

Energy & Environmental features - Holiday House

Energy Efficiency

- The housing units at Holiday House are projected to use 40-50% less energy than if the same units were built to minimum code standards. This is the result of a tight building envelope, high efficiency boilers, energy star appliances and heat recovery ventilators (HRV's).
- Performance testing was conducted on each unit to evaluate the air leakage. Following the performance testing, the values were used to evaluate the overall energy efficiency of the building. Tests resulted in an energy efficiency level for the building in the top 98 percentile (highest rating).
- Foundations were constructed using insulated concrete forms (ICFs), concrete walls with continuous foam insulation on both the inside and outside
 - Leftover sections of foam insulation from the ICFs were diverted from the landfill and provided to other Aspen Skiing Company buildings to provide insulation – reducing waste and increasing efficiency elsewhere
- Structurally insulated panel walls with continuous R-27 foam insulation (code requires R-19)
- Structurally insulated panel roof with continuous R-49 foam insulation (code requires R-38). The continuous insulation of SIPS panels and ICFs save significant energy by reducing the thermal bridging across the framing members within walls and ceilings which leads to direct heat loss throughout the building envelope
- High efficiency windows constructed with triple-pane glazing, integral heat mirror barrier, gas filled on site for altitude in fiberglass foam insulated frames double the insulating value of a minimum, code compliant window
- High-efficiency, 96% efficient central boiler system with radiant baseboard heating
- Sidearm water heating off of the boiler for central, efficient water distribution - one source heats both domestic hot water and hydronic baseboards.

Indoor Air Quality

- Heat recovery ventilators (HRVs) in each unit to provide fresh, outside air to occupants and exhaust stale, polluted, or moist inside air while recovering interior heat and transferring back into the unit.
- HRVs provide exhaust from both the bathroom and kitchen areas to prevent moisture build-up and thereby eliminate one electric fan per unit.

- The HRVs used within the units were left over from the previous building and were reused within the building rather than purchasing new units
- Advanced air sealing prevents transfer of air and pollutants between units
- Low-VOC paints, adhesives, and sealants were used to prevent indoor off-gassing of harmful pollutants
- The central heating and water heating system is sealed-combustion, reducing the risk of Carbon Monoxide within the building and eliminating the need for large combustion air openings, which can significantly reduce the effectiveness of mechanical equipment

Water Efficiency

- All units are equipped with dual-flush toilets, low-flow showerheads and low-flow lavatory faucets to reduce indoor water consumption
- Drought-tolerant landscape with high-efficiency irrigation consisting of mostly drip irrigation lines reduces outdoor water consumption
- Preservation of existing trees and plants within close proximity of the building aids in on-site infiltration on storm water, reduces energy and resources of bringing in new plants, and reduces the water needed to establish new plants and trees
- Permeable surfaces were used for the back parking area to allow for storm water to be infiltrated on site, reducing erosion and limiting the local storm water production

Location and Density

- The previously developed, infill lot is within close proximity to local transit, as well as all of the community resources that the City of Aspen has to offer
- The well-connected site reduces the need for occupants to use fossil fuels by encouraging walking, biking, and mass-transit usage. Bike racks have been installed.

Material Efficiency and Environmentally Preferable Products

- The modular construction of the Holiday House building has inherent material efficiency, since the controlled, factory setting can lead to significant material savings over building in the field
- The framing in both interior and exterior walls is FSC-certified wood, ensuring that it was sustainably harvested
- The foundation aggregate and gypsum board were both extracted, processed, and manufactured within 500 miles of the project site
- The project utilized less than ten 30 yard dumpsters.
- Old building was demolished and pulverized for landfill topping allowing the local landfill to save on topsoil as the pulverized building qualified for landfill topping.