ITC HOTELS
RESPONSIBLE LUXURY

ROOF WATER COLLECTION

Filtering Tank

Well

Gate Valve

4" PVC Pipe

Building 1

Building 2
DUG CUM RECHARGE BORE WELL

- Air Vent
- Perforated Slab
- Gap
- Screen (Opening)
- Pebbles
- Sand
- Coir Packing

Brick Work

Depth of the bore

L1 - Depth of the unlined bore

2.0 m
RECHARGE STRUCTURES FOR HAND PUMPS
**Calculation of Roof Flow Loads**

When designing drainage systems for roofs, it is necessary to find out the level and frequency of rainfall intensity for the location of the building concerned.

Due to the nature of our climate, it is not possible to ensure complete safety from flooding, or overflow. However, it is generally satisfactory to a rainfall intensity of 75 mm/hour where overflow will not cause damage within the building i.e. eaves gutters.

Allowance for the effect of wind is not required when designing for horizontal surfaces or other surfaces protected from the wind by nearby objects. However, an allowance should be considered where sloping or vertical surfaces occur that are freely exposed to the wind.

One method for calculating the effective roof area which takes into consideration the effects of wind is shown below.

**Calculation of Effective Roof Areas**

To calculate the effective roof area which allows for contribution factors, i.e. horizontal span of slope + half the vertical rise between eaves and ridge X gutter length. To calculate this in square metres:

1) Measure A, B & C in metres.
2) Use \((A + B/2) \times C\) = Effective roof area in metres.

To calculate flow in litres/second for 75 mm/hour intensity, multiply effective roof area (m) by 0.0208.

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<table>
<thead>
<tr>
<th>Terrace or Roof Area in Sq. Ft.</th>
<th>Approximate Rainfall yields in liters for various terraces size (Sq. Ft.) &amp; rainfall amount in mm.</th>
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Why water harvesting and artificial recharge?

- To arrest ground water decline and improve ground water levels and availability.
- To beneficiate water quality in Aquifers.
- To arrest sea water ingress.
- To conserve surface water run-off during monssons.
- To enhance availability of ground water at the specific place and time.
- To reduce power consumption.
- To conserve urban waste water.