

# Mason's Training Programme on Onsite Treatment Systems

Session: 3 Importance of design specification - Current practices and issues  
November 18, 2016

TECHNICAL  
SUPPORT UNIT:

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INDIAN INSTITUTE FOR  
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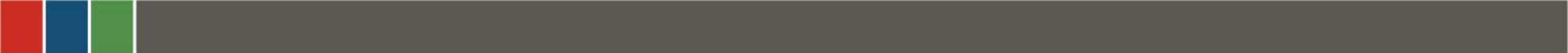
# What have you learnt so far?



# Recap



**Design and construction of the onsite sanitation system**



**Designs are foundation for great  
construction**

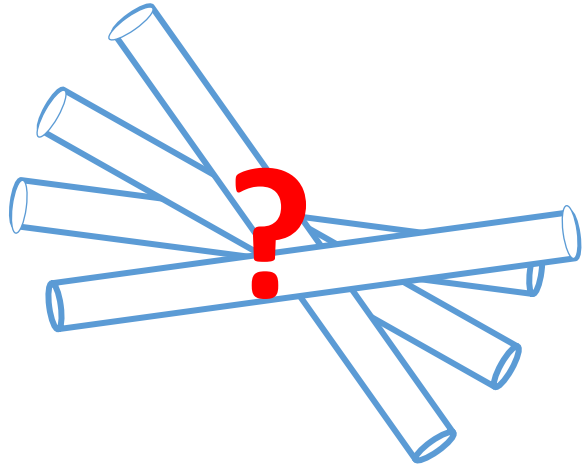


**What happens if these  
aspects are ignored**



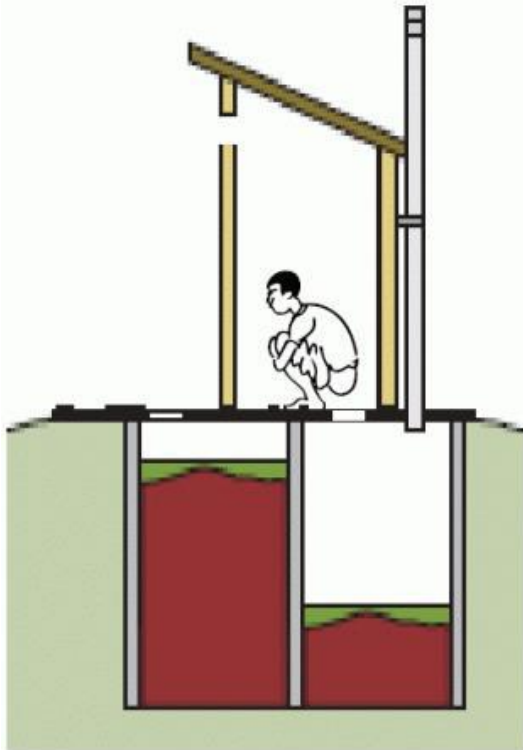
# **Common aspects**

# Ignorance of gradient while placing the pipe



Ignorance of gradient can cause blockage in the pipe which may result in either breakdown of the system or cause backflow in the superstructure (toilet)

# Ignorance of the height of vent pipes



Twin pit latrine



Lesser height of vent pipe may lead to bad odour

# Manhole cover poor design/construction



Poor design and placement of manhole cover can lead to injuries and nuisance  
inform of pest in the onsite systems



# **Twin Pit**

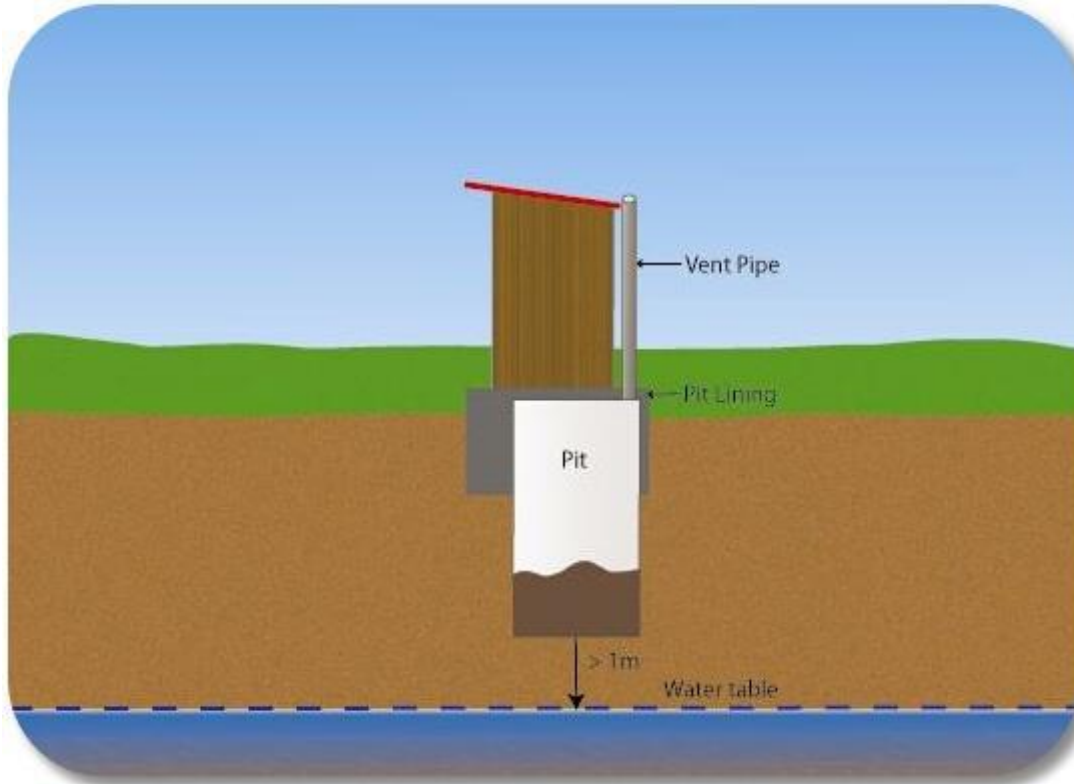
# Ignorance of soil conditions



Soil conditions determine the percolation rate, structure stability etc.  
Ignorance of soil conditions may lead to:

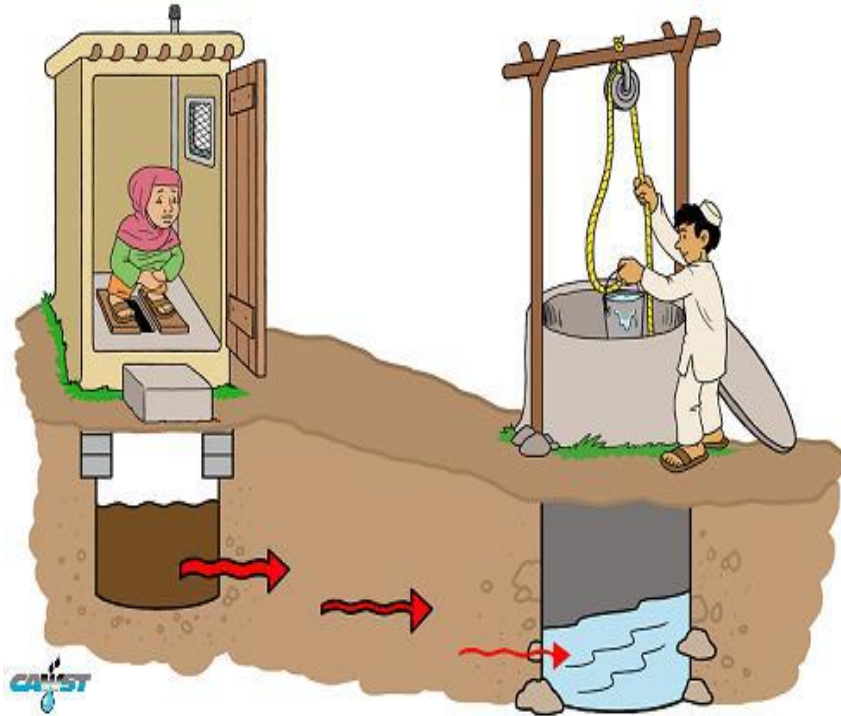
- Breakdown of onsite systems
- Partial decomposition of sludge
- Frequent removal of sludge

# Ignorance of pit distance from water table



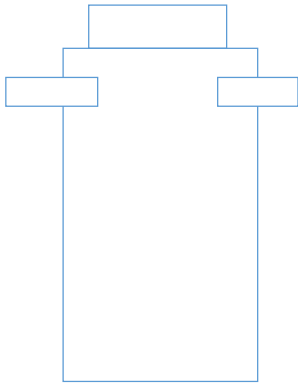
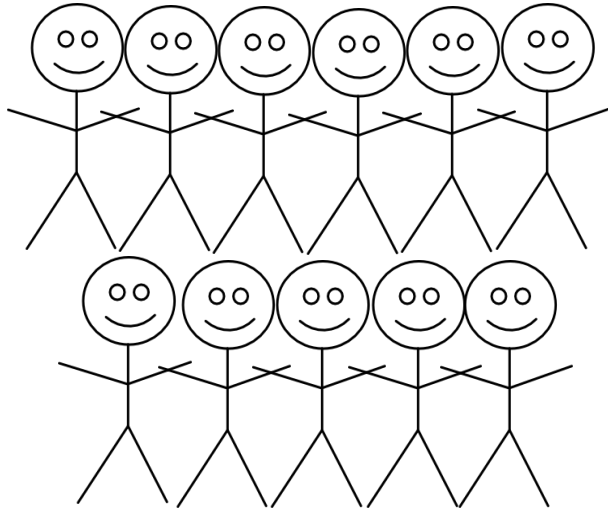
If the distance is less than the prescribed distance, the percolation from pit can pollute the groundwater which can cause health problems

# Ignorance of water body in vicinity



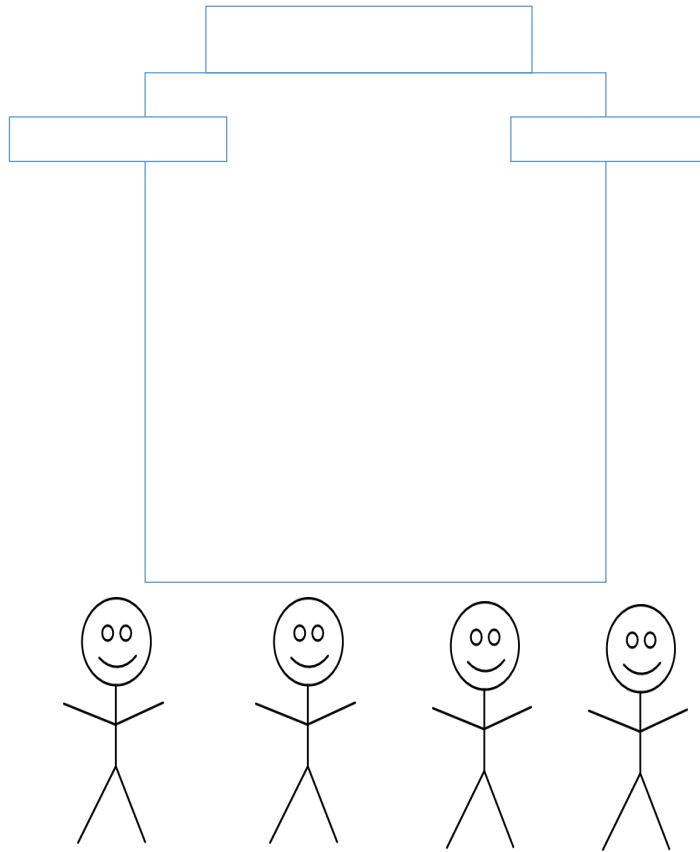
If the distance is less than the prescribed distance, the percolation from pit can pollute the water source which can cause health problems

# Under designing of Pit



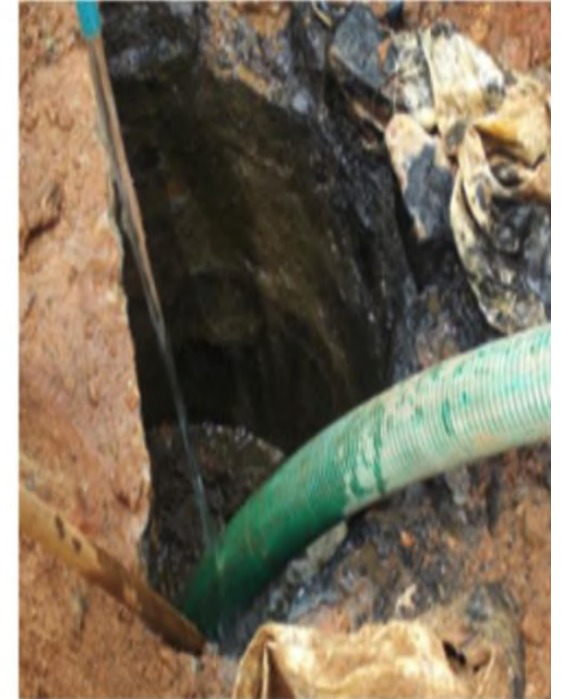
Under designing of pit or any onsite treatment system can lead to frequent removal of sludge which results in high operational and maintenance cost  
It also cause nuisance and inconvenience to user

# Over designing of Pit



Overdesigning of onsite treatment system causes inconvenience at the time of desludging as the sludge solidifies and is difficult to remove and uneconomical

# Lining of pit

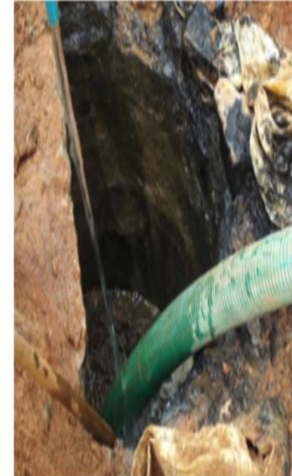
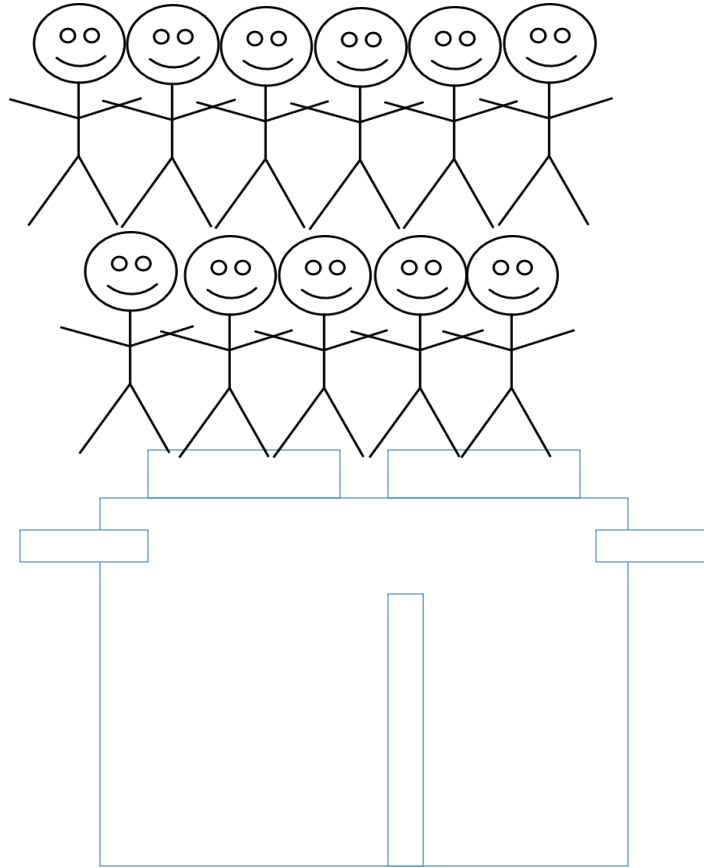


If pit lining is without requisite gap, water percolation is slow and pit fills more frequently.



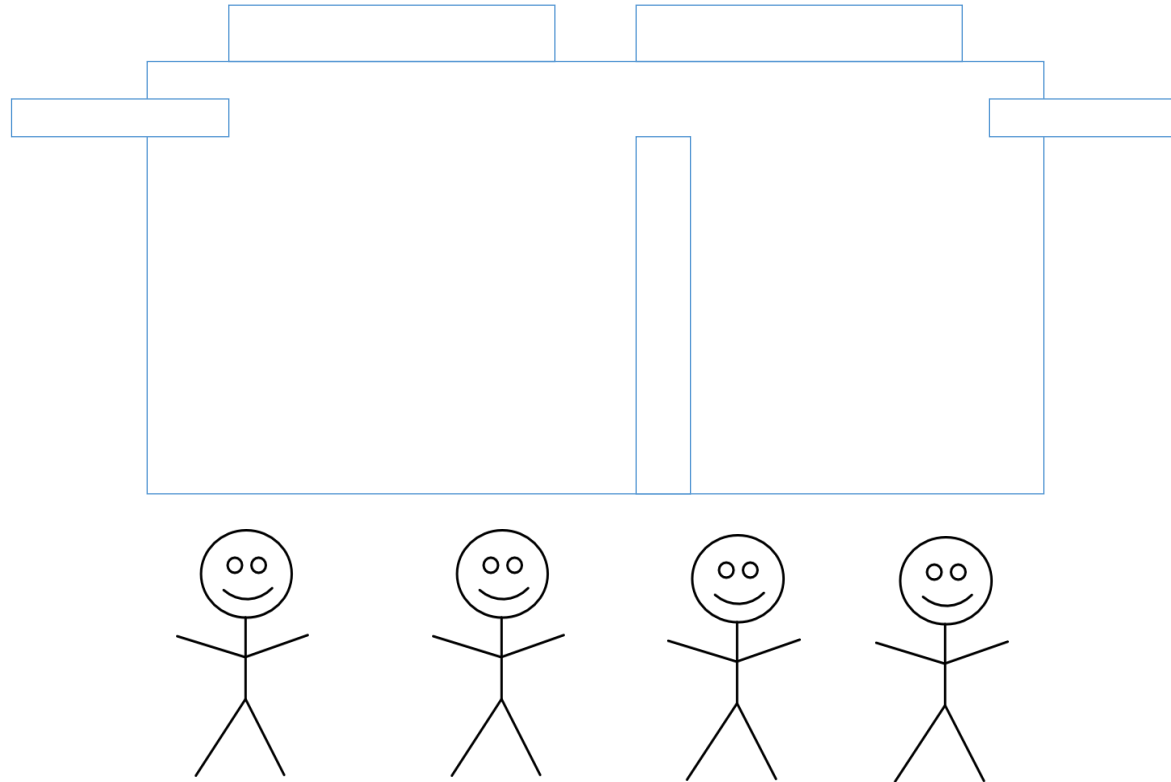
# **Septic tank**

# Under designing of Septic tank



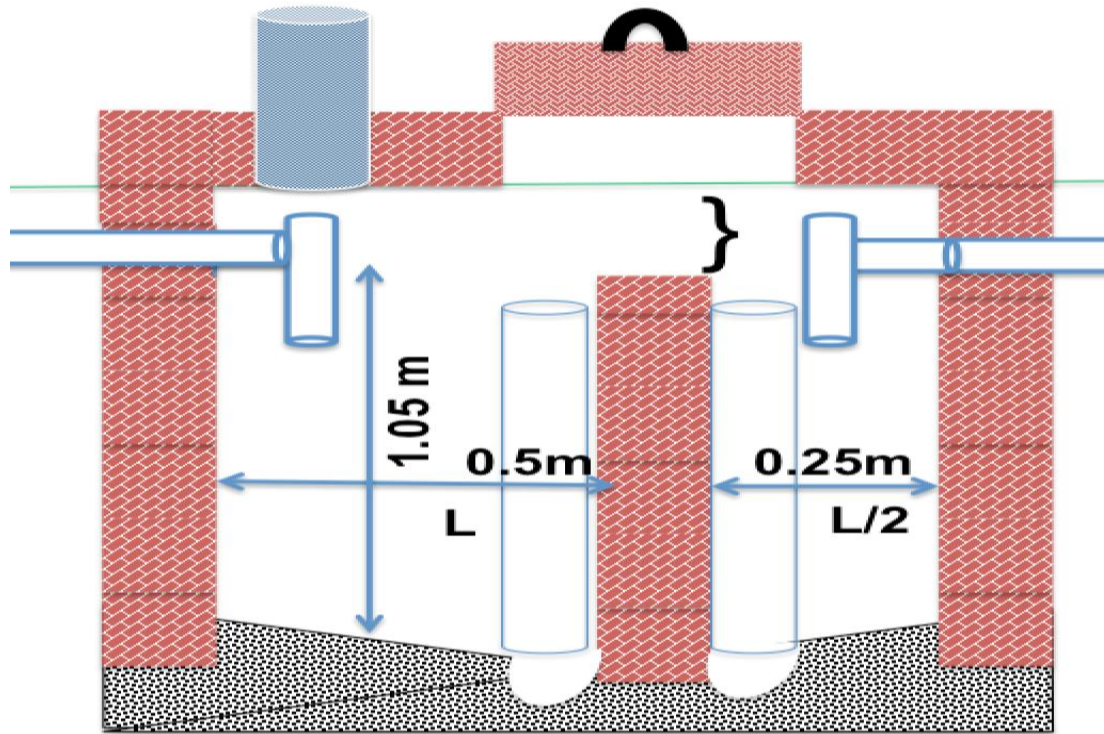
Under designing of septic tank or any onsite treatment system can lead to frequent removal of sludge which results in high operational and maintenance cost  
It also cause nuisance and inconvenience to user

# Over designing of Septic tank/pit



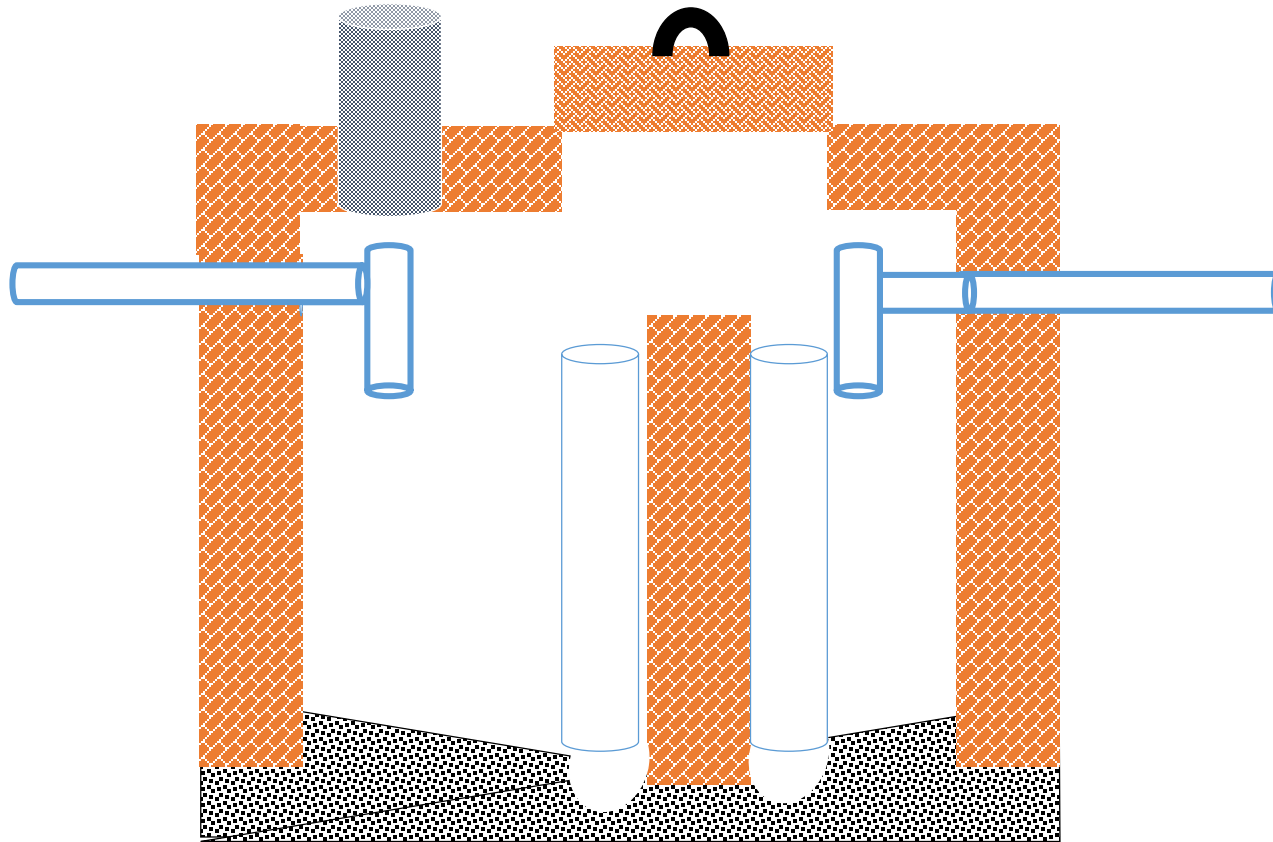
Overdesigning of onsite treatment system causes inconvenience at the time of desludging as the sludge solidifies and is difficult to remove

# Ratio of compartment size



If the ratio of compartment size is not maintained, the sludge settlement time is reduced, leading to partial treatment.

# Plastering of Septic tank



If the septic tank is not plastered inside water will seep into the soil and affect the ground water table. Also the outer walls needs to be plastered if the site is on a high rainfall region.



**Any further questions?**

**... Thank You!**