NAME OF PROJECT

Denver Courtyard House

TYPE OF PROJECT

New Construction (Under 5,000SF)

PROJECT SIZE

2,800 SF

COST PER SQUARE FOOD AND OVERALL CONSTRUCTION COST

Withheld per owner's request

PROGRAM SUMMARY

The Denver Courtyard House is a single family residence in Northwest Denver's Berkeley neighborhood. A compact yet thoughtfully designed layout features two levels of 2,800 square feet of interior space.

On the first floor, the living room, kitchen, and dining area abut expansive glass walls framing an exterior courtyard. Designed to maximize both light and privacy, the home utilizes skylights and glazing, while the walled rear courtyard ensures privacy within the dense urban neighborhood. Despite the limited width of the property, the design harnesses sunlight by positioning the second-floor volume to the north and incorporating a subtle 12-degree angle, widening the courtyard and enhancing the connection to nature. This shift allows for incorporation of a glass roof over the entry and powder room. The peaked roof of the upper story is a response to the City's zoning code, which limits the building height incrementally as it nears the neighboring property lines. Materials were chosen for their durability and character. An Accoya wood rain screen clads all sides of the upper building volume, including the roof. The material was milled to spec and finished with a grey tone to allow the product to gracefully weather to its natural color.

PROJECT COMPLETION

May 2023

PROJECT LOCATION

3982 Utica Street, Denver, Co

PROJECT NARRATIVE

In 2020, our team undertook the design of a new two-story single-family home located in the Berkeley neighborhood of Northwest Denver. The homeowner emphasized the importance of environmental consciousness along with maintaining privacy within the dense urban environment. Spanning 2,800 square feet, the house features a distinctive architectural composition, marrying an upper-story peaked roof volume with a concrete-walled ground floor.

Despite the constrained width of the property, strategic design decisions were made to optimize sunlight exposure. The second-floor volume was oriented to the north and subtly angled at 12 degrees, facilitating the installation of a glass roof over the entry and powder room. This architectural shift not only allows natural light to permeate the interior but also expands the width of the exterior courtyard on the narrow lot.

The heart of the home, including the living room, dining area, and kitchen, surrounds the exterior courtyard, which is enclosed by an extensive glass wall system. This design feature not only floods the interior spaces with abundant natural light but also establishes a seamless connection to the meticulously landscaped outdoor area. The concrete walls of the ground floor serve a dual purpose, providing structural support for vine growth while seamlessly integrating with the landscape design.

The homeowner's commitment to the environment helped to inform material selection. A sustainably modified Accoya wood rain screen envelops all sides of the upper building volume, including the roof. The mechanical system in the home was chosen for its reduced energy consumption and low greenhouse gas emissions.

FRAMEWORK FOR DESIGN EXCELLENCE

DESIGN FOR RESOURCES

The material selection during the design process was made with a heavy emphasis on prioritizing sustainability and minimizing negative impacts to the environment. Materials that are minimally processed, closely resemble their natural origins, and contribute to an authentic, human scaled design were chosen. The Accoya wood selected for the exterior rain screen is a CO2 negative building material that is sustainably sourced, inherently renewable, and Cradle to Cradle gold certified. This project employs the first application of this type on a roof in Denver.

The mechanical system selected for the Denver Courtyard House boasts a 95% AFUE rating, conserving energy and reducing the carbon footprint of the home. Hydronic radiant heating throughout the house minimizes energy waste and reduces greenhouse gas emissions.

Cradle to Cradle Bronze level certified aluminum windows were selected for their high thermal insulation and high energy efficiency. The floor-to-ceiling double glazed sliding glass wall system offers passive thermal insulation, utilizes recycled materials, and offers maximum daylight exposure.

Drought-tolerant native plants were incorporated in the landscaping, naturally requiring reduced water use.

DESIGN FOR WELL-BEING

The Denver Courtyard House design creates a serene and comfortable living space by employing biophilic design principles. Maximizing the availability of natural light exposure was a theme throughout the home, ensuring an abundance of this mood-boosting natural resource. Large windows, skylights, and strategically placed glazing flood the interior spaces with natural light, supporting physical and emotional wellness by ensuring light enters the home from multiple access points for deeper penetration. The 12 degree shift of the second story volume allows for incorporation of a glass roof over the entry and powder room creating an opportunity to increase the amount of available daylight into the interior space while also minimizing glare. This orientation also grants the living space and the kitchen a greater amount of exterior space and increases the courtyard width.

Radiant floor heat creates thermal comfort throughout the space. Operable skylights and windows along with a highly energy efficient mechanical system offer improved air quality. Carefully selected landscaping, visible through the expansive glass walls from each of the primary common areas, creates a serene and calming link to nature. The tranquil courtyard with its native plant landscaping provides a relaxing outdoor space nestled within a bustling neighborhood, fostering human-nature connection.

DESIGN FOR INTEGRATION

The Denver Courtyard House embraces the owner's mission of creating a modest-sized single family home flooded with natural light while simultaneously maintaining a sense of privacy in a dense urban neighborhood. Situated on a narrow lot, the design maximizes the amount of sunlight to the exterior spaces by shifting the second level building volume to the North side. Likewise, the volume sits at a 12 degree angle, orienting the living and kitchen space to a greater amount of exterior space and creating space for a wider courtyard. This shift allowed for incorporation of a glass roof over the entry and powder room. This feature opens the interior to the sky and connects occupants to the natural outdoors. With three of the primary living areas abutting a high-performing glass wall system, the exterior courtyard becomes a focal point of the home, creating the feel of indoor-outdoor living. Each level of the home benefits from a generous amount of light and connectivity to the outdoors, with skylights and expansive glazing, while strategically maintaining homeowner privacy. The walled rear courtyard serves to achieve both goals.

The peaked roof of the upper story is a response to the City's zoning code, which limits the building height incrementally as it nears the neighboring property lines. The Accoya wood screen material was milled to spec and finished with a grey tone to allow the product to gracefully weather to its natural color.


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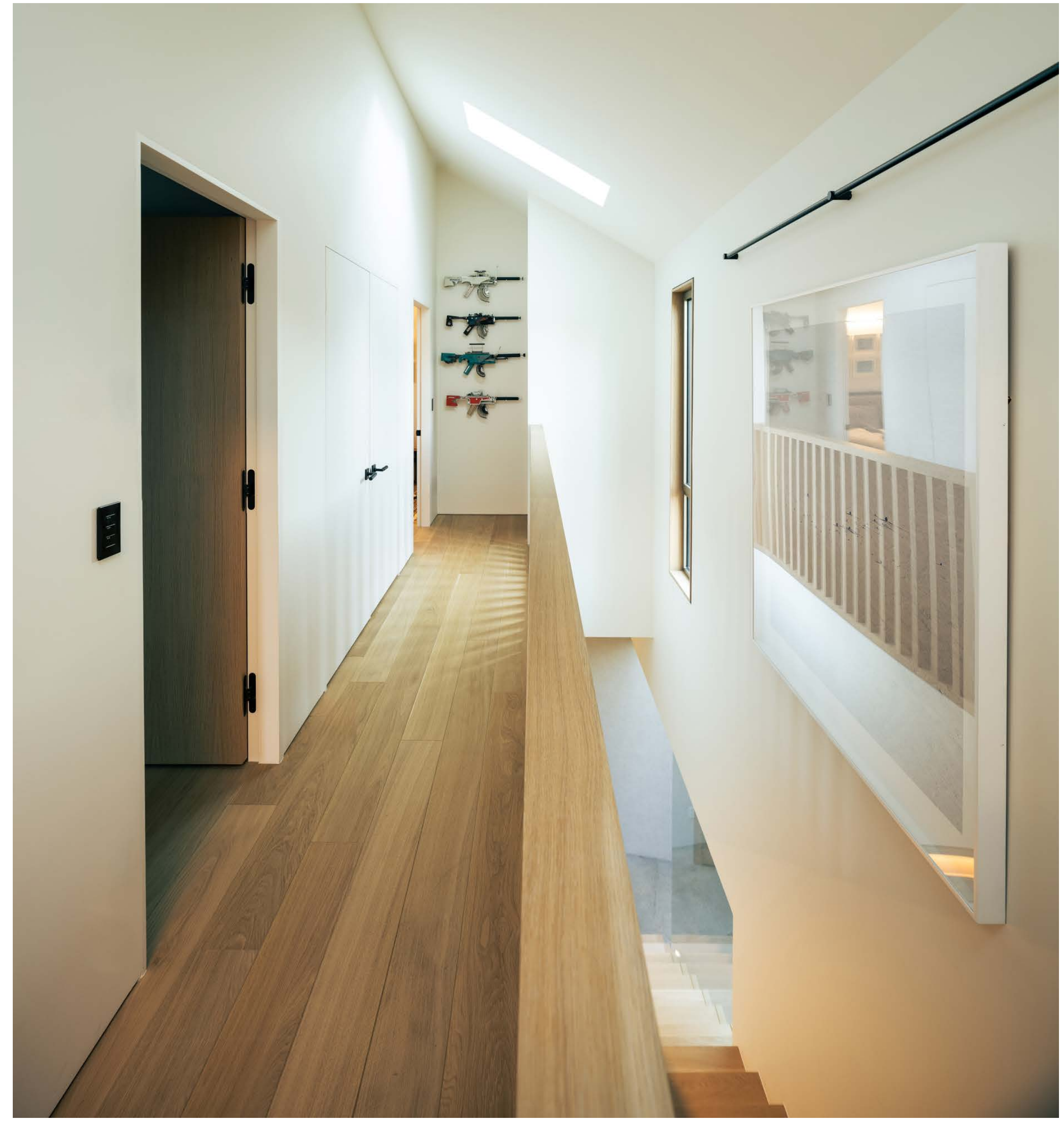


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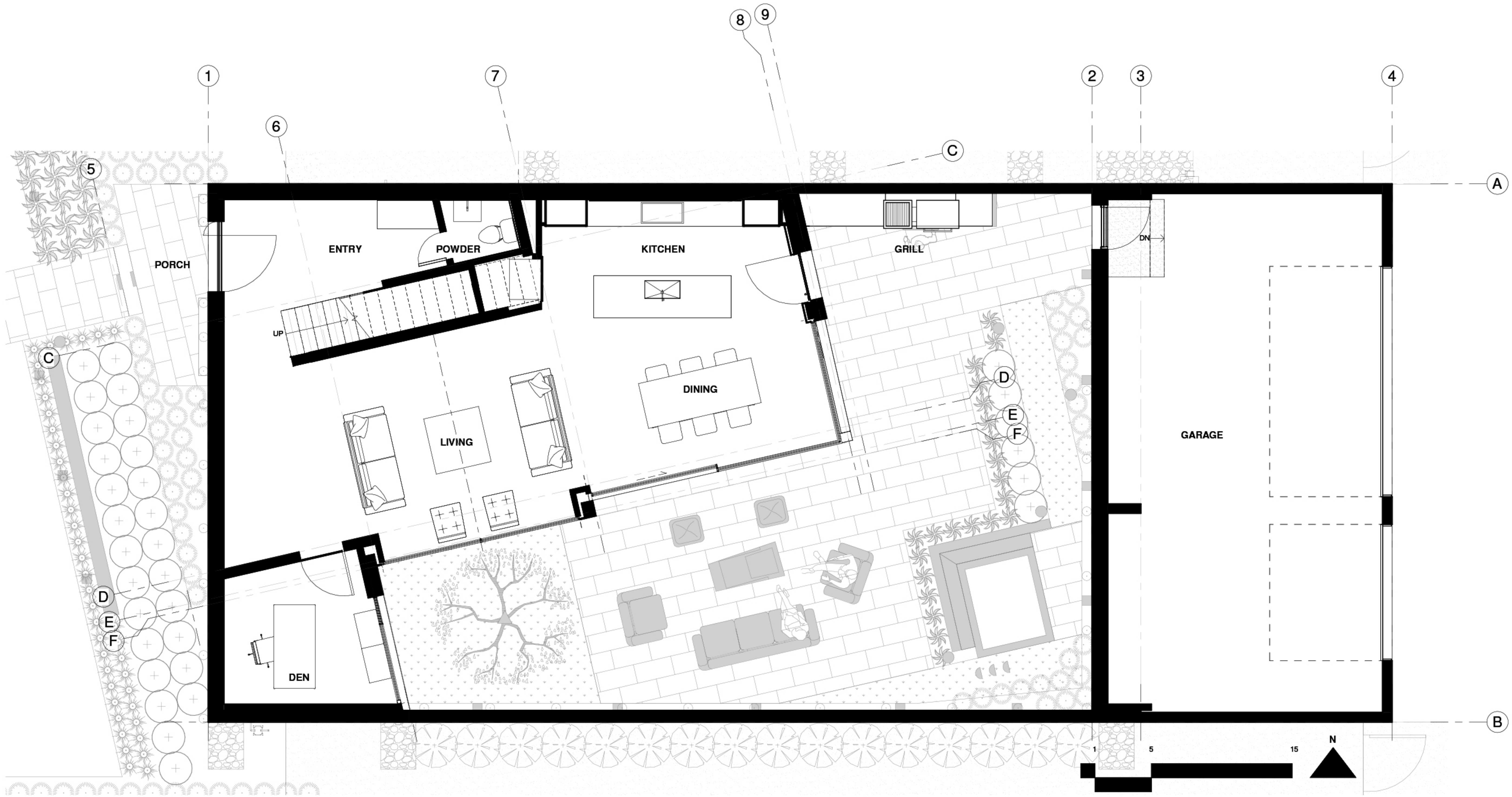
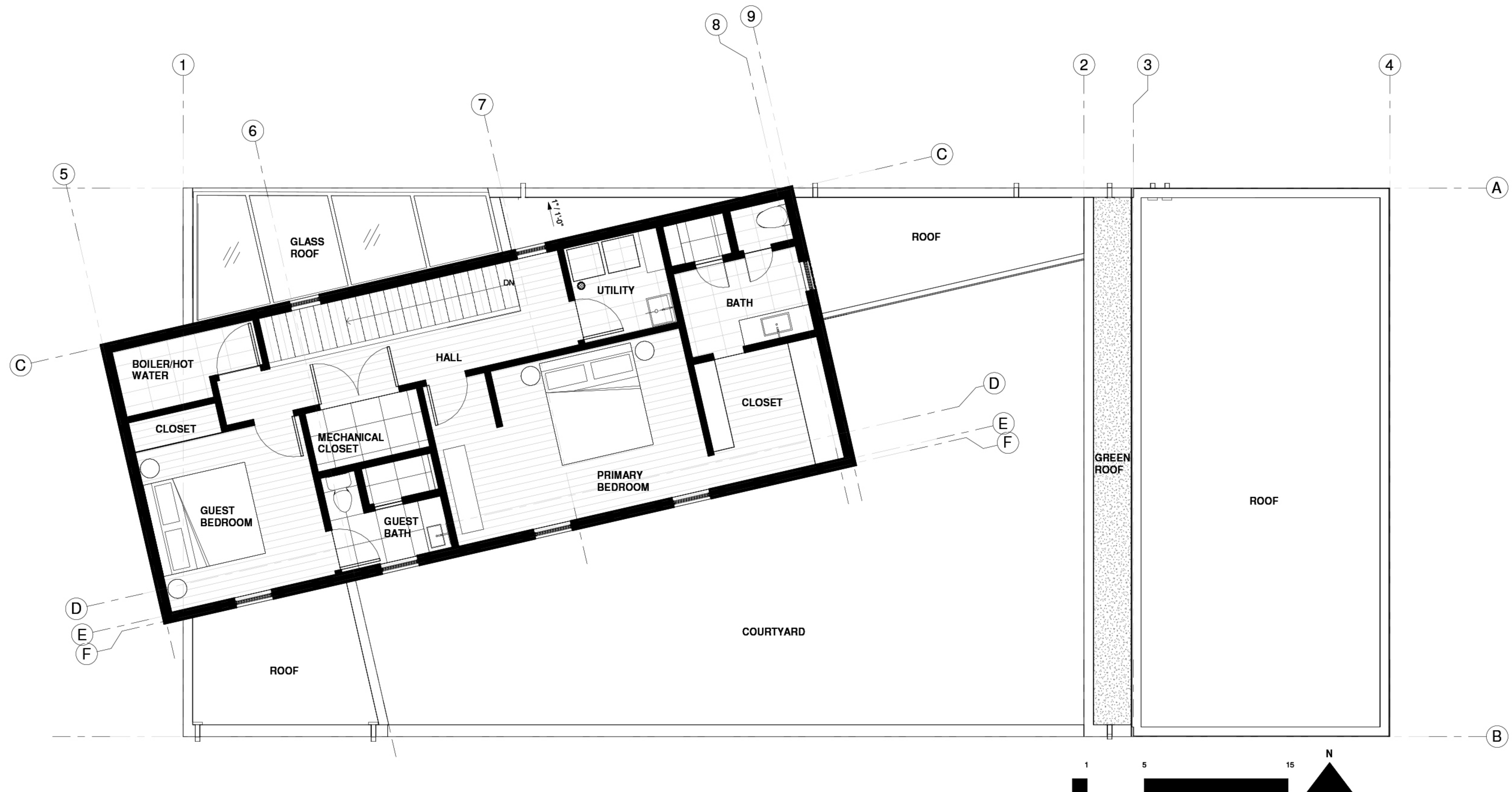


LEVEL 1 FLOOR PLAN



LEVEL 2 FLOOR PLAN