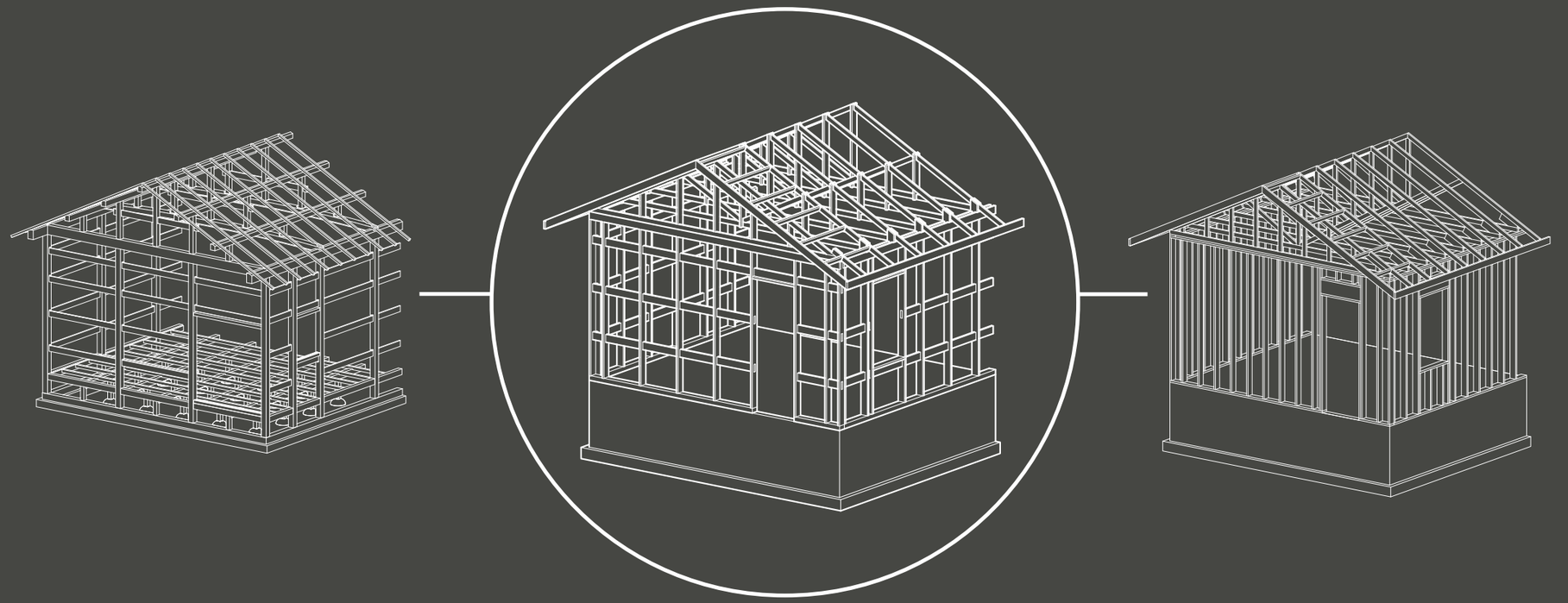
CROSS-CULTURAL CARPENTRY

REVISING LIGHT-FRAME CONSTRUCTION

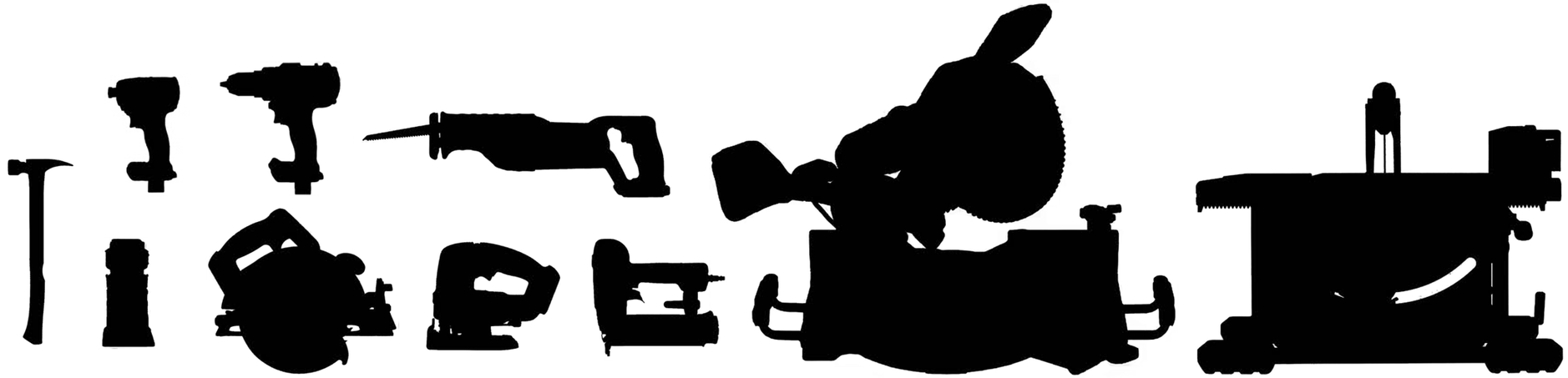


What is the potential of adapting the craftsmanship of traditional Japanese carpentry into today's light stick framing construction methods?

TRADITIONAL JAPANESE

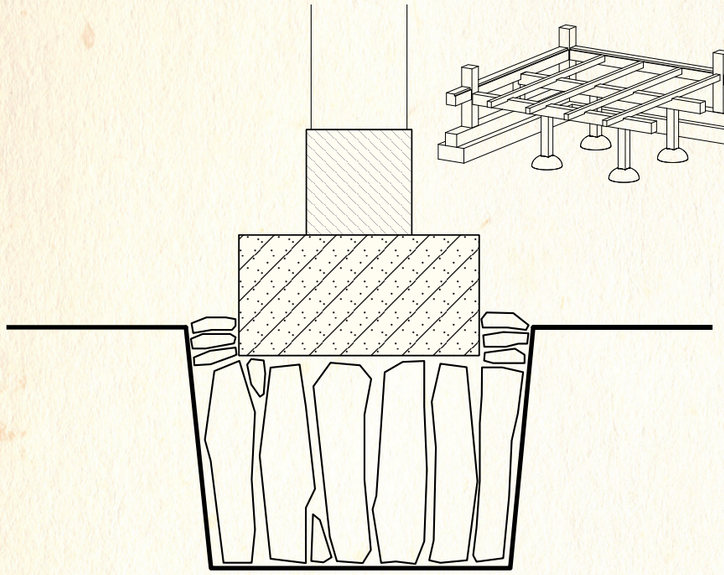
- MEASUREMENT SYSTEM
- LAYOUT
- SKILL/TECHNIQUE
- TOOLS
- CONSTRUCTION
- ASSEMBLY

LIGHT-FRAME

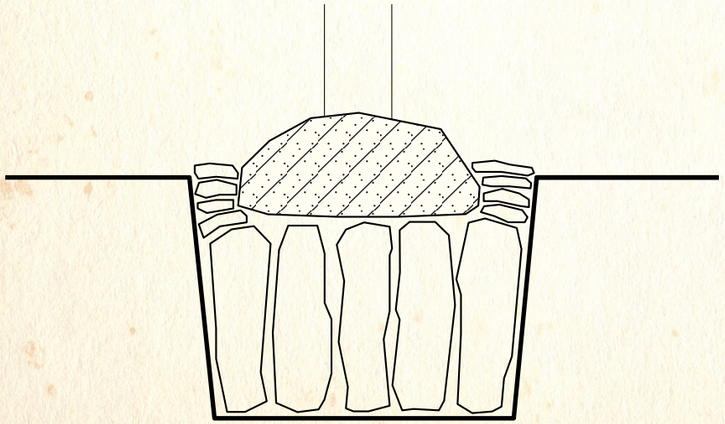


ADAPTATION

FOUNDATION

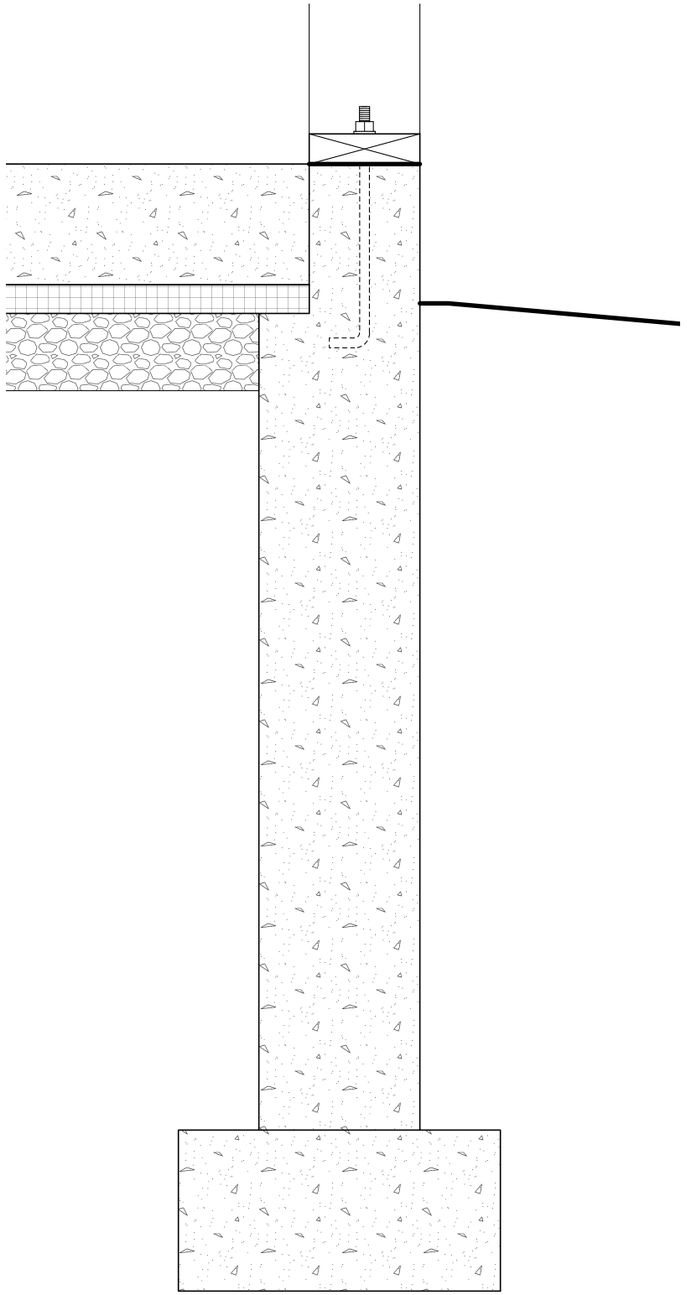


'narashiishi-kiso'
(flat stone foundation)
continuous support with stone slab

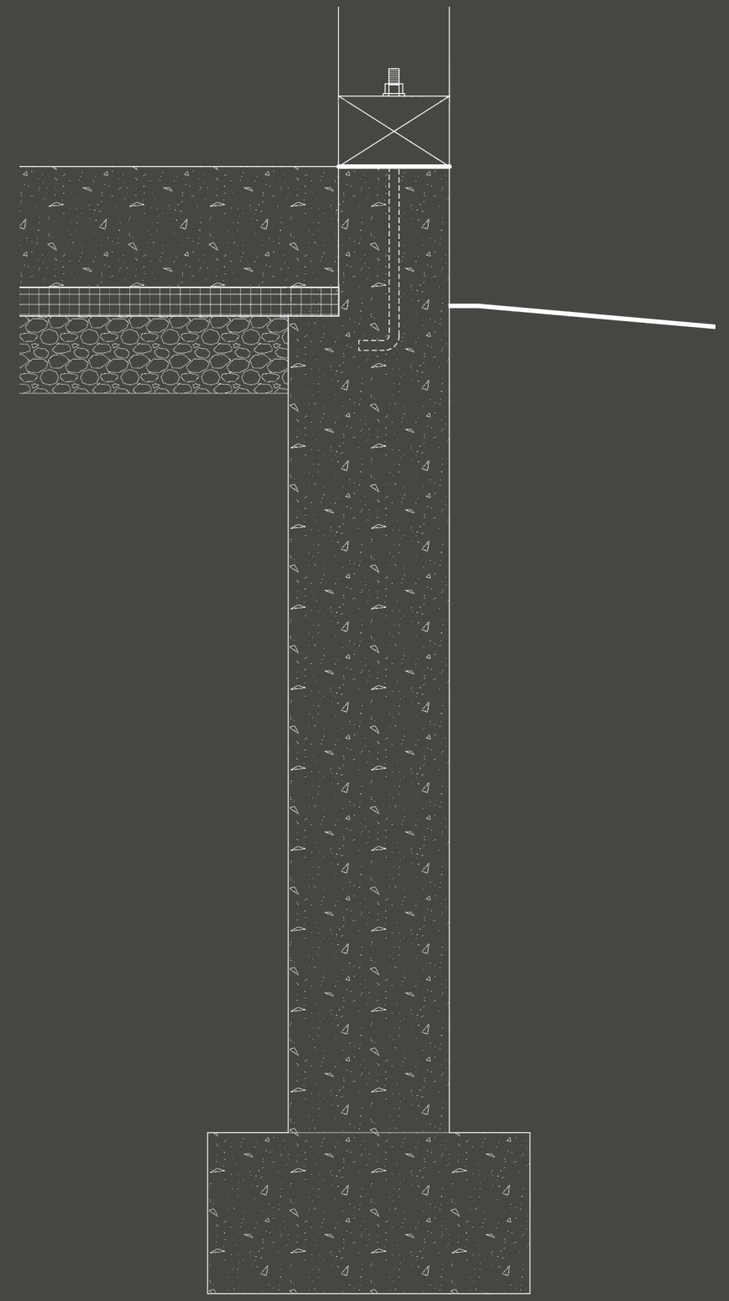


'tsukaishi-kiso'
(post-stone foundation)
support for minor structural members

TRADITIONAL JAPANESE

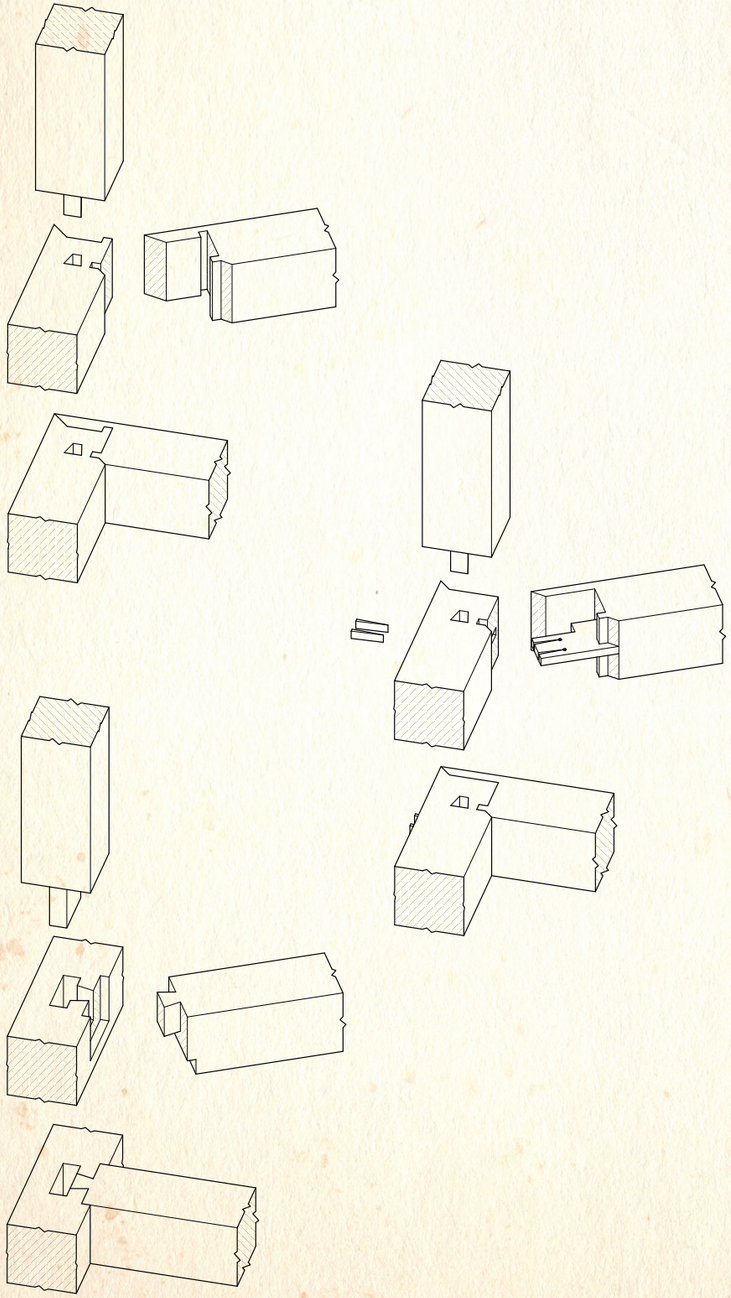


LIGHT-FRAME

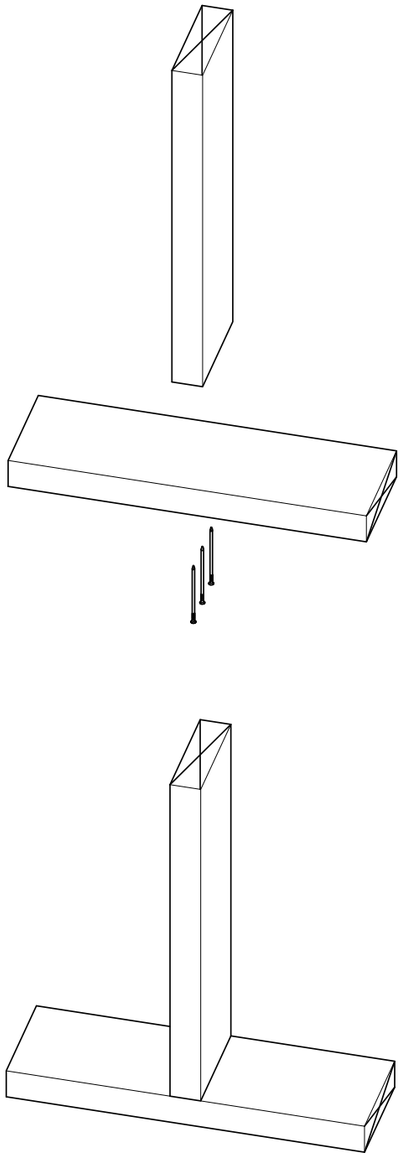


ADAPTATION

SILL PLATE



TRADITIONAL JAPANESE



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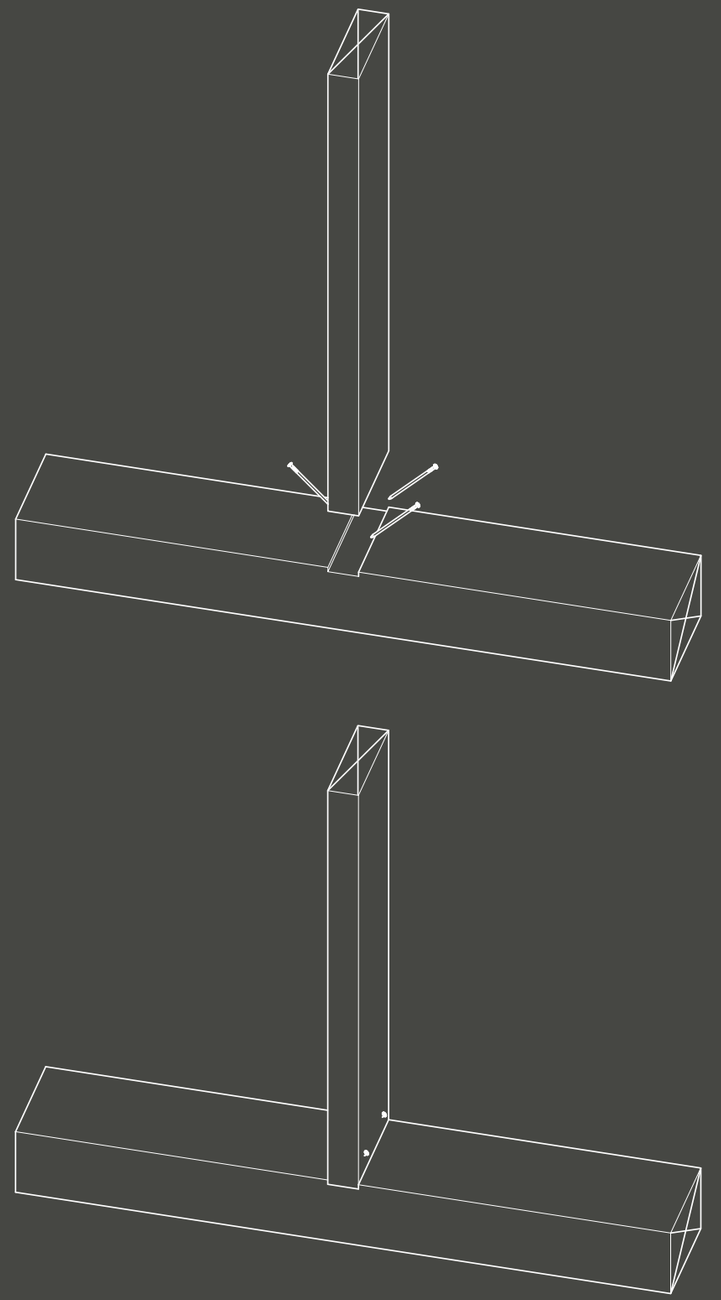
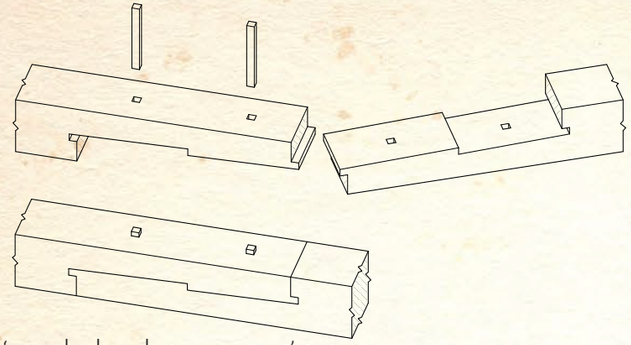
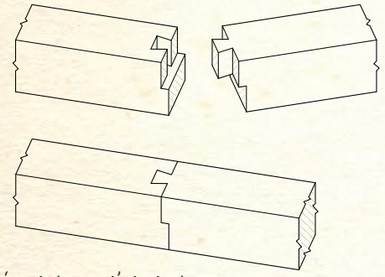


ADAPTATION

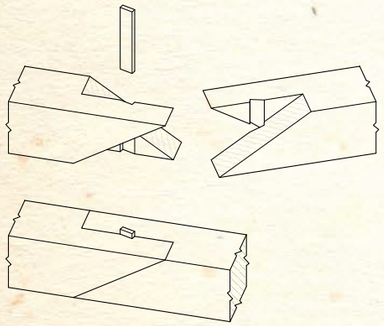
LONGITUDINAL JOINTS



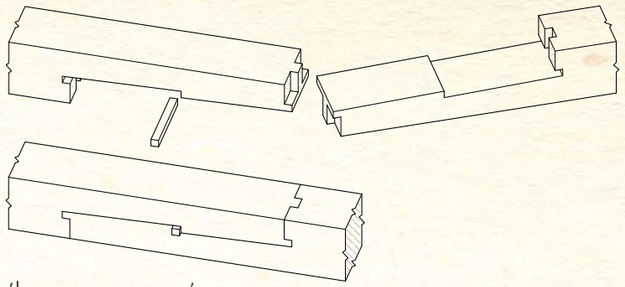
'atsukake-daisen-tsugi' joint
(dadoed and rabbeted oblique scarf joint)
uses - ground sill, eaves beam, purlin, ridge beam



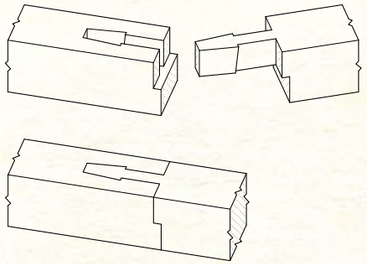
'ari-tsugi' joint
(dovetail joint)
uses - ground sill, eaves beam, purlin, ridge beam



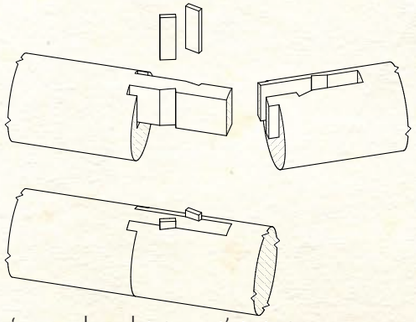
'isuka-tsugi' joint
(half rabbeted oblique scarf joint)
uses - veranda beam, ceiling rod, floor joist, rafter



'kanawa-tsugi' joint
(half-blind tenoned, dadoed, and rabbeted scarf joint)
uses - ground sill, column base replacement

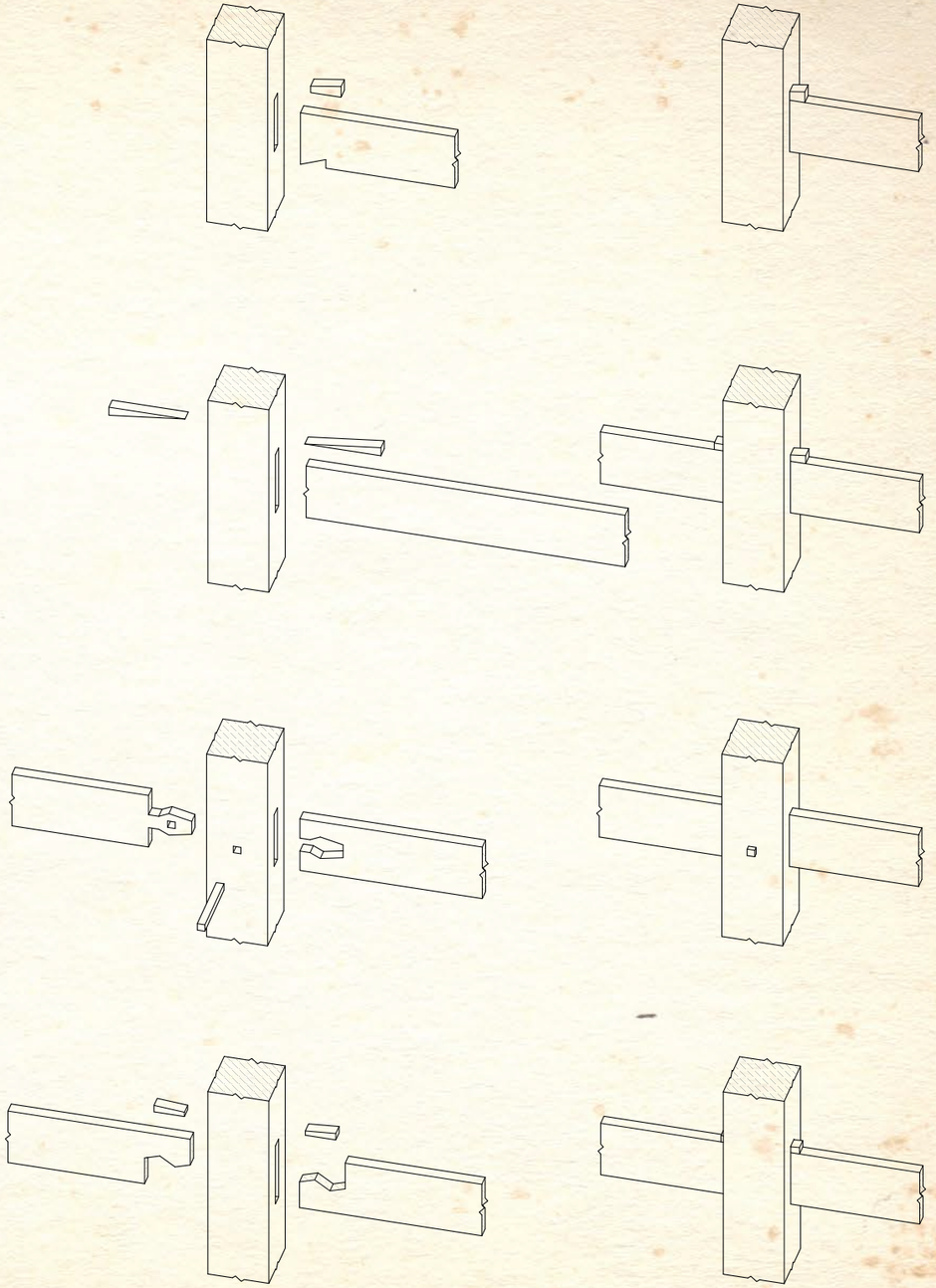


'kama-tsugi' joint
(half lapped gooseneck joint)
uses - ground sill, eaves beam, purlin, ridge beam

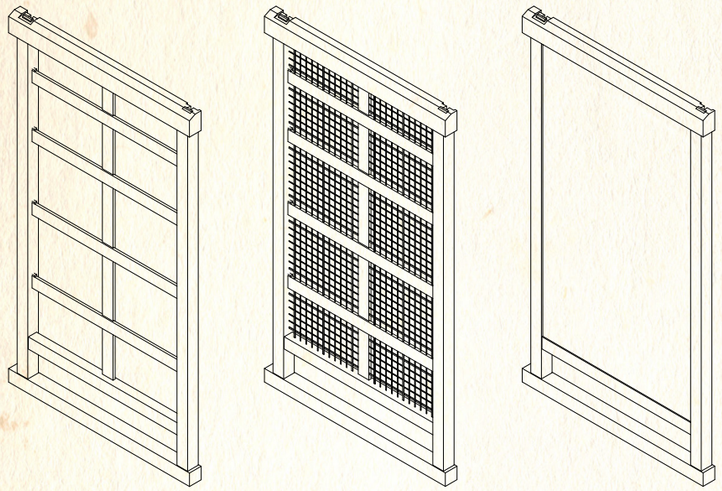


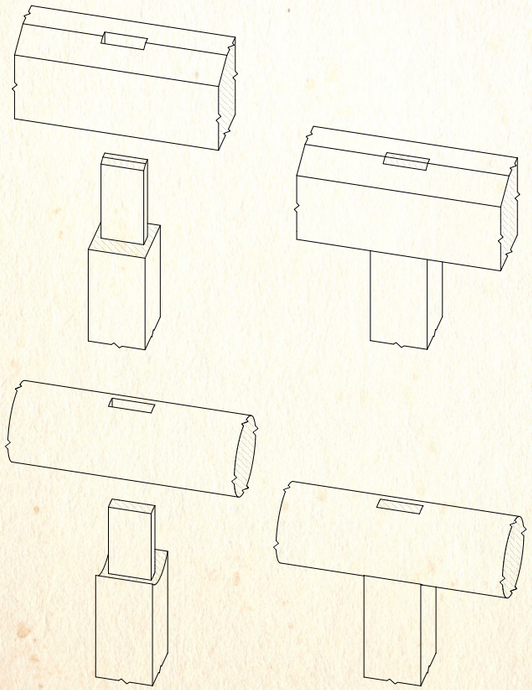
'sao-shachi-tsugi' joint
(pole tenon splice)
uses - veranda beam, interior beam, other natural circular beams

COLUMN & TIE JOINING

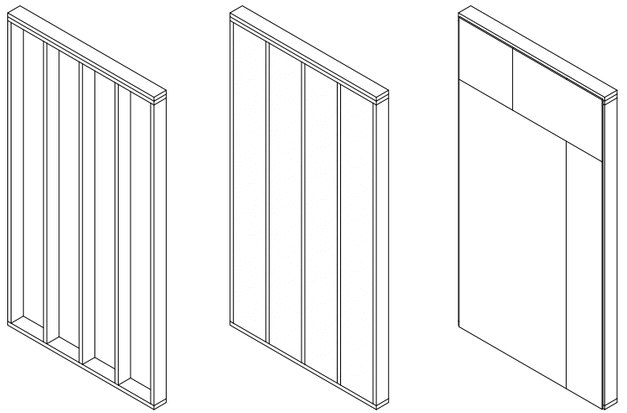


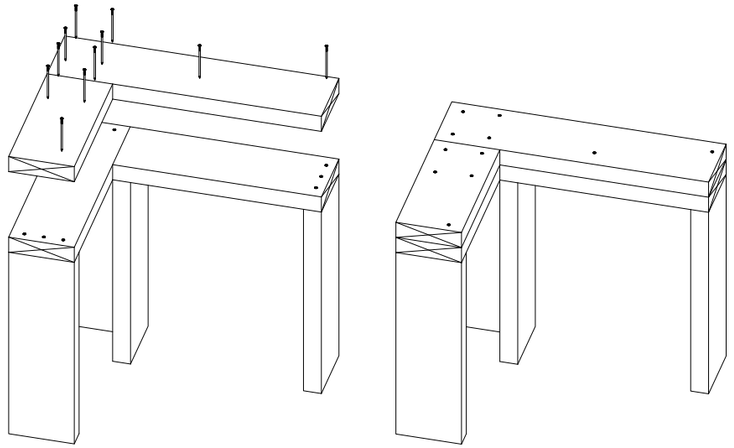
WALL



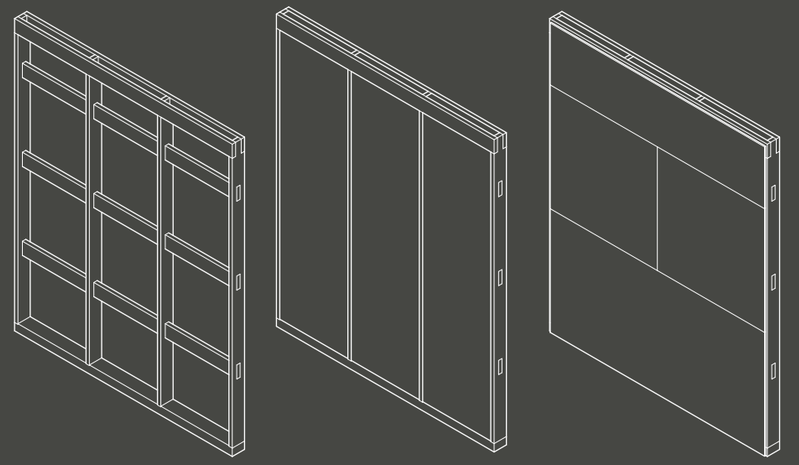


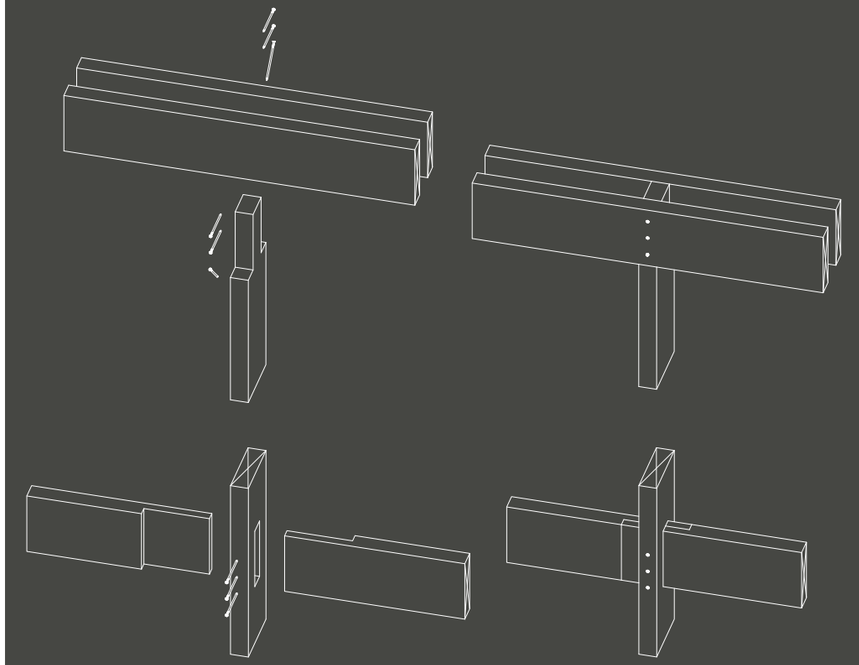
TRADITIONAL JAPANESE





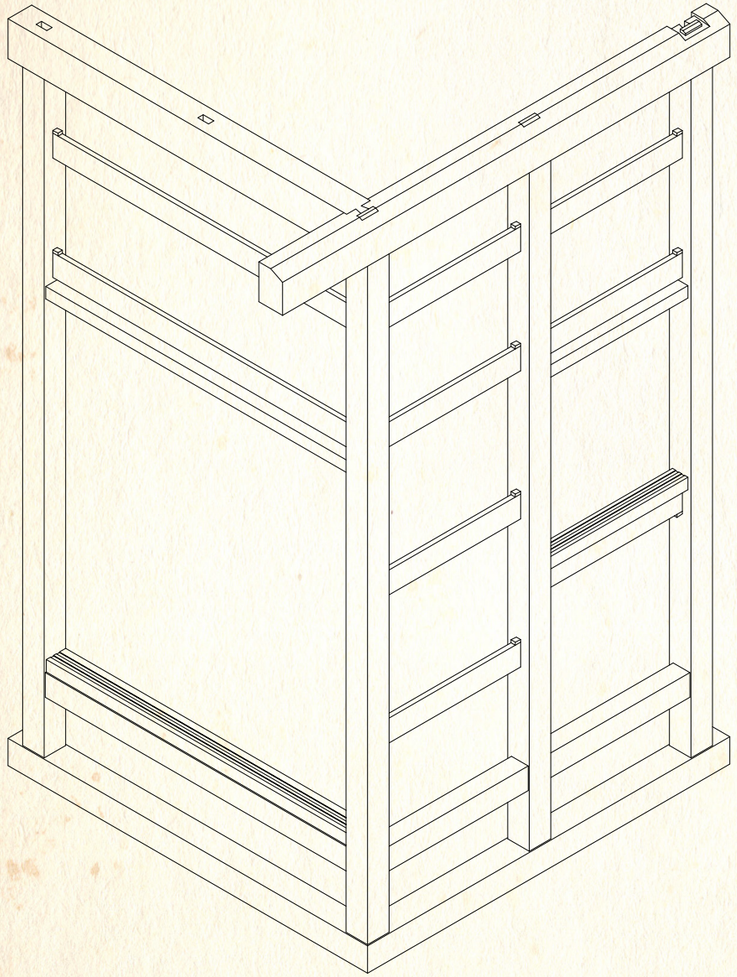
LIGHT-FRAME



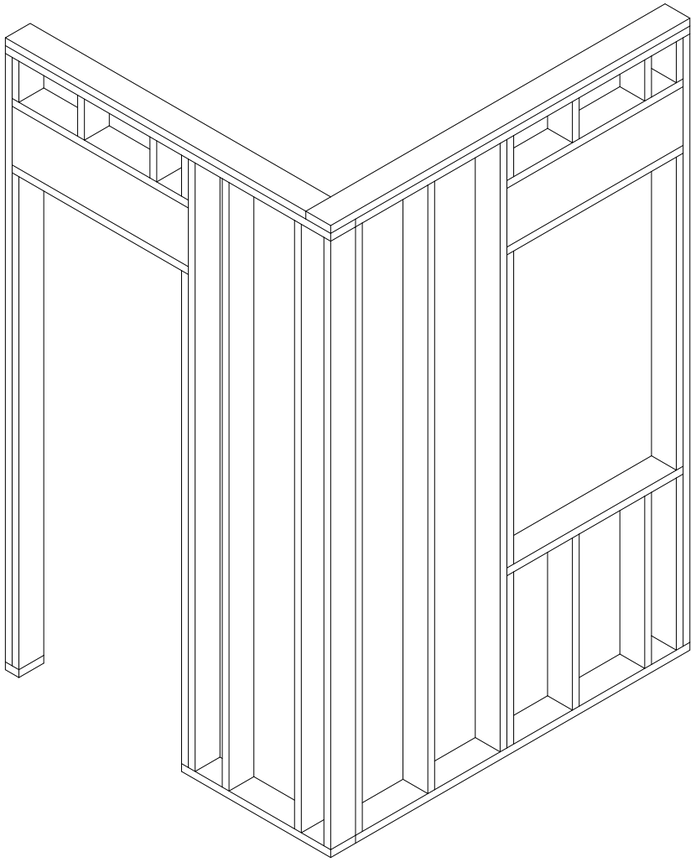


ADAPTATION

WINDOWS & DOORS



TRADITIONAL JAPANESE



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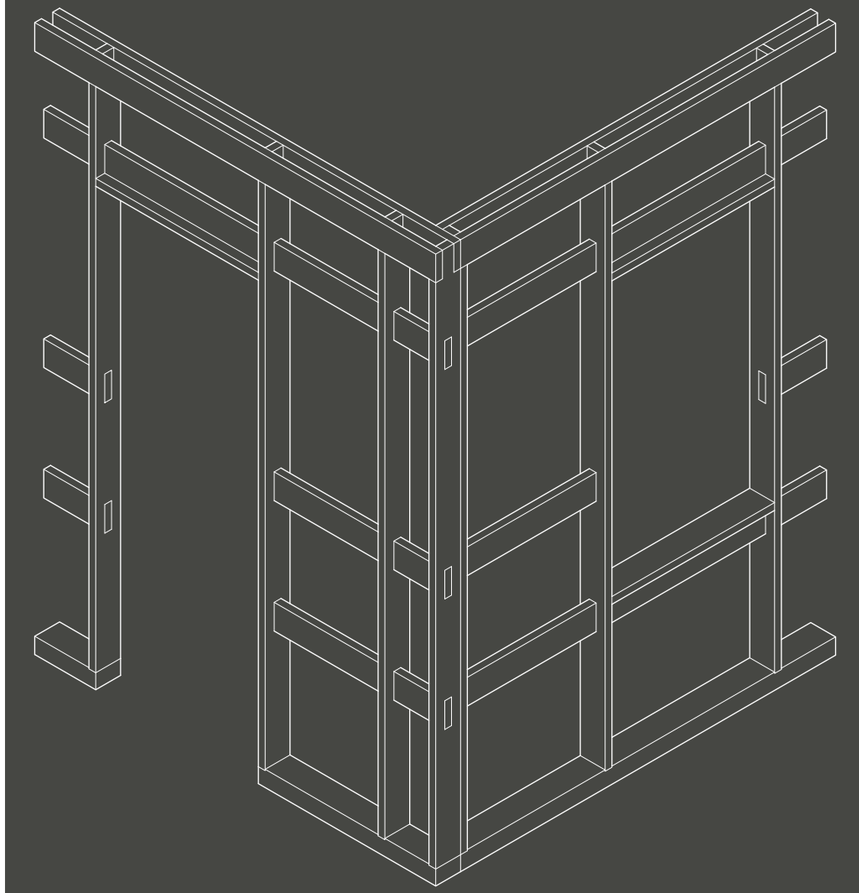
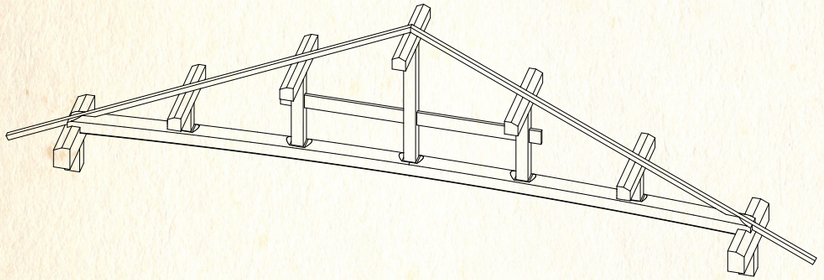
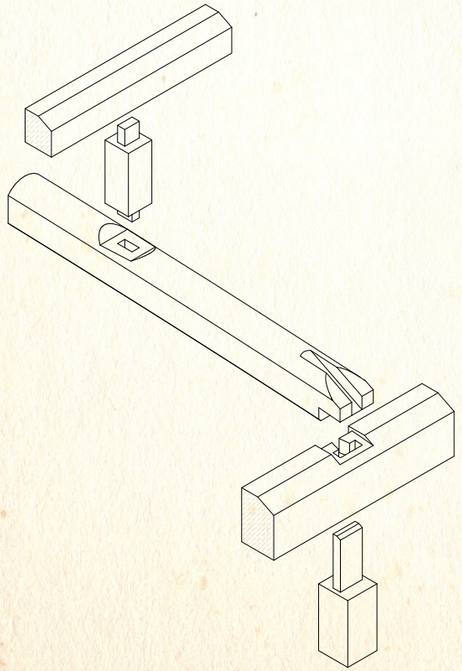


ADAPTATION

ROOF





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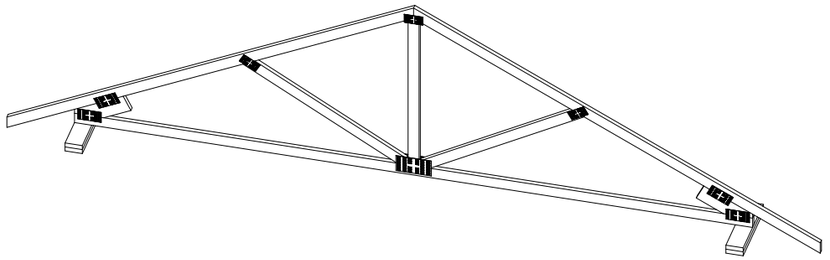

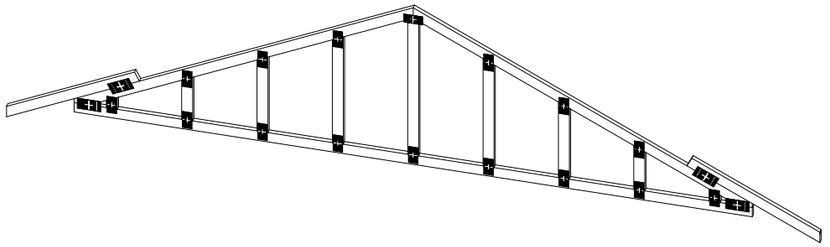

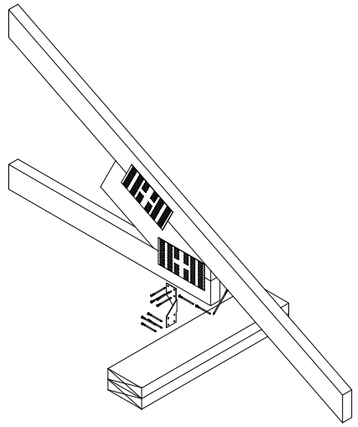

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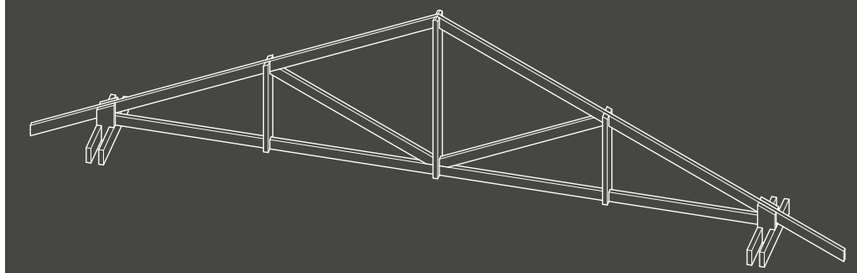
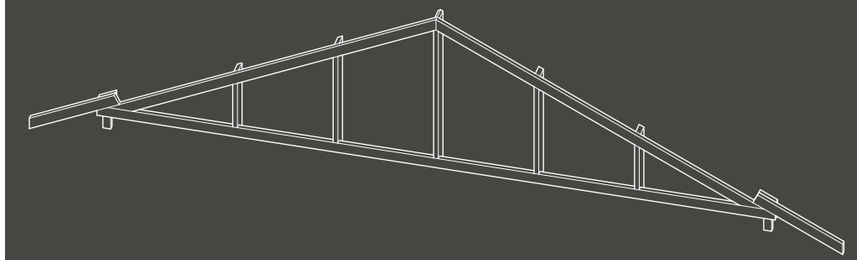
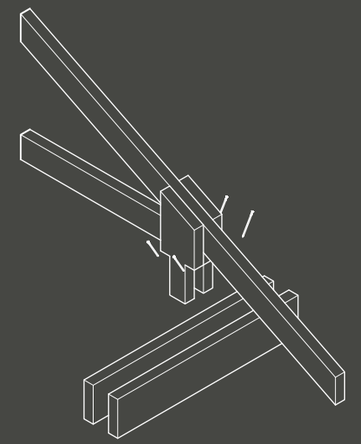
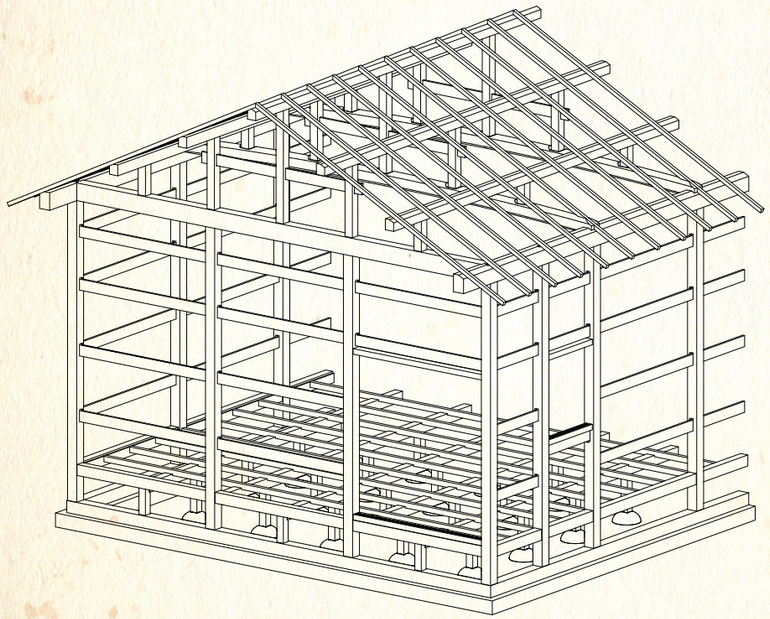


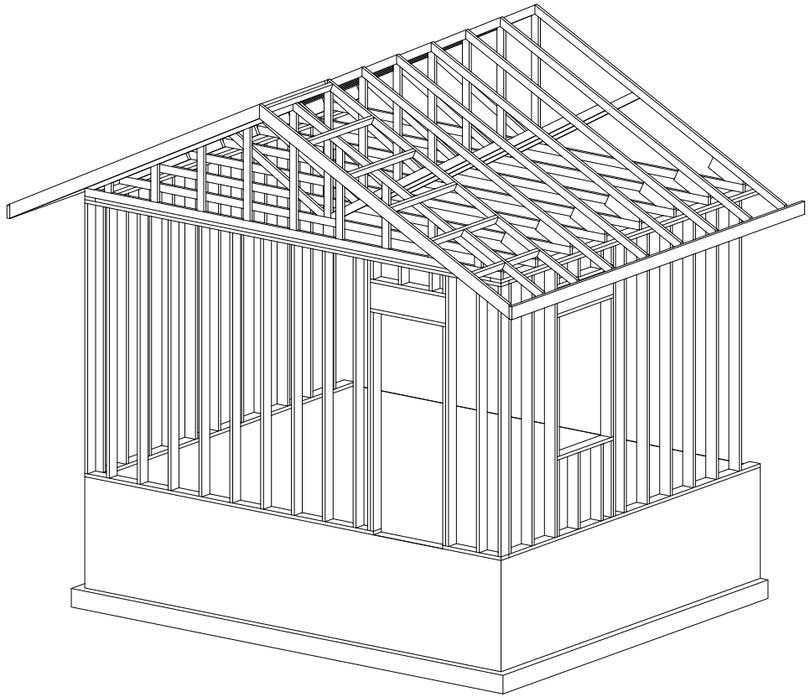




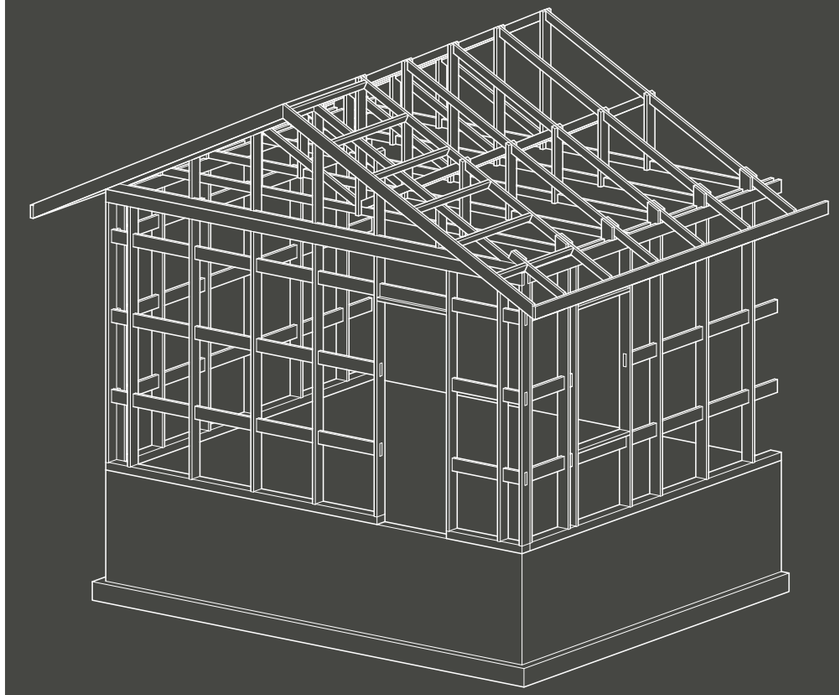
ADAPTATION



TRADITIONAL JAPANESE

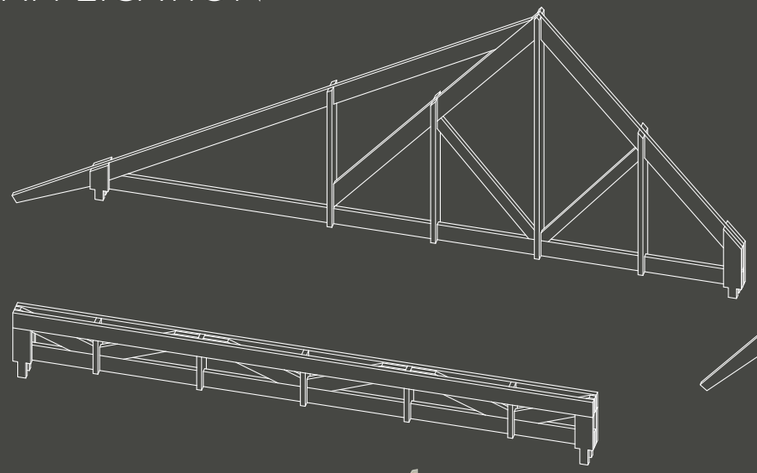


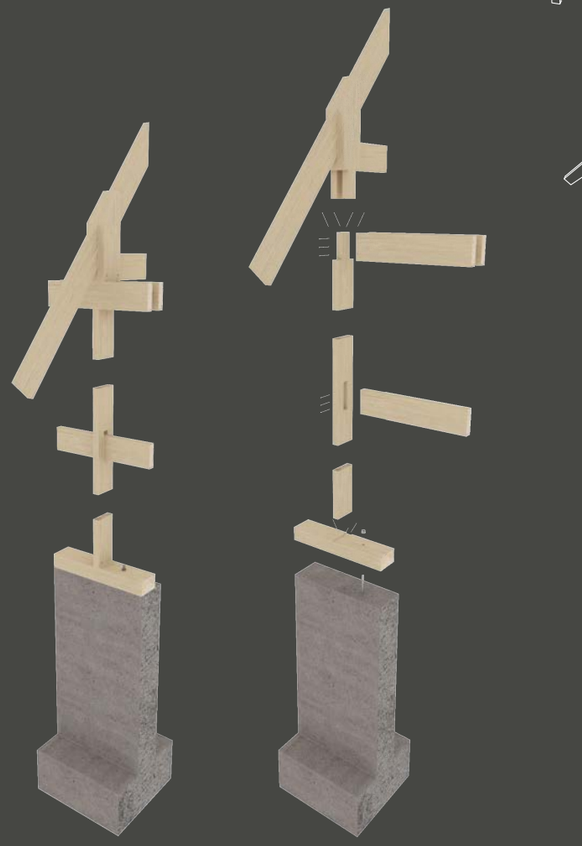
LIGHT-FRAME

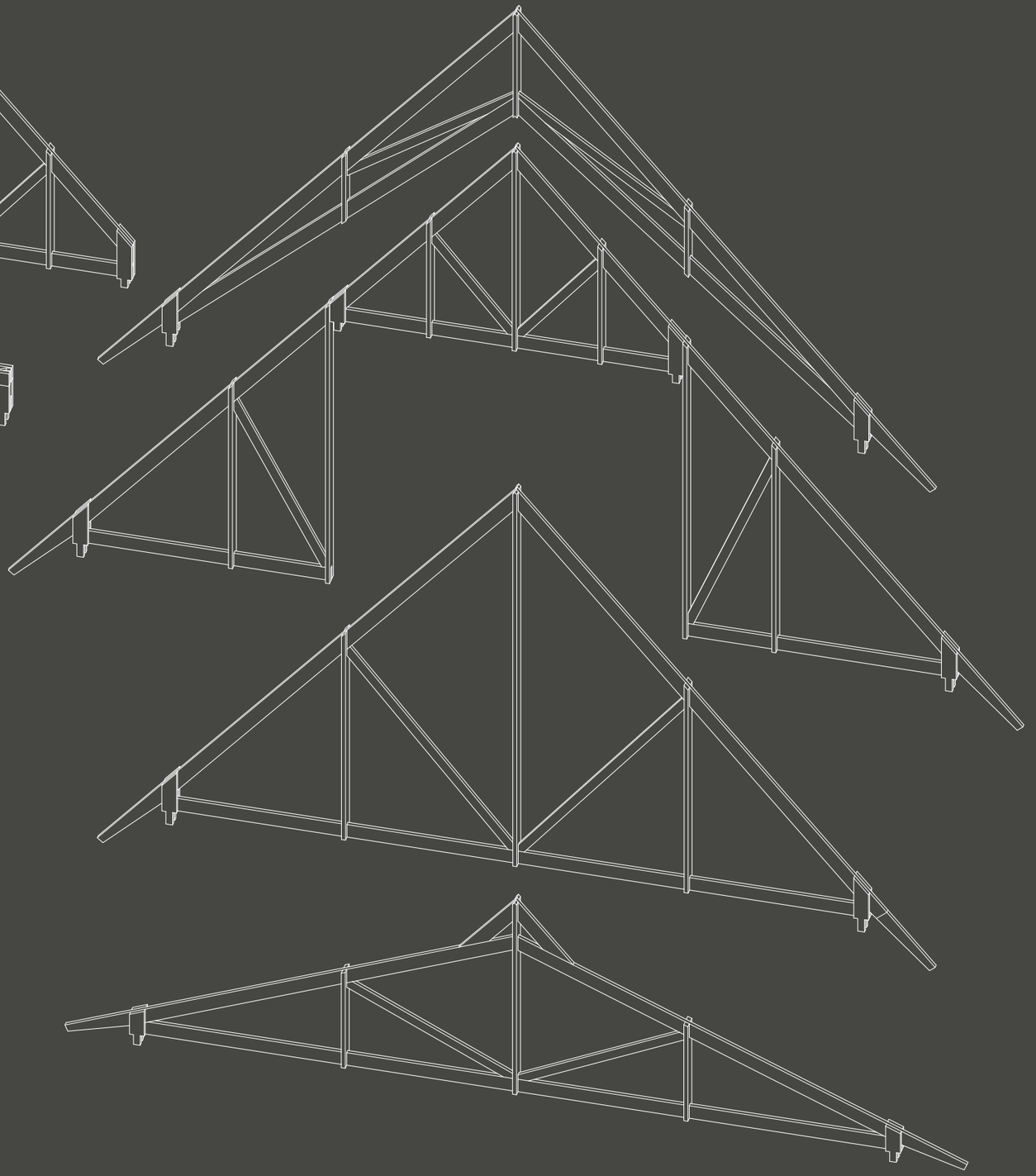


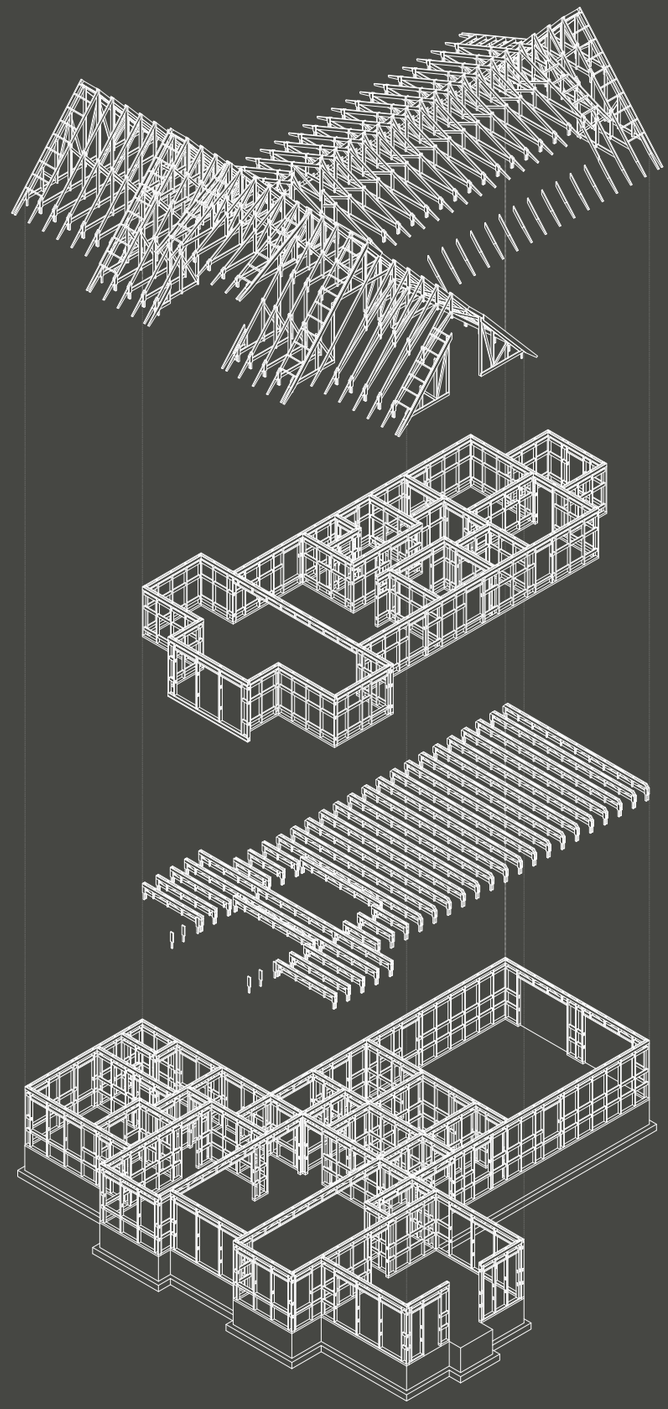
ADAPTATION

APPLICATION









SITE PLAN 0 50 100

NORTH ELEVATION

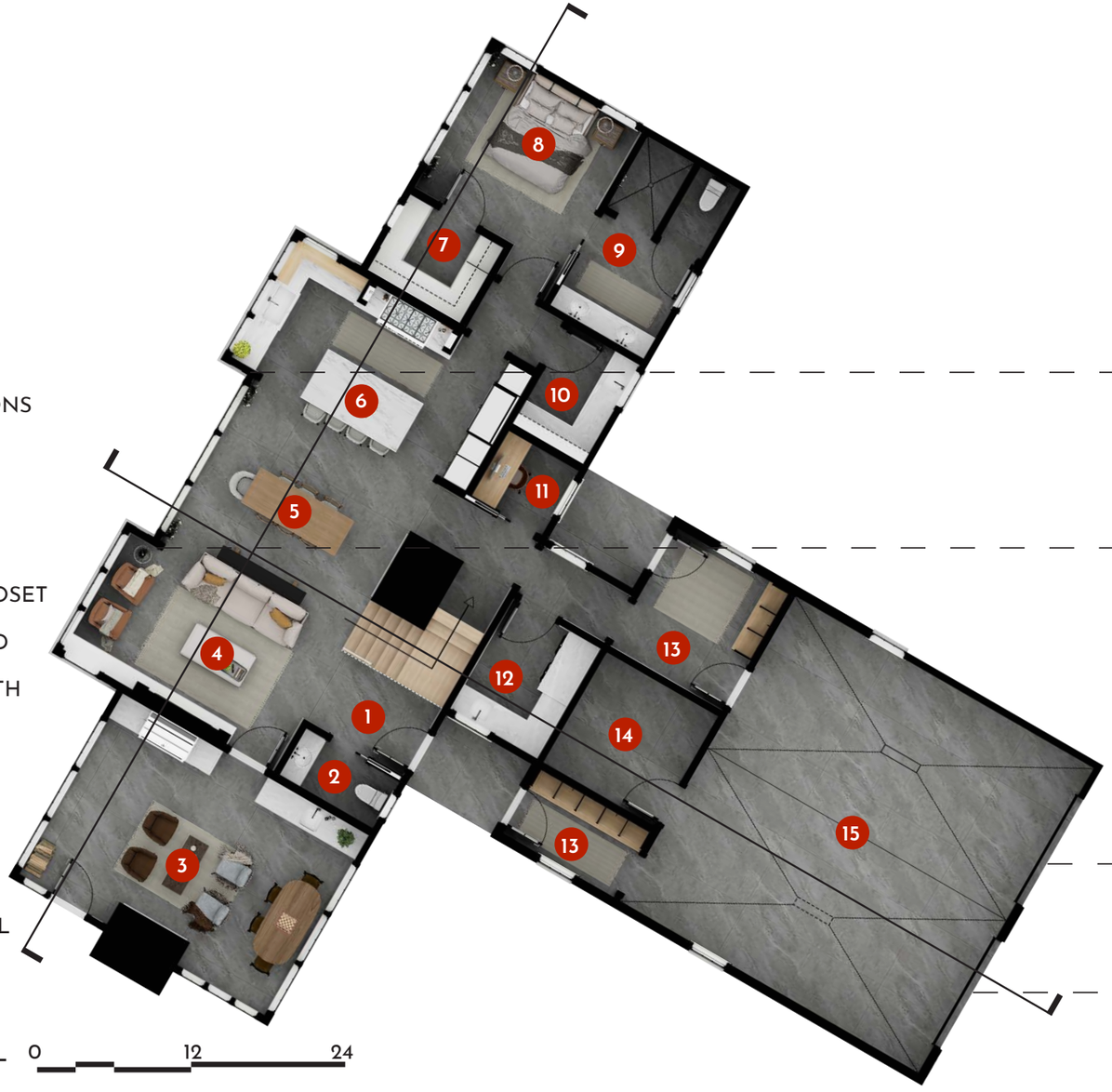
EAST ELEVATION

SOUTH ELEVATION

WEST ELEVATION

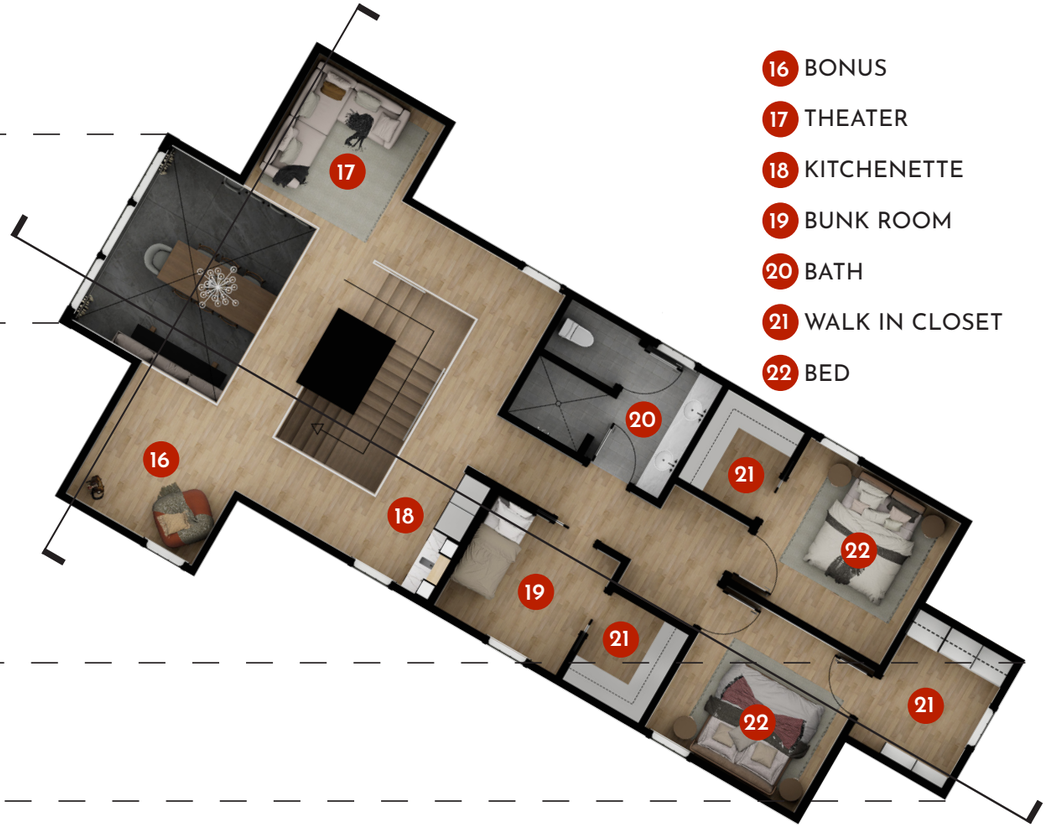
0 12 24

1 ENTRY
2 POWDER
3 FOUR SEASONS
4 LIVING
5 DINING
6 KITCHEN
7 WALK IN CLOSET
8 PRIMARY BED
9 PRIMARY BATH
10 PANTRY
11 OFFICE
12 LAUNDRY
13 MUDROOM
14 MECHANICAL
15 GARAGE

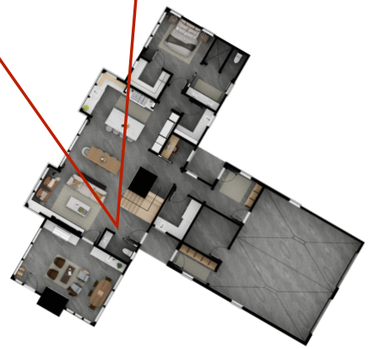


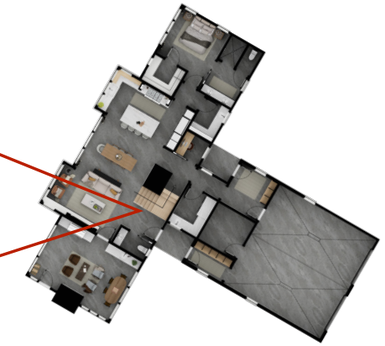
MAIN LEVEL 0 12 24

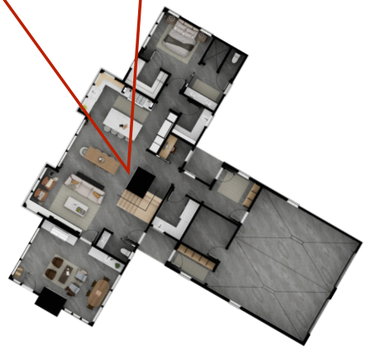
16 BONUS
17 THEATER
18 KITCHENETTE
19 BUNK ROOM
20 BATH
21 WALK IN CLOSET
22 BED

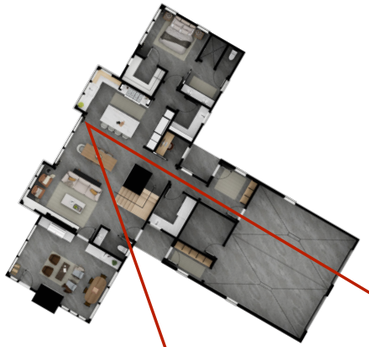


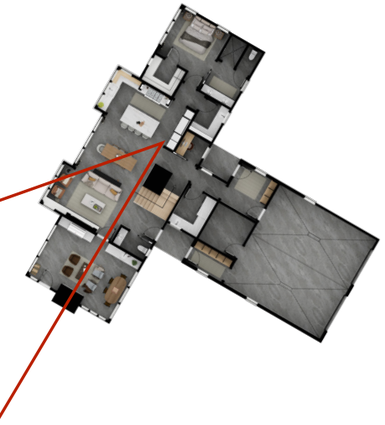
UPPER LEVEL 0 12 24

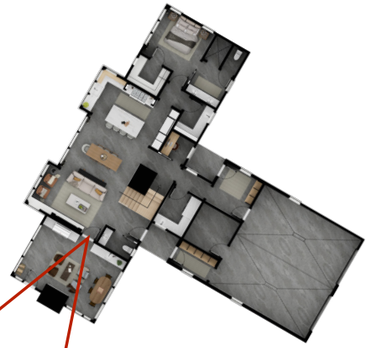


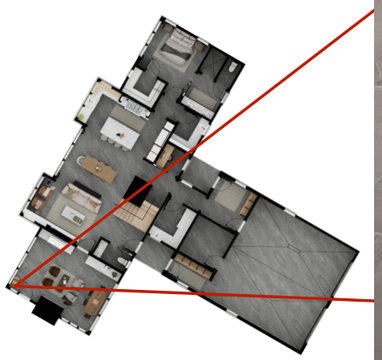


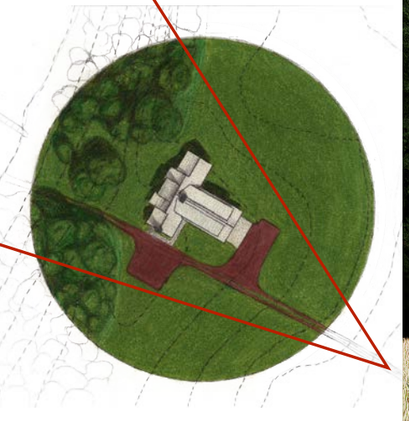












CONCLUSIONS

SEISMIC PERFORMANCE?
FIRE SPREAD?
GYPSUM BOARD?
INSULATION?
STUD SPACING?

CROSS-CULTURAL CARPENTRY

REVISING LIGHT-FRAME CONSTRUCTION