

Architecture of

LOW ENERGY

Consumption

By Ifengspace Shanghai



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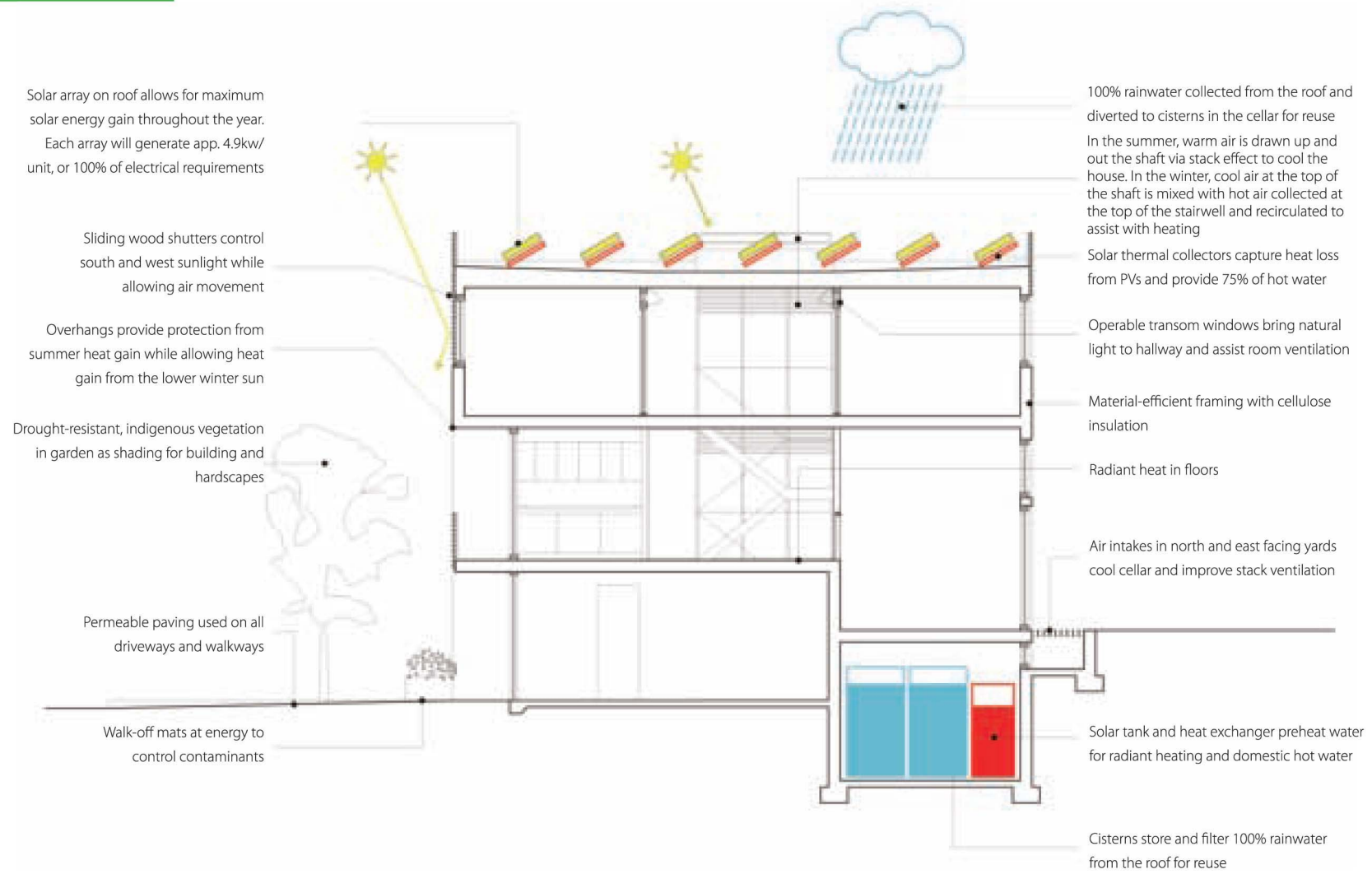
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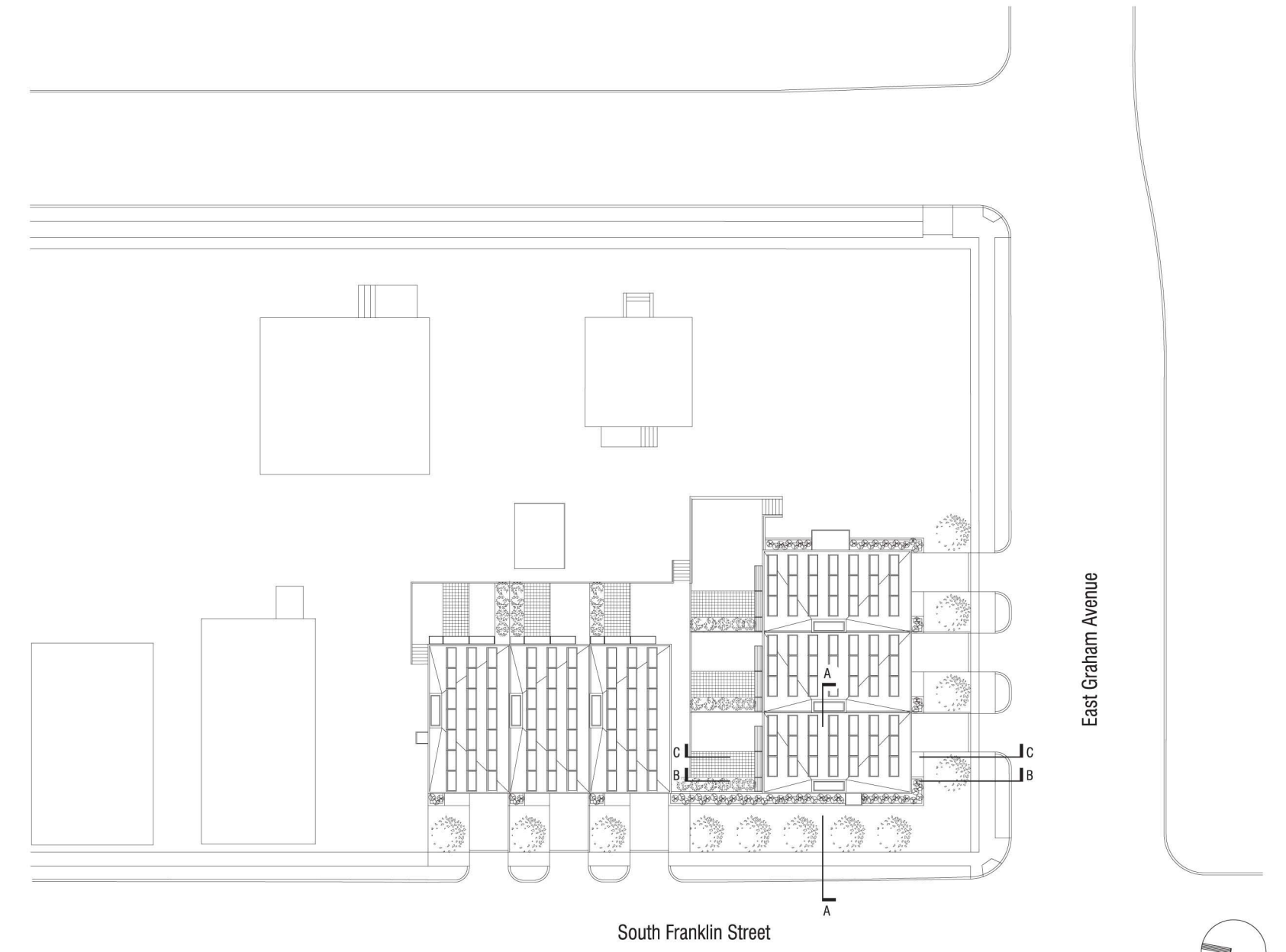
Next Generation Housing

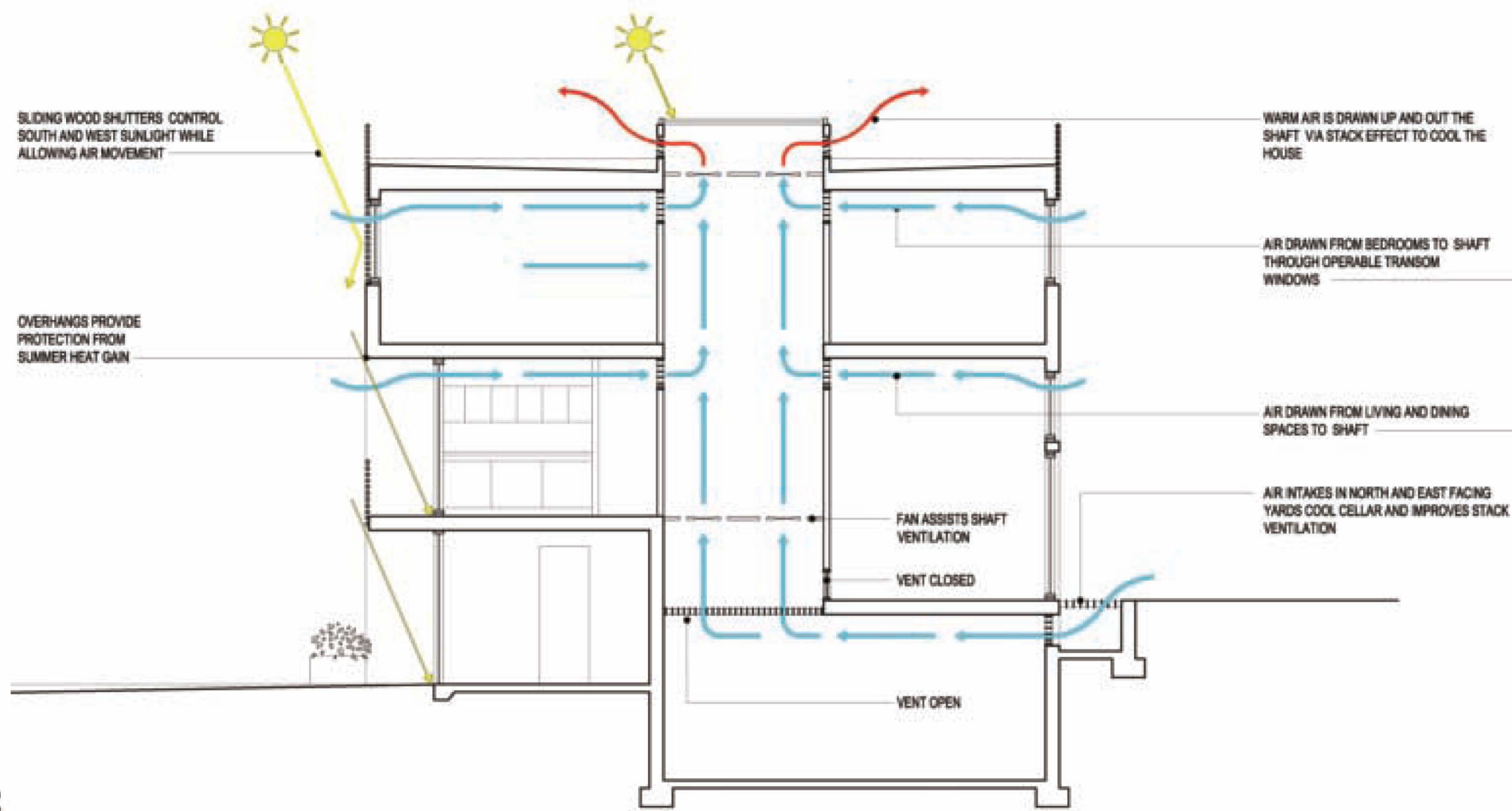
AB Architekten

The Next Generation Housing is part of an initiative to create affordable, sustainable “green” homes for Long Island, New York. Located in the Village of Hempstead at the corner of East Graham Avenue and South Franklin Street, the quarter-acre property will be developed with six 140 m² townhouses contained in two buildings, one facing South Franklin Street and the other facing East Graham Avenue. The townhouses will achieve a LEED Platinum certification—the highest possible—by following the exacting standards of the US Green Building Council’s LEED for Homes Program. This program sets measurable guidelines for environmentally-conscious residential development, addressing site planning, building construction, integration of environmental systems, and project

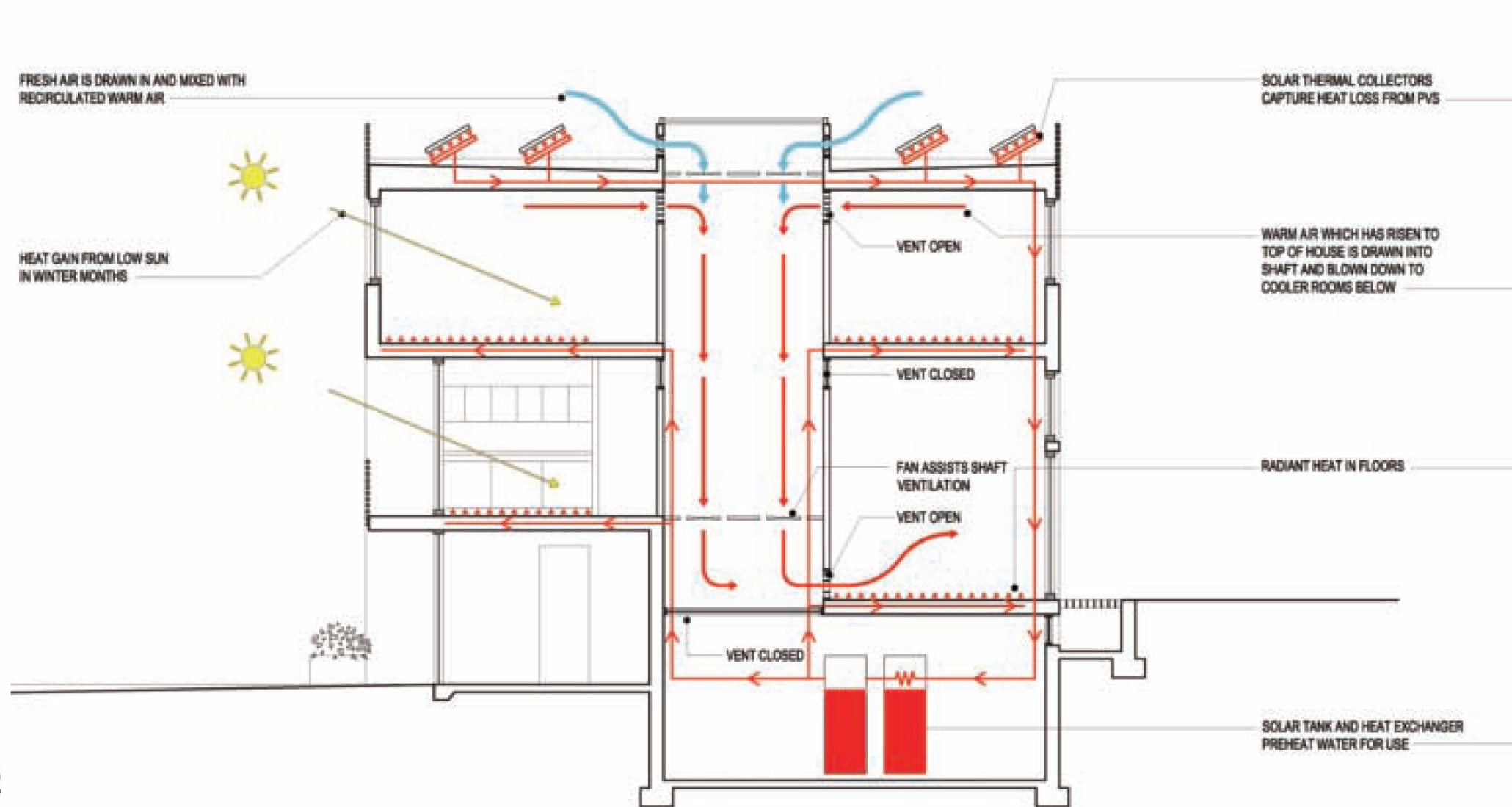
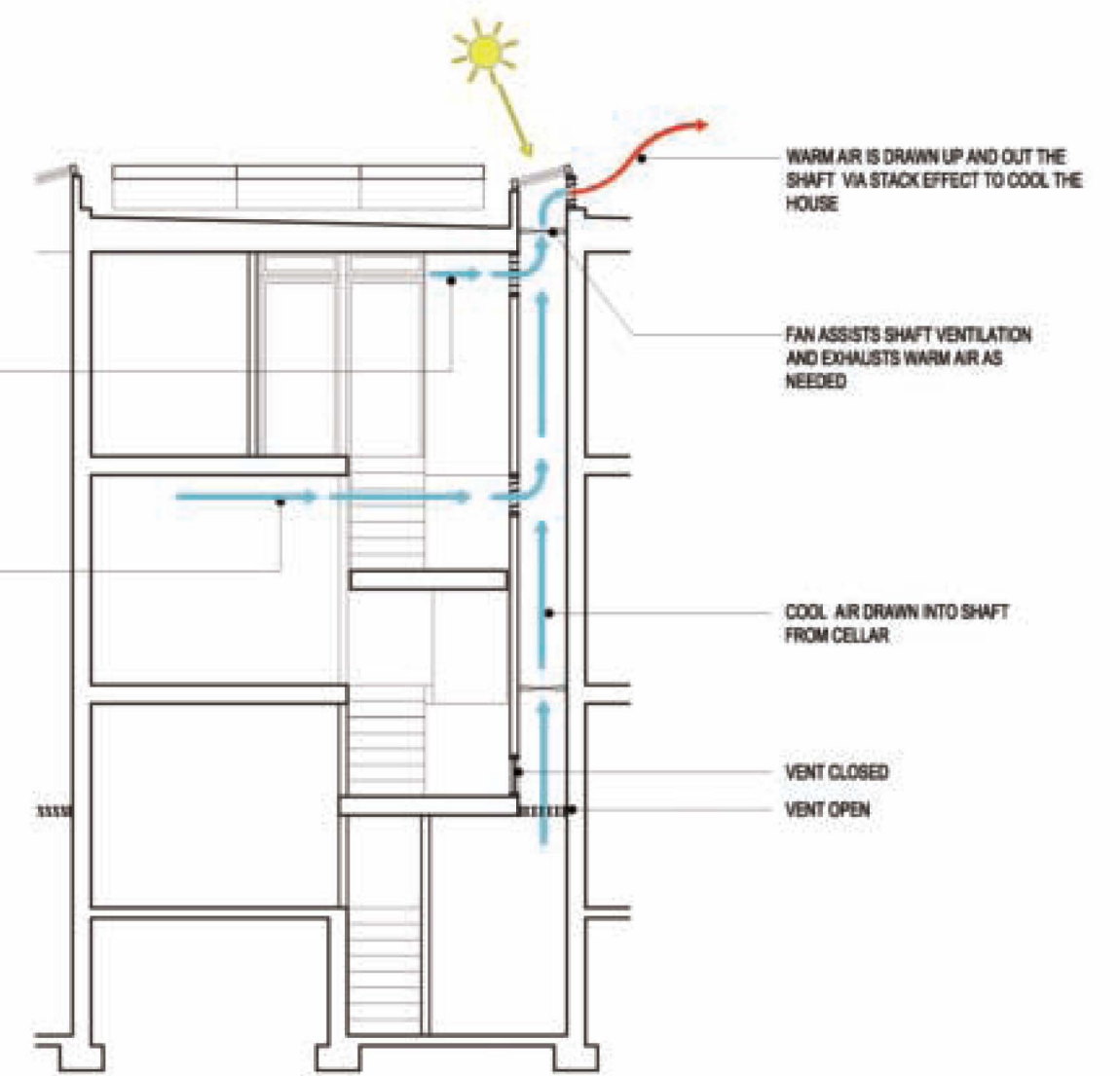
development. The coordinated effort by the municipality, developer, contractor, and architect assures that LEED standards are met at all levels and phases of the design and construction process, including the education of the homeowners after the purchase of the home. The result is a drastic reduction in the overall energy use of the building and a healthier environment for the homeowner.

Building Features
 The building shape and orientation are optimized to take advantage of solar energy, natural light, and cross ventilation. All of these reduce the overall energy use of the building and create a healthier indoor environment. The solar panels will generate 75% of the estimated necessary energy for the building.

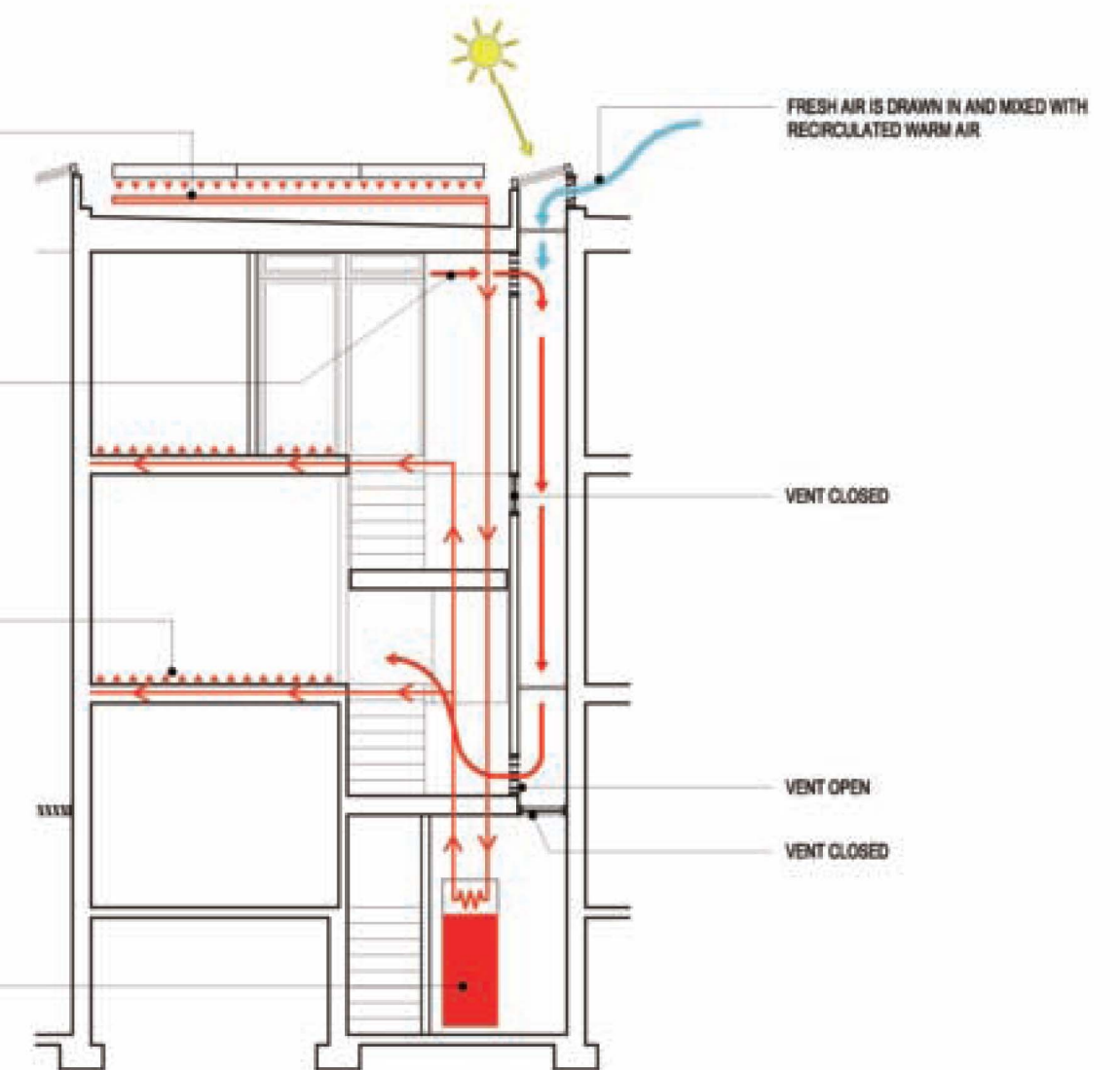


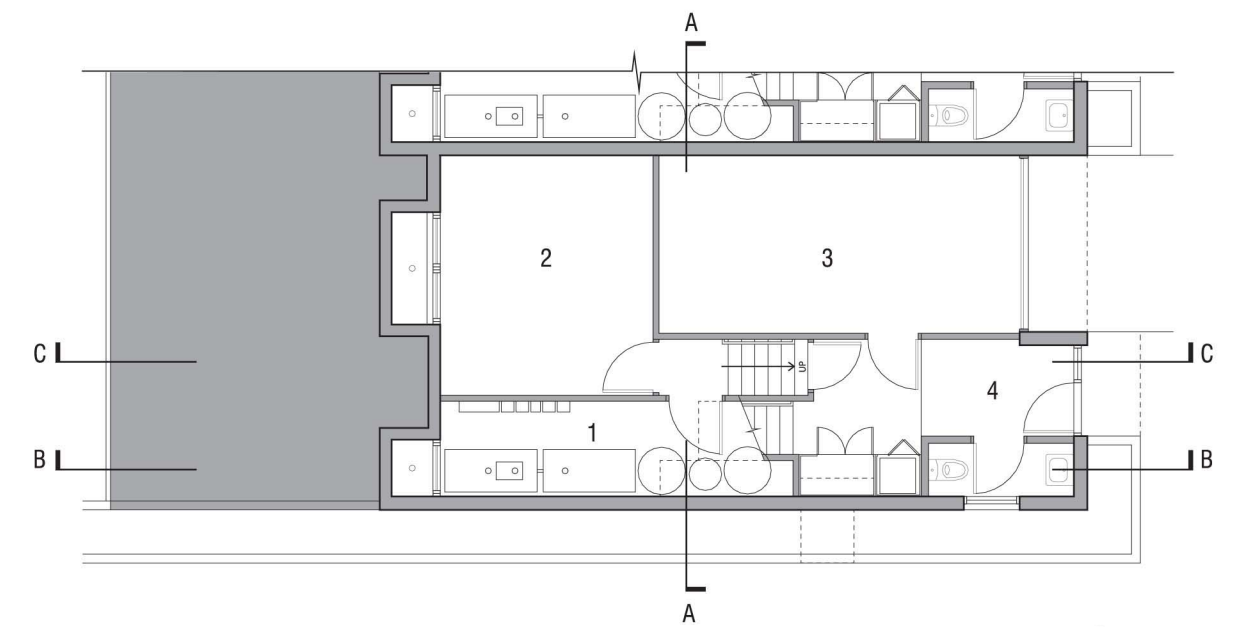


SUMMER



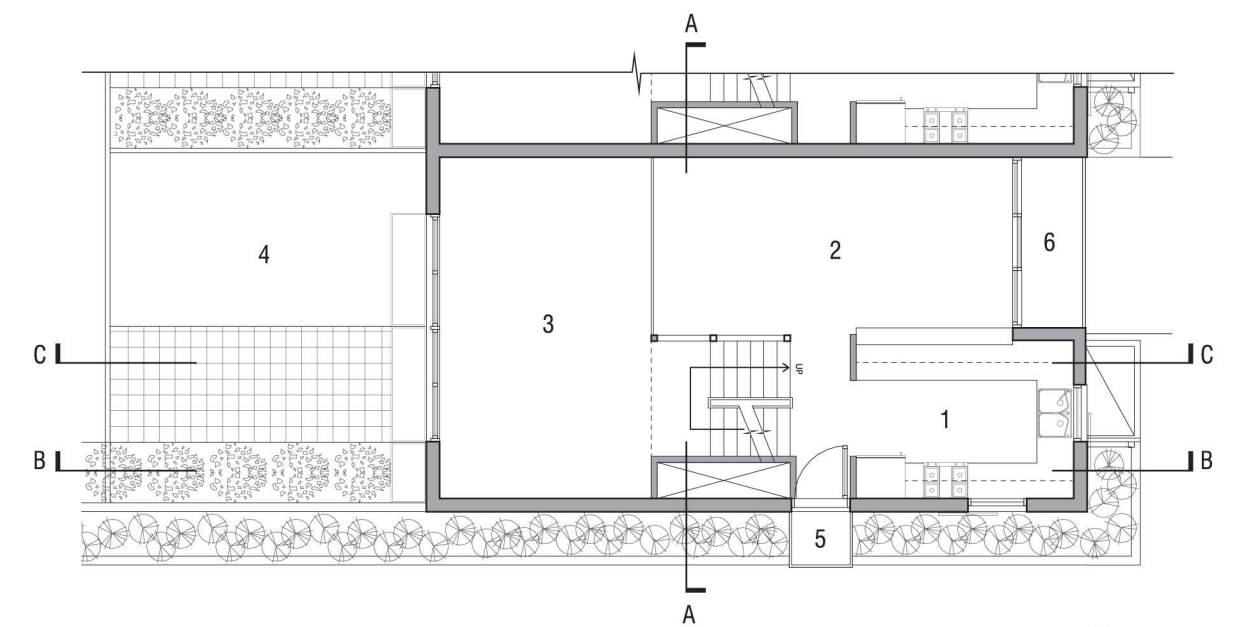
WINTER





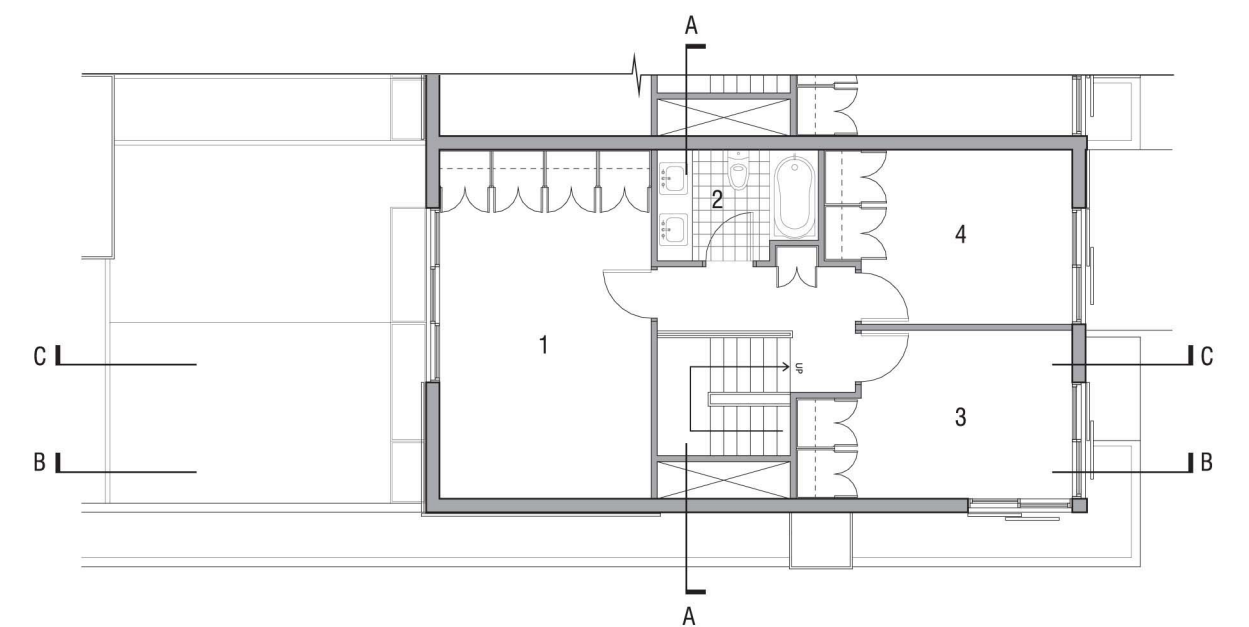
- 1. Utility Room
- 2. Cellar
- 3. Garage
- 4. Entry

Split level 1



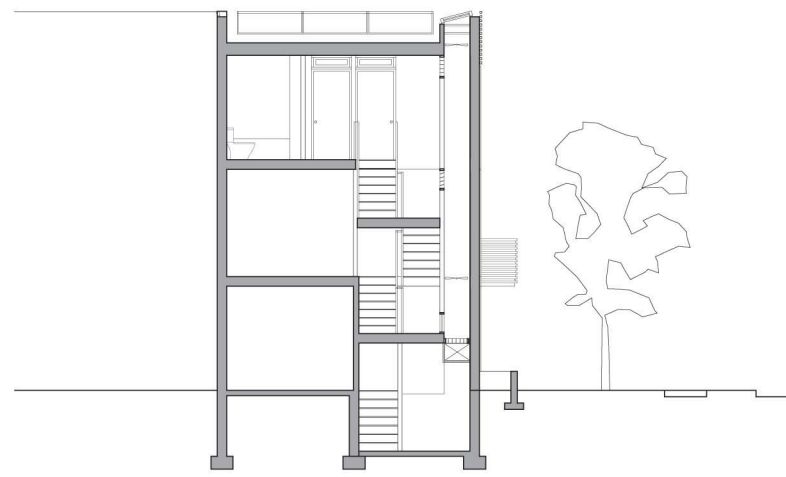
- 1. Kitchen
- 2. Dining Room
- 3. Living Room
- 4. Garden
- 5. Balcony
- 6. Terrace

Split level 2

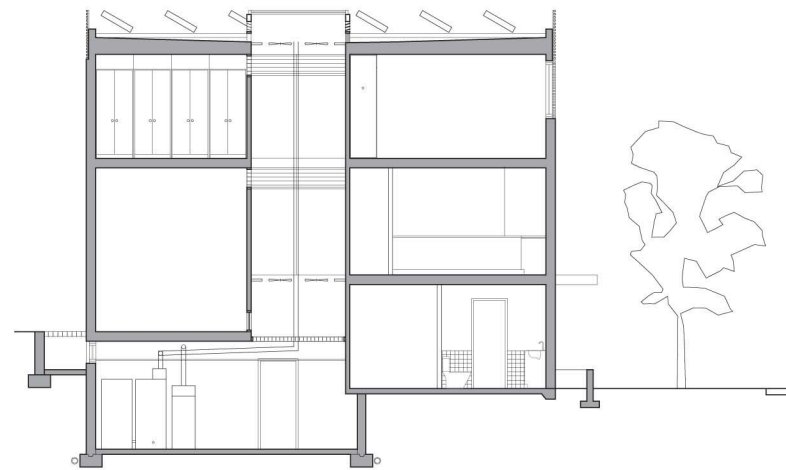


- 1. Bedroom
- 2. Bathroom
- 3. Bedroom
- 4. Bedroom

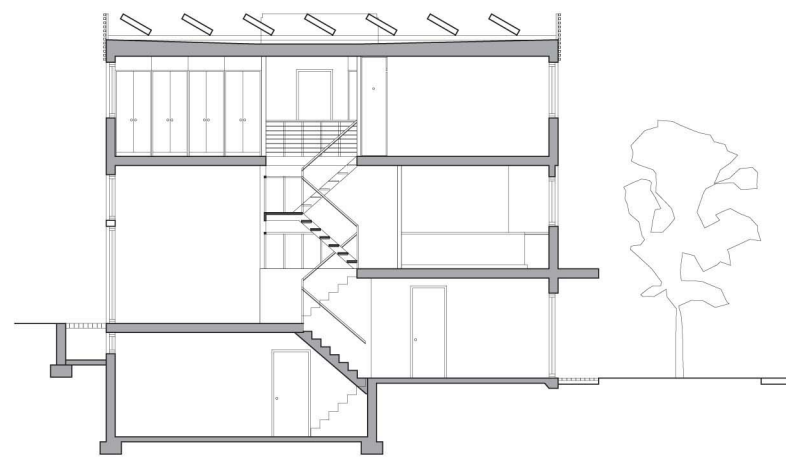
Level 3



Section A



Section B



Section C

Additionally, the shape of the roof allows for the collection of rainwater which can be filtered and reused in the building and the yard. Solar shades on the south and west facades of the building give the owner more precise control over light and heat gain in the building. An open floor plan on the second floor, in combination with an open stair and transoms over every door, will increase the cross ventilation in the building and reduce the need for air conditioning and unhealthy central air systems. A high efficiency, point-of-use hot water heater will conserve energy and water.

Construction

The construction is an efficient wood framing systems which uses 30% less wood than the conventional wood frame building. Insulation will be green-fiber cellulosic insulation which is non-toxic and more efficient than conventional insulation. Exterior finishes will be wood and fiber cement composite panels which require low maintenance; the windows will be double pane with low-e glazing. All bathroom and kitchen fixtures will be low-flow, and all appliances will be Energy Star. All materials will come from local distributors, and all finishes will be recycled (tile for kitchens, bathrooms, and terraces; carpeting) or from renewable resources (bamboo flooring).

"Green" Components

- (1) Photovoltaic panels generate 100% of the necessary electricity for the building.
- (2) Solar thermal collectors capture heat lost from the PVs, generating 75% of necessary hot water.
- (3) Cisterns collect 100% of the rainwater, which is then filtered and reused in the building and yard.
- (4) Wood Shutters on the south and west facades of the building optimize solar shading.
- (5) Stack ventilation provides natural cooling in the summer and passive heat gain in the winter.
- (6) Efficient wood framing uses 30% less wood than conventional framing.

- (7) Cellulose insulation is non-toxic and provides better thermal resistance than conventional insulation.
- (8) Radiant heating is more efficient and comfortable than conventional heating systems.
- (9) Low-flow bathroom and kitchen fixtures reduce water use.
- (10) Energy Star appliances and lighting fixtures are more energy efficient.
- (11) Building materials come from local distributors.
- (12) Interior and exterior finishes come from renewable resources or recycled materials.
- (13) Indigenous plants provide natural shading and privacy and require little watering.
- (14) Permeable pavers allow for groundwater recharge and decrease the heat-island effect.
- (15) Higher density is achieved by developing 6 units on a site typically occupied by one family.
- (16) Community resources such as public transportation, parks, and schools are within walking distance.



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