

SCKEDD and Multi-family Weatherization

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Lessons learned

History of SCKEDD

- Weatherization sub-grantee since 1979.
- Served 6 counties in South Central Kansas for many years, picked up 6 more counties in 1998, and added Sedgwick County (which has the largest population base) in 2000.
- Annual production over the last 10 years has ranged from 180 to 450.
- Total grant funding from DOE, LIEAP and ARRA for this year is \$4.1 million.

Multi-family history, Lyons

- First multi-family project took place in Lyons in 1999.
- The owner was the HUD Public Housing Authority which operated a multi-story building restricted to the elderly and disabled. There were also 12 two family units located a few blocks away.
- The Director of the Housing Authority was reluctant to participate; the Board of Directors of the Housing Authority had to intervene.

Lyons Scope of Work

- In the multi-story building the thermostats were replaced on the individual air handlers in each apartment. Many of the apartments could not be rented because the individual air handler units did not work.
- Each apartment was air sealed to compartmentalize each unit in order to reduce infiltration and minimize odor transmission.
- The motors on the ventilation shafts were replaced, so the exhaust system would work as designed. Corridor windows had been left open as a crude means to exhaust tobacco smoke from the building.
- The detached units were air sealed and additional attic insulation was added. A new ceiling fan was installed in each unit.

Early Multi-family emphasis

- All HUD Public Housing Authorities in the 13 county region were contacted each year after 1999.
- Several were weatherized each year; and at this time only three rural Housing Authorities in the 13 county region have not participated.

Privately owned Multi-family

- Over the years several large management companies have been contacted with respect to weatherization participation.
- Section 8 properties or those that are limited to elderly and disabled have been the most open to the program.
- A 6-story building in Wichita was weatherized in 2006. A contribution of \$250 per apartment was made to replace the through the wall heating/air conditioning units. Every window in the building was replaced, with weatherization paying \$150 per window. Each apartment was air sealed above a dropped ceiling to reduce infiltration and isolate each apartment (as was done in Lyons).
- A 3-story building in Wichita was also weatherized the same year. Because it was a fairly new building, the main work items included air sealing, and insulating the walls of the furnace closet (furnace closets drew combustion air from the exterior and the walls common to the apartment were not insulated).

Wichita Public Housing Authority

- SCKEDD provided an energy bill study in 2003 to the Wichita Public Housing Authority under contract. The REM/Design software was used to project utility bill costs, and provide recommendations to the Housing Authority on cost effective weatherization measures.
- The study was updated several times and the relationship was maintained with the Director.
- In 2007 the Director agreed to allow SCKEDD to weatherize three garden apartment complexes.

Wichita Public Housing Authority, cont.

- During the course of building this relationship with the Housing Authority Director, questions arose many times about the scope of weatherization work that could be used for the two multi-story buildings.
- In 2008 SCKEDD weatherized the 88 unit Greenway Manor building.
- In 2009 SCKEDD weatherized the 92 unit McLean Manor building.

High rise buildings & scope of work

- Both of the high rise buildings benefited from new condensing boilers that replaced the 1975 and 1982 vintage equipment. The old boilers were badly rusted and did not have computerized controls. Each boiler had to be manually fired or turned off when not needed.
- Air sealing work above the drop ceilings in each apartment was completed using two-part foam.
- The unused garbage chute was air sealed; the elevator shaft was air sealed.

How to get Multi-family contacts

- HUD Public Housing Authorities are now required to develop energy conservation plans. Every Director should now be open to weatherization.
- The ARRA provided money to all HUD Housing Authorities, and weatherization can stretch those dollars further.
- The HUD Housing Authorities are listed at www.hud.gov, along with contact information.

Multi-family contacts, cont.

- Section 8 units are also listed on the web, and although it will take more legwork, the “go to” person can be tracked down.
- Management companies that specialize in serving special populations may also be open to weatherization. If your state does not require landlord contributions, you will find it much easier to establish a rapport.
- USDA financed properties are located in nearly every rural community throughout the US. A listing of those properties can be found at www.usda.gov. The managers of those units may be reluctant to participate; however, they rarely have reserve funds to improve their properties, and the availability of “free” money may convince them.

Energy Audit Tools

- Kansas uses the REM/Design software, which DOE has approved for buildings with no more than 16 units. This software tool works well for small buildings. It does not work well for buildings that contain boiler systems, or chillers. REM is a product of Architectural Energy in Boulder, Colorado.
- TREAT is a DOE approved tool that can be used for any multi-family building. The software is currently supported by Performance Systems Development of Ithaca, New York.
- Both products have a significant learning curve, before a user can quickly enter data and get recommendations. PSD offers webinars periodically, Architectural Energy does not.

Weatherization Measures

- Heating units often need to be replaced. Follow your state's rules on how to spend health and safety money. For boiler systems, a formal procurement with a scope of work developed by an engineer may work best; the weatherization dollars can pay a portion of the cost if you have a limit per served unit. For individually heated units, replace the furnaces on a case-by-case basis depending upon the condition of the equipment.
- Garden apartments can be treated much like houses; add attic insulation, insulate crawl spaces, perform air sealing work, and install CFLs and new refrigerators.
- Every high rise building is different. Obtain the blueprints if they are available. Look for large bypasses and other sources of infiltration. Air seal and compartmentalize every apartment.

Conclusion

- Multi-family buildings provide major bang for the buck.
- Systematic use of cost effective weatherization measures allow work to be completed quickly with low cost per unit.
- Energy savings can be substantial when unsafe, or obsolete, heating plants are replaced.
- Build and maintain relationships with Housing Authority officials and private firm management personnel.
- Share success stories and use references to gain access to the decision makers.

Energy Audit Tools