



List of Green Building and Environmentally Friendly Design Features
Dalton's Edge
Tarentum and Brackenridge PA

Project Team:

- Allegheny County Housing Authority
- Trek Development Group
- UpStreet Architects, Inc.
- RAY Engineering
- Gateway Engineering
- Guardian Construction Management Services, Inc.
- Palladio DaVinci, Ltd

Program

- Phase 1: 48 Affordable Apartments for the Elderly
- Phase 2: 72 Affordable Apartments for the Elderly
- Phase 3: LIFE Center

Site Design, Preparation and Development

- Development of a Greyfield site from an underutilized lot into a use that contributes to the community and knits the surrounding neighborhood back together.
- Predevelopment 100% impervious area reduced to post development 55% impervious area

- Site is an infill site in a primarily residential neighborhood. The development tapped into the existing infrastructure. Neighborhood retail, medical and social destinations are within 3 blocks and the site is on a local bus route.
- Density: Phase 1 has 30.9 units/acre, Phase 2 has 28.7 units/acre. Total Site Density including the Life Center is 25.3 units/acre.
- Shared driveways, curb cuts, sidewalks, green space and storm systems for all 3 phases. Sidewalks contribute to a walkable community and promote public health.
- The parking was required to be 1 space per dwelling unit for the residential buildings as required by local zoning. But the LIFE Center was permitted to share the residential building's parking and the parking requirement was waived, resulting in less pervious area.
- Site lighting with cut off shields was selected. Controlled through photocells (On) and timers (Off)
- Green Roofs designed for the residential buildings which provide greater insulation value, reduce stormwater runoff, have higher lifespans, reduce energy consumption inside the building, and are delightful to the user.

Resource Efficiency

- Prefabricated wood roof trusses, panelized wall framing, and engineering floor systems were used which minimize waste.
- Brick, natural stone, vinyl siding, PVC trim, aluminum trim and Vinyl windows and trim were selected for durability and low maintenance.
- The OSB, Blown-in cellulose attic insulation are manufactured with recycled material content.
- Recycling containers are provided in each floor in a trash room, convenient to the apartments.
- Building entries are recessed or covered to protect them from water intrusion.
- Exterior perimeter walls were treated with a Borate spray for termites.

Energy Efficiency

- Air sealing package, Drip edge, Water Barrier, Insulation, Vapor Barrier, flashing, caulking, roof ice barrier were all installed and inspected during installation by an Energy Star Certified HERS Rater in accordance with the Thermal Bypass Inspection Checklist.
- HERS Rating scored the building at 45, which is 55% lower in energy usage than the 2004 IECC requirements. This is the first Open Loop Geothermal Affordable

Housing Energy Star Certified project in the country, as far as we know and according to the certification vendor. The building has received a 5 Star Energy Star Certification.

- Roof trusses are raised heel allowing near full depth insulation at the perimeter walls where heat loss can be the greatest.
- Window headers in exterior walls are insulated with rigid insulation.
- R-values of Attic Insulation: 60; Exterior Wall Insulation: 19; Concrete Slab Perimeter: 10
- Large 4' roof overhangs protect the third story apartments from sun and glare. First and second floor apartments are protected by individual covered patios.
- All Windows are double pane, low-e, argon filled Energy Star Certified windows.
- All Energy Star Certified Doors installed.
- All Energy Star Certified Appliances installed.
- Photovoltaic powered roof vents utilized to ventilate the attic space and reduce moisture buildup.

Mechanical

- All mechanical systems were engineered to meet or exceed the ICC IECC and ASHRAE.
- The entire site shares an Open Loop Geothermal System which enters each building and tempers a heat exchanger. Each building has its own closed loop connected to the heat exchanger and serving individual water source heat pumps in each unit and common area.
- All ductwork held within the conditioned area of the dwelling unit and joints are sealed with mastic.

Electrical

- Ceiling fans in Living Rooms and bedrooms to increase comfort levels without needing to turn on the HVAC system.
- Energy Efficient Light bulbs installed in every fixture.
- All recessed lighting is air tight and electrical boxes in exterior walls have seals.
- Motion sensors are installed at laundry rooms, trash rooms, mechanical rooms, restrooms and storage rooms.

Water Efficiency

- Plumbing manifolds were used to reduce the time for water distribution to the fixtures and to improve balancing the flows between fixtures, therefore reducing unnecessary water consumption. PEX tubing reduces construction time.
- All plumbing supply lines are insulated and no plumbing is located in an outside wall.
- All low flow showers, sinks, toilets installed.
- Plants were selected in the landscaping design that require no irrigation to maintain.

Indoor Environmental Quality

- Radon Protection installed for the health of the tenants, although not governed or required for multi-family housing by the EPA.
- Large Glazing areas provided which reduces the need for lights during the day. All windows and glazing in doors have sheers or reflective miniblinds to reduce glare and heat build up.
- No Smoking signs are posted.
- Green Label Carpets are installed.
- Smooth resilient flooring is FloorScore Certified and was used in bathrooms, kitchens, entryways, mechanical room and laundry rooms which can tolerate moisture.
- Moisture resistant green board and one piece fiberglass shower enclosures used in bathrooms to reduce the potential for mold propagation.
- All water is diverted from the building foundation through the use of a piped drainage system.
- Windows are operable for natural ventilation.
- All wall, floor and joint assemblies are sealed to prevent pests.