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Become a City of Green Buildings

The ten strongest green building markets in the US are in cities that have established public policies that promote green building.

— C40 Cities

A huge green building movement is underway. The world's first carbon neutral eco-cities are being built in Dongtan, China and Masdar, Abu Dhabi. In Germany 6,000 *Passivhaus* buildings use only 5% of the energy used by a typical German house. The benefits are enormous, not only for the world's climate but also financially and for cleaner air, improved health and increased happiness.

Adopt a Visionary Framework

Britain has laid down its Carbon Challenge: all new buildings and ten new towns must be zero carbon by 2016. In Austin, Texas, all new homes must be Zero Energy Capable by 2015 — 65% more efficient than the current code and have protected roof space for solar PV and hot water.

In England it was a long-term green commitment by the London Borough of Sutton that attracted the pioneering Beddington Zero Energy

Development (BedZED). In Victoria, Canada, it was the city's commitment to the "triple bottom line" for land-use decisions that attracted the equally pioneering Dockside Green development. In Port Coquitlam, Canada, and Aspen, CO, all permit applicants must complete a sustainability scorecard, with points needed for approval.

Architecture 2030 is calling for all new buildings and retrofits to be carbon neutral by 2030, a challenge that has been endorsed by the American Institute of Architecture, the US Conference of Mayors and a growing list of cities. These commitments must be backed by engagement with the local building community, as Austin Energy's Green Building Program has done since 1991.

Create Green Building Incentives

In Seattle, developers can add extra density or height to a LEED-certified building. In San Francisco, all larger proposed buildings must demonstrate the highest level of green performance in America before they can receive a building permit. Other communities using fee rebates, tax incentives and grants. It is essential to identify the regulatory barriers to green building so that they can be eliminated.

Adopt Green Building Codes

In Boston and Los Angeles, all projects over 50,000 sq ft must be LEED certified. In England, the London Borough of Merton requires the use of renewable energy for 10% of the heat whenever ten or more buildings are constructed. The Merton Rule is being adopted by hundreds of communities, with Kirklees, Yorkshire, adopting a



TOM CHANCE BIDIRECTIONAL DEVELOPMENT GROUP

The Beddington Zero Energy Development in Sutton, England.

- Architecture 2030: architecture2030.com
- Austin Energy Green Building: tinyurl.com/2v7r9a
- BedZED: tinyurl.com/5zjr7
- Berkeley's RECO: tinyurl.com/8cffq4
- Boston Green Building: bostongreenbuilding.org
- Building Technologies Program: www1.eere.energy.gov/buildings
- Cambridge Energy Alliance: cambridgeenergyalliance.org
- Dockside Green: docksidegreen.ca
- Energy Efficiency Building Retrofit Program: clintonfoundation.org
- Energy Savings Plan: saveenergynow.ca
- European Center for Renewable Energy (Gussing): eee-info.net/cms
- LED City: ledcity.org
- Playbook for Green Buildings and Neighborhoods: greenplaybook.org
- Port Coquitlam's Sustainability Checklist: tinyurl.com/2clt29
- San Francisco's RECO: tinyurl.com/2p36zl
- The Carbon Challenge (UK): englishpartnerships.co.uk/carbonchallenge.htm

35% rule. In Fingal, Ireland, all new buildings must use less than 50 kWh/m² a year for space and water heating, 30% of which must come from renewable energy. In Freiburg, Germany, where a 1992 Low Energy Housing Construction code limits houses to 65 kWh/m², new buildings use 80% less energy than average. White roofs are also important. Hashem Akbari, a physicist at the Lawrence Berkeley National Laboratory, has calculated that making a 1,000-square-foot roof reflective rather than absorbent color would offset ten tonnes of carbon dioxide emissions.¹

What about existing buildings? There are three successful solutions — ESCOs, RECOs and Utility Programs.

Energy Services Companies (ESCOs)

An ESCO is a business or non-profit society that specializes in building energy retrofits, financing the work by the energy saved. Toronto's Better Buildings Partnership works with 40 ESCOs. In Cambridge, MA, a \$100 million ESCO partnership is visiting 23,000 buildings and offering free energy audits, with retrofits financed through the savings. Portland's Multifamily Home Energy Solutions and the Berlin Energy Agency in Germany operate in a similar manner.

Residential Energy Conserving Ordinances

In Berkeley and San Francisco, since 1981, every building has been required to have an energy upgrade whenever it is sold, transferred or renovated. In Berkeley, by 2006, 12,000 residences had been upgraded (30% of the building stock), resulting in a 25–50% energy saving. Berkeley also has a Commercial Energy Conservation Ordinance.

Utility Programs

If your community owns its utility, much can be achieved. In Austin, TX, Austin Energy provides free home-energy improvements to customers with low to moderate incomes and gives rebates for energy investments to 48,000 apartments. Seattle City Light has numerous programs that assist with energy upgrades, including the Neighborhood Power Project in targeted neighborhoods. In Colorado, Fort Collins Utilities provides Zero-Interest Loans for Conservation Help (ZILCH).

How to Proceed?

Form **Team #7: Green Building Solutions**, including local green builders, citizens and municipal staff. Ask them to research the best practices and make recommendations to council. See also Solutions #53 and #67.