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 – Sun Consideration - UNIT- 3
Presented by –Hetram Sharma (Assistant Professor)

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

CONTENTS

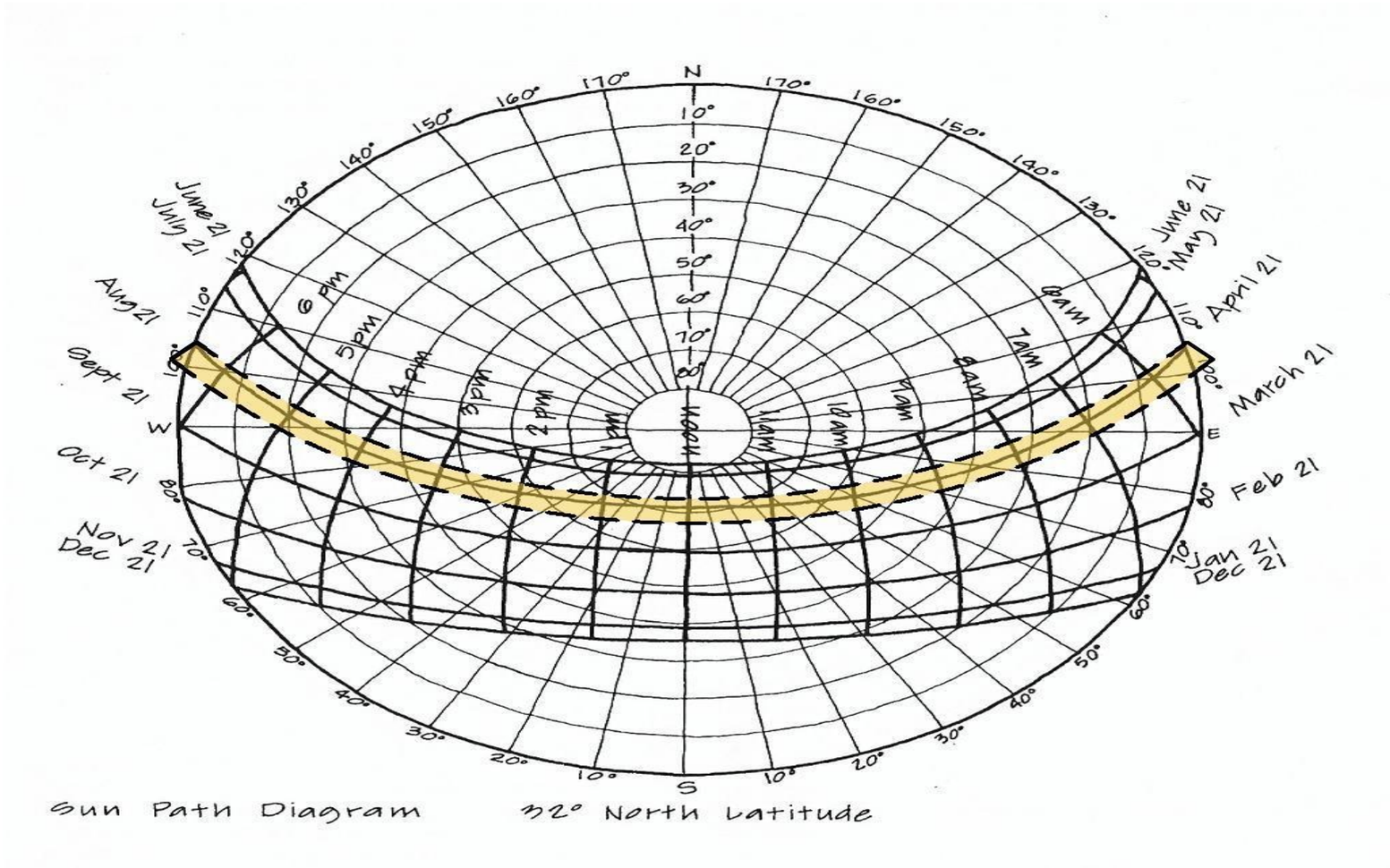
Sun Consideration :

1. Different methods of drawing sun chart,
2. Sun shading devices, design of louvers.

Sun path :-

Sun path polar **chart** for any location at the latitude of Rotterdam. This solargraph exposed over the course of a year shows the Sun's paths of diurnal motion, as viewed from Budapest in 2014. (Credit: Elekes Andor). **Sun path**, sometimes also called day arc, refers to the daily and seasonal arc-like path that the ...

Different methods of drawing sun chart:-



Different methods of drawing sun chart:-

Azimuthal lines: Azimuth angles run around the edge of the diagram in 15° increments. A point's azimuth from the reference position is measured in a clockwise direction from True North on the horizontal plane. True North on the stereographic diagram is the positive Y axis (straight up) and is marked with an N.

• Altitude lines: Altitude angles are represented as concentric circular dotted lines that run from the centre of the diagram out, in 10° increments from 90° to 0°. A point's altitude from the reference position is measured from the horizontal plane up.

• Date and month lines: Date lines represent the path of the sun through the sky on one particular day of the year. They start on the eastern side of the graph and run to the western side. There are twelve of these lines shown, for the 1st day of each month. The first six months are shown as solid lines (Jan-Jun) whilst the last six months are shown as dotted (Jul-Dec), to allow a clear distinction even though the path of the Sun is cyclical.

• Hour Lines: Hour lines represent the position of the sun at a specific hour of the day, throughout the year. They are shown as figure-8 style lines that intersect the date lines. The intersection points between date and hour lines give the position of the sun. Half of each hour line is shown as dotted, to indicate that this is during the latter six months of the year.

• Step 1 - Locate the required hour line on the diagram.

• Step 2 - Locate the required date line, remembering that solid are used for Jan Jun and dotted lines for Jul-Dec.

• Step 3 -

Find the intersection point of the hour and date lines. Remember to intersect solid with solid and dotted with dotted lines.

• Step 4

Draw a line from the very centre of the diagram, through the intersection point, out to the perimeter of the diagram.

• Step 5 - Read the azimuth as an angle taken clockwise from North.

• Step 6 -

Trace a concentric circle around from the intersection point to the vertical North axis, on which is displayed the altit ude angles.

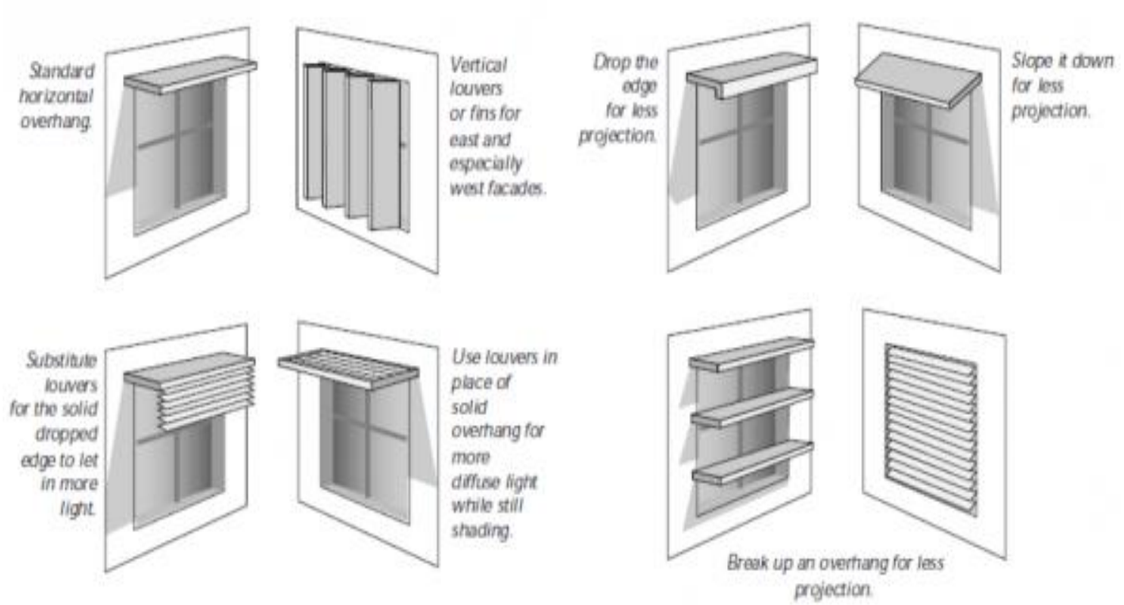
• Step 7 - Interpolate between the concentric circle lines to find the altitude.

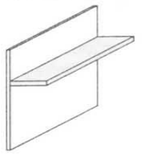
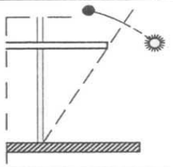
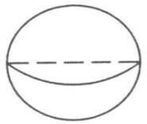
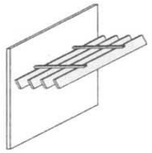
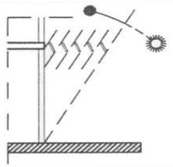
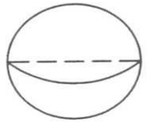
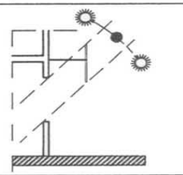
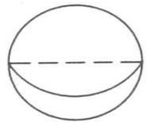
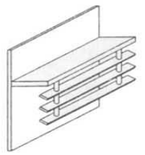
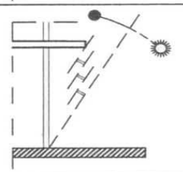
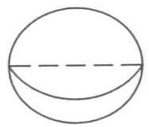
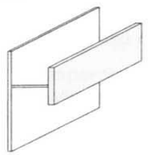
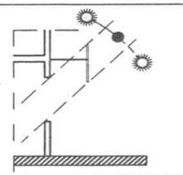
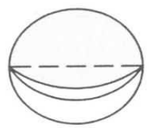
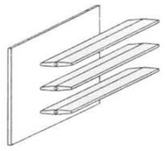
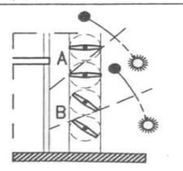
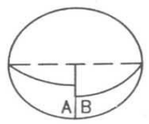
Sun shading devices:-

Introduction –

Sun Shading Devices are any mechanical equipment or textiles that are used either internally or externally or in between the internal and the external building space. ...

- Usually are adjustable and allow occupants to regulate the amount of direct light entering their space.


Standard horizontal overhang.
Vertical louvers or fins for east and especially west facades.
Drop the edge for less projection.
Slope it down for less projection.
Substitute louvers for the solid dropped edge to let in more light.
Use louvers in place of solid overhang for more diffuse light while still shading.
Break up an overhang for less projection.

PROSPETTIVA	SEZIONE	MASCHERA	CARATTERISTICHE
			Gli aggetti orizzontali sono massimamente efficaci verso sud o intorno a orientazioni a sud. La loro maschera di ombreggiamento e' segmentale.
			Le persiane parallele alla parete hanno il vantaggio di permettere la circolazione dell'aria vicino alla facciata. Le persiane inclinate forniscono una protezione migliore di quelle verticali.
			Le tende di tela hanno le stesse caratteristiche degli aggetti e possono essere ritraibili.
			Dove e' richiesta una protezione dal sole basso sull'orizzonte, sono efficaci frangisole appesi ad aggetti orizzontali pieni.
			Uno schermo pieno o traforato disposto parallelamente al muro riduce o esclude la radiazione solare bassa all'orizzonte.
			Le persiane orizzontali mobili cambiano le loro caratteristiche di ombreggiamento in funzione del loro posizionamento

Louver:-

A **louver** (American English) or **louvre** (British English; see spelling differences) is a window blind or shutter with horizontal slats that are angled to admit light and air, but to keep out rain and direct sunshine. The angle of the slats may be adjustable, usually in blinds and windows, or fixed.

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Thank you!

STAY HOME, STAY SAFE