

PORTFOLIO

HAJIR HIDAJI

RESIDENTIAL ARCHITECTURE DESIGN

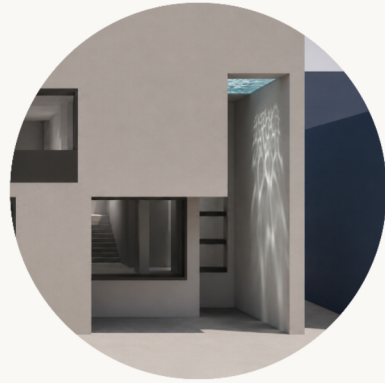


2026

CANADA

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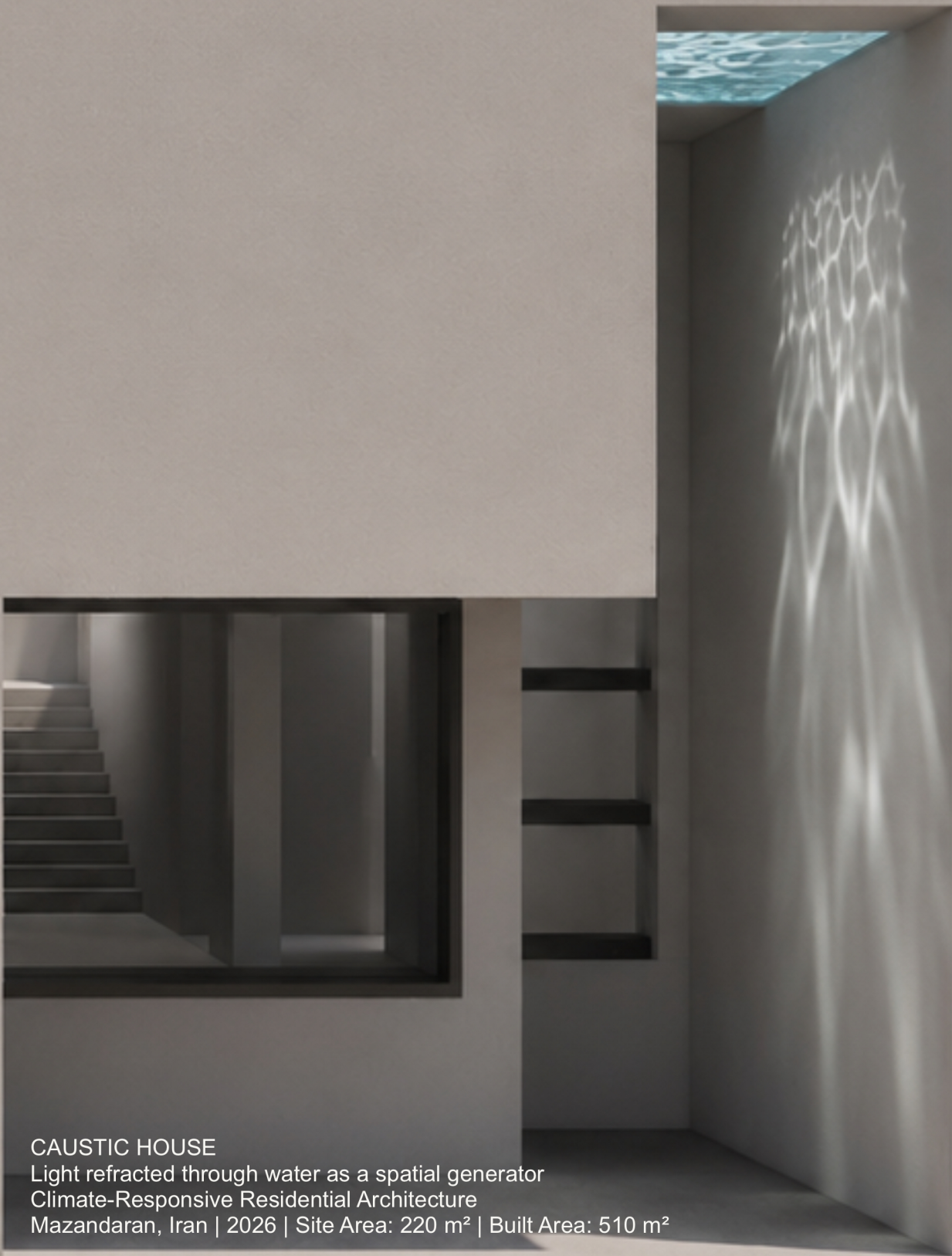


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CAUSTIC HOUSE

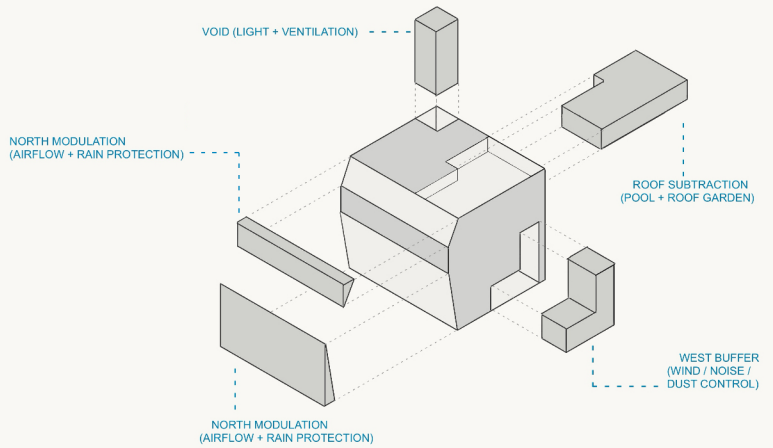
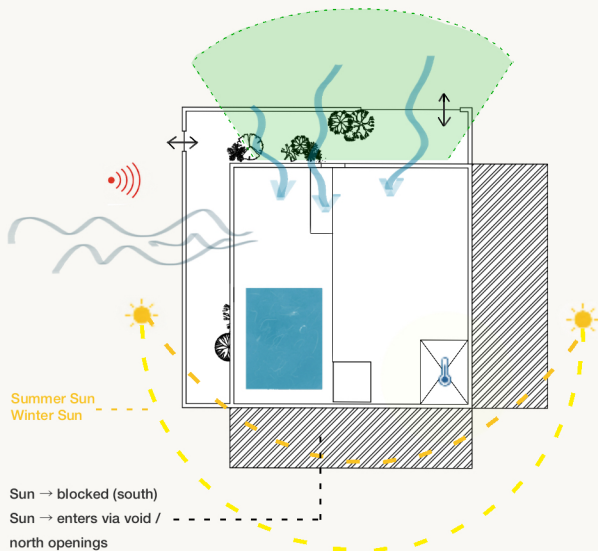
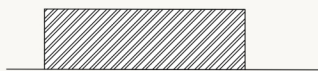


CAUSTIC HOUSE
Light refracted through water as a spatial generator
Climate-Responsive Residential Architecture
Mazandaran, Iran | 2026 | Site Area: 220 m² | Built Area: 510 m²

CAUSTIC

SITE ANALYSIS & DESIGN RESPONSE

Volume subtraction
climate + client-driven →



FINAL DESIGN ARGUMENT

Problem

West exposure to wind, rain, and noise; south and east blocked → limited daylight

Data

Stable diffuse northern light; humid climate conditions

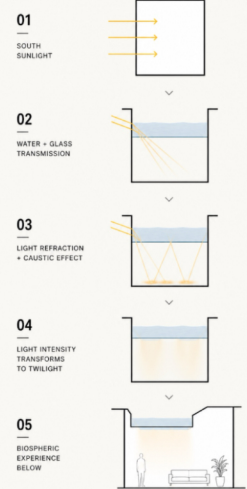
Response

Southeast void, large north-facing openings, glass-bottom pool

Result

Deep daylight penetration, passive ventilation, reduced western disturbance

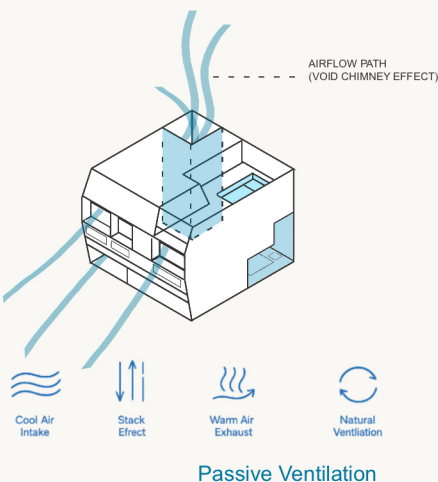
CAUSTIC DIAGRAM



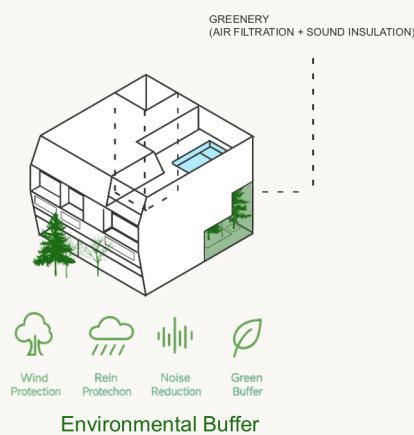
1. SOLAR ORIENTATION
2. WIND DIRECTION
3. CLIMATIC ANALYSIS
4. NOISE ANALYSIS
5. ACCESS & CIRCULATION
6. VIEW ANALYSIS
7. URBAN CONTEXT
8. DESIGN RESPONSE



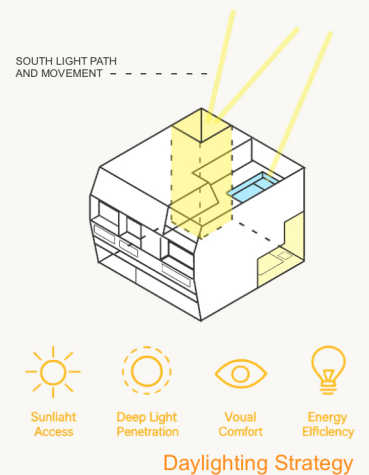
Climate-responsive design using passive daylighting, stack ventilation, and solar control. A void and glass-bottom pool improve light distribution, airflow, and indoor environmental quality.



Passive Ventilation



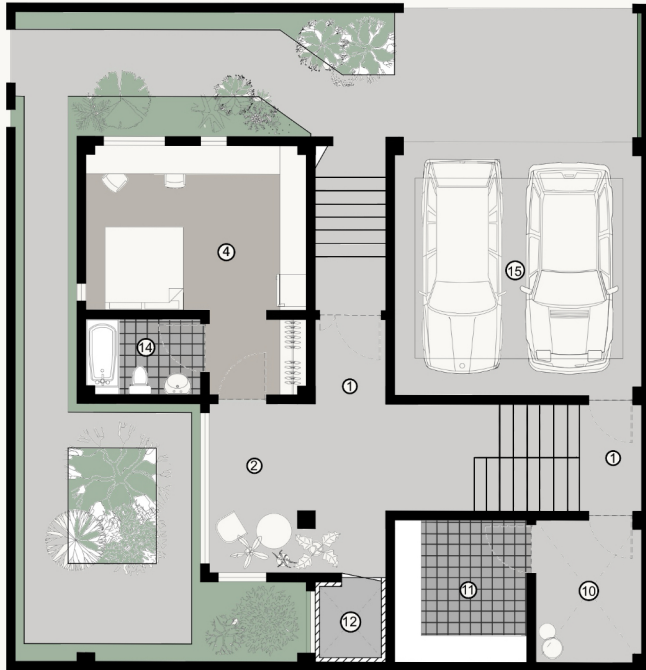
Environmental Buffer



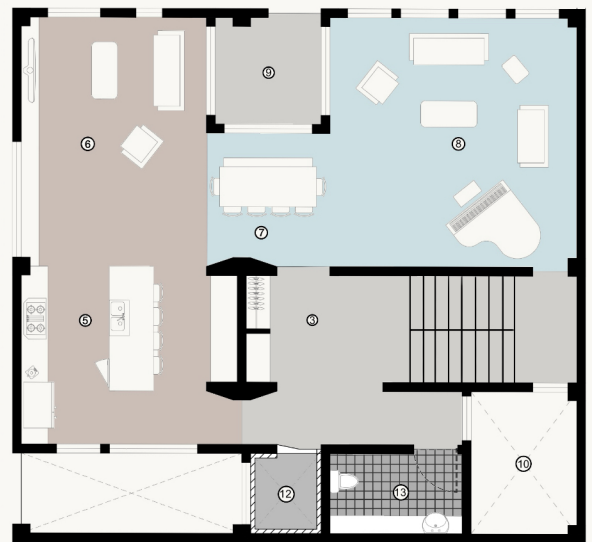
Daylighting Strategy

CAUSTIC

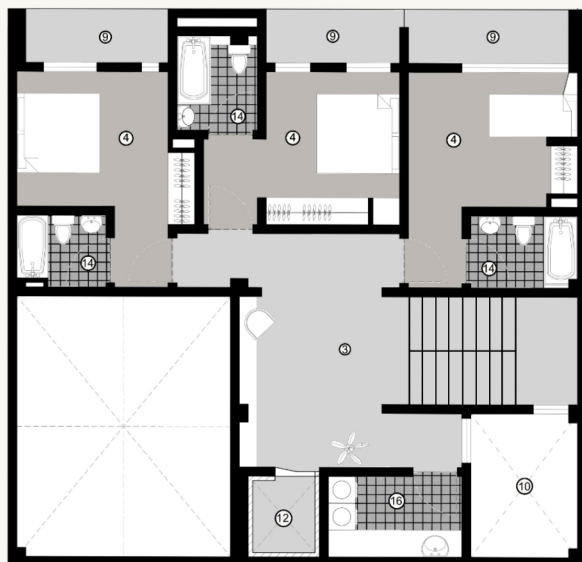
The design uses a modular plan based on function, spatial relationships, and climate response. Spaces are arranged from public to private for efficient circulation and privacy. A glass-floor pool and a void in the south of the house enhance natural light and visual continuity.



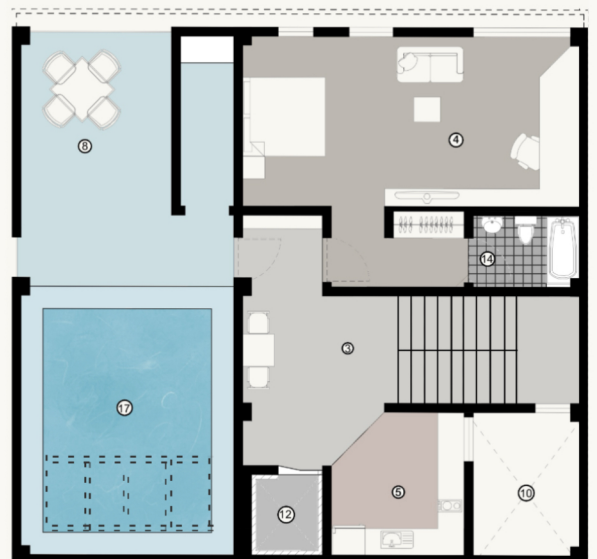
. GROUND FLOOR PLAN



. FIRST FLOOR PLAN



. SECOND FLOOR PLAN



. THIRD FLOOR + POOL TERRACE

.SPATIAL LEGEND

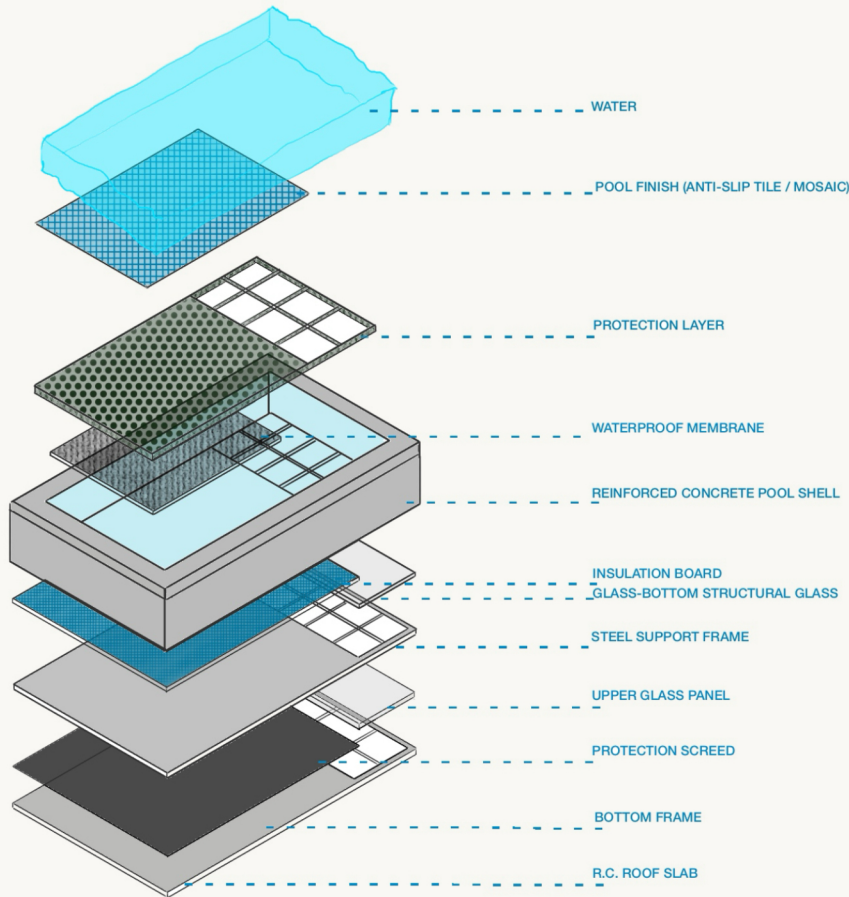
- | | | |
|-------------------|-----------------|-------------|
| 1. ENTRANCE | 7. DINING AREA | 13. WC |
| 2. LOBBY | 8. SITTING AREA | 14. BATH |
| 3. HALL | 9. TERRACE | 15. PARKING |
| 4. MASTER BEDROOM | 10. OPEN SPACE | 16. LAUNDRY |
| 5. KITCHEN | 11. STORAGE | 17. POOL |
| 6. LIVING AREA | 12. LIFT | |

SCALE 1:200

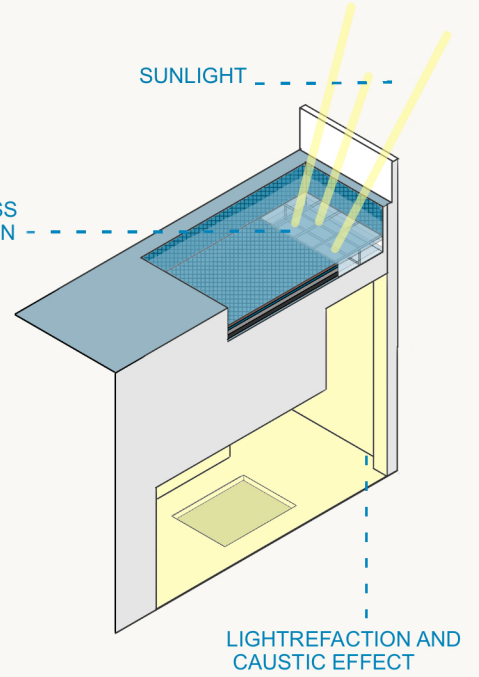


PUBLIC ZONE	
SEMI PRIVATE ZONE	
PRIVATE ZONE	
SERVICE ZONE	
CIRCULATION ZONE	

CAUSTIC



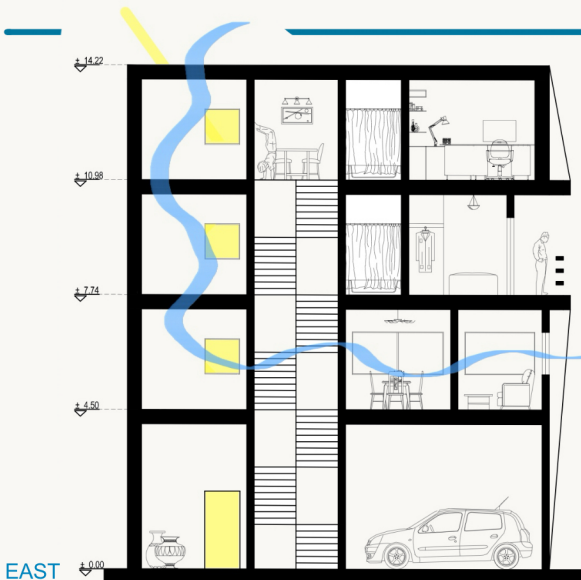
WATER + GLASS
TRANSMISSION



Part of the pool floor uses structural glass to transmit daylight through water and glass to the western patio and interior spaces.

Refraction through moving water creates **caustics**—dynamic light patterns—enhancing visual richness and spatial experience in areas such as the kitchen.

HOUSE & POOL SECTIONS



PATH OF
LIGHT
TRANSFER
PATH OF
AIRFLOW



CAUSTIC

The façade design is developed through principles of simplicity, balance, and climate responsiveness. White-grey cement creates a clean and timeless architectural expression, while matte metal elements introduce contrast and a contemporary character.



. WEST



. NORTH



. NORTHWEST



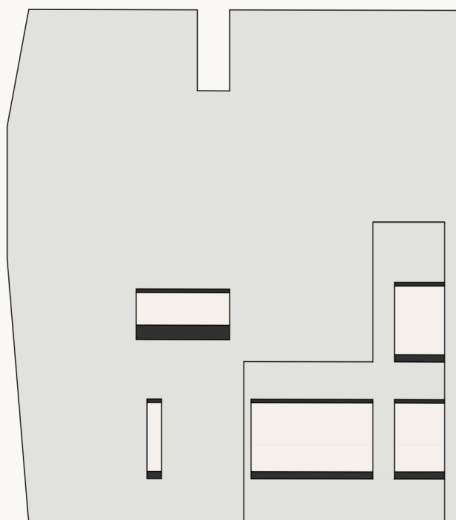
WHITE GREY CEMENT

- DURABLE**
High strength and long-lasting performance.
- BREATHABLE**
Allows moisture vapor to pass through.
- LOW MAINTENANCE**
Easy to clean and resistant to mold and bacteria.
- LIGHT REFLECTIVE**
Reflects natural light and helps reduce energy use.
- SUSTAINABLE**
Made from natural materials with low environmental impact.



MATTE METAL (WINDOW FRAMES & PLANTERS)

- DURABLE**
Strong and long-lasting, suitable for exterior use.
- SCRATCH RESISTANT**
Matte finish helps hide fingerprints and minor scratches.
- WEATHER RESISTANT**
Resistant to rust, corrosion, and harsh weather conditions.
- LOW MAINTENANCE**
Easy to clean with a soft cloth and mild soap.
- MODERN AESTHETIC**
Sleek, minimal look that complements contemporary architecture.



WEST



NORTH

CAUSTIC



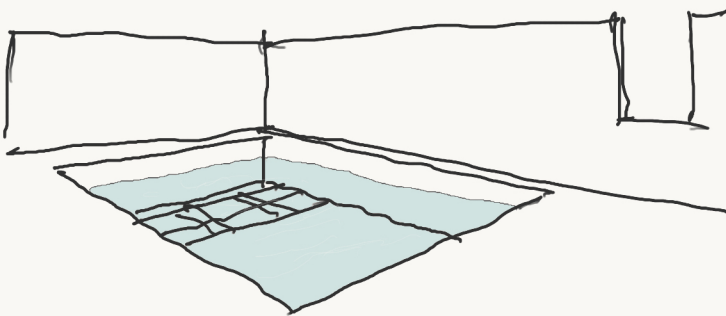
HALL



KITCHEN



LOBBY



POOL



SMALL KITCHEN

LAKE HOUSE

LAKE HOUSE

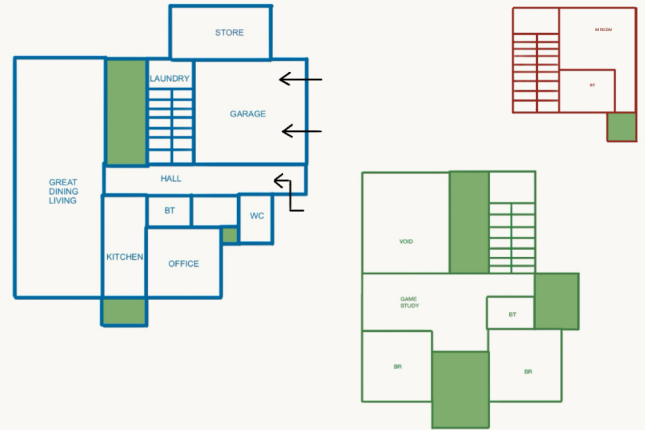
Climate as Generator of Form

Form derived from climate, function, and spatial logic.

Mazandaran, Iran | 2023 | Site Area: 500 m² | Built Area: 330 m²

LAKE HOUSE

SITE ANALYSIS & DESIGN RESPONSE



The design process followed a sequential logic:

Climatic analysis informed orientation, daylighting, and spatial organization. The plan was developed based on functional needs and human-centered spatial relationships. The architectural form emerged from the internal logic of the plan and site conditions, rather than from purely formal intentions.

CLIMATE

Temp: 17–18°C
Humidity: High
Rain: 700–900 mm
Wind: N → S

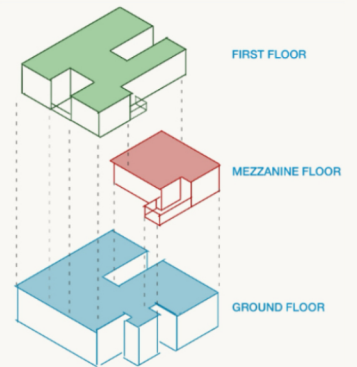
SEASONS

SUMMER → Ventilation + Shading

WINTER → Drainage + Moisture Control

RESPONSE

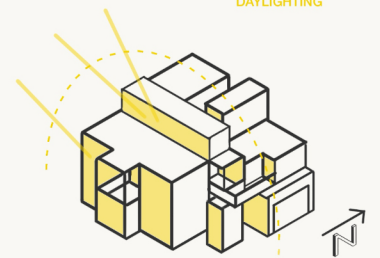
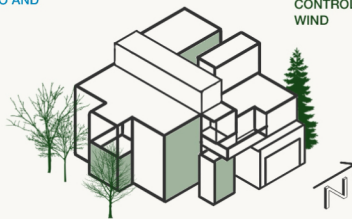
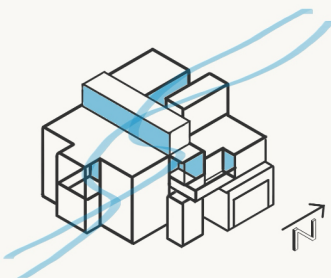
Cross Ventilation
Sloped Roof
Elevated Floor



SUITABLE WIND FLOW FROM NORTH TO SOUTH, WITH FAVORABLE WIND CONDITIONS, IS UTILIZED THROUGH THE PATIO AND LARGE OPENINGS

CREATION OF GREEN SPACES AND PLANTING TREES FOR SHADING, REDUCING NOISE AND DUST POLLUTION, AND CONTROLLING UNWANTED WIND

OPTIMAL SOUTH-FACING DAYLIGHTING



Passive Ventilation

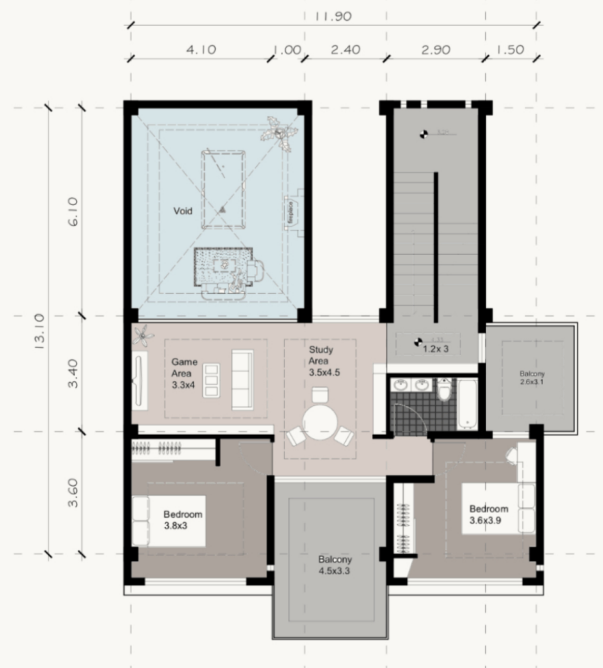
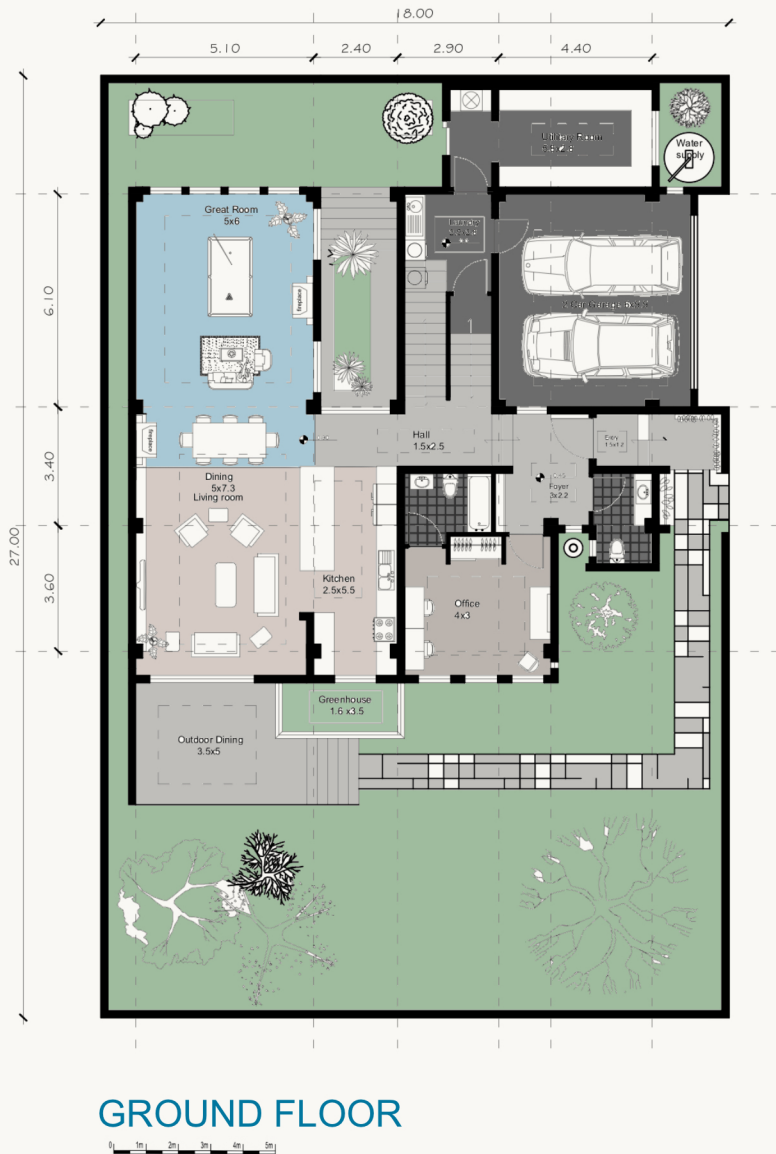


Environmental Buffer



Daylighting Strategy

LAKE HOUSE



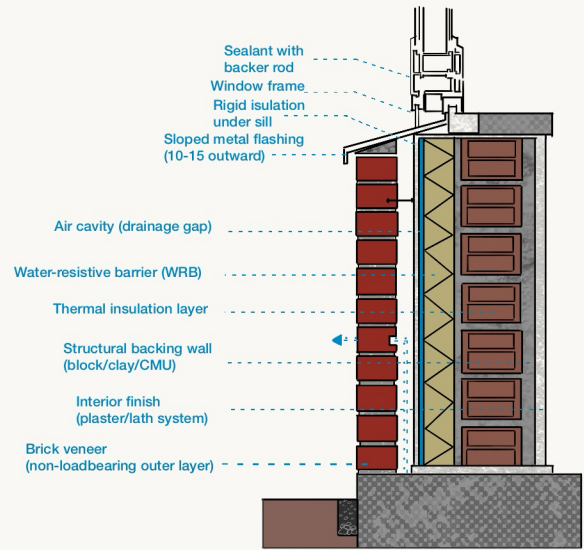
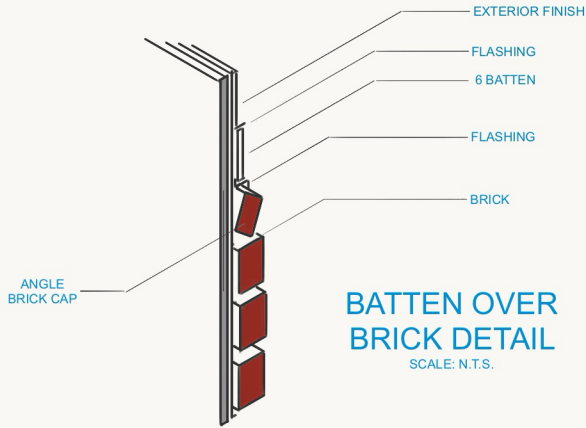
A floor plan is both a technical and experiential representation of space. The design develops through imagining the sequence of entering, moving, and perceiving the space.

1. Mental entry into the space
2. Movement through spatial paths
3. Experiencing light, scale, compression, and openness
4. Formation of spatial perception
5. Translating the experience into a floor plan

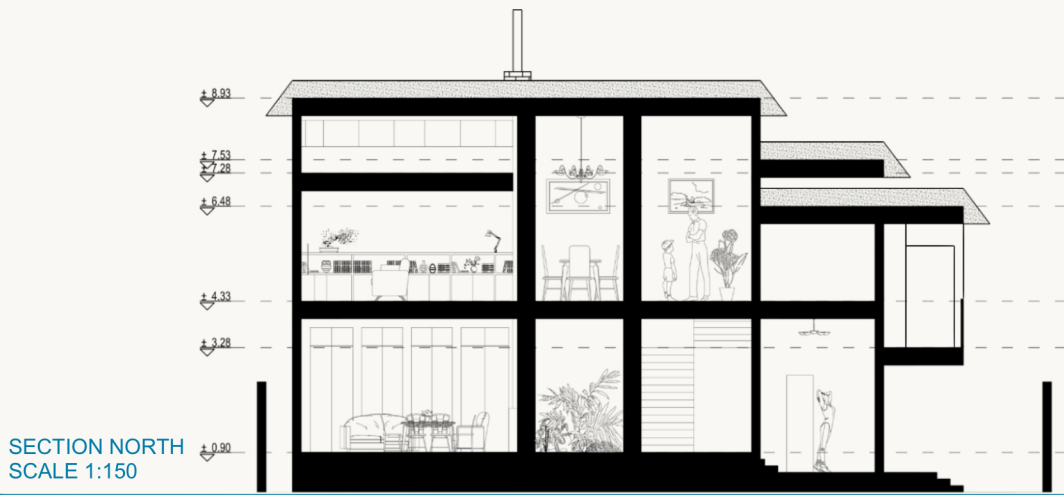


PUBLIC ZONE	
SEMI PRIVATE ZONE	
PRIVATE ZONE	
SERVICE ZONE	
CIRCULATION ZONE	

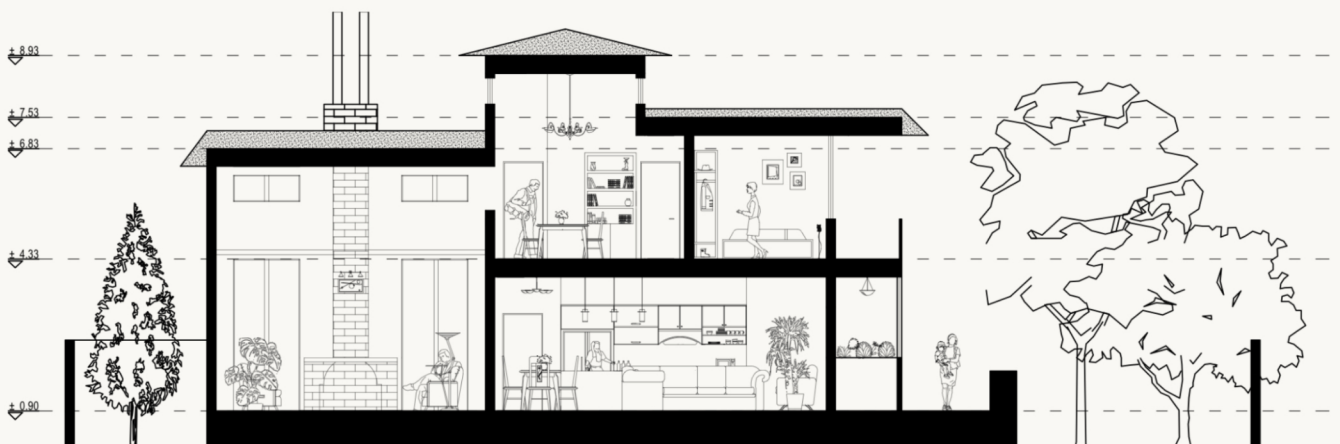
LAKE HOUSE



WALL AND WINDOW SECTION
STRUCTURE SECTION

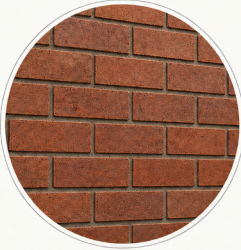


SECTION WEST
SCALE 1:150



LAKE HOUSE

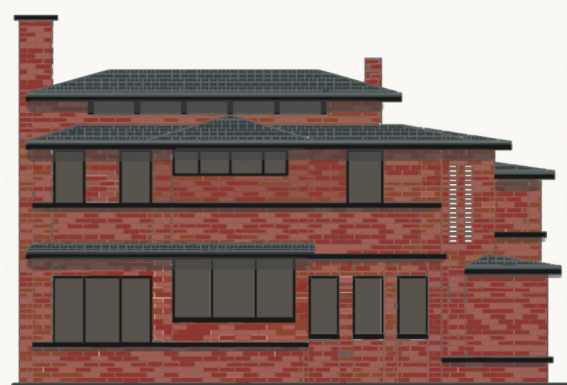
BRICK
WALL FINISH



MATTE METAL
WINDOW FRAMES & PLANTER

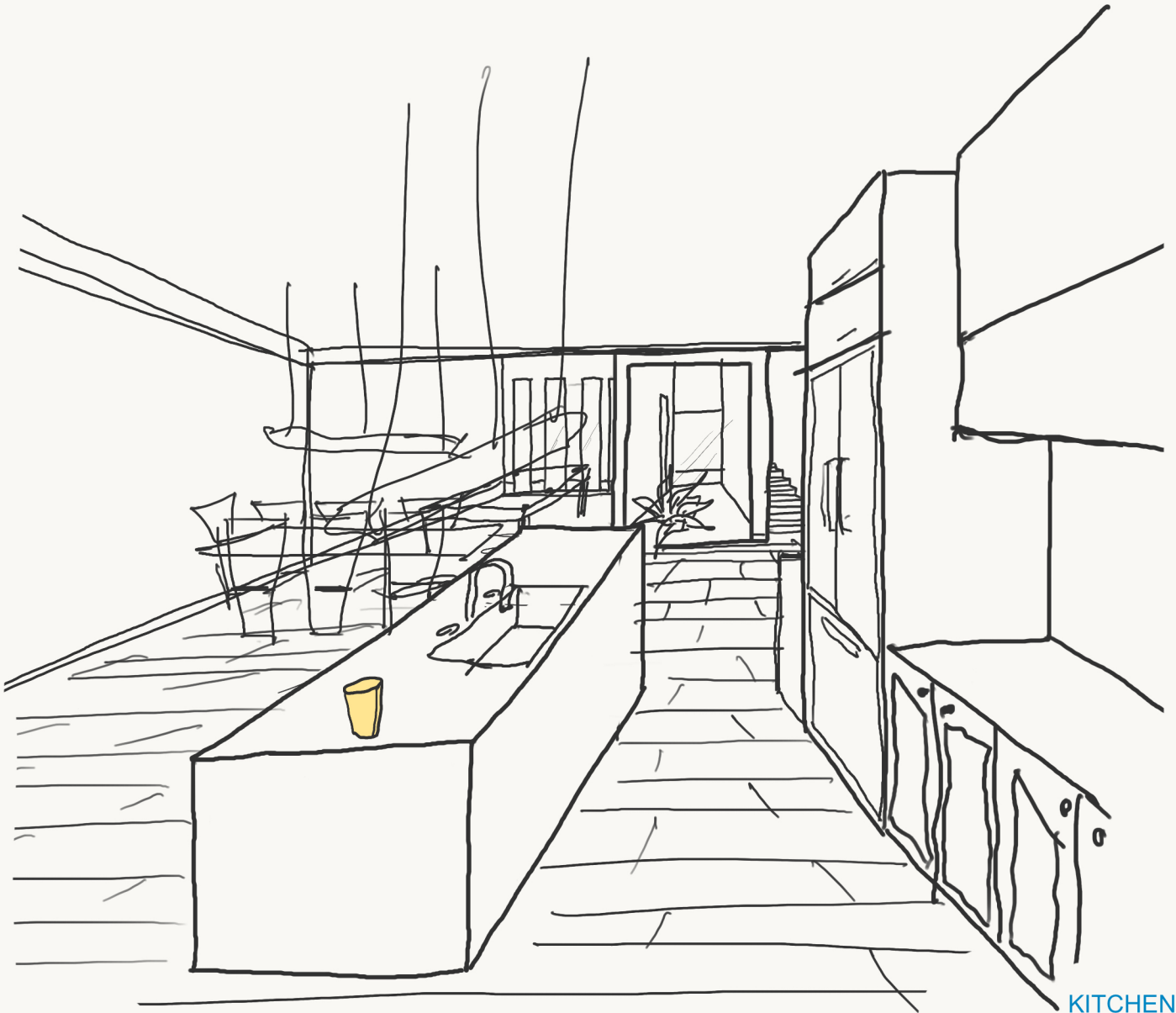
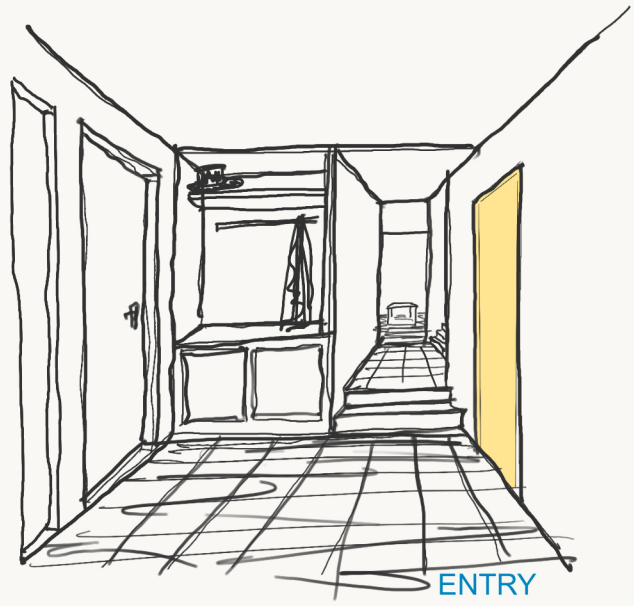
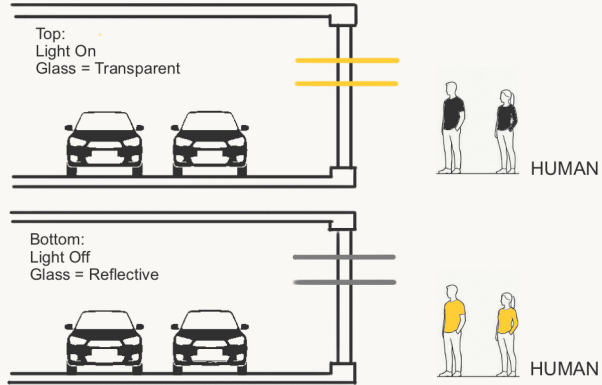


EAST



SOUTH

LAKE HOUSE



LOFT STUDIO



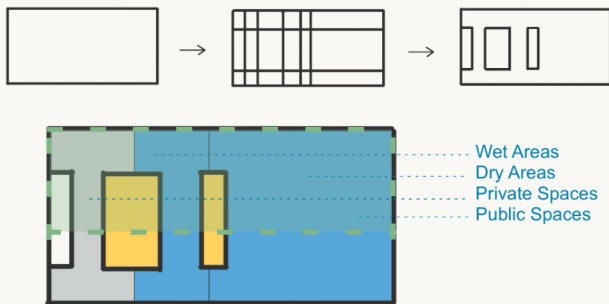
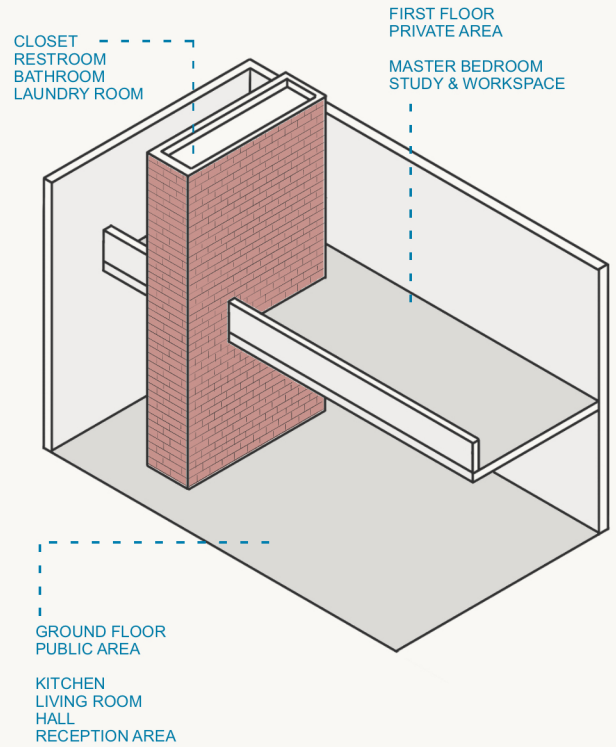
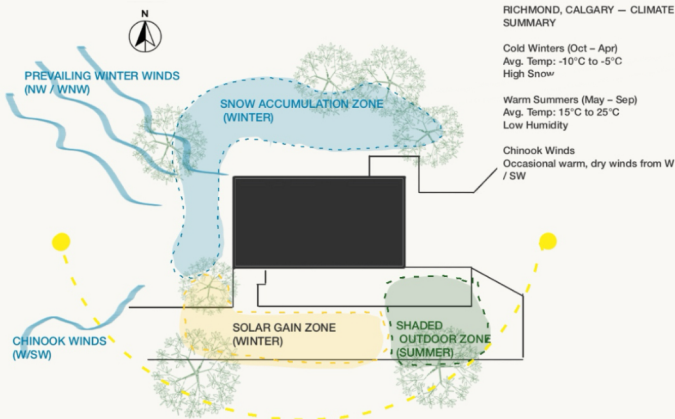
LOFT STUDIO

Form-Driven Architecture

Concept-driven design based on loft architecture and open-plan living, shaped through climatic responsiveness.

Calgary, Canada | 2026 | Site Area: 600 m² | Built Area: 200 m²

LOFT STUDIO



DESIGN LOGIC

PUBLIC TO PRIVATE



The ground floor is dedicated to public and social functions, while the upper loft provides a private retreat.

CLIMATE ADAPTIVE



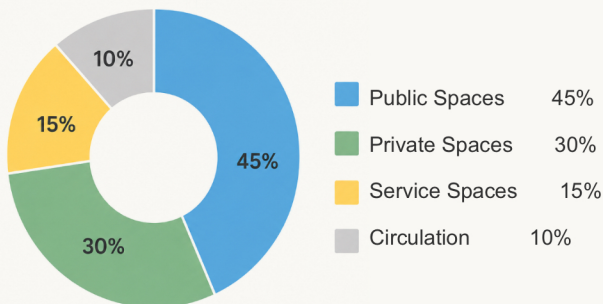
Orientation and zoning respond to Calgary's climate, maximizing solar gain and minimizing winter heat loss.

FLEXIBLE LOFT LIVING



Open plan, high ceilings, and minimal partitions allow spatial flexibility for living, working, and hosting.

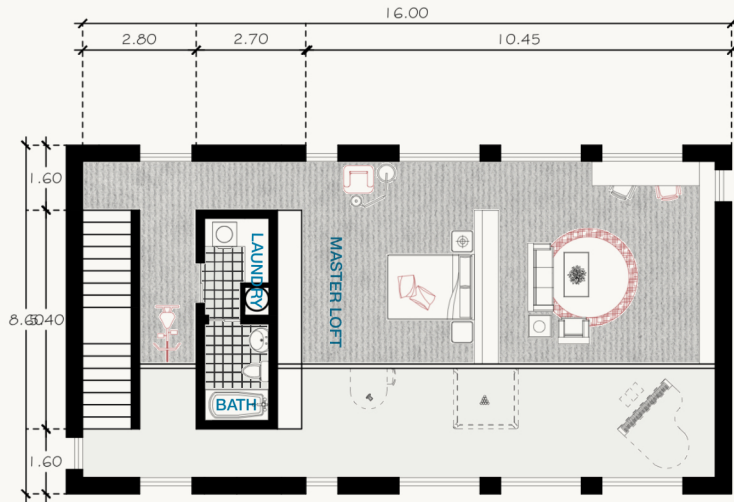
SPACE ALLOCATION



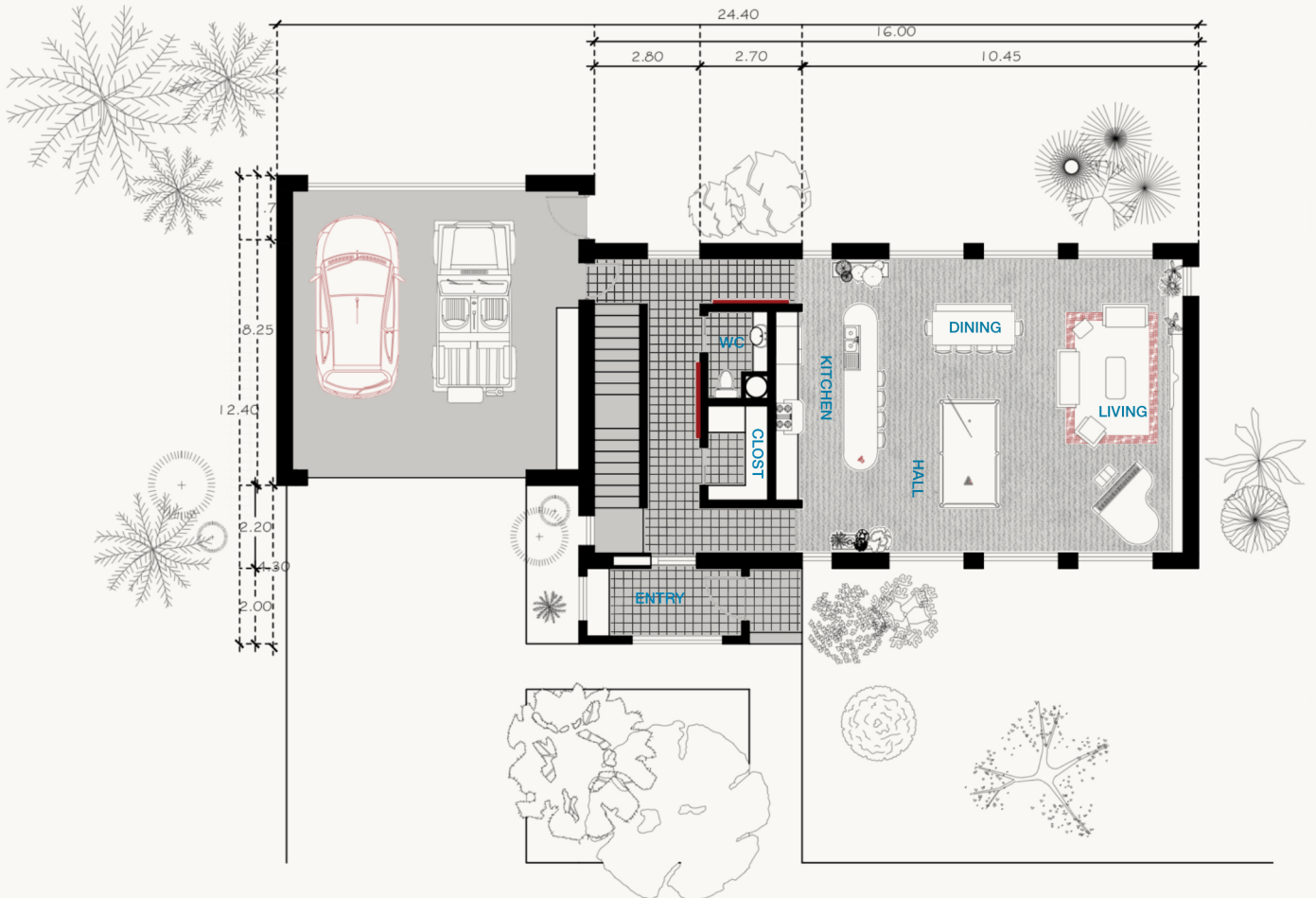
PROJECT DATA

Site Area	600 m ²
Built Area	200 m ²
Floors	2
Bedrooms	1 – 2
Typology	Urban Residential Loft
Location	Calgary, AB, Canada
Climate Zone	7A
Status	Concept Design
Date	2026

LOFT STUDIO



. FIRST FLOOR PLAN

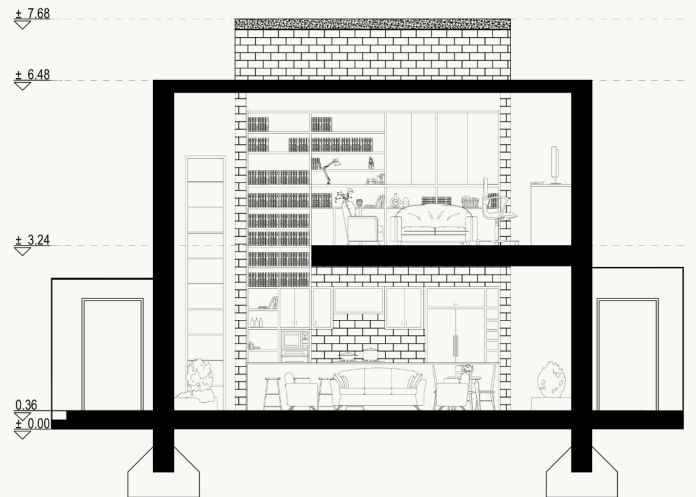
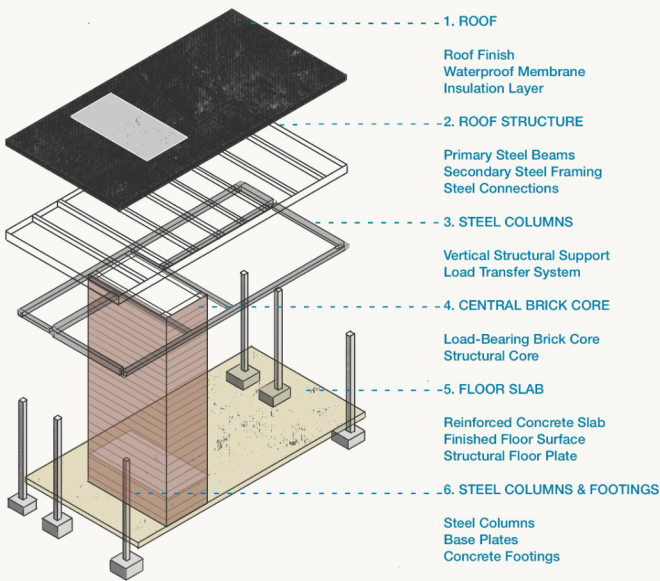


. GROUND FLOOR PLAN



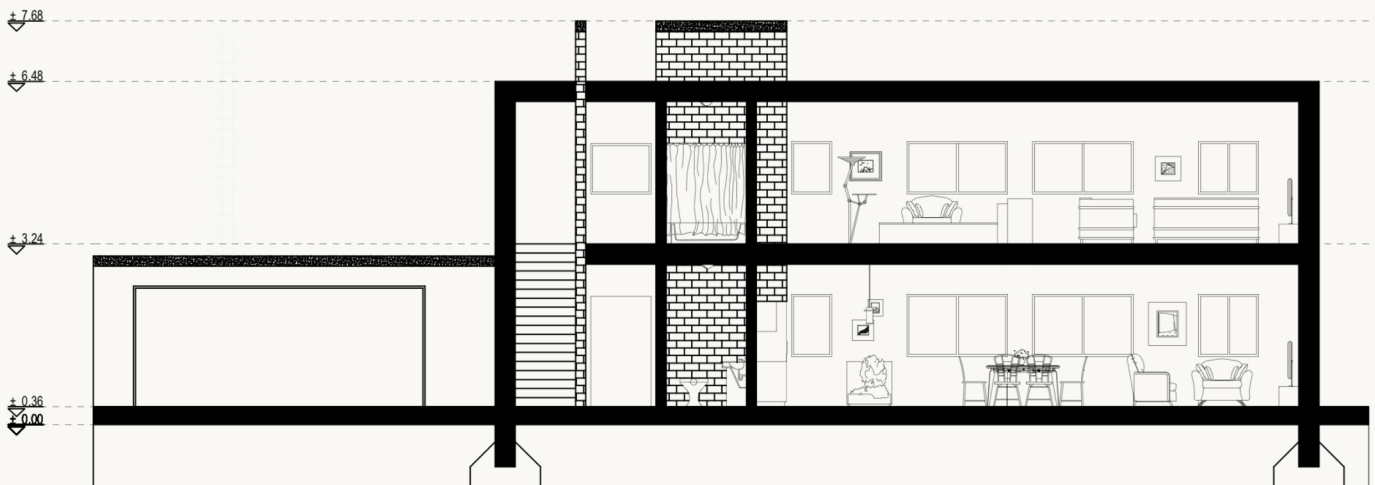
LOFT STUDIO

Structural System & Layer Composition



.East

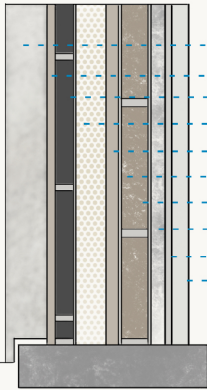
A sectional exploration of the loft's structural framework, material layering, and load transfer strategy.



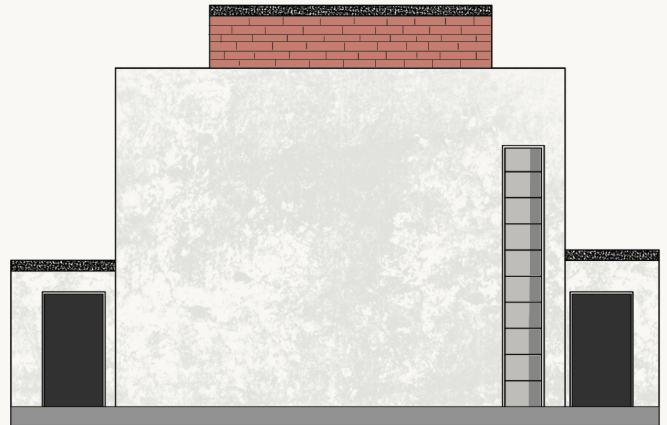
.South

Sectional and structural study of the loft, illustrating spatial configuration, load-bearing strategy, and material layering.

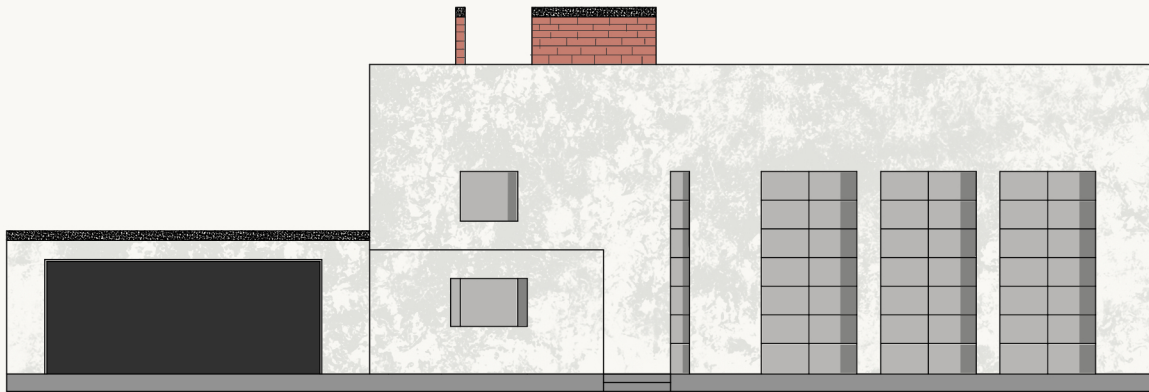
LOFT STUDIO



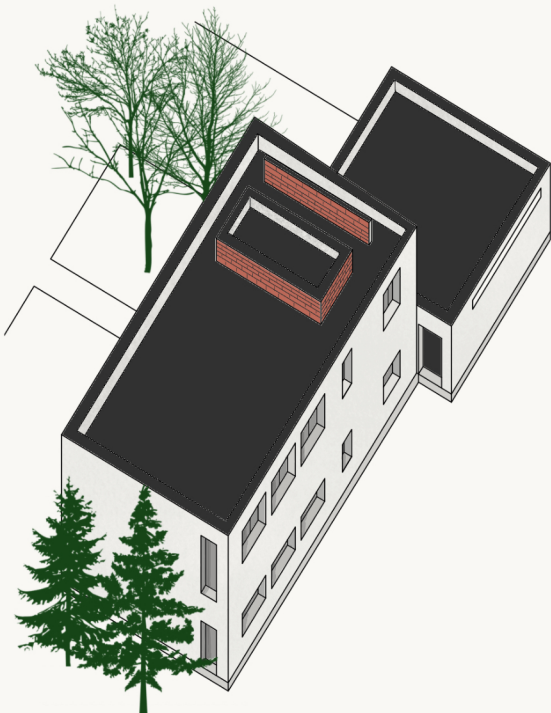
- Smooth Cement Stucco Finish (Render)
- Fiberglass Reinforcement Mesh
- Ventilated Air Cavity (Rainscreen)
- Continuous Exterior Thermal Insulation (Rigid Mineral Wool)
- Weather-Resistive Barrier (WRB) / Air Barrier
- Exterior Sheathing Board
- Light Gauge Steel Stud Wall with Mineral Wool Batt Insulation
- Smart Vapor Retarder
- Service Cavity (Optional)
- Interior Gypsum Board Finish



. EAST



.SOUTH



LOFT STUDIO



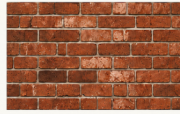
CONCRETE

Smooth light gray stucco concrete finish for main facade.



METAL

Black metal window frames, doors, and trim elements for a crisp, modern contrast.



BRICK

Natural red brick for chimney and accent elements.

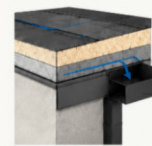


. SOUTH



. SOUTH WEST

1 GUTTER SECTION DETAIL



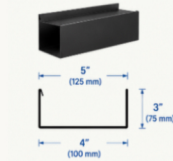
- 1 ROOF MEMBRANE
- 2 RIGID INSULATION (MIN. R-30)
- 3 TAPERED SLOPE TO GUTTER
- 4 ALUMINUM BUILT-IN GUTTER

2 DOWNSPOUT DETAIL



- 1 ALUMINUM DOWNSPOUT
- 2 INSULATED BACKER
- 3 WALL STRUCTURE
- 4 THERMAL BREAK BRACKET
- 5 DRAIN AWAY FROM FOUNDATION

3 GUTTER PROFILE



. SOUTH EAST

1 WINDOW SECTION DETAIL

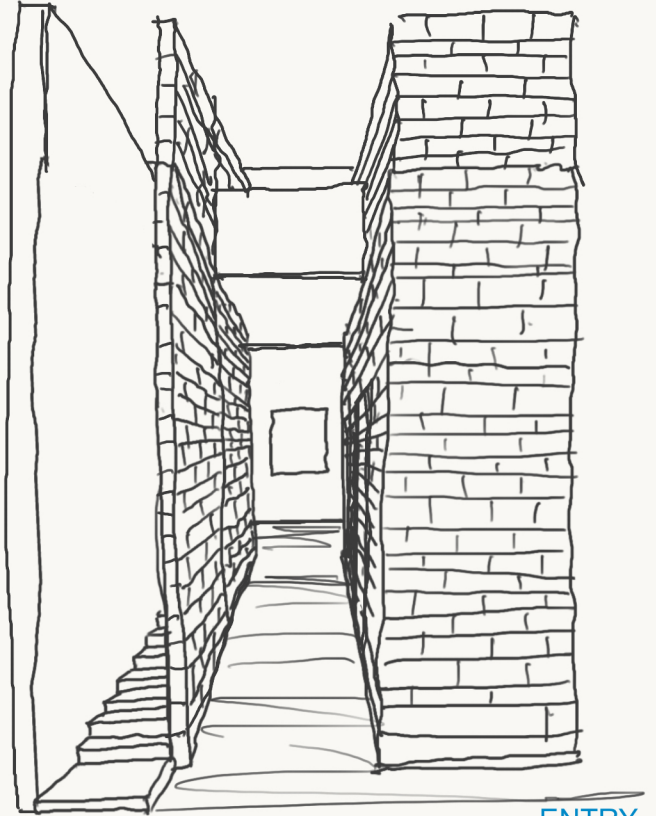


- 1 SMOOTH CEMENT STUCCO FINISH (RENDER)
- 2 FIBERGLASS REINFORCEMENT MESH
- 3 VENTILATED AIR CAVITY (BANSCREEN)
- 4 CONTINUOUS EXTERIOR THERMAL INSULATOR (RIGID MINERAL WOOL)
- 5 WEATHER-RESISTIVE BARRIER (WRB) / AIR BARRIER
- 6 EXTERIOR SHEATHING BOARD
- 7 WINDOW FRAME (THERMALLY BROKEN ALUMINUM)
- 8 LOW-E INSULATED GLASS UNIT
- 9 AIR SEAL / BACKER ROD AND SEALANT
- 10 INTERIOR TRIM / GYPSUM BOARD FINISH

LOFT STUDIO



UPSTAIRS



ENTRY



DOWNSTAIRS

HAJIR HIDAJI



ARCHITECTURAL DESIGNER

Residential Design | Interior Design | Design Development

Architectural designer with experience in residential and interior design, concept development, spatial planning, architectural visualization, and design documentation. Skilled in translating design concepts into functional and visually compelling spaces through hand sketching, digital modeling, and presentation development.



EDUCATION

Master of Architecture (M.Arch)

Azad University, Iran | 2020 | Scholarship

Thesis: Sustainable Residential Design



SKILLS

Core Skills

Residential Design
Interior Design
Design Development
Concept Development
Space Planning
Floor Plan Development
Spatial Design
Design Documentation
Architectural Sketching
Design Presentation

Software

AutoCAD (Strong)
3ds Max (Strong)
Procreate (Advanced)
SketchUp (Intermediate)
Revit (Working Knowledge)

Visualization

Architectural Rendering
3D Modeling
Presentation Graphics
Concept Diagrams
Visual Communication



SELECTED EXPERIENCE

Freelance Architectural Designer | Iran | 2018–Present

Developed residential architectural and interior design projects from concept to documentation

Produced AutoCAD drawing packages for residential concrete construction

Created 3D visualizations and presentation models using 3ds Max

Delivered renovation design, material selection, and client consultation

Architectural Site Coordination | Iran

Coordinated architectural drawings with on-site construction execution

Supervised construction quality, finishes, and implementation compliance

Managed contractor communication and site-related design adjustments

Additional Design Experience

Retail storefront and visual display design

Landscape and water feature implementation support

Residential renovation and finishing supervision



CONTACT

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