Understanding Construction

Home: Today and Tomorrow 6th Edition

Planning the Housing Site

Specific parcel of land or lot

Size

Shape

Contour

Soil type

May affect type of architecture used

Cannot build a large 1 story house on small lot, but could build a 2 story home

Planning the Housing Site

Must consider zoning laws

Determine the type of building that can be built

May have setback distances

Zoning types:

Restricted residential: *only single-family homes*

General residential: *multifamily units and some businesses*

Commercial: *stores and offices*

Industrial: *factories and warehouses*

Greenbelt : *park and farmlands, no buildings, conservation areas*

Site Characteristics

Topography:

Contour, or slope, of land

Other physical features

Affects construction

Drainage of soil

Soil with poor drainage tends to have swampy yards, wet basements, sewage problems, poor plant growth

In cold climates water gets trapped, freezes and expands, causing sidewalks, driveways and foundations to crack and bulge

Flat vs. sloping

Visit site while raining to check for drainage

What influences Design

Read page 254

Think it Through:

What environmental features affect the designs of homes or any of their systems in your area?

Historically, how were home designs in your area adapted to the land?

Planning the orientation

Orientation:

Position on lot

Direction home faces

Amount of sunshine

Wind direction

Shade

Planning the orientation
Sunlight:
Provides natural warmth and light
Prevents dampness, mildew, and rot
South and west sides receive more sun
Large windows let more light in
Rood over-hangs or awnings prevent direct sunlight yet let in warmth and light
Planning the orientation
Air flow:
Cross ventilation
Air flow created when air goes in one side of the home and out the other
Window placement important
Helps keep home cool in warm weather
In colder climates avoid north facing windows
Hilltops have stronger winds, good in hot weather but not so good in cold weather
Windbreaks protect house from strong wind
Row of trees or shrubs, walls, fences or other buildings
Planning the orientation
The View:
Homes should be placed to take advantage of the best view so owners can enjoy the surroundings
Large windows
Porches and patios
Hide or camouflage undesirable views
Walls or fences
Line of trees
Floor Plans
Diagram of a building
Activity Zones:
Private zones:
Quiet, comfortable areas for sleeping and relaxing
Privacy for bathing and dressing
Examples: bedrooms and bathrooms
Service zones:
Where household work is done
Examples: kitchen, laundry room, garage
Floor Plans
Activity Zones:
Social zones:
Used for social/family activities and entertainment
Examples: living room, dining room, den, family room, recreation room, entrance hall, patios, decks and yards
Open Plan:
Few dividing wall to separate rooms

Closed Plan:
Rooms are separate and self-contained
Floor Plans
Traffic Patterns:
Paths people take as they walk from one room to another during everyday activities
Question:
How could you create the 3 separate zones in an efficiency (one-room) apartment?
Floor Plans
Activity:
Look at 3 different floor plans and rate the following on a scale of 1 (good) to 5 (not-so-good), giving a reason for each rating:
Traffic patterns
Activity zones: private, service and social areas
Critical Thinking:
Of the 3 floor plans, which would be best for an elderly person who is losing sight and why?
Universal Design
Universal design

What Is Universal Design?
The process of imbedding **choice** for all **people** in the **things** we design.

choice involves flexibility, and multiple alternative means of use and/or interface
people includes the full range of people regardless of age, ability, sex, economic status, etc.
things include spaces, products, information systems and any other things that humans manipulate or create
Ron Mace, one of the original universal design movement leaders, defined universal design as: "Universal Design is the design of products and environments to be useable by all people, to the greatest extent possible, without the need for adaptation or specialized design."
Universal Design
PROBLEM: How do you create a roll-in shower facility in a space that doesn't accommodate a prefabricated unit or when a custom-designed look is desired?
TIP: Slope the floor towards the shower drain and install thinset floor tile over a liquid-applied waterproof membrane. This creates a 'wet area' bathroom so that the entire waterproofed floor of the bathroom acts as a shower pan.
Universal Design
A person seated at a kitchen sink often has trouble trying to reach objects on the counter or shelves on either side, without having to reposition themselves.
TIP: In the book Building for a Lifetime, author Margaret Wylde suggests that the sink be positioned at 45 degrees in a corner of the counter, with clear floor space below. This design puts the sink and counter within reach range of a seated person and utilizes the corner space.
Universal Design
PROBLEM: How can transfer showers be made safer and easier to use by bathers and care givers?
TIP: At the 2008 American Institute of Architects National Convention and Expo, Gregory J. Scott, AIA presented a seminar titled "Dentures, Denim & Design: Architects Designing for

Seniors." He showed a simple but effective shower plan for resident units at continuing care retirement communities (CCRC). A trapezoidal shower plan is wider at the front thereby providing more room for assistants. The layout is based on a concept from Dr. Lorraine G. Hiatt.

Universal Design

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Floor Plans

One-level:

May be an apartment, manufactured home, or ranch-style house

All living areas are on main floor

Universal design (no stairs)

Take more land, a larger foundation and more roof

Floor Plans

Two-level:

2 floors of living space

May be single-family or multifamily units

Traditionally social and service zones on 1st floor and private zones in 2nd (allows for more privacy)

Must have stairs

Floor plans

Split-level:

3 or more levels of living space separated by short flights of stairs

Uses space efficiently

Typically entrance, living room, dining room and kitchen on main level; bedrooms and bathroom a short flight up; garage, laundry, and possibly a family room or another bedroom short flight down

Floor plans

Split-entry:

Split-foyer, entrance on main level with stairs going up and stairs going down

2 levels of living space, with lower level partially below ground

Upper level usually has the living room, kitchen, dining room, bathroom and bedrooms; lower level has laundry, garage, a family room and possibly another bedroom or bathroom

Types of Homes

Multifamily units:

High-rise apartments:

Often in cities, multistory building with elevators

May have amenities, such as covered parking, laundry, recreational facilities and concierge service

Low-rise apartments:

Few floors and no elevators, more personal setting

May have amenities, such as parking, laundry, recreational facilities

Garden apartment:

Includes landscape grounds

May be several apartments around a patio area (commons)

Types of Homes

Efficiency apartment:

One main room (bedroom, living room and dining area), small kitchen area and a bathroom

Also called a studio

Usually least expensive

Town house:

Several houses attached together at side walls

Usually have identical floor plans and are 2 stories

Each unit has a separate entrance and may have a private patio

More private than other apartments

Types of Homes

Duplexes

One building with 2 separate unites

Side-by-side with several floors, or one unit per floor

Separate entrances and yard space for each unit

Close to a single-family home

Other multifamily units:

Triplex or fourplex: 3 or 4 housing units attached

Not always in a straight line, but connected in a unique design which allows for more privacy

Types of Homes

Single-family housing:

A separate dwelling designed to be used by one household

Come in all different shapes and sizes and ages

Main advantage is privacy and yard space

Not always most efficient use of space

Architectual drawings

symbols

Architectual Drawings