

THE
WEST COMMON HOUSE
THE QUAKER INTENTIONAL VILLAGE PROJECT

EAST CHATHAM, NEW YORK

PROJECT OVERVIEW



NOMAD
ARCHITECTURE

51-02 21st Street
Long Island City, NY 11101

PROJECT SUMMARY

The West Common House is the shared community facility for The Quaker Intentional Village Project; a Quaker based cohousing community of twelve families located in the Hudson valley region of New York. The community's homes will be clustered around the common house on roughly seven acres of the 135-acre farm property. The Common House's program includes:

- Cooking and dining space for community-wide shared meals.
- Childcare space.
- A great room to serve as a worship space, community meeting room and general living room.
- Facilities for canning, food processing and packaging for a community-supported agriculture program.
- Guest bedrooms for short-term stays of community visitors.
- Community laundry facilities.
- A south-facing front porch that overlooks the valley below.

The building's design exemplifies the Quaker values of simplicity and honesty. It strives to be purposeful, and is derived from programmatic, environmental and construction requirements without stylistic embellishments. The design fits within its context of 18th- and 19th-century farmhouses without mimicry.

The building was built on the site of an 18th-century farmstead that was in ruins. Zoning requirements dictated that it retain the former house's footprint. A small 1970's-era addition to the original house was retained and incorporated into the common house.

Most of the construction work on the common house was completed by the members and friends of the community, mostly through volunteer labor. The structure is a hand-cut timber frame with Cob (woodchip and clay) walls.

SUSTAINABLE DESIGN FEATURES

The project's environmental features are summarized in the four general categories described below.

Minimize Water Consumption

Roof rainwater is collected and stored in a 2,500-gallon polypropylene cistern for both toilet flushing and site irrigation use. The tank is located in the cellar to avoid freezing in winter.

All plumbing fixtures are low-water-use.



The rainwater harvesting tank

Minimize Energy Consumption

The project is located in a region that has rather severe winters, with an average heating load of 6,890-degree days but mild summers.

The exterior envelope is highly insulated to minimize heat loss. The exterior walls are 12"-thick wood chips and clay with $R=24$ and no thermal bridging due to studs. The roof is constructed of structural insulated panels with 12 EPS foam with $R=49$. Foundation walls are insulated with 2" of EPS foam to $R=11$. Windows are Marvin Integrity with low-e, argon-filled glazing; total window $u=0.33$. The exterior envelope is tightly sealed to reduce infiltration heat losses.

The spaces are organized with the inhabited spaces facing south and the less-occupied support spaces (closets, bathrooms, etc.) on the north side. Ample windows are provided on the south side to provide direct passive heating. Windows are kept to a minimum on the north side.

Several passive cooling features are incorporated to keep the spaces comfortable in summer without resorting to mechanical air conditioning. High clearstory windows in the library provide convection cooling. (Hot air rises up and out to be replaced by cooler air pulled in through windows at the ground-floor level.) Reflective galvalume roofing with a ventilation cavity between roofing and roof deck minimizes solar heat gain through the roof. Overhangs at all south-facing windows will reduce solar heat gain through the glazing. Paddle-type ceiling fans in several rooms will provide a light breeze.

Electricity consumption is minimized by using fluorescent or compact fluorescent light bulbs and Energy Star-rated high-efficiency appliances. All laundry is dried on clotheslines; clothes dryers are not provided.

An American Aldes HRV 300 DDD heat-recovery ventilator provides mechanical ventilation to maintain fresh indoor air while recouping up to 50% of the heat loss from the exhausted air.



The heat recovery ventilator



The boiler

Space heating is provided by an H. S. Tarm XL200 high-efficiency dual-fuel (wood or natural gas) fired boiler with a 600-gallon heat storage tank. All wood burned in the boiler is culled from downed timbers on the property. Radiant floor convectors are used throughout the first floor. Salvaged cast iron radiators are used on the second floor. Each floor is a separate heat zone with its own programmable thermostat.

A roof-mounted, drain-back-style flat-plate solar water heater will provide an estimated 70% of the common house's total annual domestic hot water, including 100% of the hot water during the summer months. The H. S. Tarm boiler provides backup water heat for

days when the solar system is insufficient.

Minimize total lifecycle environmental impact of materials used

The structural frame is fabricated from locally-harvested and milled white pine timbers. The frame was fabricated on-site during a three-week timber framing workshop conducted by Fox Maple School of Traditional Building. All mortise and tendons were hand-carved by chisel. All interior partition studs and interior wall paneling were locally-harvested and milled pine timbers from Hankle Lumber in East Nassau, NY. All wood flooring was locally harvested ash, also from Hankle.



The barn raising



The cob walls

The exterior walls are cob, fabricated of locally-harvested woodchips and clay. The woodchips are salvaged from a local lumber yard. The interior and exterior faces are coated with natural lime plaster.

All of the kitchen cabinets, appliances and countertops were salvaged from an Upper East Side apartment undergoing a total renovation. Community members removed the components from the apartment, then reconfigured them to fit the new space.



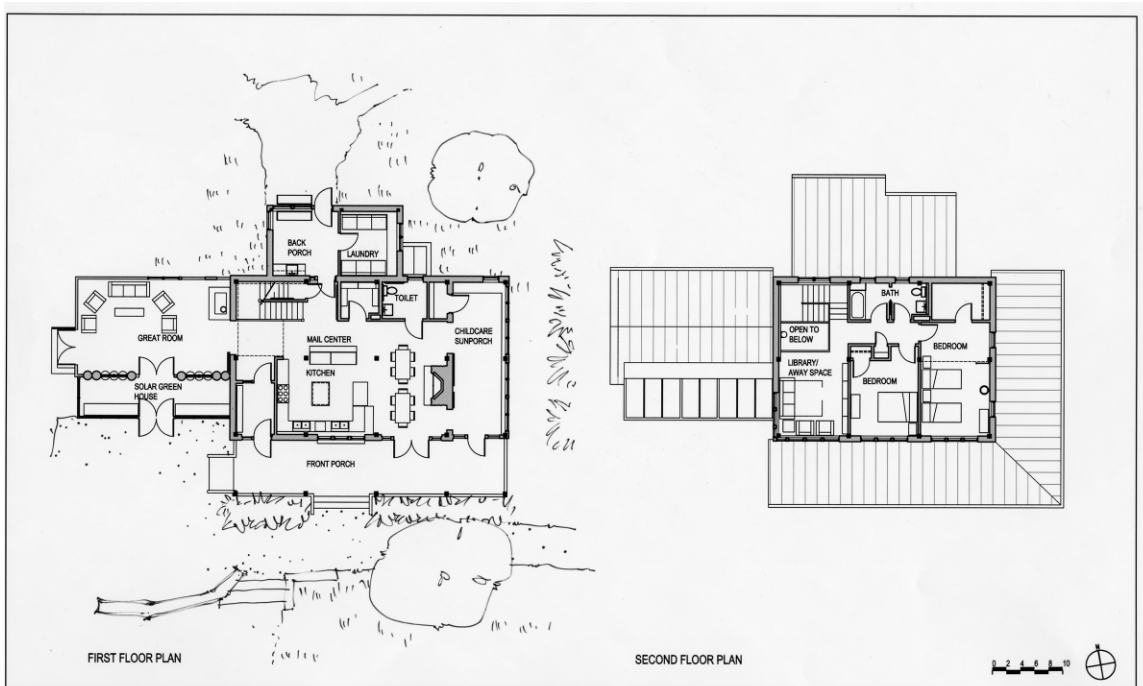
The salvaged kitchen components

Many other interior components, including all doors, many light fixtures, ceramic tiles, bathroom sinks and cast iron radiators were salvaged; most of the items were purchased from the Build It Green Warehouse in Queens.

Enhance indoor environmental quality

Paints, adhesives and other indoor finishes that have low or no VOC emissions are used throughout. All plywood, MDF, etc. use urea formaldehyde-free adhesives. All interior walls are finished in pine ship lap siding; no dry wall or latex paint is used in the project.

Wood flooring is finished in a natural penetrating linseed oil and a wax top coat.



Floor Plans