

STATE OF THE WORLD 2012

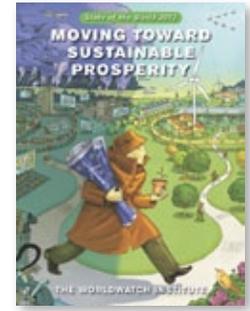
Moving Toward Sustainable Prosperity

POLICY BRIEFS

Chapter 10

From Light Green to Sustainable Buildings

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KEY MESSAGES

- ▶ The building and construction sector accounts for a tremendous amount of natural resource use and greenhouse gas emissions.
- ▶ Current “green building” policies are inconsistent and undefined, and have yet to facilitate truly sustainable buildings.
- ▶ Policy packages that incorporate the unique building aspects of process, performance, sustainable infrastructure, and resource use hold promise in changing “light-green buildings” to truly sustainable ones.

THE PROBLEM

The built environment consists of the office buildings, homes, and other structures in which we all live and work, whether in cities, small towns, or the countryside. Large amounts of natural resources are used in the production, maintenance, and operation of buildings. The construction industry consumes more than one-third of global resources, including 12 percent of all freshwater use. Buildings also use 25–40 percent of all produced energy sources, accounting for approximately 30–40 percent of global carbon dioxide (CO₂) emissions. In addition to natural resource consumption, buildings produce and unload 30–40 percent of solid waste into the environment.

Our world is quickly becoming more urban than rural: by 2030, an additional 1.4 billion people will live in cities, of which 1.3 billion will dwell in cities of developing countries. In the decades ahead, there will be more construction on the planet than ever before. As a result, there is an urgent need to address the long-term impacts of the increased built environment.

Yet there has been a lack of consistent, basic policies, policy tools, and measurable targets to govern “sustainable” building. In the rush to market everything as “green,” buildings are only superficially so, at best a “light green.” Truly green and sustainable buildings still account for only a small fraction of

total construction. Policies, building regulations, and benchmarks need to go beyond cheap tricks to basic principles. Building policy needs to address the multi-dimensional aspects of sustainability, from the time a building is planned and constructed, throughout its operating lifespan, until the day it is demolished or renovated.

MOVING FORWARD

Building policy can be the cheapest and most efficient means of promoting sustainability in construction. Policies need to specify measurable benchmarks such as net zero energy, zero carbon, and zero waste. Assessment tools such as fair trade and public procurement criteria are in turn needed to support policy decisions.

Effective policy relies on a complete toolbox of regulations, incentives, and awareness-raising. And instead of a stand-alone policy, different policies need to be combined and packaged so that they can reinforce each other. Policy packages need to cover the four aspects unique to buildings: process, performance, sustainable infrastructure, and use of resources. (See Table, next page.)

- ▶ *Process.* Process means taking into account the entire lifecycle of a building, from cradle to grave. It has been suggested that designating a coordinator for the entire sustainability process should be a requirement for any building permit. The coordinator would be in charge of a mandatory “maintenance diary,” showing the various ways the building was serviced. Anti-corruption measures such as the Project Anti-Corruption System (PACS) should be integrated worldwide to solidify sustainability policies against powerful interest and lobby groups.
- ▶ *Performance.* How well a building performs matters more than how many requirements to which it adheres. For example, setting minimum energy performance standards is more effective than specifying the thickness of thermal insulation.

There are efforts to define a core set of criteria to measure building performance, including greenhouse gas emissions, energy and water use, and waste production, among others.

- ▶ **Sustainable infrastructure.** Buildings need sustainable and efficient infrastructures that provide access to the basic services of water, wastewater, energy, communications networks, and roads. When these services serve people at shorter distances, CO₂ emissions can be lessened. For example, land use plans might allow new construction only if public transport is available.
- ▶ **Resource use.** Shifting toward greater reliance on renewable energy will have a much bigger impact on greenhouse gas reduction than higher energy standards for new buildings and the refurbishment of existing ones. Such a shift also helps reduce local air pollution. High taxes and fees on construction waste management can help curb waste disposal. Technology such as the co-production of heat and electricity or water and energy meters also enable greater resource efficiency.

LOOKING AHEAD

No single policy is going to transform light-green buildings into truly green ones, but policy packages tailored to the critical aspects of process, performance, sustainable infrastructure, and resource use of buildings promise far-reaching change. Policy packages will have to combine sticks, carrots, and “tambourines.” Tambourines are both stationary awareness-raising tools such as a public information office and mobile ones like an “energy-consulting bus.” Policy packages must entail a great deal of coordination, enforcement, and monitoring to be successful.

Sustainable building entails measurable targets such as net zero energy, zero carbon, and zero waste. Agreement on a core set of criteria for sustainable building is critical to help guide decision making. In order to mainstream sustainability, much more needs to be done beyond putting out publications and websites. By actively engaging people in building policy through regulation, incentivizing, and awareness-raising, green and sustainable building can progress from being rare to being familiar.

Livability Principles and Related Indicator Types

	Mandatory Requirements	Incentives	Awareness-Raising Tools
Process: Long-term thinking, life cycle approach	<ul style="list-style-type: none"> • Mandatory “maintenance diary,” showing how the building has been serviced • Anti-corruption measures 	<ul style="list-style-type: none"> • Subsidies for refurbishment • Construct and maintain contracts for long-term lease 	<ul style="list-style-type: none"> • Public hearings about land use planning and building permits • Some evaluation systems • Voluntary checklists
Performance: “How well” instead of prescribing “how to do it”	<ul style="list-style-type: none"> • Minimum energy performance standards • Handicapped access requirements 	<ul style="list-style-type: none"> • Reduction in real estate tax for extra energy efficiency • Introduction of sustainable public procurement criteria 	<ul style="list-style-type: none"> • Awards for excellent buildings or developers • Local guidebooks, websites, Q&A sessions for builders
Sustainable Infrastructure: Access to basic services	<ul style="list-style-type: none"> • Land use plan that allows new construction only if public transport is available • National water legislation 	<ul style="list-style-type: none"> • Feed-In Tariff for renewable energy • Cross-subsidized pricing and reliability of public transport 	<ul style="list-style-type: none"> • Car-free days, when public transport is free for all • Declaration of access to water as a human right
Resource Use: Renewable or not? Polluting? Hazardous?	<ul style="list-style-type: none"> • Prohibited use of tropical wood or asbestos • High price for management of construction waste 	<ul style="list-style-type: none"> • Pricing of water and energy (use more, pay more) • Research funding 	<ul style="list-style-type: none"> • Save Energy Day! Earth Hour • “Energy consulting bus” • Water and energy metering in every household

This brief is based on Chapter 10, “From Light Green to Sustainable Buildings,” by Kaarin Taipale, published in Worldwatch Institute’s *State of the World 2012: Moving Toward Sustainable Prosperity*.

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