

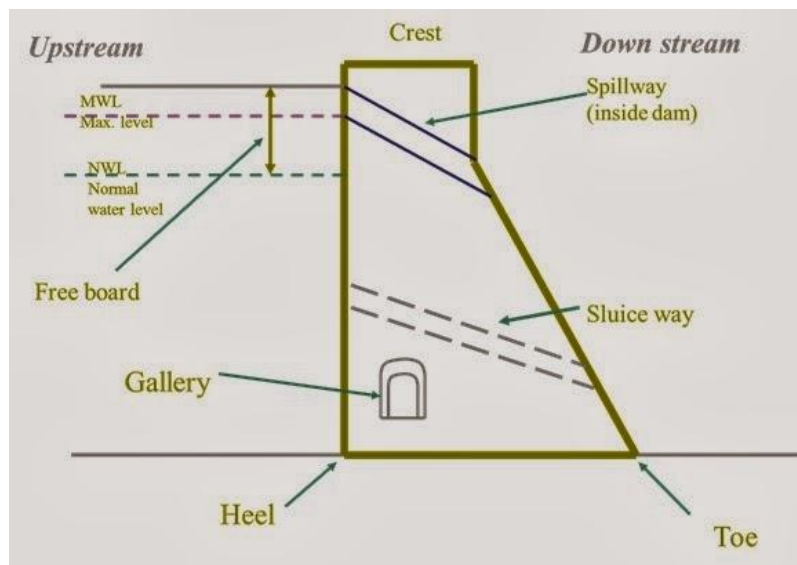
Dams

- Dam is a solid barrier constructed at a suitable location across a river valley to store flowing water.
- A dam is a hydraulic structure of fairly impervious material built across a river to create a reservoir on its upstream side for impounding water for various purposes.
- Dams are generally constructed in the mountainous reach of the river where the valley is narrow and the foundation is good. Dams are probably the most important hydraulic structure built on the rivers. These are very huge structure and require huge money, manpower and time to construct.

Storage of water is utilized for following objectives:

- Hydropower
- Irrigation
- Water for domestic consumption
- Drought and flood control
- For navigational facilities
- Other additional utilization is to develop fisheries

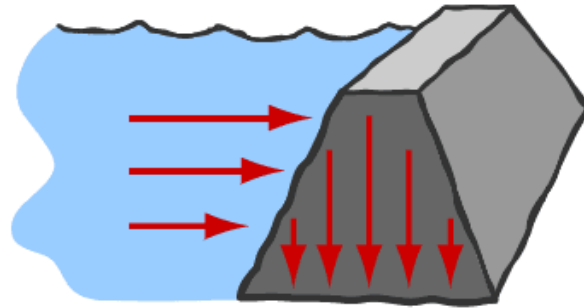
Structure of Dam:



- Heel: contact with the ground on the upstream side
- Toe: contact on the downstream side
- Abutment: Sides of the valley on which the structure of the dam rest
- Galleries: small rooms like structure left within the dam for checking operations.
- Diversion tunnel: Tunnels are constructed for diverting water before the construction of dam. This helps in keeping the river bed dry.
- Spillways: It is the arrangement near the top to release the excess water of the reservoir to downstream side
- Sluice way: An opening in the dam near the ground level, which is used to clear the silt accumulation in the reservoir side.

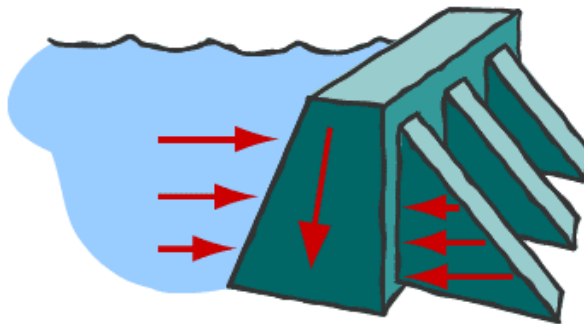
Gravity Dam:

- These dams are heavy and massive wall-like structures of concrete in which the whole weight acts vertically downwards.
- As the entire load is transmitted on the small area of foundation, such dams are constructed where rocks are competent and stable.



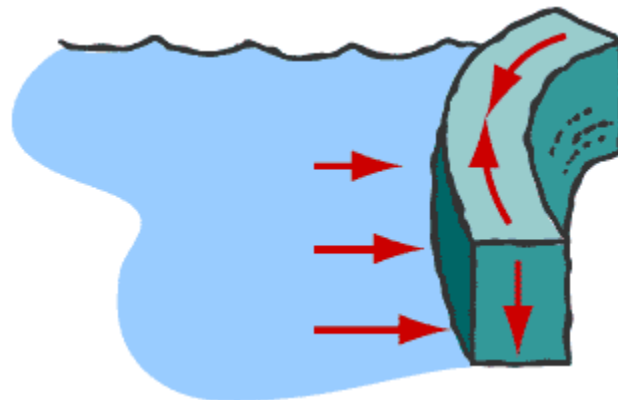
Buttress Dam:

- Buttress Dam - Is a gravity dam reinforced by structural supports.
- Buttress - a support that transmits a force from a roof or wall to another supporting structure.
- This type of structure can be considered even if the foundation rocks are little weaker.



Arch Dams:

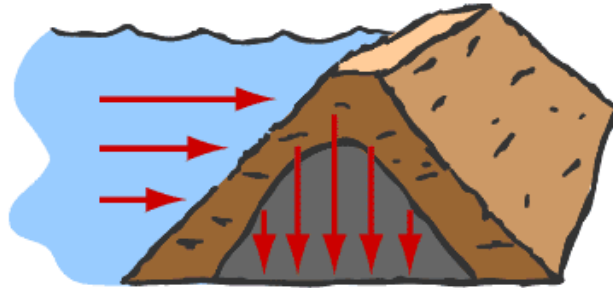
- These type of dams are concrete or masonry dams which are curved or convex upstream in plan.
- This shape helps to transmit the major part of the water load to the abutments.
- Arch dams are built across *narrow, deep river gorges*, but now in recent years they have been considered even for *little wider valleys*.



Earth Dams:

- They are trapezoidal in shape.

- Earth dams are constructed where the foundation or the underlying material or rocks are weak to support the masonry dam or where the suitable competent rocks are at greater depth.
- Earthen dams are relatively smaller in height and broad at the base.
- They are mainly built with clay, sand and gravel, hence they are also known as Earth fill dam or Rock fill dam.



Source: <http://hydropedia.blogspot.in/search/label/Arch%20Dam>