



September 20, 2011  
10:30 a.m. to 11:30 a.m.  
Conference Room B-2

Minutes

**Council Sustainability Committee Members:**

Present were Vice Mayor/Chairperson Steve Frate (Sahuaro District), Councilmember Yvonne Knaack (Barrel District)

**City Staff Members:**

Present were Marilyn Clark, Stuart Kent, Bob Manginell, Deborah Mazoyer, Brad Tarrant, Pam Wertz

**I. Approval of the Minutes**

Vice Mayor/Chairperson Frate entertained a motion to approve the minutes of the August 16, 2011 meeting. Councilmember Knaack made the motion to accept the minutes. The motion was seconded by Vice Mayor/Chairperson Frate, and the minutes were approved as written.

**II. Presentation on Energy Code Adoption**

Deborah Mazoyer, Director, Building Safety made the opening remarks and introduced Pam Wertz, Assistant Director, Building Safety who presented this agenda item.

The Building Safety department has been looking at the International Energy Efficiency Code as a tool to help establish minimum standards for the energy efficiency of future buildings that are being constructed in the City of Glendale. Building Safety received funding through an Energy Efficiency Grant. The funds have been used for staff training on the Energy Code, purchasing materials, and generating information for public outreach as the department moves forward.

In terms of what energy efficiency means, a simple definition of energy efficiency would be simply "doing more with less." Through maintaining energy efficiency, we can expect to sustain our renewable resources and extend the availability of non-renewable

resources. This also allows us to preserve our environment and reduce the costs of products in such areas as manufacturing and distribution.

Statistics taken from the US Department of Energy determined that 39% of all energy utilized in the country is used to maintain habitable conditions inside buildings, which is more than what the transportation or industrial industry uses.

The figures show that five million commercial buildings and 115 million residential households in the United States consume over 40% of the nation's total primary energy. Combined, commercial and residential buildings consume 70% of all electricity generated in the United States.

The intent and scope of the Energy Code is to regulate the design and construction of both residential and commercial buildings for the effective use of energy. By doing so, this step will lock in significant energy savings for future generations by making efficiency improvements during the initial construction phase or during a renovation, when the costs are less expensive, and construction is easier.

The Energy Code regulates the building envelope. The building envelope is considered to be the construction that separates conditioned space from non-conditioned space, such as floor space in an unfinished, non-heated or air conditioned basement, or the separation between a garage and a house. The Code also regulates the mechanical systems, electrical systems, and water heating systems, which are critical to energy efficiency. These apply to both residential and commercial applications.

The main emphasis of the International Energy Conservation Code is the reduction of heat loss and heat gain across the building envelope through the selection of materials and systems that provide energy efficiency. Specifically, glazing, insulation, sealants, and energy equipment are all regulated.

The Code has established minimum efficiency standards for glazing which regulates the amount of heat transmission through glass in windows, doors, and skylights. The energy performance standards that measures the heat transmission through the glass are referred to as U-Factors. The minimum energy performance rating for Glendale is 0.65. An energy performance label is placed on the every piece of glass indicating the energy properties.

Minimum efficiency standards have been established for the amount and location of insulation. Once the specification of the minimum standard has been established, the standard can be exceeded. Glendale requires a minimum of an R-13 rating in the walls and floor systems, and an R-30 in the roof or roof-ceiling system. Currently, the building codes do not require insulation in any part of a building. All R-Values must be specified by the manufacturer.

The use of sealants is required by the Code to seal all joints, seams, and other areas of penetration between the conditioned and unconditioned spaces within the building.

The Code requires mechanical and electrical equipment such as appliances, and heating / air conditioning units to be selected to maximize energy efficiency by being properly sized for the space it conditions. The Code requires all ductwork to be properly installed and insulated in the conditioned and unconditioned spaces in which it travels through. The electrical requirement is that a minimum of 50% of all permanently installed lighting fixtures shall be high efficiency bulbs.

The Code applies to all new construction and existing buildings where new conditioned space is created or the energy use increases. The Code also applies to any alteration to energy using systems in an existing building, such as appliances or air conditioning units. Any additions, alterations, renovations, or repairs shall comply with the provisions of the International Energy Conservation Code as they relate to the new construction without requiring the unaltered portions of the existing building or building system to comply.

What is not regulated by the Code is any property on the National Historic Register, or a property that contributes to the historic designation of a historic neighborhood.

Code cannot prohibit continued use and maintenance of a building or building system that is lawfully in existence at the time of the adoption of the Energy Code.

An example of a revision that would need to comply with the IECC would be adding more windows, revising electrical lighting systems, or replacing ductwork such as enclosing a garage into a livable space from a carport. This renovation would require the addition of electrical outlets and lights as well as ductwork. This change in use often includes the addition of windows and doors for egress. For these reasons, these items would be regulated. The remainder of the house would not be regulated by the Code. Repair of a fire-damaged building would be another example.

The first step in the internal process is to determine whether or not a project needs to comply with the Code. Next, the applicant would need to submit plans to Building Safety. The plans would then be submitted to code review for evaluation to determine whether or not the project is in compliance with the Code. If the project is in compliance, a permit is issued, and a field inspection is made.

The process to integrate the Energy Code items into a building is identical to the other codes currently enforced with the addition of an insulation inspection and the builder's certification. The developer or design professional is required to post a permanent certificate within the electrical box listing the R-Values, U-Factors and the types and efficiency of the heating, cooling, and service water heating equipment.

RES-Check (residential dwellings) and COM-Check (commercial structures) are a no cost, easy to use web-based software program that allows a designer or a plans examiner to input information into the system to determine if the minimum levels of energy efficiency are in compliance. The designer or architect would supply these to the Building Safety department with the submittal and staff would then do a quick check during plan review to ensure it is accurate.

Stud sizes vary in the typical construction that is seen today. Not all builders use two by four studs or two by four plates. In a two by four stud wall they typically do install three and a half inches of insulation in the walls. More typically in the ceiling. The amount of insulation is currently not regulated by the adopted codes. Insulation is specified but not inspected. Windows are almost exclusively double pane but U-Factors are not specified. Sealants are not specified on the plan, but are used in the field. Energy systems are sized correctly for the space. Ductwork is insulated, and conditioned spaces are expanded into attics.

Almost all builders constructing buildings in the City of Glendale use double pane windows with caulk. They all use sealants around the sill plate and insulated ductwork as well.

Some of the benefits for end users are that the latest technologies that are put into a home are paid back to them through utility cost savings. Energy demands and energy prices for homes and businesses are stabilized, forestalling the need for new power generation and reducing the need for imported energy for our nation.

The Code breaks down the country into climate zones that represents geographic areas for which there are specific requirements. In the climate zone established for Arizona, it has been determined that the cost savings per home by the adoption of the 2009 Energy Code has proven an average savings of 13.45% in energy bills. Other parts of the country can also expect to save money in varying degrees. California would have a lower percent because they are located in a marine area of the country.

The Department of Energy has a short-term goal of achieving a 30% reduction in energy consumption with a long-term goal of saving a minimum of 50% over what has been the standard.

In conclusion, Ms. Wertz stated that enforcement begins with knowledge and that she was happy to share that knowledge with everyone today.

Vice Mayor/Chairperson Frate thanked staff for their time and the information presented at the meeting. This agenda item was for informational purposes only, therefore no action was required on the part of staff.

Councilmember Knaack reported on the Valley Forward Association's 31st Annual Environmental Excellence Awards program that took place at The Westin Kierland on Saturday, September 17, 2011.

City of Glendale received the coveted Crescordia Award for Environmental Education and Communication in the Public Sector. This entry was for Glendale's Conservation and Sustainable Living Programs.

Glendale also received two Merit Awards. One for the entry for the Pedestrian/Bicycle Bridge Loop 101 Crossing at 63rd Avenue in the category of Site Development and Landscape: Trails. The other for the Glendale Regional Public Safety Training Center in the category of Buildings and Structures: Industrial and Public Works.

**III. Staff Updates**

None

**ADJOURNMENT** 11:06 a.m.

**NEXT MEETING:** October 18, 2011  
10:30 a.m. to 11:30 a.m.  
Conference Room B-2

**TOPIC:** Economic Development

Respectfully submitted,



Marilyn Clark, Recording Secretary