

Andalusia Apartments

This affordable housing project in Clovis NM showcases the implementation of green design, building techniques, products and systems. The project utilizes site-specific solutions for solving key green building challenges including energy, water, land, resource use, waste management, and indoor environment quality.

Located one block from the primary downtown intersection of Grand and Main is Andalusia a multifamily development providing high quality, affordable housing to the community within the original urban core of Clovis' historic downtown. Andalusia has met the highest levels of sustainability and will achieve LEED certification. Located within a transitional zone between residential and commercial areas, the context for the site is diverse and complex. Directly surrounding Andalusia lies a large, community recreational facility, commercial and light industrial, municipal buildings and even a traditional single-family residential neighborhood.

The goals of the project were to:

1. Design and build houses/units that are affordable, durable and green
2. LEED for Homes™ Platinum certification for New and Gold for Existing
3. Follow Energy Star protocol for testing

Project Overview

Andalusia will introduce 60 new, affordable rental units to the city of Clovis. This project consists of 5 new two story buildings and the rehabilitation of 5 existing multi-family residential buildings.

The site and roof have been designed to harvest and filter water all the rain water into the aquifer and the on-site drought tolerant landscaping that includes a community garden, orchard and central commons throughout the project.

This project has excelled in the LEED for Homes program and achieved the following points for certification:

New Buildings – Platinum certification level

Innovation and Design Process (ID)	7.5 out of 11 points
Location and Linkages (LL)	8 out of 10 points
Sustainable Sites (SS)	14.5 out of 22 points
Water Efficiency (WE)	10 out of 15 points
Energy and Atmosphere (EA)	20.5 out of 38 points
Materials and Resources (MR)	9 out of 16 points
Indoor Environmentally Quality (EQ)	10 out of 21 points
Awareness and Education (AE)	2 out of 3 points
Total Points	81.5 points out of 136*

Existing Buildings - Gold certification level

Innovation and Design Process (ID)	7 out of 11 points
Location and Linkages (LL)	8 out of 10 points
Sustainable Sites (SS)	16 out of 22 points

Water Efficiency (WE)	10 out of 15 points
Energy and Atmosphere (EA)	10.5 out of 38 points
Materials and Resources (MR)	10 out of 16 points
Indoor Environmentally Quality (EQ)	11 out of 21 points
Awareness and Education (AE)	2 out of 3 points
Total Points	74.5 points out of 136*

*Due to the home size adjustment the platinum threshold was reduced 5 points from 90 to 80 and gold was reduced from 75 to 65.

These buildings addressed the fundamental aspects of sustainability in the following ways:

I. Water Efficiency:

1. Reduced irrigation demand due to the 90% plus indigenous drought tolerant landscaping
2. Highly efficient irrigation - 90% drip with a moisture sensor attached to the controller
3. Very High-Efficiency flow fixtures and Fittings

II. Energy Efficiency:

The highly insulated envelopes of the buildings (the new buildings have a 3 kW Photovoltaic system increasing the energy efficiency to a HERS of 60) make a very tight envelope and reduced the energy consumption over 30%. The following items contribute to the energy efficiency of the building:

1. Efficiently zoned spaces for specified occupant use
2. Air Source Heat Pump mechanical systems (SEER 16, HSPF 8.5)
3. On-demand electric water heating
4. Blown insulation reduces infiltration (R=21)
5. Continuous exterior Zip Wall rigid insulation wrap around the house (R=5)
6. Unvented roof system that keeps ducts in semi-conditioned space
7. East/West/North Windows = U of 0.30 or better windows that have a low infiltration value with a Solar Heat Gain Coefficient (SHGC) of 0.27 or better
8. South Windows = U of 0.35 or better windows that have a low infiltration value with a Solar Heat Gain Coefficient (SHGC) of 0.70 or better to allow in the strong winter sun for heating
9. Energy star appliances
10. Energy efficient CFL or LED light fixtures

III. Resource Use

All materials specified for the house have been chosen carefully based on sustainable characteristics such as non-toxicity, recycled content, rapidly renewable or reclaimed content. The following materials were used in the project:

1. Engineered or Existing trusses and sheathing
2. Concrete with 25% flyash and locally harvested
3. Locally harvested stucco material
4. No volatile organic compound paint and adhesives

5. Formaldehyde free cabinet substrates

IV. Indoor Environment Quality:

Indoor environmental quality has been addressed to reduce interior toxins and allergens and improve the general well-being of the inhabitants. This was achieved through system and material choices such as:

1. No volatile organic compound paint
2. Water based finishes
3. Indoor containment control during construction
4. Continuous venting of interior space (bring in fresh air)
5. Sealed combustion or power vented equipment
6. Carbon monoxide monitors

V. Durability

A home that last longer, requires less maintenance and has surfaces that can be cleaned easily with non-toxic products is both a value add to the Owner and has a greatly reduced environmental footprint. To achieve this goal, the project has:

1. The home has no exterior wood products that break down with sun and moisture.
All of these elements are built of steel or concrete
2. The interior surfaces are durable and cleanable with non-toxic products
3. The home manages water runoff and keeps it away from the house

VI. Education

One of the most important goals of this project is to educate homeowners/buyers, designers, realtors, builders, and developers about sustainable development. To achieve this goal, the project has:

1. Open houses upon completion of the project to raise awareness of green building and encourage transformation of the marketplace by showing that this project cost no more than other similar homes and operates at a substantially reduced level.
2. Operation and training manuals for the building manager/operator so that this company can educate/inform all tenants about the green features of their new places to live before they move in