

HOW TO BUILD ON A SLOPE PLOT

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Advantages

- ❑ View
- ❑ Natural light
- ❑ Landscaping
- ❑ Natural drainage of water
- ❑ Opportunity for unusual design

Disadvantages

- ❑ Increasing costs
- ❑ Large scale earthworks
- ❑ Risk of erosions increases
- ❑ Drainage and sewer system more expensive
- ❑ Accessibility
- ❑ Geotechnical risks

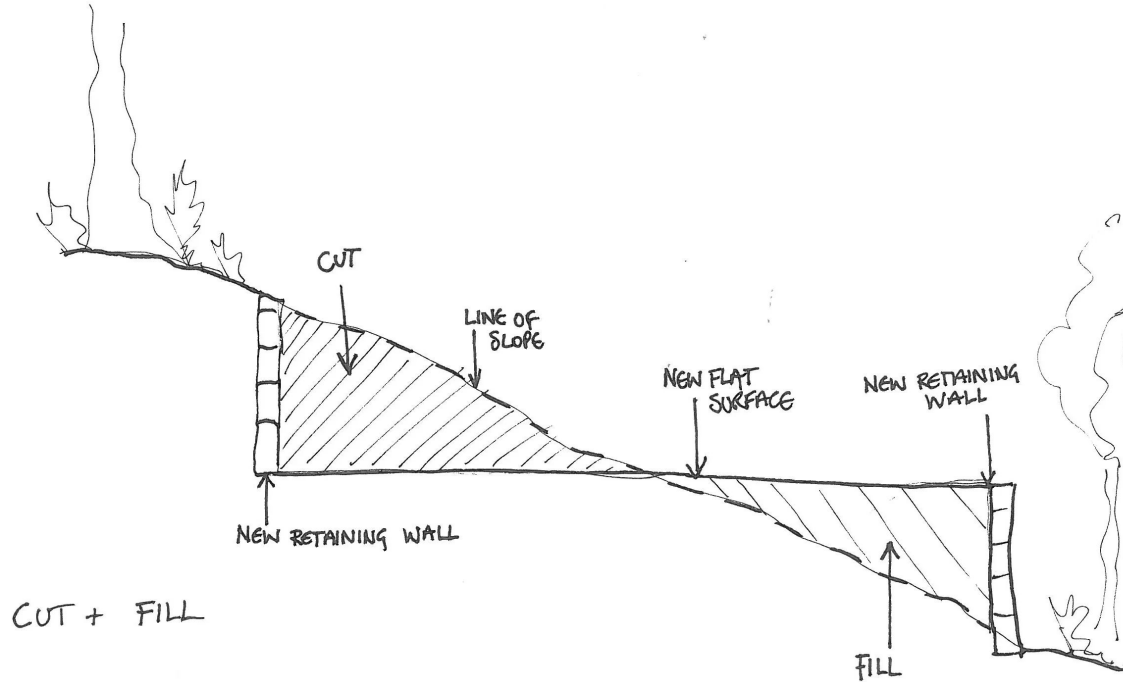
Factors to consider

- ❑ Morphology of the terrain
- ❑ Orientation towards the cardinal points
- ❑ presence of prevailing winds
- ❑ Existing views
- ❑ Existing vegetation
- ❑ Size of the plot
- ❑ Urban or rural location
- ❑ Type of soil
- ❑ e.t.c.

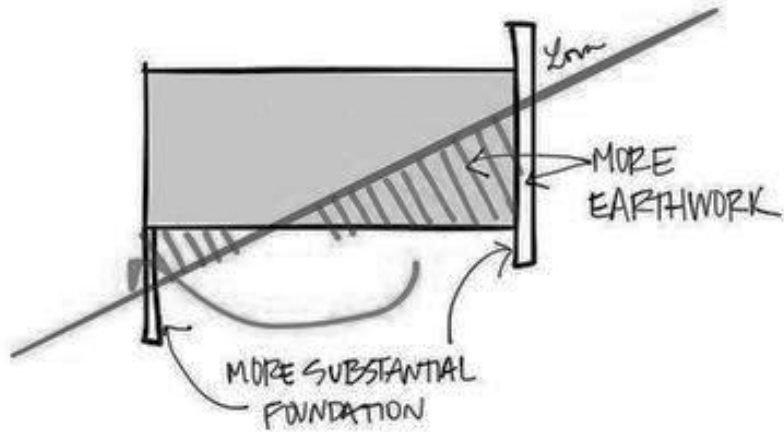
Functions

- ❑ Living rooms on the upper levels
- ❑ Garage and Storages on the lower levels
- ❑ Outdoors spaces (terrace, balcony, roof top...) on the building's upper parts

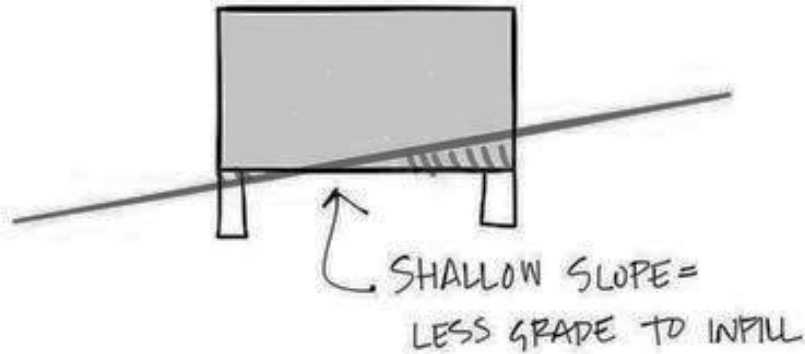
Cut and Fill Solution



- ❑ Reusing the on site earth
- ❑ Creation of space under slope
- ❑ Retaining wall implementation
- ❑ Earthworks needed



- ❑ The lower we build, the higher the cost

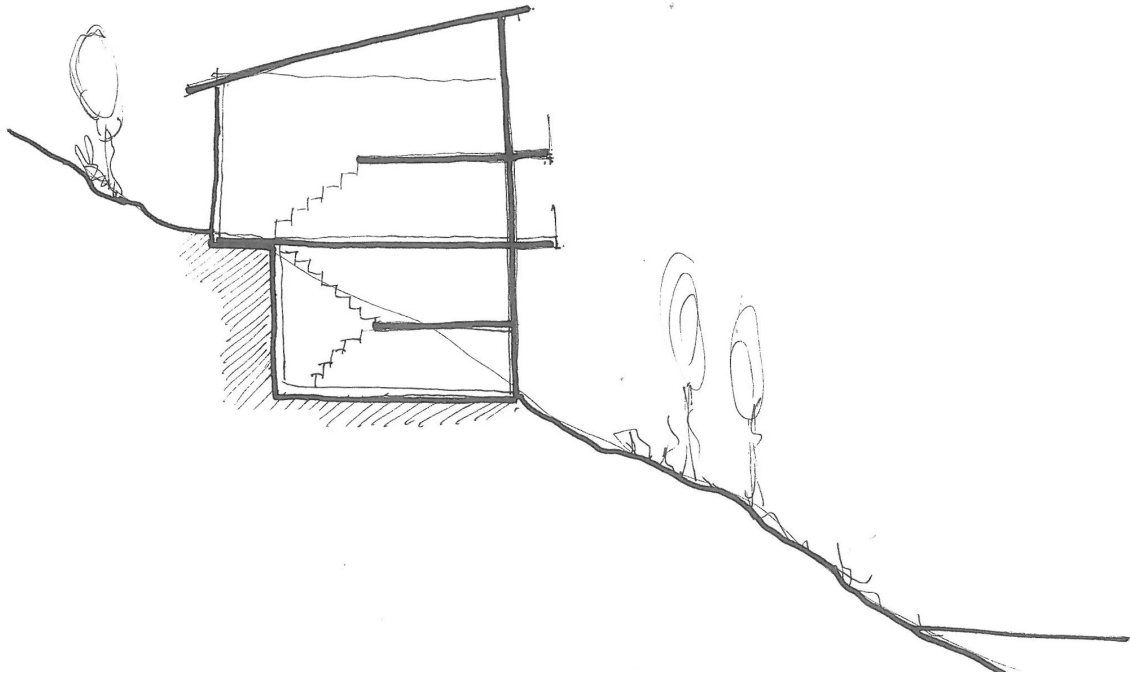


- ❑ The steeper the slope, the higher the cost

Examples

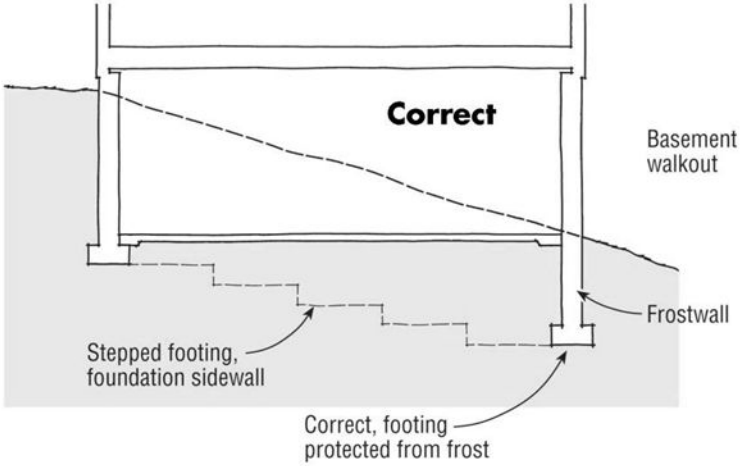
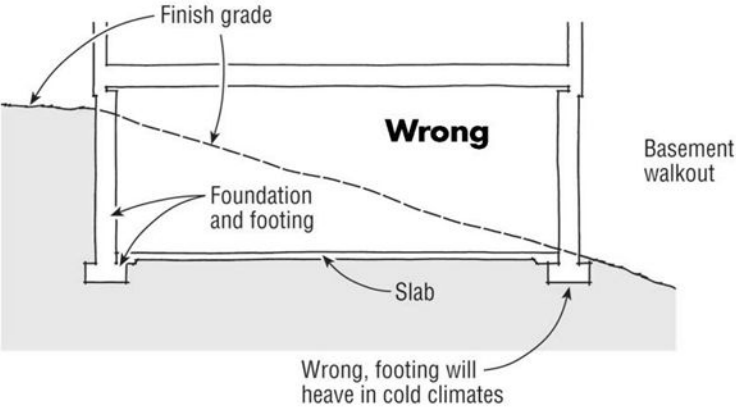


Retaining Walls Solution

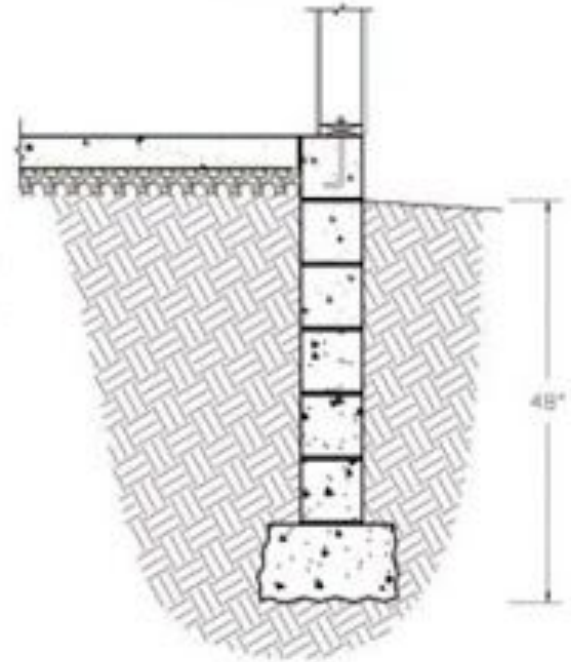
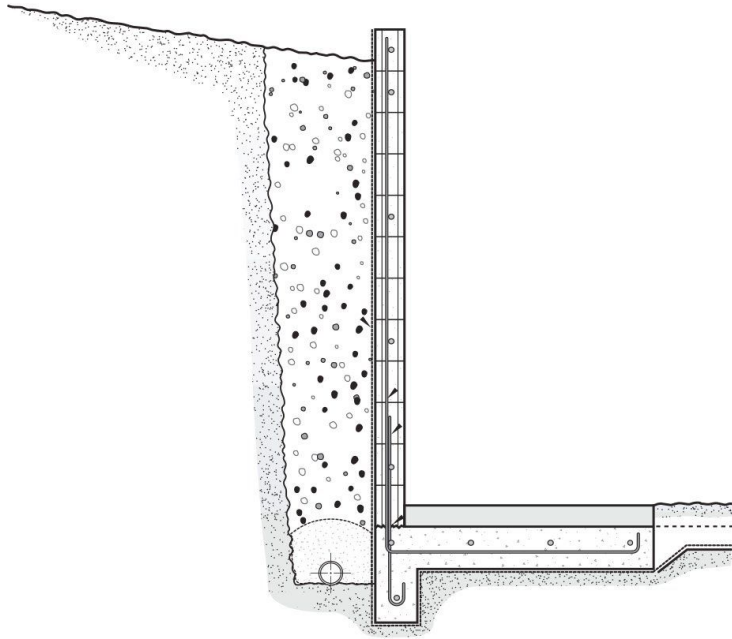


- ❑ Removing a large amount of soil
- ❑ Creation of space under slope
- ❑ Retaining wall implementation
- ❑ Very costly solution (earthworks needed)
- ❑ Material consuming

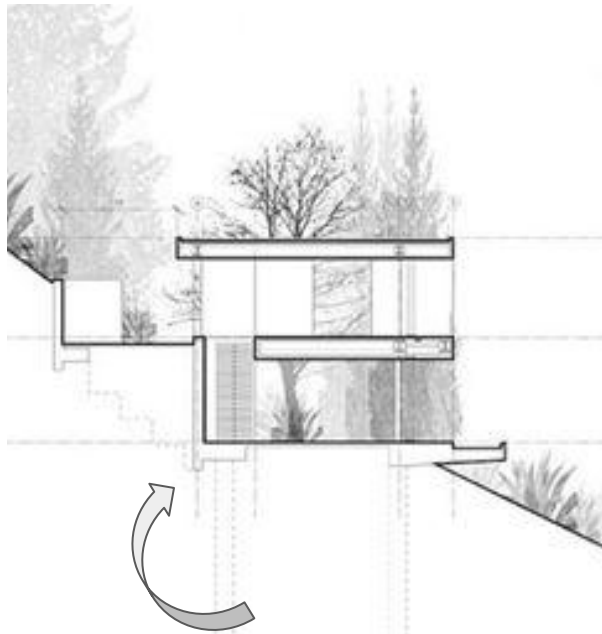
Basements Implementation



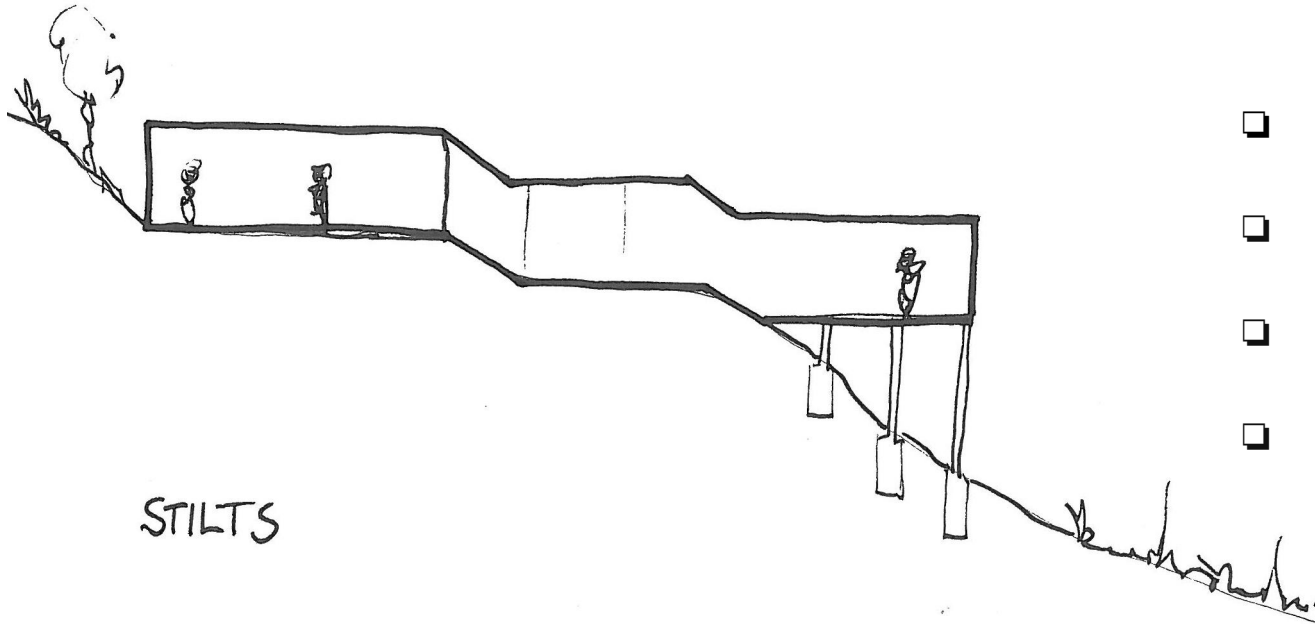
Retaining Walls and Footing



Example

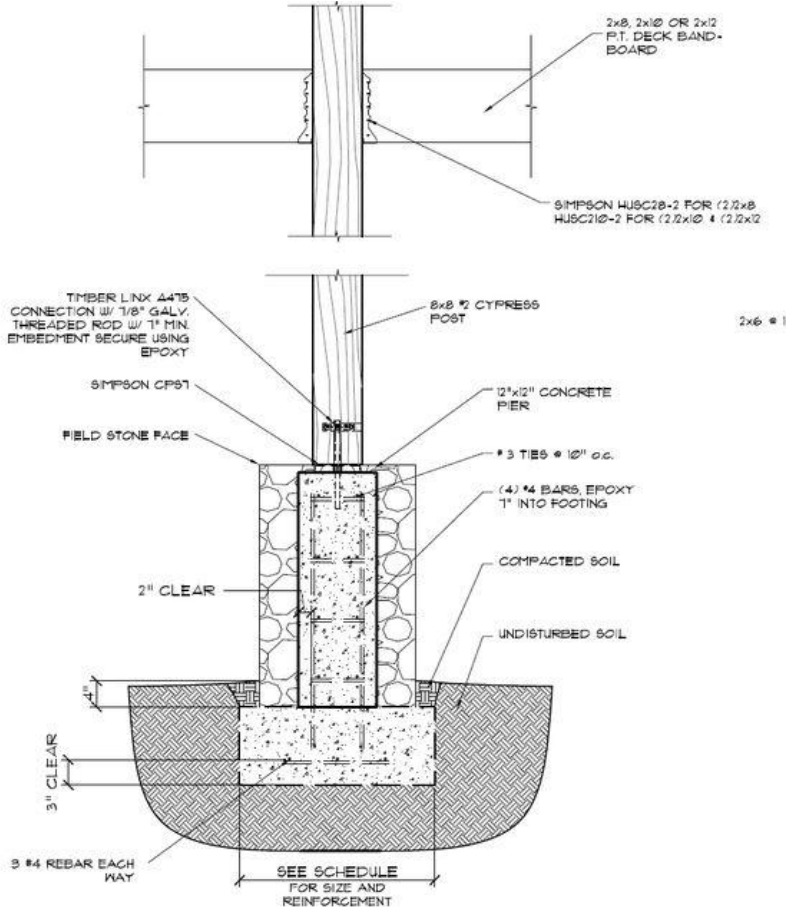


Building on Stilts Solution



- ❑ Building on a series of supporting stilts or columns
- ❑ no need to build extensive foundations
- ❑ minimal impact on the natural terrain
- ❑ allowing planting to take over more of the site
- ❑ can be applied to terrains with very steep slopes

Stilts & Foundation

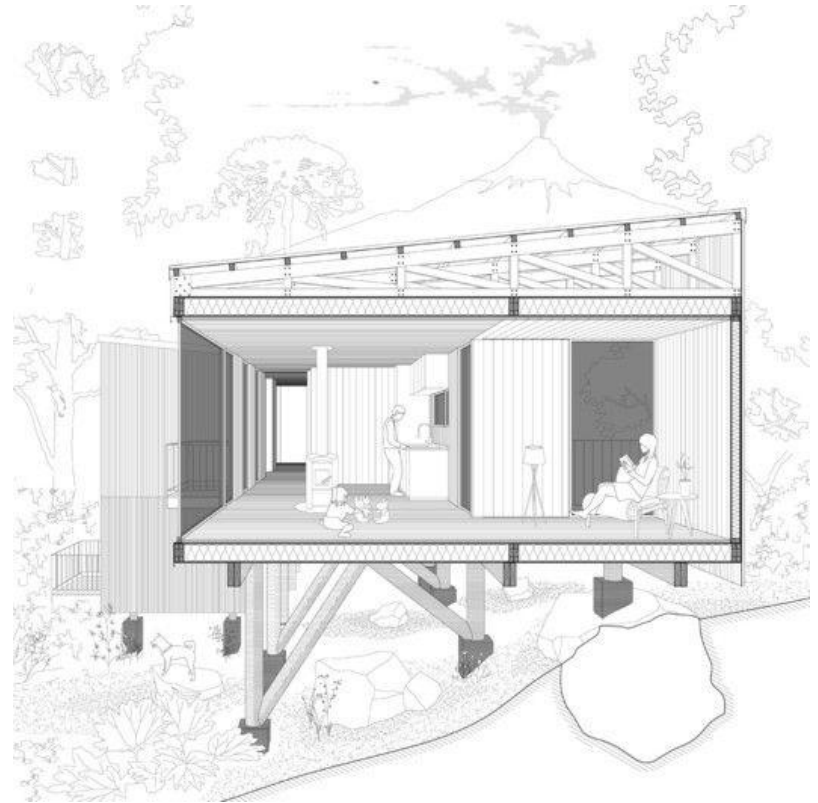
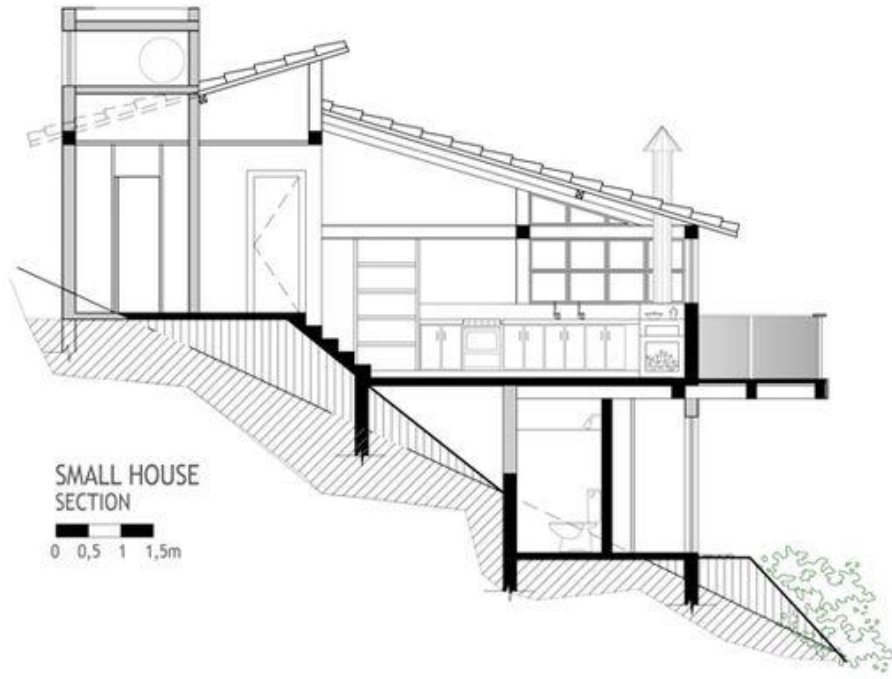


A **EXTERIOR PIER BEARING**
SCALE: 3/4" = 1'-0"



Things
can get
interesting...

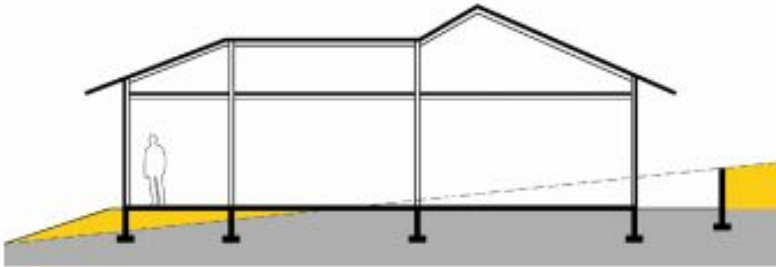
Examples



Examples

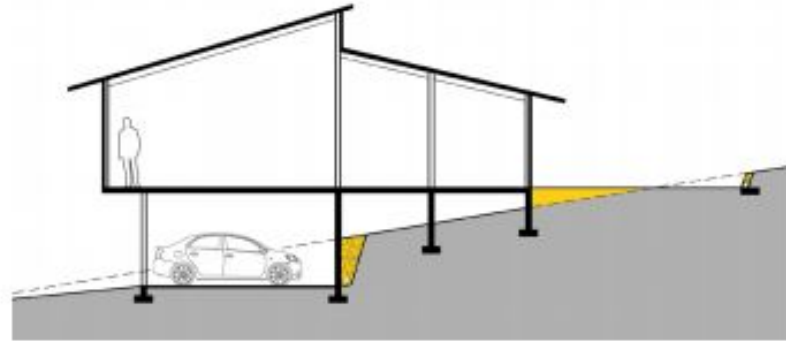


Matching building design to suit the degree of slope



Flat to slightly sloping sites

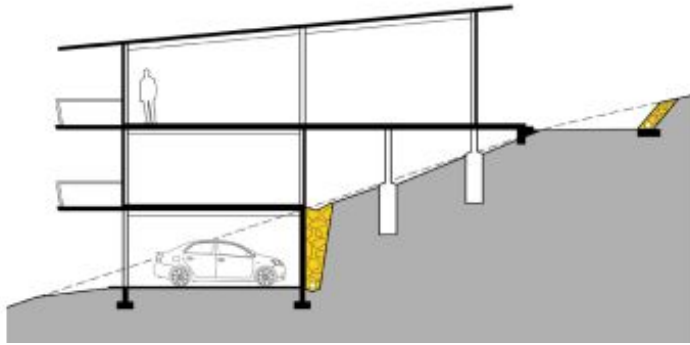
Single slab on ground construction is only suitable for a site slope up to seven per cent. Slopes between seven and 10 per cent, should accommodate some level change within the building footprint.



Moderate slope

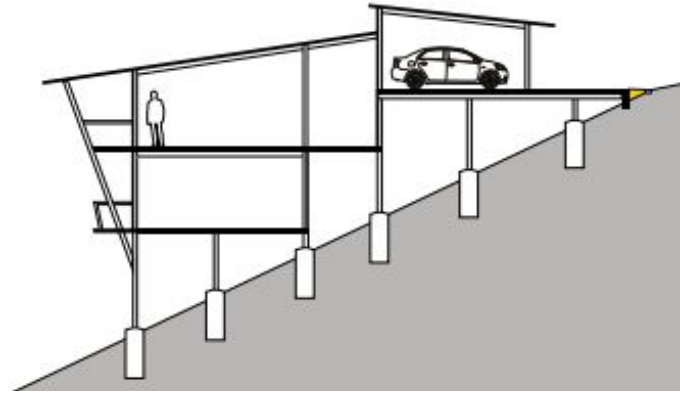
For slopes between seven and 20 per cent, stepping two or more slabs or using part slab/part post or beam construction would be suitable to handle the slope. Single slab on ground construction is not recommended.

Matching building design to suit the degree of slope



Steep slope

For slopes between 20 and 33 per cent, post and beam construction should be used which steps with the site. This may include a lower part level with a concrete slab. Single slab on ground construction should not be used.



Extreme slope

For slopes more than 33 per cent, suspended or pole construction techniques are required. This degree of slope is more suited to a downslope configuration. Driveway access is generally too difficult on steep upslope lots which require large batters/retaining walls and sometimes a curving driveway

Conclusion

BIBLIOGRAPHY

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