Integrated Community Energy System Application

- CITP has a community energy system that delivers hot water from a central source through insulated underground pipes to heat buildings in the development.

Context

- CITP will be a multi-use, pedestrian-friendly community hub being built in Sherwood Park, Strathcona County, Alberta.
- It is County owned land and the last development site of the Area Redevelopment Plan.
- CITP is a multi-use area that combines municipal services, local government, residences, retail services and public spaces.
- It used community design principles and a triple bottom line approach to designing the development.

Drivers and Rationale to do the Project

- The vision for CITP is to create a centre for Strathcona County in the heart of Sherwood Park which personifies the character and values of Strathcona County.
- The development will help to create a complete community, linking to existing amenities such as Broadmoor Lake Park, Festival Place, the trail system, businesses and schools.
Benefits

- The community energy system will reduce 1,000 tonnes of greenhouse gases compared with a conventional system.
- The development demonstrates sustainable planning, policy, and operational strategies at the community level.
- The increased density of the site will result in:
  - Less urban sprawl
  - Higher tax revenue per acre
  - Lower municipal service costs
  - Adding diversity to the existing single family homes

Project Description

Community Energy System:

- The community energy system delivers hot water from Community Energy Centre through insulated underground pipes to heat buildings. Natural gas is used as the fuel to heat the water.
- The Community Energy Centre is the building where the boilers and other system equipment are located.
- Each building connected to the system receives the energy through a plate heat exchanger energy transfer station.
- Buildings served by the Community Energy System include:
  - Strathcona County Hall
  - Festival Place
  - The Kinsmen Leisure Centre (pool), arena and recreation office
  - Residential buildings

Community Design Principles:

- Connectivity to the site
  - Integrate the site with the community
- Layer the many elements of a community
- Create a focal point for the community
- Make it a walkable community

Timeline and Status

1989 - 1990
Public consultation and Area Redevelopment Plan were adopted

1991 - 1998
Festival Place, Broadmoor Park and Heritage Trails were developed and balance of land assembled

1999 - 2002
Concept plan was developed and business plan was adopted

2002 - 2004
Implemented competitive development and land sale process, Christenson Developments / WAM Development Group were chosen as developers

2004 - 2005
Stage I site servicing constructed
Community energy system and Phase I buildings started

2006
Installation of the underground piping for the community energy system was completed
Construction began on the Community Energy Centre

2007
Commissioning of the Community Energy Centre was in its final stages

2008
The first two adult condominium buildings were completed
The first stage of a seniors’ project was 90% complete

2009
The second of the construction was scheduled to begin

2010
Completion of the Community Centre

canmetenergy.nrcan.gc.ca
Considerations for Implementation and Ownership

- Various partnerships were formed with the County for this project:
  - Residential buildings: two developers (Christenson Developments / WAM Development Group)
  - Community energy system: Atco Gas, and FVB Energy Inc.
  - Infrastructure: Infrastructure Canada-Alberta Program
- Community consultation was undertaken to design the development.
- A County Assets management approach was used to develop the vision for the site.
- A business case was completed to understand the return on investment, which included a market analysis.
- The concept plan was refined with partners.

Costs and Financing

- Total value of the project - $210 million.
- Investment of $8.5 million in infrastructure by the County, offset by over $750,000 per year in projected residential tax revenue.

Relationship to Other Best Practices

- The Community Energy Centre has been designed and constructed to the LEED® Silver standard.

Lessons Learned (as of Feb 2009)

- Need a clear vision of project which is shared by all stakeholders.
- Set design guidelines and maintain high standards.
- Organization leading the development needs to be the champion.
- Need all stakeholders involved in the process.
- Need to build strong relationships with those involved.

Additional Information

- Additional information may be obtained from the City’s web site at: www.strathcona.ab.ca

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