



THE BUILDING SECTOR: A Hidden Culprit

With so much attention given to transportation emissions, many people are surprised to learn that buildings are the single largest contributor to global warming. In order to clarify this misconception, Architecture 2030 has reshaped the debate surrounding climate change and GHG emissions to define and include a Building Sector.

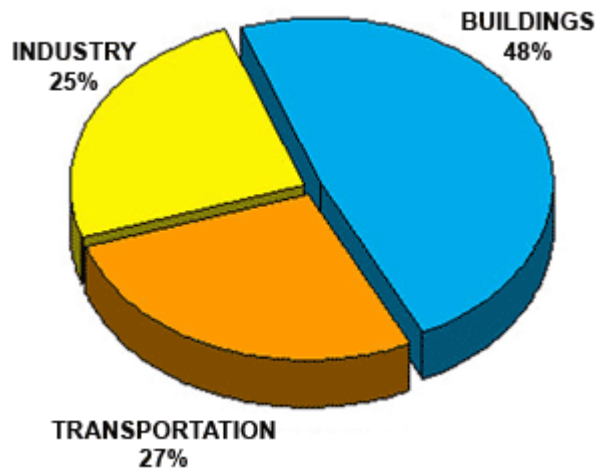
Previous pie charts distributed the various elements of the Building Sector into several sectors, i.e. industry, commercial, residential, transportation and so on. To determine the real energy impact of buildings, Architecture 2030 combined these various elements into a single sector called Buildings.*

Data from the US Energy Information Administration illustrates that buildings are responsible for almost half (48%) of all energy consumption and GHG emissions annually; globally the percentage is even greater. Seventy-six percent (76%) of all power plant-generated electricity is used just to operate buildings. Clearly, immediate action in the Building Sector is essential if we are to avoid hazardous climate change.

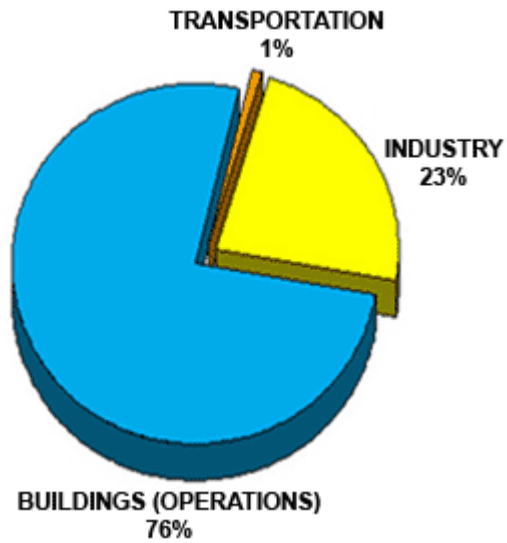
*To create a US Building Sector percentage for the year 2000, the Residential buildings (operations) sector (20.4 QBtu), Commercial buildings (operations) sector (17.2 QBtu), Industrial sector - buildings operations (2.0 QBtu) and the Industrial sector - annual building construction and materials embodied energy estimate (8.57 QBtu) were combined. Total annual 2000 Building Sector consumption was 48.17 QBtu and the total annual 2000 US Energy consumption was 99.38 QBtu. Source: US Energy Information Administration (consumption numbers vary slightly depending on the EIA table used. To be conservative, Architecture 2030 rounded down).

The annual embodied energy of building materials and the energy used to construct buildings is estimated at 1.146 MBtu/sf of building for new construction and half of this for renovation. Source: US Energy Research and Development Administration. At the current rate of construction in the US of approx. 5 Bsf of new building and 5 Bsf of renovation (EIA and Dodge), the total annual energy consumed is approx. 8.6 QBtu, or 8.6% of total US annual energy consumption.

Residential, commercial and industrial building operations consume 76% of total US electricity generation.



U.S. Energy Consumption (U.S. Energy Information Administration)



U.S. Electricity Consumption (Arch 2030 per US EIA data for the combined Buildings Sector)