schemata
workshop

daybreak
condominiums

portland, oregon

The Pacific Northwest is home to a growing number of cohousing communities, each trying to foster community in the maelstrom that is contemporary North American life. Originally conceived in Denmark in the mid-1960s, the concept of cohousing is the intention to recreate the sense of community among residents that is typically associated with the development and building patterns seen in a traditional village. Sustainability in a cohousing community is a holistic approach to growing both the individual and the community in their relationship to each other, as well as their environment. While residents own a complete private home, the shared space of the Common House is the focus of the community. The outdoor open space that connects the private homes to the Common House provides informal opportunities for interaction and community involvement.

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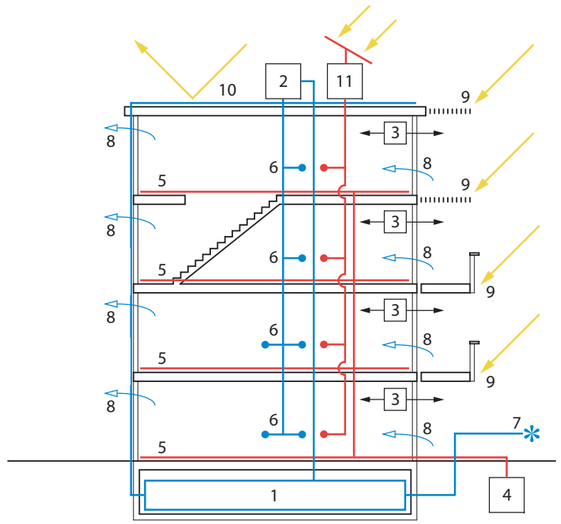
d a y b r e a k c o h o u s i n g

With a goal of net-zero energy usage in the future, the construction is optimized for energy conservation. Sensitive site planning and building massing that optimize natural light, advanced wood framing technology that reduces thermal breaks in the exterior wall and high-performance window systems exceed energy code requirements.



sustainability concepts

1 rainwater collection bladder in existing basement
2 rainwater storage tank
3 heat recovery ventilation
4 central high-efficiency boiler
5 radiant hydronic under floor heating
6 rainwater toilet flushing and Common House laundry
7 rainwater irrigation
8 through-unit natural cooling & ventilation
9 exterior sun shading for south facade
10 high-reflectivity, water-collecting roof membrane
11 solar hot water collector and storage tank

The site is located in the Overlook Neighborhood in Portland, Oregon and is within six-blocks of the MAX light rail line and on a major bus route. Three wood-framed, single-story residential structures currently occupy the site and will be replaced with four interconnected buildings providing 30 units of housing (48 DU/acre). Two, three and four-story buildings terrace toward the north property line and provide an economically and socially viable community while maximizing the quality of daylight that falls within the open space. At the heart of the courtyard is the existing maple tree providing a focal point for the community as well as shading. Landscape is indigenous to the region, with edible plants in gardens located throughout the site.

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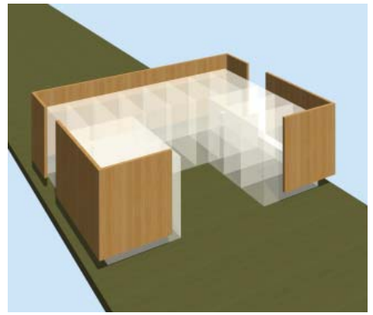
water

The project incorporates two main strategies for improving water efficiency: a rainwater harvesting system and concurrent water efficiency measures through plumbing fixtures and appliance selection. A central laundry facility is in the Common House, and eliminates the need for additional appliances throughout the community. The rainwater harvesting system provides filtered rainwater for irrigation, toilet flushing and clothes washing. This system offsets anticipated community water consumption significantly in those three categories, with a reduction in total potable water consumed.



materials

Existing buildings on-site will be deconstructed with very little waste material. Much of the wood framing, exterior siding and wood flooring will be re-planed as necessary and incorporated in the new construction.

New materials are thoughtfully integrated, e.g., stained, lightweight concrete floors that provide both finish surface and the necessary thermal mass for hydronic heated floors. All wood is FSC certified and advanced framing methodology reduces wood consumption. Material selection is based on low VOC, chemical free products. Insulation is formaldehyde free and binding agents and adhesives are water-based and/or non-toxic. All materials are chosen for their proximity to the site. Throughout construction, waste is diverted from landfills through an aggressive recycling program.