



JECRC Foundation



**JAIPUR ENGINEERING COLLEGE
AND RESEARCH CENTRE**

JAIPUR ENGINEERING COLLEGE AND RESEARCH CENTER

Class – 2nd Year - IV Semester: B.Tech. (Civil Engineering)

Subject – Building Planning

Chapter – Introduction - UNIT- 1

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VISSION AND MISSION OF INSTITUE

Vision

To become a renowned centre of outcome based learning, and work towards academic, professional, cultural and social enrichment of the lives of individuals and communities.

Mission

M1. Focus on evaluation of learning outcomes and motivate students to inculcate research aptitude by project based learning.

M2. Identify, based on informed perception of Indian, regional and global needs, areas of focus and provide platform to gain knowledge and solutions.

M3. Offer opportunities for interaction between academia and industry.

M4. Develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.

VISSION AND MISSION OF DEPARTMENT

Vision

To become a role model in the field of Civil Engineering for the sustainable development of the society.

Mission

M1.To provide outcome base education.

M2.To create a learning environment conducive for achieving academic excellence.

M3.To prepare civil engineers for the society with high ethical values.

COURSE OUTCOME

CO-1 STUDENTS WILL BE ABLE TO UNDERSTAND TYPES OF BUILDING & APPROPRIATE SELECTION OF SITE WITH SUN CONSIDERATION.

CO-2 STUDENTS WILL BE ABLE TO UNDERSTAND ABOUT BYE-LAW AND NBC REGULATION ALONG WITH ORIENTATION, CLIMATE&COMFORT CONSIDERATION.

CO-3 STUDENTS WILL BE ABLE TO UNDERSTAND BUILDING PLANNING. STUDENTS WILL ABLE TO USE PRINCIPALS OF OF VASTU SHASTRA

CO-4 STUDENTS WILL BE ABLE TO UNDERSTAND FUNCTIONAL DESIGN AND ACCOMMODATION REQUIREMENTS OF RESIDENTIAL BUILDING AND NON-RESIDENTIAL BUILDING WITH PROVIDING DIFFERENT SERVICES

CO-PO MAPPING

Subject Code	COs	Program Outcomes (POs)											
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
4CE4-07	CO-1	3	1	3	3	2	3	3	2	1	1	3	2
	CO-2	3		3	2	2	2	3	2	1	1	2	2
	CO-3	3	1	2	1	1	2	3	2	2	1	3	1
	CO-4	3	2	2	2	2	2	3	1	2	1	2	2

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1. Scope
2. Objective and outcome of subject
3. Types of buildings
4. Criteria for location and site selection, site plan and its detail.

Scope:-

Scope of Building Planning

Scope is 'The totality of outputs, outcomes and benefits and the work required to produce them' and 'scope management' as 'The process whereby outputs, outcomes and benefits are identified, defined and controlled.'

In building planning the term '**scope of work**' is a very general, referring to a general description of the work that is expected to be performed under a particular contract. It may be prepared by the client or their consultants and included in tender documentation for construction works. A **scope of work** can be a useful way of agreeing broad building requirements for both the client and supplier.

We can plan well and build safe, healthy buildings for people using them now and any future users. Building work is any work done in relation to the construction or alteration of a building. This includes any work on your home, premises or other structure, We need to understand the building process so that:

the end result is safe, healthy and durable

We can protect our rights

We can meet our legal obligation

We should get familiar with the process before we start, so that we can plan well and build safe, healthy buildings for people using them now and any future users as well as complying with the Building Act and the Building Codes:

Most building work will require a building consent to show how it meets the requirements of specific Building Code clauses

We need to find out about the land and any need for resource consent or approvals related to the district plan.

Objective and outcome of subject:-

Objectives of Building Planning

There are following objectives of Building Planning

Building should be economical. The building should have lowest operating and maintenance cost, longest life span, and the best rate of investment.

The building should be functional. The building should meets the needs of the people who use it and the technical requirements of the programs it is used for, then we say the design is functionally successful.

The building should perform well. That is building should integrate and optimize all majors high performance building attributes, including energy efficiency, durability, life cycle performance, and occupant productivity.

Objective and outcome of subject:-

Outcome of the Building Planning Subject

A building is a man-made structure with a roof and walls standing more or less permanently in one place. Buildings come in a variety of shapes, sizes and functions, and have been adapted throughout history for a wide number of factors, from building materials available, to weather conditions, to land prices, ground conditions, specific uses and aesthetic reasons. The practice of designing, constructing, and operating buildings is most usually a collective effort of different groups of professionals and trades. Depending on the size, complexity, and purpose of a particular building project. A building planning process may include a series of steps followed by designers. Depending on the product or service, some of these stages may be irrelevant, ignored in real-world situations in order to save time, reduce cost, or because they may be redundant in the situation. Typical stages of the building planning process include

Pre-production design

Design brief - a statement of design goals

Analysis - analysis of current design goals

Research - investigating similar design solutions in the field or related topics

Specification - specifying requirements of a design solution

Problem solving - conceptualizing and documenting design solutions

Presentation - presenting design solutions

Design during production

Development - continuation and improvement of a designed solution

Testing - in-situ testing a designed solution

Post-production design feedback for future designs

Implementation - introducing the designed solution into the environment

Evaluation and conclusion - summary of process and results, including constructive criticism and suggestions for future improvements

Redesign - any or all stages in the design process repeated (with corrections made) at any time before, during, or after production.

Types of buildings:-

A building can be defined as a structure consisting of foundation, walls, floors and roofs, erected to provide covered space for different uses such as residence, education business, manufacturing, storage, hospitalization, entertainment, worship etc with all the services like W.C. bath, stair etc. is called a **building**.

Tents, shamianas, tarapaulin shelters and slums, without foundations, walls and rigid roofs erected for temporary and ceremonial occasions shall not be considered as buildings, even when they are used for longer periods.

All buildings shall be classified depending upon the character of occupancy or the type of use as:

- | | |
|-------------------------------|----------------------------|
| (i) Residential buildings | (ii) Educational buildings |
| (iii) Institutional buildings | (iv) Assembly buildings |
| (v) Business buildings | (vi) Mercantile buildings |
| (vii) Industrial buildings | (viii) Storage buildings |
| (ix) Hazardous buildings | |

(i) Residential Buildings : These buildings include any building in which sleeping accommodation is provided for normal residential purposes with or without cooking and dining facilities. It includes single or multi-family dwellings, apartment houses (flats), lodgings or rooming houses, restaurants, hostels, dormitories and resident hotels.

(ii) Educational Buildings : These include any building used for school, college or day care purposes involving assembly for instruction, education or recreation.

(iii) Institutional Buildings : These buildings are used for different purposes, such as medical or other treatment or care of persons suffering from physical or mental illness, disease, care of infants, convalescents or aged persons and for penal or correctional detention in which the liberty of the inmates is restricted. Institutional buildings provide sleeping accommodation for the occupants. These buildings include hospitals, sanatoria, custodial institutions, or penal institutions like jails, prisons and mental asylums.

(iv) Assembly buildings : These are the buildings where groups of people meet or gather for amusement, recreation, social, religious, political, civil travel and similar purposes. These buildings include theatre, assembly halls, city halls, marriage halls, town halls, auditoriums, exhibition halls, museums, gymnasiums, places of worship, dance halls, club rooms, passenger stations, terminals of air, other public transport services, recreation places etc.

(v) Business Buildings : These buildings are used for transaction of business, for keeping of accounts, and records and for similar purposes. The function of these buildings is transaction of public business and keeping of books and records. These buildings include offices, banks, professional establishments, court houses, and libraries.

(vi) Mercantile Buildings : These buildings include any buildings or part of a building which is used as shops, stores, market for display and sale of merchandise either whole sale or retail.

(vii) Industrial Buildings : These are the buildings in which products or materials of all kinds and properties are fabricated, assembled and processed. For examples refineries, gas plants, mills, dairies, Industries etc.

(viii) Storage Buildings : The buildings are used for storage or sheltering of goods, wares or merchandise, like ware houses, cold storages, freight depot, transit sheds, garages, hangers, grain elevators, stables etc.

(ix) Hazardous Buildings : These buildings are used for storage, handling, manufacture or processing of highly combustible explosive materials or products which are liable to burn with extreme rapidity and or which may produce poisonous fumes or explosions, for storage, handling manufacturing or processing which involve highly corrosive, toxic or noxious alkalies, acid or other liquids or chemicals producing flame, fumes and explosive etc.

Criteria for location and site selection, site plan and its detail:-

The very first important aspects to be considered for construction of residential building is "selection of good site". Factors like cost of building, functional utility depends on the site in which building is proposed to be constructed.

Sites which contains soils of low bearing capacity like loose and fine dry sand, silt, moist soft clayey soils, black cotton soils, etc. influence the cost of building since they require costly foundations. Similar is the case of sites lower than surroundings. To overcome problems like inundation, unbalanced sewer connections etc size able expenditure has to be made for filling up and lifting the level of site at par with surroundings.

Selection of site should be made carefully. If selection of site is not made properly it may result in enhanced construction expenditure, unhealthy and uncomfortable living conditions. Following points should be considered while making selecting of site.

- (i) The soil of site should have good bearing capacity. Hard strata should be available at reasonable depth, say within 1.20m to 1.50m depth from ground level.

- (ii) The site should be on elevated ground. It should have slope towards front street to afford facility of good drainage. Stagnation of water may occur in low lying sites in rainy season which will lead to dampness in building components and unhealthy living conditions.
- (iii) Sites of made up or reclaimed soils should be avoided as they absorb water, become water logged and emanate foul smell which is detrimental to human health. Insects like flies and mosquitoes breed fast in reclaimed soils. These soils are likely to settle and their bearing capacity is difficult to assess.
- (iv) Sites nearer to ponds, pools of water, water logged areas must be avoided as they remain in damp condition and promote unhealthy living conditions. The excessive water content in soil damages foundations as well as walls.
- (v) Sites near road with high traffic, heavy industrial areas should be avoided as these areas are highly prone for air pollution and noise pollution which will create hazardous health problems.
- (vi) Sites near to high voltage power transmission lines should be avoided.
- (vii) Sites near to big shopping complexes, markets, transportation, complexes like railway stations bus stand, air ports should be avoided.
- (viii) The surrounding of site should be pleasing and calm.
- (ix) The area of site should be such that it accommodates comfortable open spaces around. Congested sites should be avoided. Sites of irregular shape should be avoided. Square and rectangular plats should be preferred for prosperity and health.
- (x) The orientation of site should be such that it receives natural light and air in plenty.
- (xi) Location of site should be such that common facilities like shopping, transportation, schools, medical facilities etc are within reasonable approach.
- (xii) Sites in developed colonies should be preferred. The layout of colony should be approved by local authorities. This will help in getting essential facilities like water, drainage, electricity, telephone connections etc easily.
- (xiii) Sites exposed to huge rocks are not favourable as they get heated up during day and radiate heat during night. Trees do not flourish in these sites. Drilling of bore well and excavation is costly.
- (xiv) Ground water table should be at reasonable depth. It should be at least 1.00m below level of bottom of foundations.

Criteria for location and site selection, site plan and its detail:-

1.5 Site Plan Details

A site plan is a top view, bird's eye view of a property that is drawn to scale. A site plan can show.

- Property lines
- Surrounding streets
- Easements
- Outline of existing and proposed buildings and structures.
- Distance between buildings
- Distance between buildings and property lines (setbacks)
- Parkings lots, indicating parkign spaces
- Driveways
- Landscaped areas
- Ground sign location

Site planning in landscape architecture and architecture refers to the organizational stage of the landscape design process. It involves the organization of land use zoning, access, circulation, privacy, security, shelter, land drainage, and other factors, This is done by arranging the compositional elements of landform, planting, water, buildings and paving and building.

Site planning generally begins by assessing a potential site for development through site analysis. Information about slope, soils, hydrology, vegetation, parcel ownership, orientation, etc. are assessed and mapped. By determining areas that are poor for development (such as floodplain or steep slopes) and better for development, the planner or architect can assess optimal location and design a structure that works within this space.



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*Thank
you!*

STAY HOME, STAY SAFE