

Buildings and Global Warming

AIA 150 Legislative Day

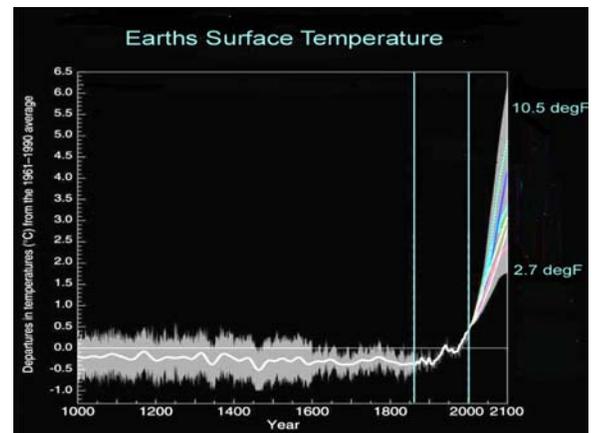
25 January 2007

Welcome. I'm Howard Kaplan, an architect with Wilson & Company, Board Member of the US Green Building Council-NM Chapter and co-founder of CASA-A Center Advancing Sustainable Architecture.

I would like to thank AIA New Mexico for organizing this day and the other sponsors and exhibitors:

- CASA
- USGBC - NM
- HBA of Central NM
- BuildGreen NM
- THE Group

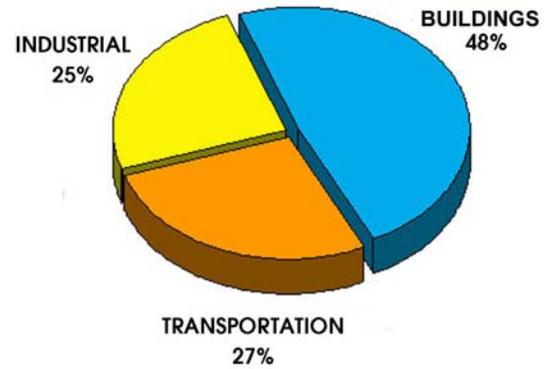
The most significant challenges we in the building industry are facing today are the reduction of greenhouse gases that are causing global warming, the health of building occupants and the depletion of energy and material resources that are needed to build our buildings. The graph on the right illustrates the severity of what we are facing. As you can see the surface temperature of the earth has remained relatively constant for the last 1,000 years. It is only in the last 150 years – since the start of the industrial revolution – that we see a significant change upward. By the year 2000 the earth's temperature had increased 1^o centigrade and the prediction is dire if we continue on the current course of energy consumption and subsequent emissions.



What does a further 1^o increase in temperature mean? It means the world will be warmer than it has been in a million years; it means that the Greenland and Antarctic ice shelves will be melting at an alarming rate and it means that the mean sea level will rise between 10 and 20 feet inundating coastal cities around the world. Here in New Mexico it means that we will have decreased snowpack and increased evaporation; a significantly higher risk of prolonged drought and major impacts on our industry and agriculture. It will be a very different world.

This country and the rest of the world are only now becoming aware of the significance that buildings play in contributing to this problem. Up until now,

the discussion around reducing greenhouse gas emissions has centered around transportation and industry. While these are certainly important, the pioneering work of Ed Mazria and his Architecture 2030 Challenge has shown us otherwise. When we look at the problem in terms of total energy consumption, we clearly see that buildings are far and away the largest segment consuming 48% of total energy. And this is significant because the energy that buildings consume is derived principally from electricity that is generated from coal fired power plants and additionally from the burning of natural gas to heat hot water and run our furnaces.



U.S. ENERGY CONSUMPTION

The demand for energy is increasing at such a furious rate that it has the power companies projecting that an additional 150 power plants will need to be constructed in this country in the next 30 – 40 years to keep up with this demand. And under the current federal rules, those plants could be conventional coal fired plants. Plans are currently on the drawing boards for a new plant in the Four Corners Region in New Mexico and 11 plants in Texas. Therefore, a significant reduction in demand leads immediately to the elimination of the need to construct more power plants and buildings are the key to this solution.

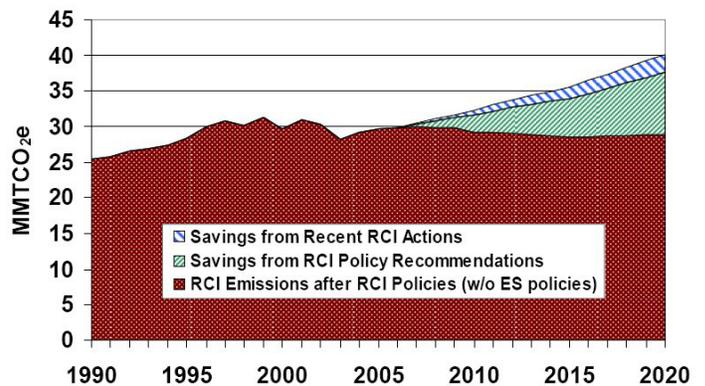
The State of New Mexico is ready to take up the challenge. New Mexico is the 5th largest energy producing state in the nation and the only energy producing state to take up the challenge of greenhouse gas reduction. We are fortunate to be living in a State that has the foresight and the political will to tackle this problem head-on. Governor Richardson has made this challenge the centerpiece of his energy policy and he has issued a series of Executive Orders specifically designed to address to issue:

- E.O. 2004-019 declared New Mexico to be the *“Clean Energy State”*
- E.O. 2005-033 set greenhouse gas reduction targets for the State and established the *Climate Action Council* and the *Climate Change Advisory Group*.
- E.O. 2006-01 directed all State buildings to adopt the *US Green Building Council’s LEED* rating system and *50% Energy Reduction* for certain projects
- And now E.O. 2006-69 which establishes a blueprint for *New Mexico Climate Change Action* designed to address the recommendations of the Climate Change Advisory Group.

The Climate Change Advisory Group, of which I was a member, forwarded 69 policy recommendations, 19 in the Residential, Commercial and Industrial (RCI) sector, to the Governor. These 19 building RCI sector policies were approved unanimously by the CCAG and are listed as follows:

- DSM Programs – Electricity
- DSM Programs – Gas
- Regional Market Alliance
- State Appliance Standards
- Green Power Purchasing
- Rate Design
- Improved Building Codes
- Solar Roofs – Water & PV
- Solar Hot Water Systems
- Building Energy Performance for State Buildings
- Building Energy performance – Reach Codes
- Gov't Agency Building Operations
- Education for Building Professionals
- Consumer Education Programs
- Energy & Environment in Higher Education
- Promotions for Renewable Energy & Combined Heat & Power
- Distributed Generation
- National & Regional Cap & Trade Programs
- Voluntary Emissions targets
- Use of Alternative Gases
- Solid Waste Recycling

These 19 RCI policies represent the necessary contribution from the building sector to reduce New Mexico's greenhouse gas emissions to 10% below 2000 levels by the year 2020. As you can see from the chart, by implementing all of the policies we just barely get to the goal of 10% reduction by the year 2020. And this is only a small step in getting to the Governor's ultimate goal of reducing New Mexico's greenhouse gas emissions to 75% below 2000 levels by the year 2050. 2050 is the date most climate scientists agree is the point of no return with regard to preventing the most dire consequences if climate change.



This is why it is critically important that the policies being presented for passage during this year's legislative session are passed and implemented. Some of these policies fall into the realm of the regulatory agencies so you won't see all 19 policies in the proposed bills. The bills that we know of that are proposed include:

- Tax Incentives for Sustainable Buildings
 - For certain LEED and BuildGreen-NM projects
- GRT Exemption for Energy Star Appliances and Advanced HVAC
 - A permanent exemption, not a tax holiday

- Land, Wildlife and Clean Energy Fund
 - Include Clean Energy Grants for State, Municipal, Schools and Tribal buildings
- Tax Incentives for Advanced Energy Manufacturing
 - An economic development incentive to bring advanced energy manufacturing to New Mexico
- Enhancements to the Solar Tax Credits
 - Increases the scope of the current tax credits
- Solar Covenants Legislation
 - Prevents codes and covenants from prohibiting solar on buildings
- Solar Ready Roofs
 - Require homes and businesses to be designed for the installation of future solar equipment.

I urge all of you to contact your local senators and representatives and voice your support for this legislation. A new report on global warming to be issued on February 2nd by the Intergovernmental Agency on Climate Change will show "much stronger evidence now of human actions on the change in climate that's taken place." And the early draft adds: "An increasing body of evidence suggests a discernible human influence on other aspects of climate including sea ice, heat waves and other extremes, circulation, storm tracks and precipitation." The report goes on to state that the two warmest years on record for the world were 2005 and 1998. Last year was the hottest year on record for the United States.

Therefore, the time to act is now, tomorrow may be too late!!

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