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ID # 16669

Section B

BE - Civil Department

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Introduction to Architectural &
Town Planning

Q_{no}: 1

Ans: **Building Site:** we selected a house in Bahria Town Rawalpindi which is recently constructed and on a less dense area. Here we will see the positive and negative aspects of building orientation.

Aspects to Observe: In this building we'll see the building orientation, in aspects of wind, Temperature, Humidity. The above factors really effect the building orientation as.

WIND:-

Orientation is the positioning of a building in relation to seasonal variations in the sun path as well as prevailing wind pattern, in our site we observed that its windows is in front face which give a smooth way to the air circulation, so was effective and is suitable for observe.

and will remain cool in Hot season ②
as well as it gives good condition.

TEMPERATURE:-

Temperature has a greater effect in the
building orientation the sun rises from
East and the building is on back of
the orientation and so far is good to
avoid the temperature effect, as well
as we get the response as in hot season
we have to avoid the sun light and
if we get the orientation for sun light
then on front windows add surge.
in size, and avoid the radiation
because is silver coated and produce reflection.

Humidity:-

Normally humidity effect the esthetic
look of the building, the disturbance
and paints are destroyed by the
humidity but in our case the humidity
level is reduced and barren Jan 9
is in wide range so there is no issue
only one factor is there beside
left there is a canal on 2 km
away from house and is therefore
effecting the left face of the house
anyway for that we used weather
coat which will really effect the
weather conditions.

Unity:- The Oneness and Harmony Among ^③
different building elements.
In our building it's very good
the esthetic look is so attractive.

Contrast:-

In Our Building the contrast,
is good as the colour and is
Red and dark brown which give
a very bold face.

Proportion:-

In our building the proportion is good
and is really good proportioned
and well organized.

Positive:-

By observing the above points
we observed that the fact of building
orientation, in wind, sunlight,
humidity etc, is good, and the utility
shown is good and the alignment
and the esthetic look is normal.
and hence good for...

Negative:

no window is provided on
left and right side of the house, which
is necessary for wind orientation and
hence the sunlight the humidity
cannot be get of the esthetic
look of building.



Q₁₀:

Ans: Good orientation, combined with other energy efficiency features, can reduce or even eliminate the need for auxiliary heating and cooling, resulting in lower energy bills, reduced greenhouse gas emission and improved comfort, it takes in the Sun's path as well as the direction of and types of winds such as cooling breezes.

Good orientation can help reduce or even eliminate the need for auxiliary heating and cooling resulting in lower energy bills, reduced greenhouse gas emissions and improved comfort.

Ideally, choose a site or home with good orientation for climate and regional conditions and build or renovate to maximize passive heating and passive cooling, adjusting the focus on each to suit the climate, for the site that are not ideally oriented there are strategies for achieving some of the challenges, In hot humid climates and hot dry climates with no winter

Site problems:

① Open drainage in direction of summer which is a major source of bad smell.

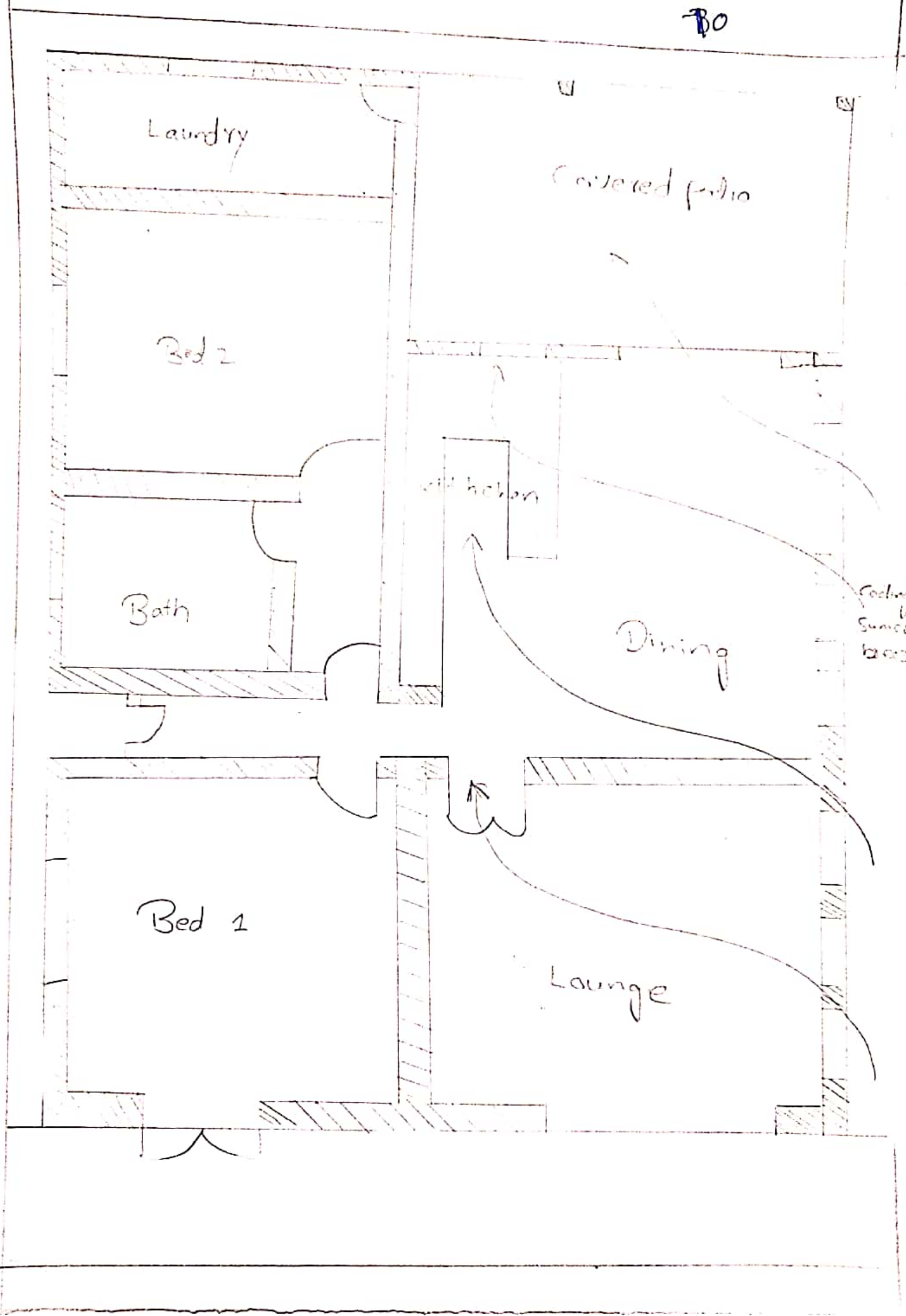
Sol: In Peshawar there is no concept of under ground drainage system because on domestic level we don't have any good purification system to filter solid wastes and garbage. On a domestic level so what we do is to don't put windows and doors on the side of drain and to avoid it from the wind direction to not spread smell inside house.

② Noise from west side and winter winds from north-east side.

Sol: Peshawar is a densely populated city by using traditional heavy horns and big loads vehicles so the noise pollution is on top so to avoid such we have to provide insulation as per budget required or either to relocate the opening on the opposite side and reduce the opening sizes.

③ Existing 2 storey building on south side blocking some solar radiation.

Sol: It's a big issue in designing of a house and in such a location like Peshawar to go this we have to adjust the opening in such way on East north side to cater this issue on a maximum possible way so that to avoid and get maximum solar radiation.



Q³ No: _____

Q

Ans: The building orientation is generally used to refer solar orientation while planning of house with respect sun path. The orientation can refer to a particular room as most imp: the building facade. The word "building orientat" is basically the positioning of building with respect to sun, usually done to maximize solar gain at the appropriate time of the year when required in cold climate and to minimize solar gain in a hot climate, Best house orientation can increase the energy efficiency of your home by making it more comfortable to live in and cheaper to run.

South building facade or orientation receives maximum solar radiation during winters, which is preferable. As south building facade has the advantage of receiving more solar radiation during summer, for house windows & doors or opening on the south facade, small awnings or curtains can cut off direct solar penetration during summer and allow it during winter. This is most beneficial aspect, not available on any other facade.

East & west receiving maximum solar radiation during summer, west is crucial orientation because high intensity of solar radiation is received during evening hours, when the indoor

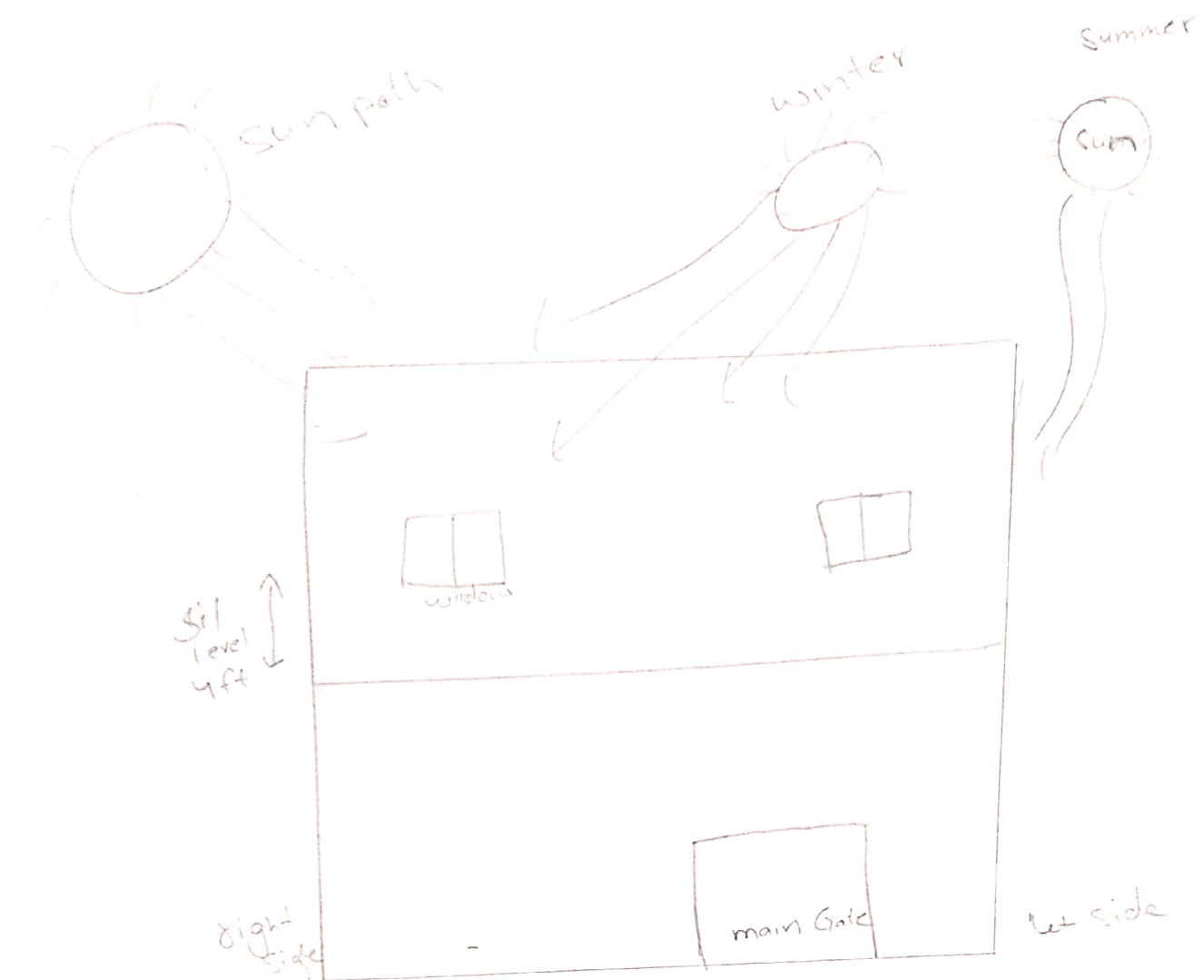
gains are also at its peak.

Therefore, Deep verandahs or Sushades in the South and west facade would effectively exclude these strong evening rays.

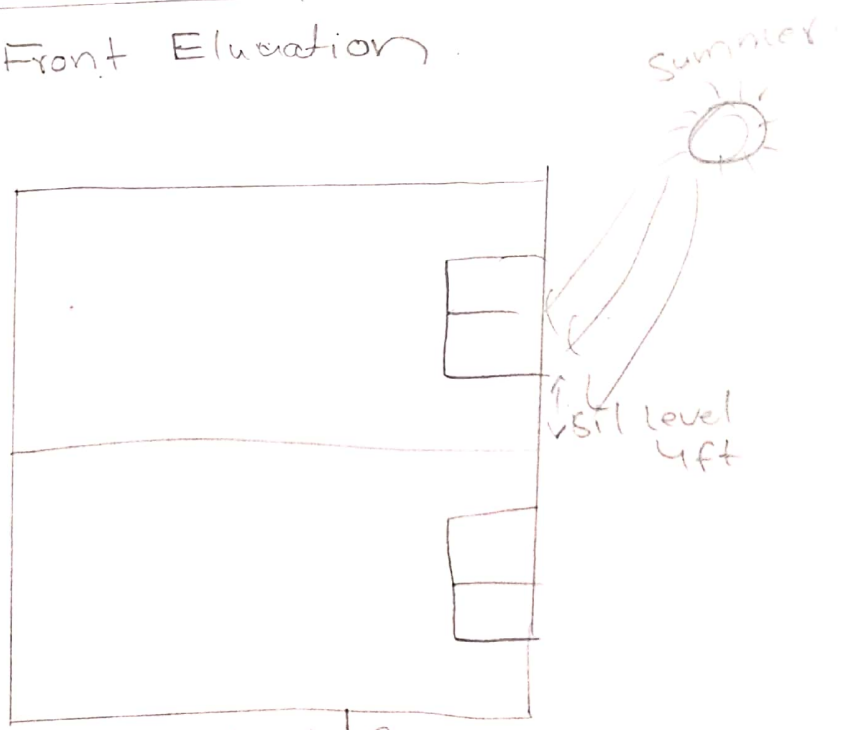
Aim of Building Orientation:

The most frequently used rooms during the day are oriented in the East & West north whereas the rooms that are used mostly at night are restricted to the South and the west which are better directions. House is placed windows and doors in East to allow the sun's UV rays to penetrate into the house in the mornings. The orientation of Kitchen should be towards the East. The design of home should be in such a way that all rooms get the maximum benefit of the sunlight weather the occupants desire it or not. One must also take into consideration the landscape features in a plot, i.e. trees, planters, etc which will affect the building depending on sun direction and sun path.





Front Elevation.



left side Elevation

