**Case Study Title:** Creative Collaborative Partnerships: How Net-Zero Energy saving technologies can reduce costs while increasing awareness to citizens.

**Case Study Category:** Technology Advancements

**Jurisdiction Name:** City of Grand Prairie, Texas

**Jurisdiction** Population: 178,290

**City Manager:** Tom Hart

**Innovation Award:** Yes

**Rapid Fire Sessions:** Yes

**Project Leader:**

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**SYNOPSIS**

The City of Grand Prairie Housing and Neighborhood Services Department sought ways to cut utility costs for families under its HOME Reconstruct Program. Since net zero energy homes produce as much or more energy than they use by incorporating many high efficiency upgrades and designs to conserve and minimize electricity usage, the need for this particular project became a high priority for the city. Prior to the net zero energy saving project, the department did not direct attention to educating its clients about zero energy or energy conservation, nor did it implement these new technologies in any of its grant programs involving construction or rehabilitation. Since many residents were unaware of net zero energy and energy conservation, an opportunity arose to educate the general public on energy conservation technologies. An infill lot, long considered an eyesore, was acquired by the city through tax foreclosure and transformed into a state-of-the-art, energy efficient 1,267 square foot single-family home to temporarily house families participating in the reconstruct program.

During the pre-planning phase, the department contracted with Building Performance Comfort Inc. to provide consultation on net zero energy efficiency specifications for the home. The consultant was Doug Garrett, whose contact information is CEM, 266 Spears Ranch Road, Jarrell, TX 75637-1448, Phone: 254-793-0211, Email: dgarrett@texas.net. The department initiated a Request for Bids from contractors to collaborate with the consultant to ensure the successful implementation of net zero energy technologies. The General Contractor hired to construct the home, in accordance with net zero energy efficiency specifications, was Symone Construction Services, LLC. Total construction costs for the project were $131,920.92. The collaborative effort of all parties involved in the project resulted in the completion of a 1,267 square foot single-family home incorporating many efficiency upgrades and designs to conserve energy and minimize electricity usage.

Potential energy savings for a homeowner in a 1,267 square foot net zero energy home in the City of Grand Prairie is approximately $3,000.00 annually. Potential savings for the city are an estimated $8,400 annually in relocation expenses (prior to the project, the city expended several grant dollars on relocation assistance), for a total of $11,400 saved annually. Additionally, the net zero energy house will generate revenue for the city in the sale of unused energy back to the provider.

The Zero Energy house project provides another level of service to the general public in the form of education and awareness of energy conservation. The department has partnered with the Grand Prairie I.S.D. to provide informative and educational field trips with guided tours through the net zero energy home. Indeed a partnership with the school district provides valuable opportunities to educate and create awareness among today’s youth on energy conservation and its importance in our lives and future.

Finally, the project will improve the viability of the city by informing and educating its employees and residents; demonstrate the latest zero energy technologies and energy conservation systems; and lead by example by constructing energy efficient homes. The net zero energy house will serve as a platform to increase awareness among its residents.

Cooperation from every city level was essential in getting the innovative project off the ground and running, as well as seeing it to completion. The approval and unwavering support from the Mayor’s office, the City Council and City Manager’s office contributed to the successful construction of the net zero energy home. In addition, the project provided an opportunity for collaboration and cooperation among several departments, including Land Management, Planning and Engineering, Building Inspections, Housing and Neighborhood Services and Marketing Communications. Each city department played an integral role in the project.

Obstacles and challenges developed throughout the process, including planning and zoning issues, achieving energy efficiency building codes and resolving disputes between the energy distributor, provider and solar panel insulation sub-contractor. However, the project also produced opportunities to improve energy conservation in the city. Recently the City of Grand Prairie attracted over 100 citizens to a net zero energy Ribbon Cutting event. In addition to increasing awareness in the community, the event provided information and live demonstrations on the latest energy efficiency technologies and their uses. The project will have an indelible impact on this great city for years to come. For example, the project may result in the successful implementation of energy saving technologies in future housing programs, as well as the increased likelihood of city adoption of Zero Energy technologies in future city building codes.

**PRESENTATION STYLE**

The case study presentation will begin with a fun group exercise to test a participant’s knowledge of zero energy technologies, energy conservation and how energy conservation can benefit local governments. Next we will introduce an informative four minute High Definition video of the project from concept to finish. The video will give the viewer an in-depth view of the City of Grand Prairie’s HOME Reconstruct program and its new concept to minimize relocation costs and energy expense, and to increase energy conservation awareness by constructing the net zero energy home. After the video, we will conduct a hands-on demonstration of key net zero energy technologies used in the home. Finally, we will distribute net zero energy project brochures, before and after photos and answer any case study questions.