions Needed

Sustainable growth of "mega cities" is crucial to the reduction of greenhouse gas emissions. Consider that the 20 largest cities consume 80% of the world's energy. Urban areas generate 80% of greenhouse gas emissions worldwide. According to The Global Footprint Network, we are currently growing at a rate that is using up the earth's resources far faster than they can be sustainably replenished. Right now, global growth is using about 1.5 earths.<sup>4</sup>

This projection underscores the necessity for new approaches and innovative technologies that dramatically reduce or even reverse the effects of CO<sub>2</sub> emissions to mitigate the upward trajectory of population growth.



### New Technology Delivers Sustainable Building Materials

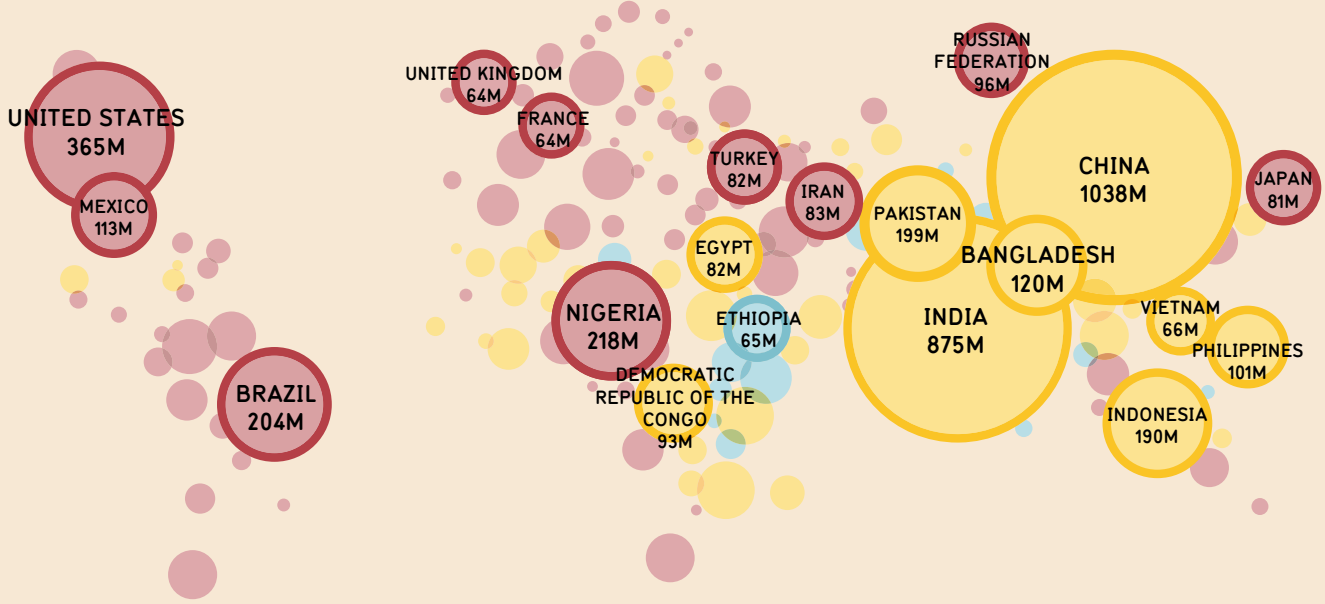
The urbanization of the planet over the coming decades will exert intense pressure on the agility and responsiveness of industry to innovate. The building materials and construction industries must adapt new practices to meet the increased demand for materials to build the housing and transportation infrastructure needed to support the anticipated increase in city dwellers, while reducing CO<sub>2</sub> emissions in a resource-constrained environment.

Solidia Technologies™ has a patented process that reduces CO<sub>2</sub> emissions in the production of cement by 70%. Cement is responsible for 5-7% of CO<sub>2</sub> emissions worldwide. Concrete, the supply chain sibling of cement, is the second most utilized resource after water. Roughly 17-25 billion5 tons of concrete is produced per year; with increased urbanization, this annual rate is projected to grow to up to 29 billion tons.<sup>6</sup> With Solidia Technologies, the building materials and construction industry has the opportunity to benefit from a new technology and deliver building materials sustainably and profitably.

**“AN URBAN WORLD” – UNICEF  
COUNTRIES AND TERRITORIES WITH URBAN POPULATIONS EXCEEDING 100,000 IN 2050**

CIRCLES SCALED TO URBAN POPULATION SIZE  
COLOR REFLECTS % OF PEOPLE LIVING IN CITIES AND TOWNS

● >75%   ● 50% - 75%   ● 25% - 50%



**Additional Resources:**

**UN World Urbanization Prospects** – The 2011 Revision

**Rapid Urbanization and Megacities** – Research Study by FIG Commission 3: International Federation of Surveyors

**Meeting the challenges of China’s growing cities** – McKinsey & Company

**Concrete and the Environment** – University of California, Berkeley.

1. UN World Urbanization Prospects – The 2011 Revision. March 2011.
2. Does Population Growth Impact Climate Change. Scientific American. July 29, 2009
3. United Nations Department of Economic and Social Affairs/Population Division World Urbanization Prospects: The 2011 Revision
4. “The Earth is Full,” The New York Times. Thomas Friedman. June 7, 2011
5. Calculated based on 15% cement content per ton of concrete
6. Based on projections by the World Business Council for Sustainable Development