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project name: kahn/williams haus

project location: seattle, washington

scope of work: an energy efficient
single family residence on
a steep sloped infill site

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thedesignteam



Daniel Williams ARCHITECT



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place-based design:
the region
the neighborhood
the site

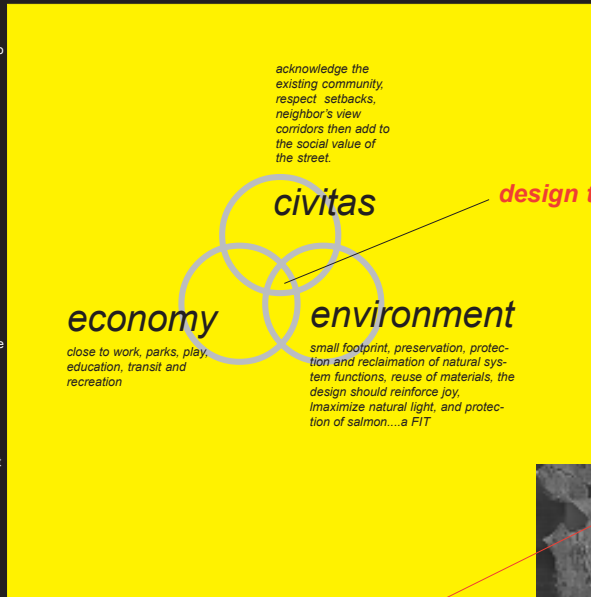


Slected an infill site in a location that requires little or no driving; created super efficient volume, with minimum circulation space in an energy efficient envelope that incorporates renewable energy.

This design incorporates low water volumn fixtures and low water use, indigenious landscape materials. The house will be passively heated and ventilated.

The architecture will be constructed from materials that last, are from a sustainable sources and be able to be reused in its next life.

Respect *PLACE*



connectedness

Energy: The initial conservation of energy is the geometric form of this house. A cube is the most efficient rectangular volume.

Cubic geometry maximizes the volume within the least amount of skin - this reduces the embodied energy of the structure/ volume relationship - reducing the total amount of materials in the construction.

Site:

the house is placed to the northern side of the property.

The site is located in a community with civic amenities within walking distance - it is an urban infill site.

It is within walking distance to the community's commercial area, parks, transit, schools and recreation. Being able to take the transit to work was

interior and exterior are retrofitted for grey water reuse using water from the *living roof garden*.

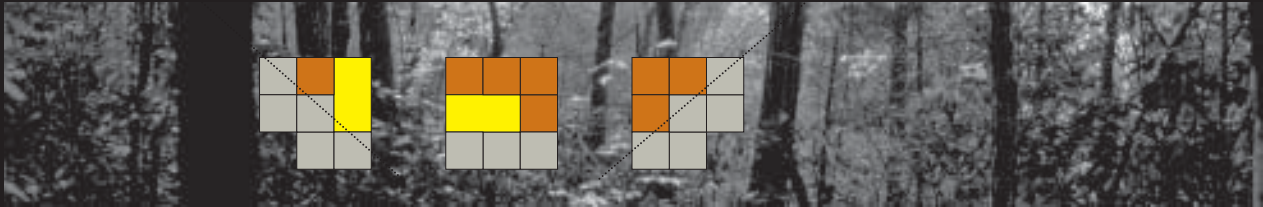
The structural integrity inherent in the cube reduces the use of concrete for the containment of the slope. Fly ash and aggregate decrease weight/ construction ratio. The concrete infrastructure is also the exposed finished

structural span efficiencies. Passive heating and cooling combined with natural gas in a super insulated skin provides healthy comfort. Exposed beam and columns are from reused sources and/or sustainable yield forests.

Lime-based paints, waxed wood

Waste: Materials:

Indoor Air Quality:



The orientation of the house maximizes the solar gain for passive heating and daylighting from the early morning throughout the day. The southern exposure is maximized as

an important element in the site selection/energy conservation criteria. The house dimensions are modulated so that material efficiency is maximized - reducing waste. The




surface - eliminating additional finishing materials and labor.

Integration:

Form and energy efficiency are integrated into this house by maximizing

finishes, passive heating, heat-reclamation, and bamboo flooring all add to the quality of architecture and healthy indoor environment.

Legend:

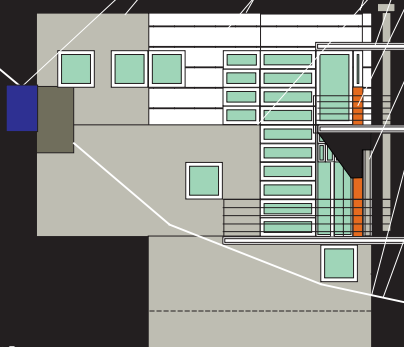
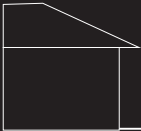
-  strength / rock / concrete
-  light / mood / heat / warmth
-  neighborhood face / wood / warmth

energy conservation & form

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design elements:

- o infill site
- o close to transit
- o walking community
- o minimize material envelope
- o passive heating
- o photovoltaics
- o living roof
- o light shelves
- o gas heating & cooking
- o greywater irrigation
- o small footprint
- o sustainable yield forest
- o long life materials
- o natural pigments
- o local materials
- o reuse of existing materials
- o modular
- o minimum waste
- o low maintenance



element integration

legend:

- s - stairs
- dk - deck
- e - entry
- st - studio
- b - bathroom
- g - garage

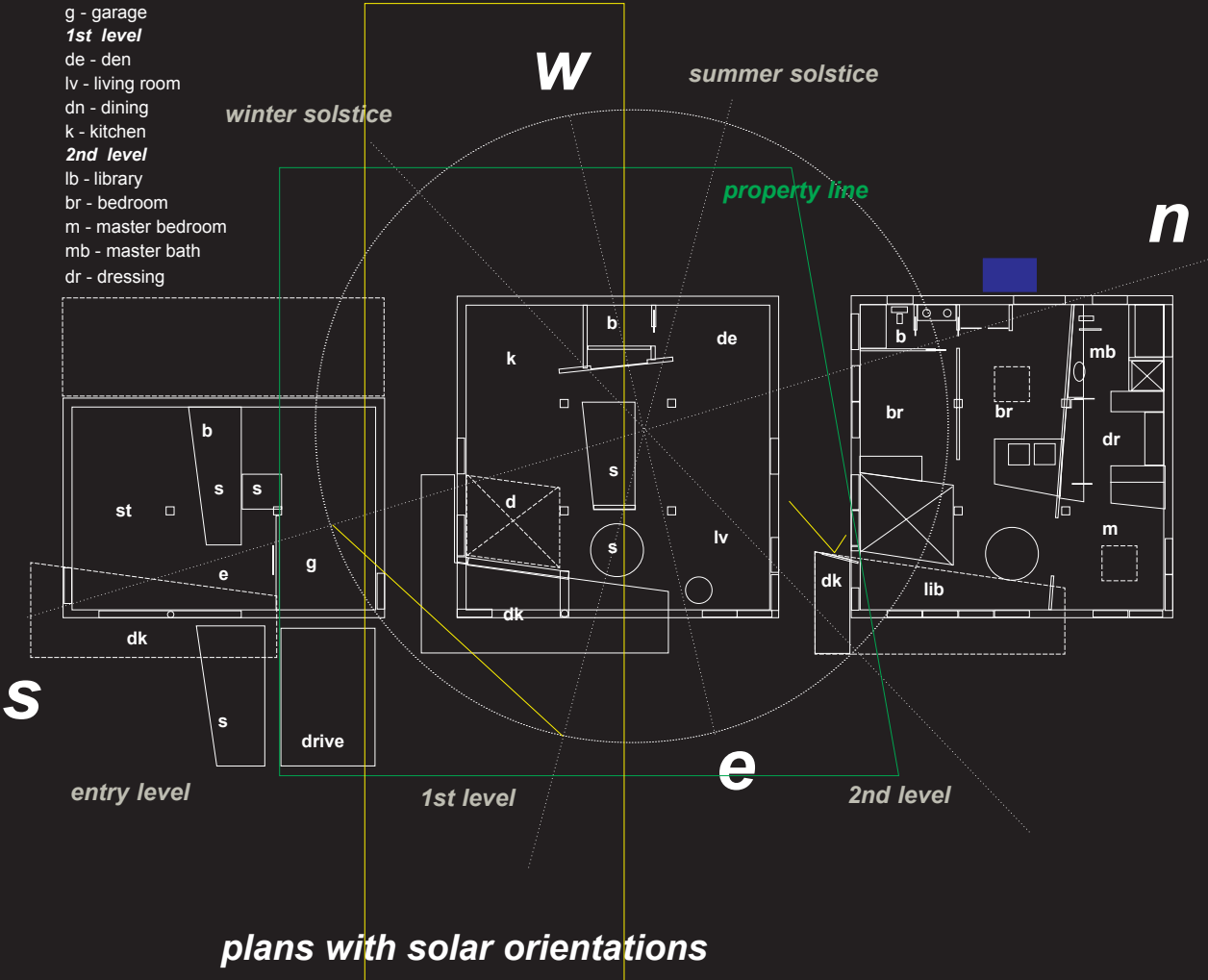
1st level

- de - den
- lv - living room
- dn - dining
- k - kitchen

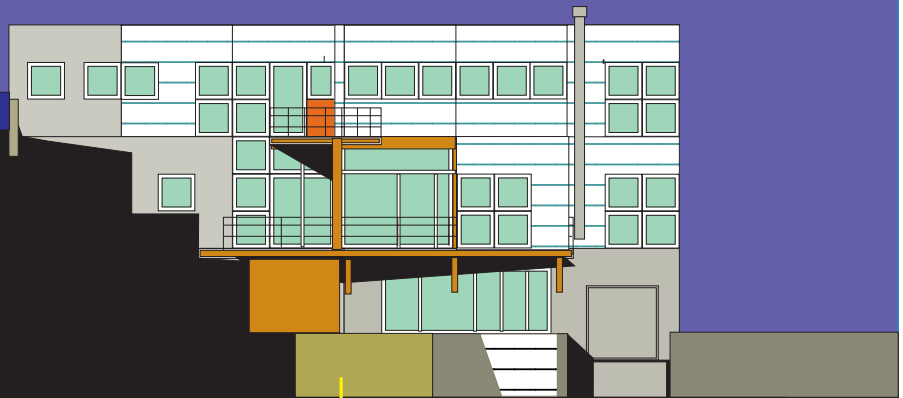
2nd level

- lb - library
- br - bedroom
- m - master bedroom
- mb - master bath
- dr - dressing

solar envelope



plans with solar orientations



south elevation

east elevation - front

project narrative

Sustainability starts with designing solutions that solve aesthetic, economic and environmental issues simultaneously.

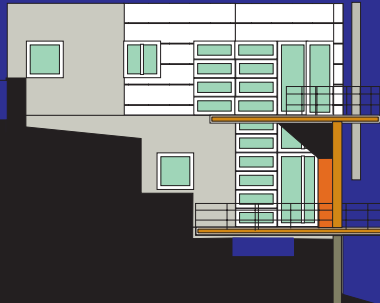
The setting is an infill site in a neighborhood that requires little driving. The cubic geometry creates a super efficient volume with minimum circulation space. This is an energy efficient envelope, least skin/volume ratio, and it incorporates renewable resources.

This design incorporates low water volume fixtures, low water use and indigenous landscape materials, including mosses on the living roof. The house will be passively heated, cooled and ventilated.

The architecture will be constructed from materials that last, some are found, and are from sustainable sources.



existing house
(randolph ave.)



existing house

section/elevation /
height and setback
bonus summaries /
schedule of drawings

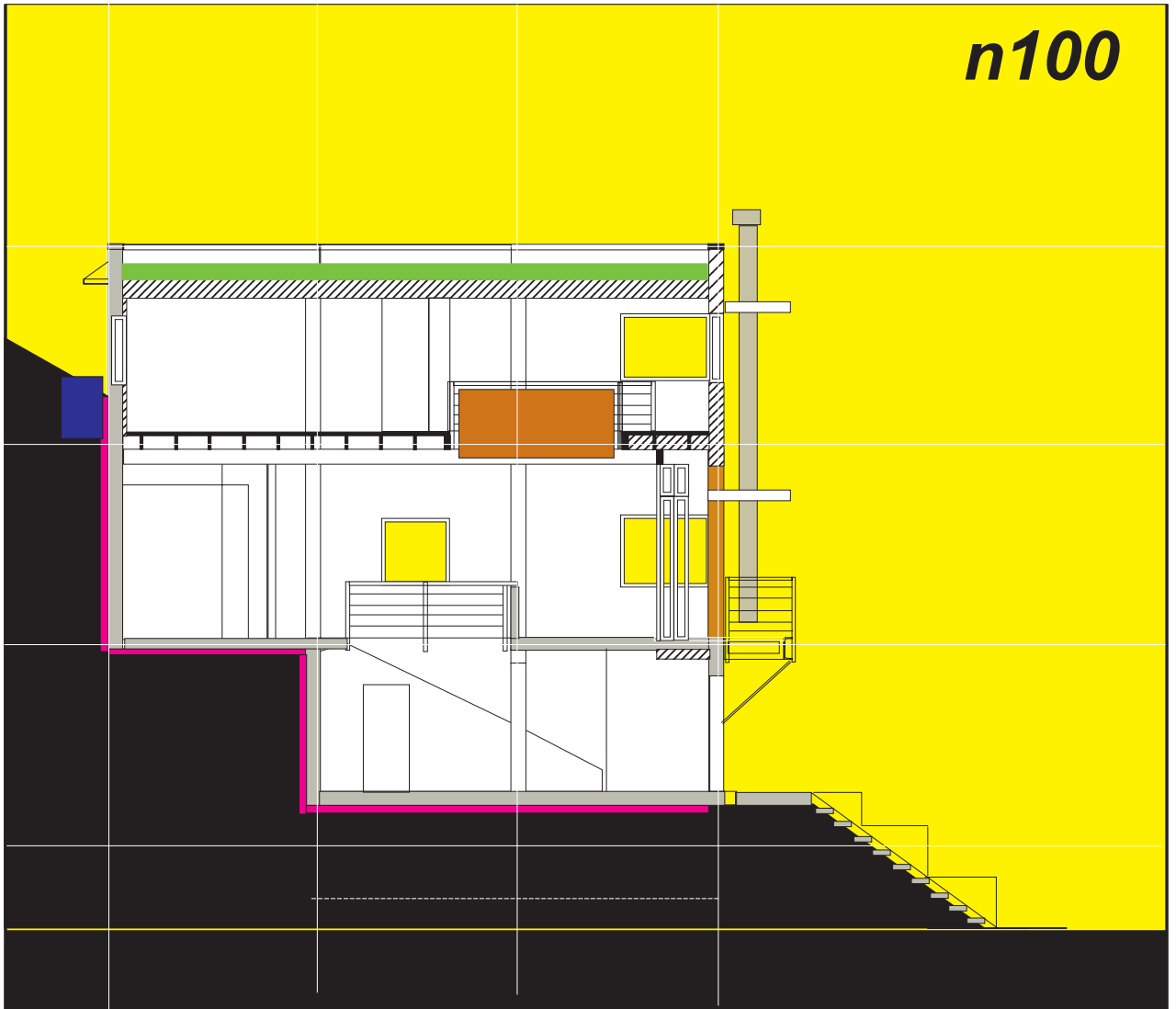
38th Avenue

existing road with curb, gutter and sidewalk

sectional narrative:

both holding and embracing the hill this house, which will be built by the owners, seeks to invite the pacific northwest climate -integrating the natural beauty of the site with the view over lake washington and on to the sunrise over the cascade mountains.

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12x modules 4x material - reduce waste

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daylight box

living roof -provides insulation, water conservation and good view for the neighbors

mass heat storage areas

roof water storage for irrigation and greywater useage

view east over lake washington and the cascade mountains

rising sun over the cascades

convert garage to bike storage and entry stairs

solar and daylight patterns

