

7. Egress + stairs

Building and the Environment

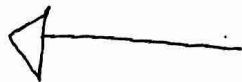
- Green building - practice of sustainable design and construction

The Material Life Cycle

Western Red Cedar Decking Life cycle

- Manufacture or processing

Lug storage
sorting
Debarking
Sawing
Seasoning
Planing
Packaging



Environmental Impacts

Fossil fuel
Nuclear energy
Renewable Energy
Biomass Energy
Fresh water
Ancillary Materials

- Installation

sawing
Nailing
Finishing
Disposal of cutoffs and waste



Non hazardous
waste materials
Hazardous waste materials
Global Warming
Acidification
Eutrophication
Smog
Ozone

Zoning Ordinances

- many factors may be include : transportation, ~~the~~ height of building, land use

Building Codes

- setting minimum standards for construction quality

Construction Trade and Professional Associations

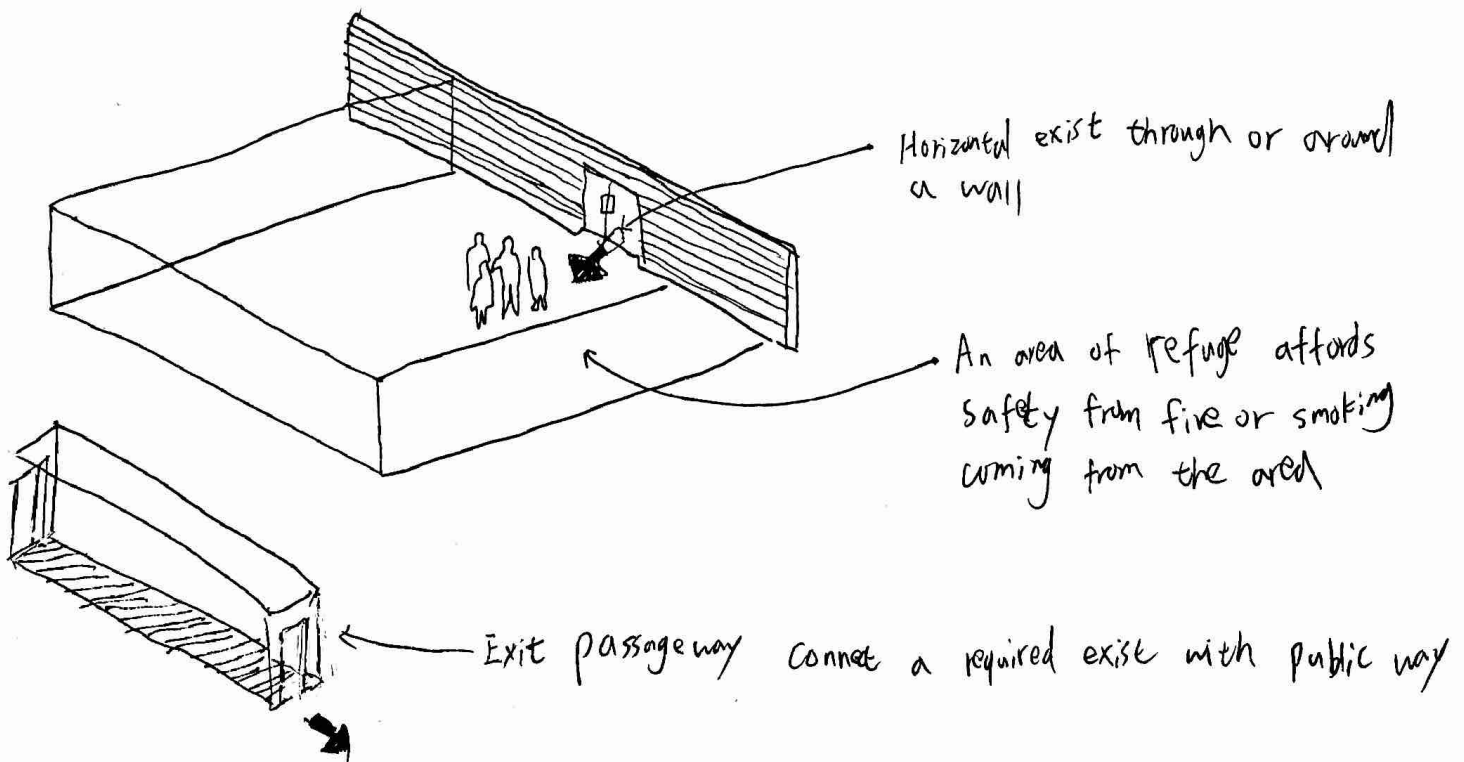
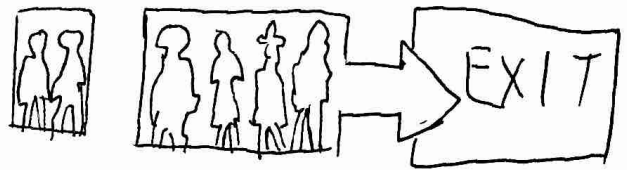
- Before construction work, building materials manufacturers and construction trade groups will form a large number of organizations to talk about program and their interest

Construction Project Delivery Methods

- hire a team of architects and engineers to describe the facility to be build
- estimate the cost to build

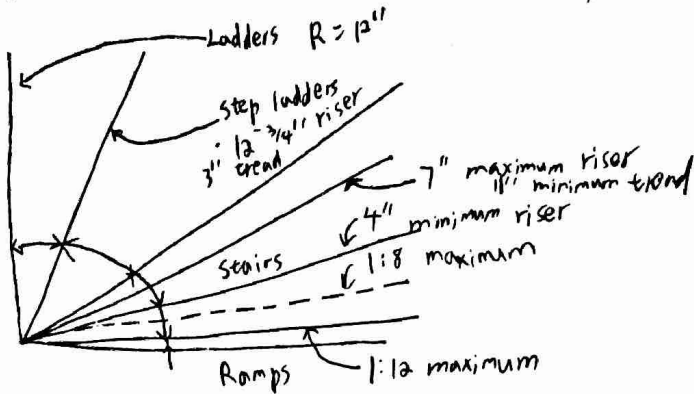
Meas of Egress

- fire-resistance rating of materials and construction
- fire alarm and protection system
- exist safely in case of fire
- control spread of fire
- Exist doors



Stair design

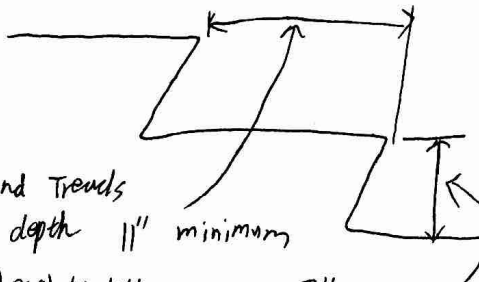
- Proportioned to accommodate people's body movement



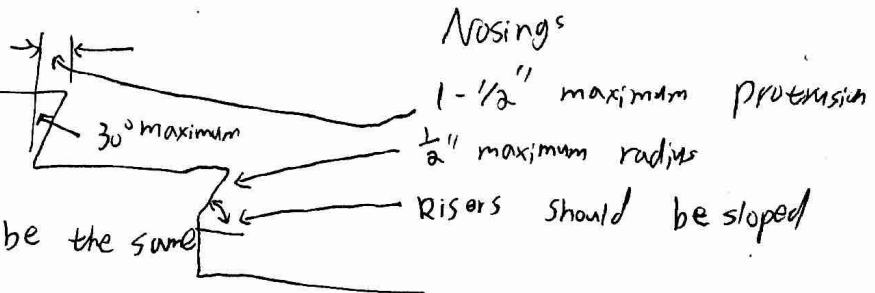
- dimension of riser and tread are dividing total rise or floor to floor height by the desired riser height

Stair Requirement

- emergency ~~egress~~ egress system
- stairway width
 - occupant load, how many people fit
- Landings
 - not longer than 48"
 - door swing ~~the~~ ^{the} direction of egress
- Handrails
 - on both sides of stair
- Guardrails
 - protect open or glazed sides of stairways, ramps
 - at least 42" high



- Riser and Treads
 - Tread depth 11" minimum
 - Riser height: 4" minimum; 7" maximum
- ~~all~~
 - Risers and tread dimensions should be the same
 - Open risers are not allow



- Nosings
 - 1-1/2" maximum protrusion
 - 1/2" maximum radius
 - Risers should be sloped

.1:12 maximum slope
 3" maximum rise between landing

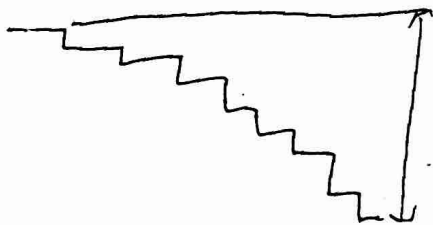
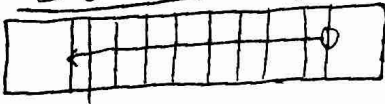


landings

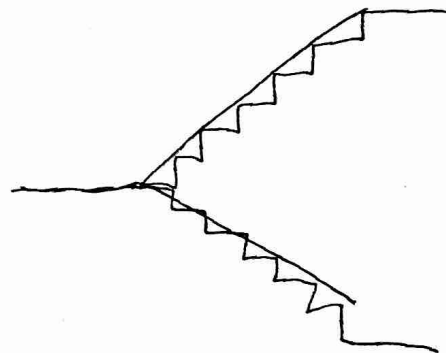
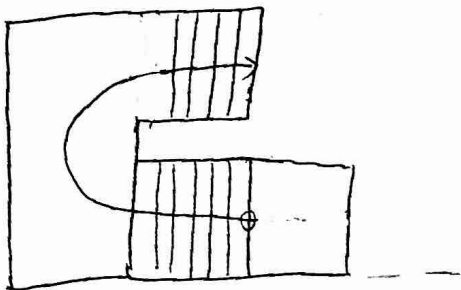
Ramps having level landings at each end with a 60" minimum length

- widest as widest
- 60" x 60" minimum landing when ramp change direction

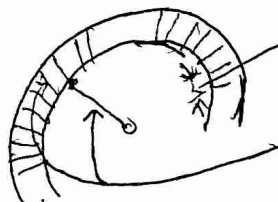
Stair Plans



Straight-Run stair extend from one level to another without turn

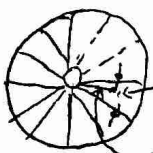


Circular stair
 - circular plan at least twice the actual width of stairway



10" minimum at the narrow end of the treads

inside radius at least twice the actual width of stair

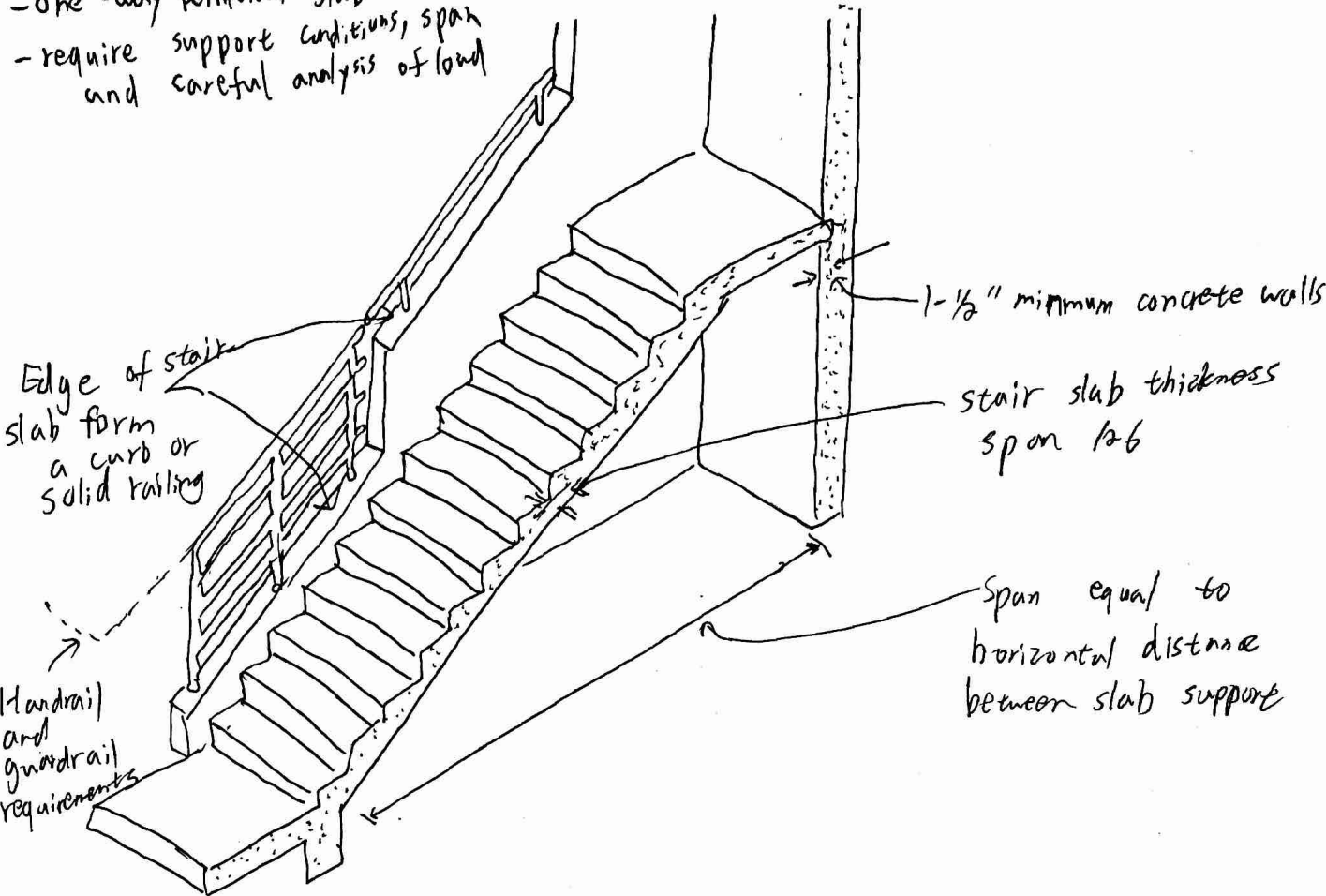


7-1/2" minimum tread dimension

1/2" in from the narrow end of the treads

Concrete Stairs

- one-way reinforced slab
- require support conditions, span and careful analysis of load



Steel Stairs

stair treads span at the distance between stringers

