

Engagement with CSE since 2011

Reflection in field

Mainstreaming RWHS at Industry for production - 2019



DEWATS, 2012



Received Training on Tools & Approaches for CWS Management from CSE, 2018. held at India



RW-convention in 2012. CSE is one among other organizers

Received Training on Urban Wastewater and Rainwater Management

Training facilitated by CSE and organized by WaterAid in 2011

Mainstreaming Rainwater Harvesting System in Industry for production purpose : Bangladesh



Zahid Hossain
Consultant-WASH, UNICEF

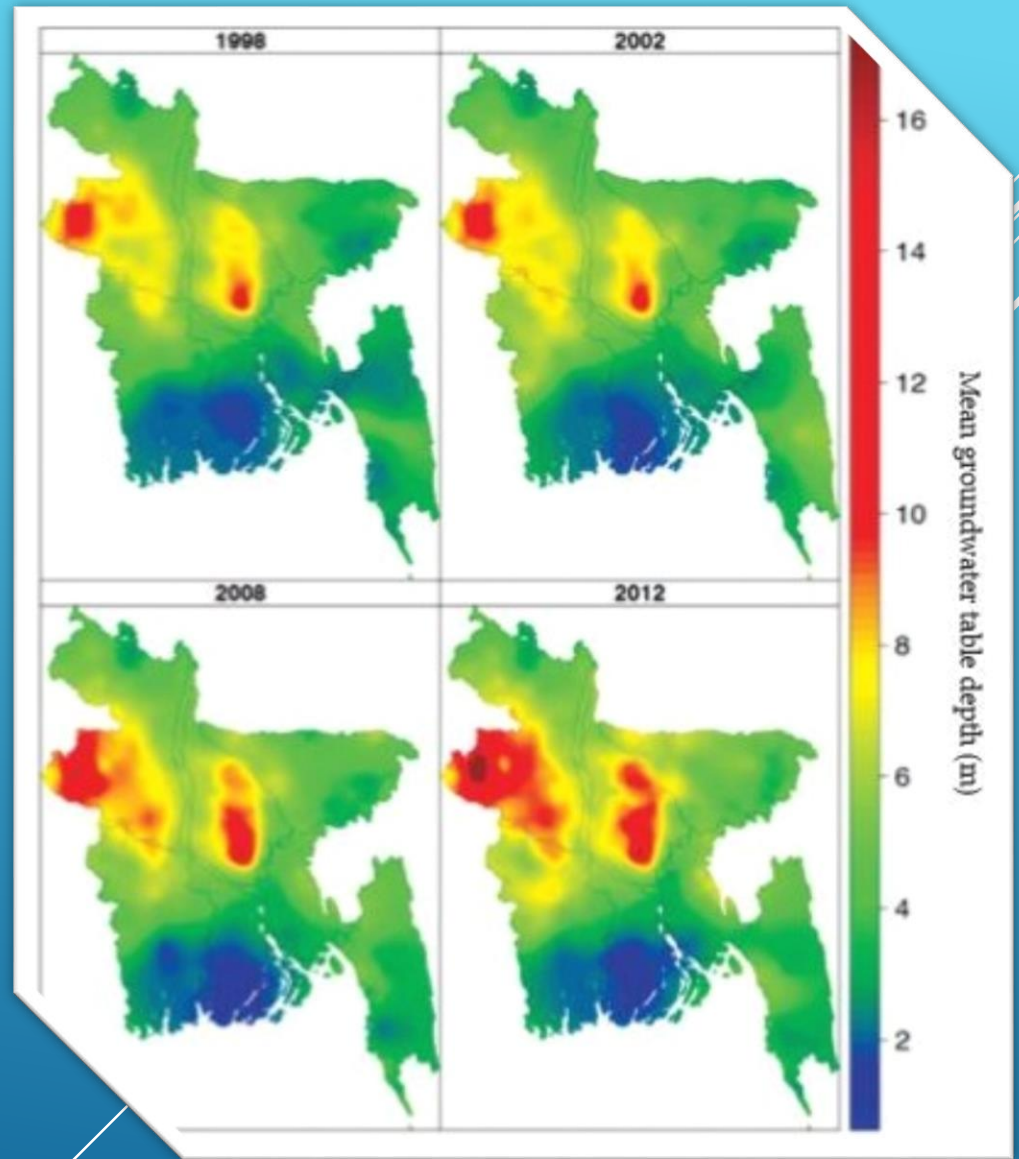
WATER DEMAND AT TEXTILE

- ▶ 250 to 300 litres water needs for 1 kg cloth washing and dyeing according to PaCT (IFC), which is equivalent to daily water use for 2 people (Restiani, 2016)
- ▶ RMG & Textile sector consuming 1500 billion litres of groundwater annually (It was published on 2014 by a survey, was conducted by Netherland and Bangladesh Government)



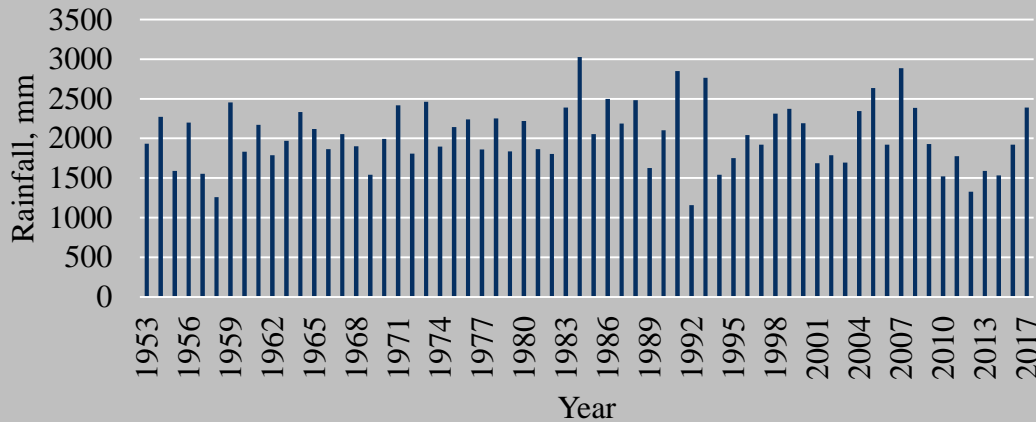
Groundwater depletion

Groundwater table depletion rate is 1-2 meters every year due to huge water withdrawing against recharge



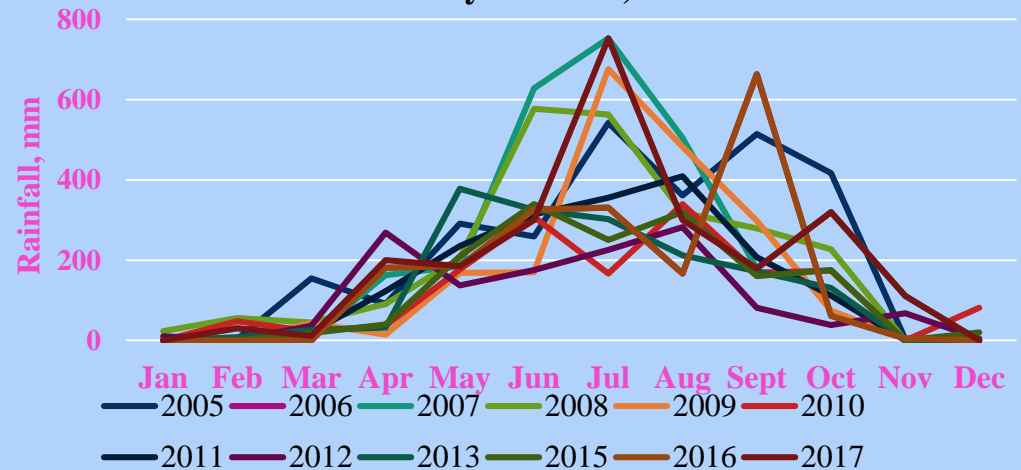
Why Rainwater Harvesting at RMG & Textile sector?

Yearly Rainfall, Dhaka



- ❑ Average rainfall 2000 mm at Dhaka and surrounding
- ❑ Country's rainfall 1500 to 4000 mm, average 2000 mm
- ❑ Rain pattern changing and unpredicted

Monthly Rainfall, Dhaka



WHY RAINWATER HARVESTING AT RMG & TEXTILE SECTOR?

- ▶ Considering the roof top as catchment area of factories under RMG and Textile sector (6850 factories including 4560 textile, average catchment area 8000 sqm). Source: BGMEA and BKMEA
- ▶ 90 billion litres of rainwater could be harvested annually
- ▶ 90 billions litres equivalent to 336 core Taka or 40 million US \$ annually (38.37 Tk per cubic meter water) (1\$ = 84 BDT)



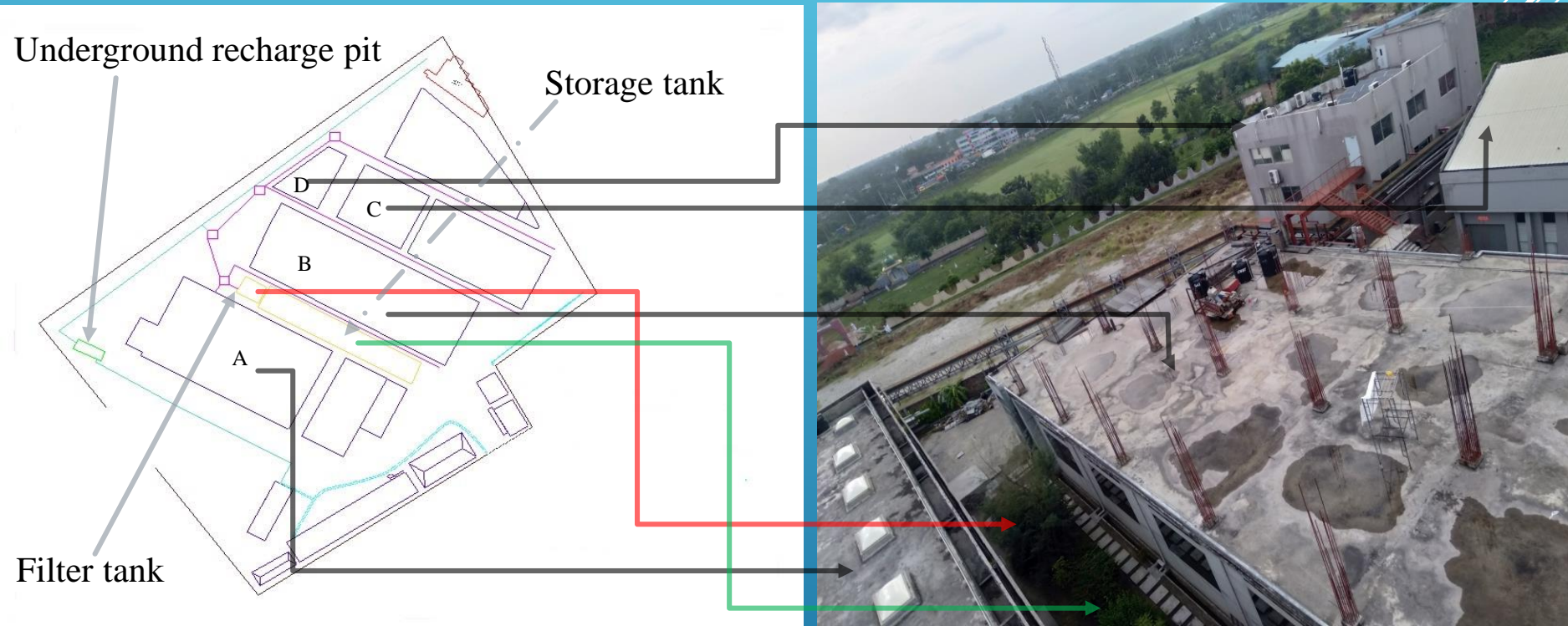


WHY RAINWATER HARVESTING AT RMG & TEXTILE SECTOR?

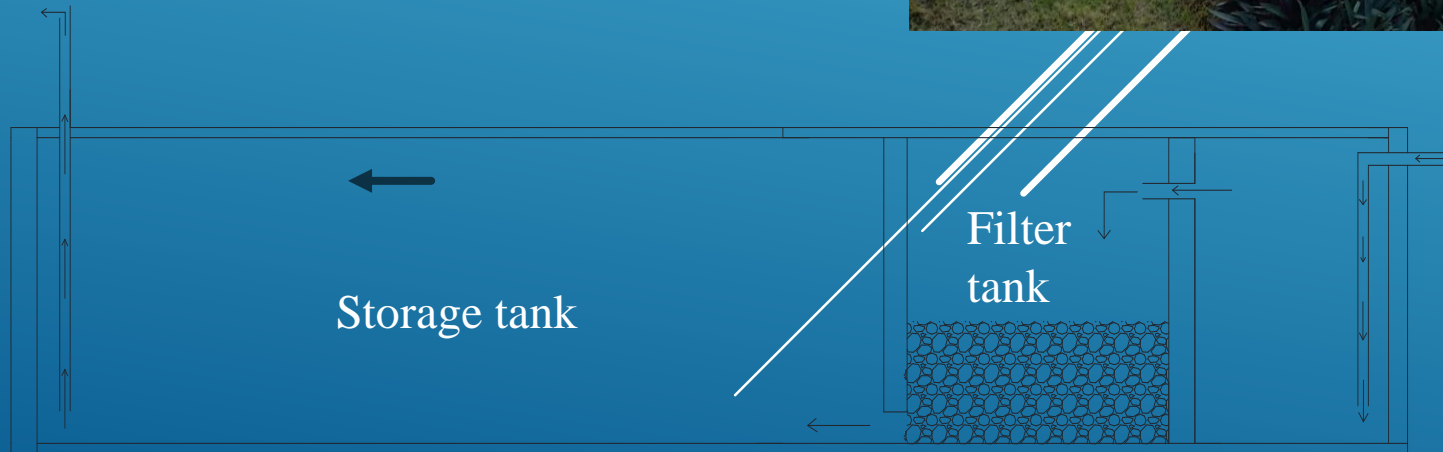
- ▶ Hardness free or less than 5 mg/l- water is essential for wet processing purposes, so groundwater treatment is essential in this regard (10 BDT is needed for 1 cubic water water), but in case of rainwater –no need
- ▶ Rainwater has been storage into tank under gravity flow whereas energy and technology need for groundwater extraction
- ▶ Solving Waterlogging problem emerging due to climate change

Rainwater Harvesting at Factory, Case study-1

Next Accessories Ltd



Filter Tank and Storage Tank



Groundwater Recharge

Recharge
pit



Inlet & Settler

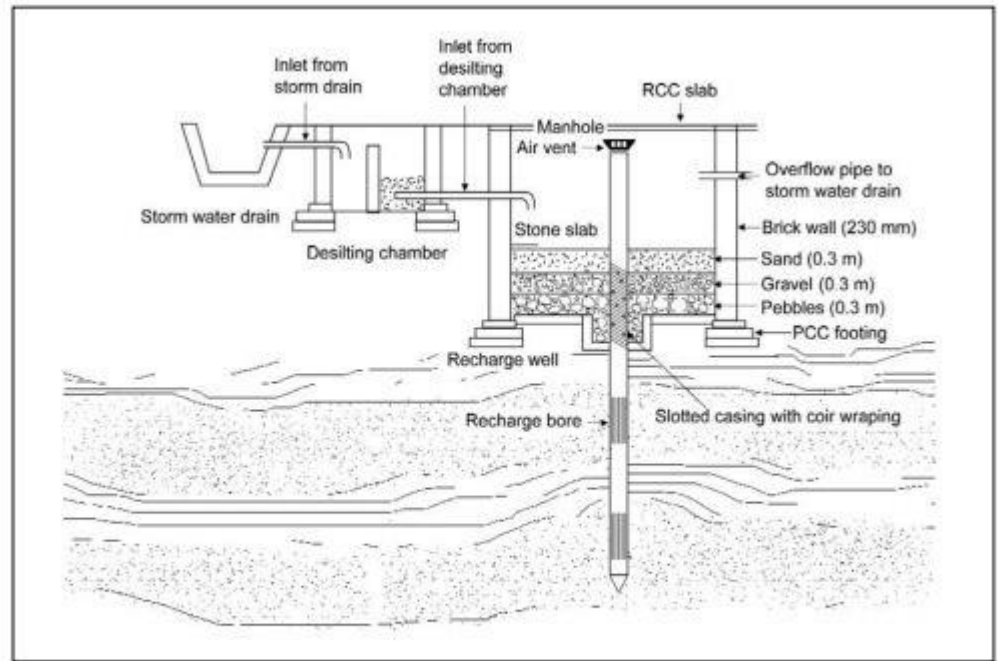
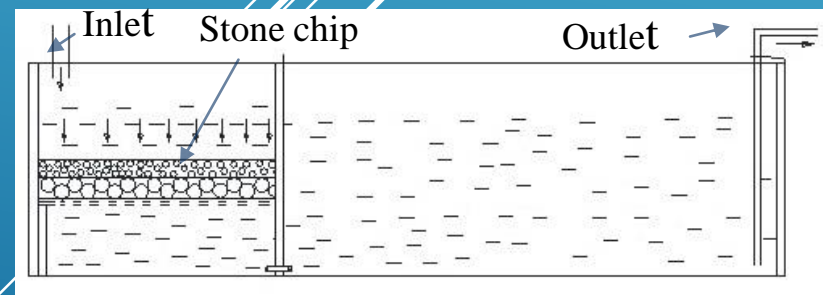
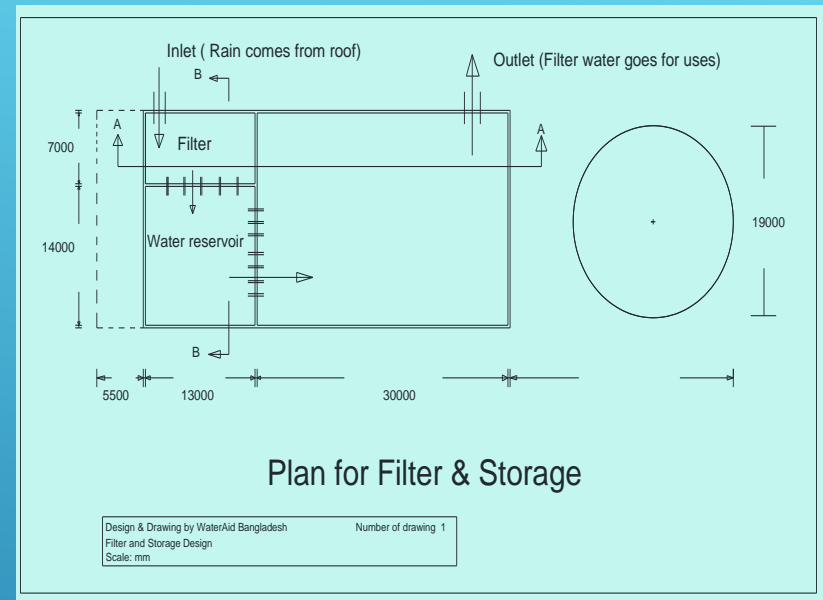
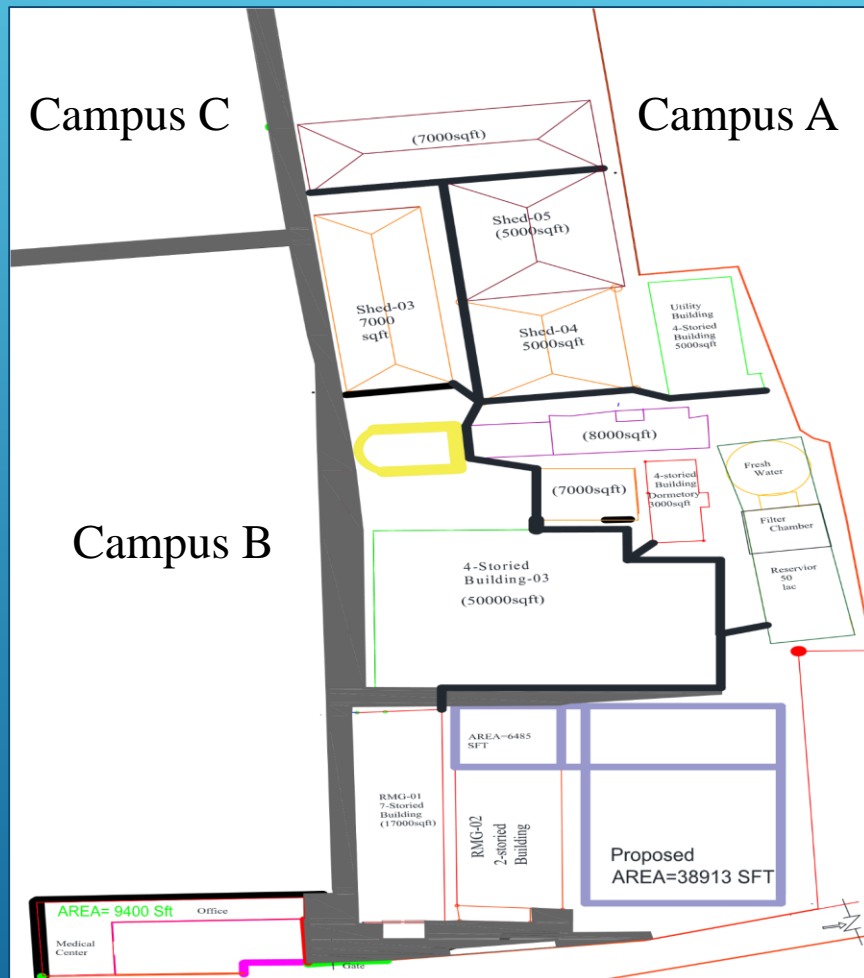


Fig. : Cross Section of Recharge Well with Desilting Chamber.

Rainwater Harvesting at Factory, Case study-2

Fakir Fashion Ltd

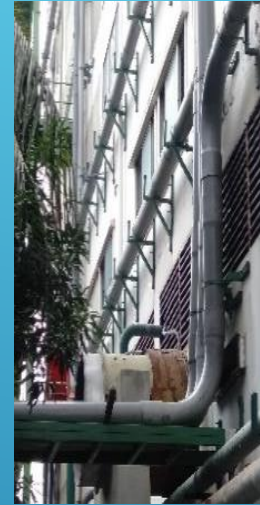


Rainwater Harvesting at Factory, Case study-2

Fakir Fashion Ltd

Collector pipe

Roof



Pipes come down from roof

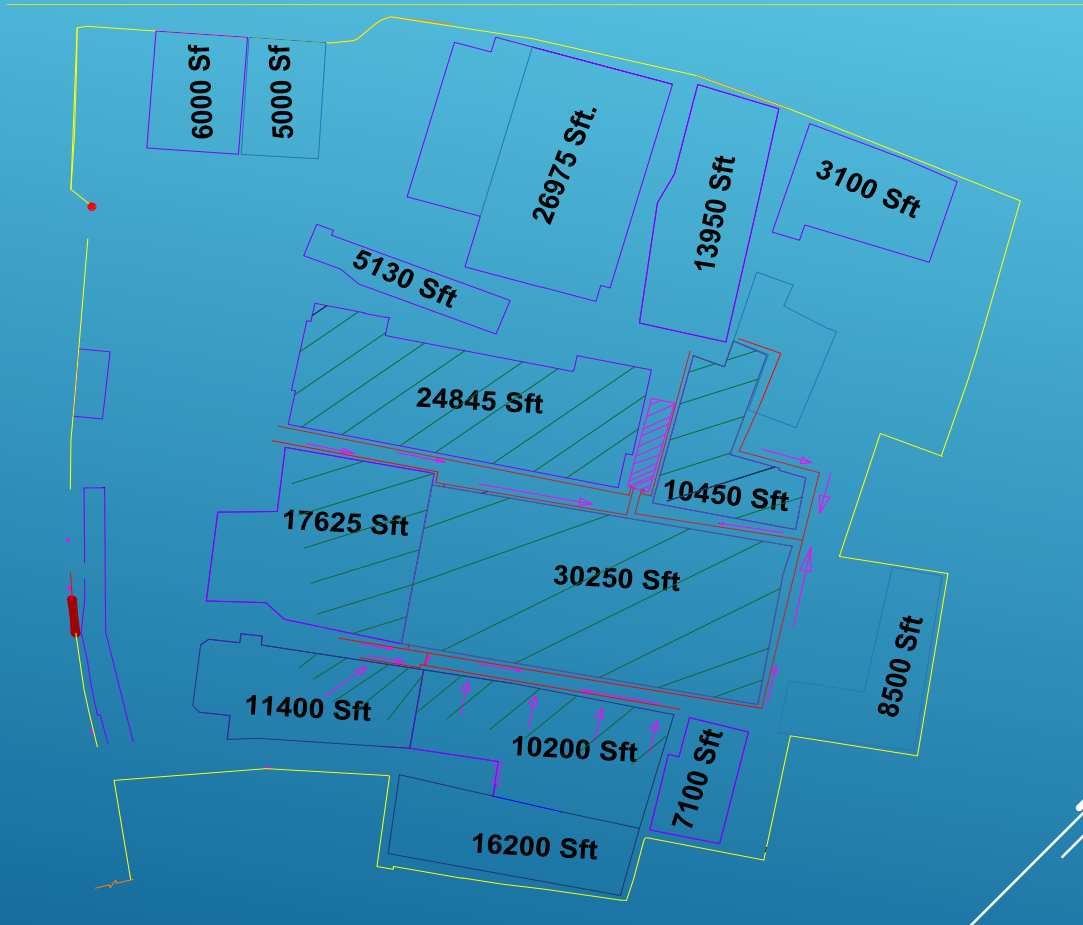
Filter tank (underground)



Pic : Catchment, Pipe networking and Storage

Rainwater Harvesting at Factory-Case study-3

Metro Knitting & Dyeing Mills Ltd



Rainwater Harvesting at Factory-Case study-4

Epic Garments Manufacturing Company Ltd (EGMCL)



Pic 4: Catchment, Pipe networking and Storage

Catchment and Harvested rainwater-4 factories

Fig 4: Catchment Area for RHS

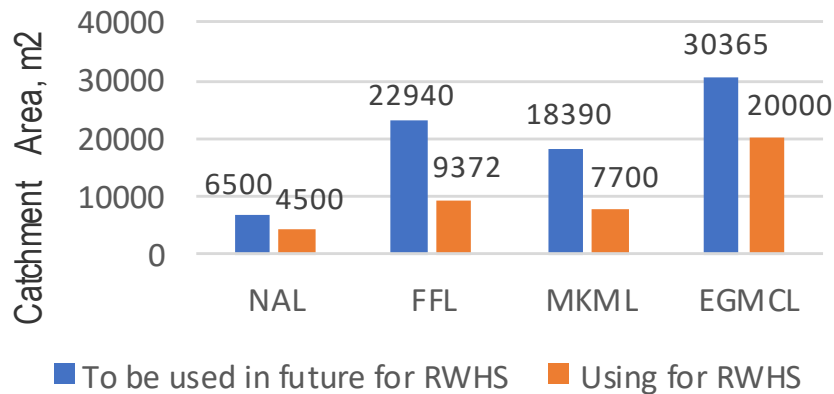
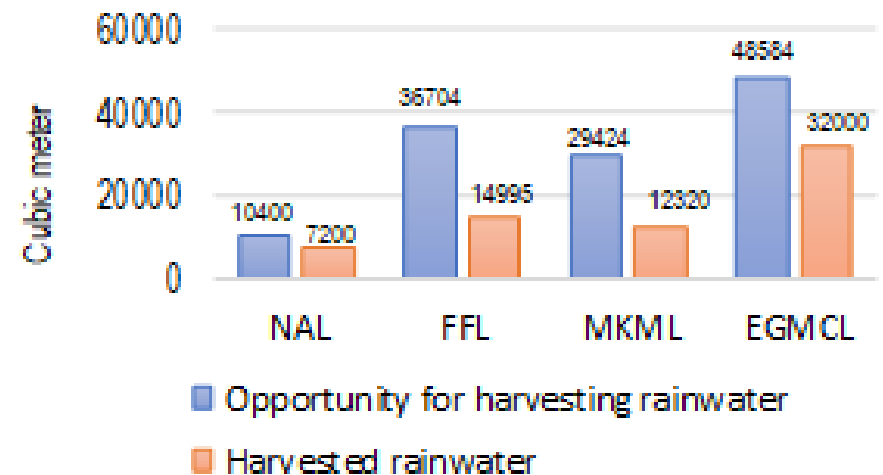


Fig 5: Annual Rainwater Harvesting



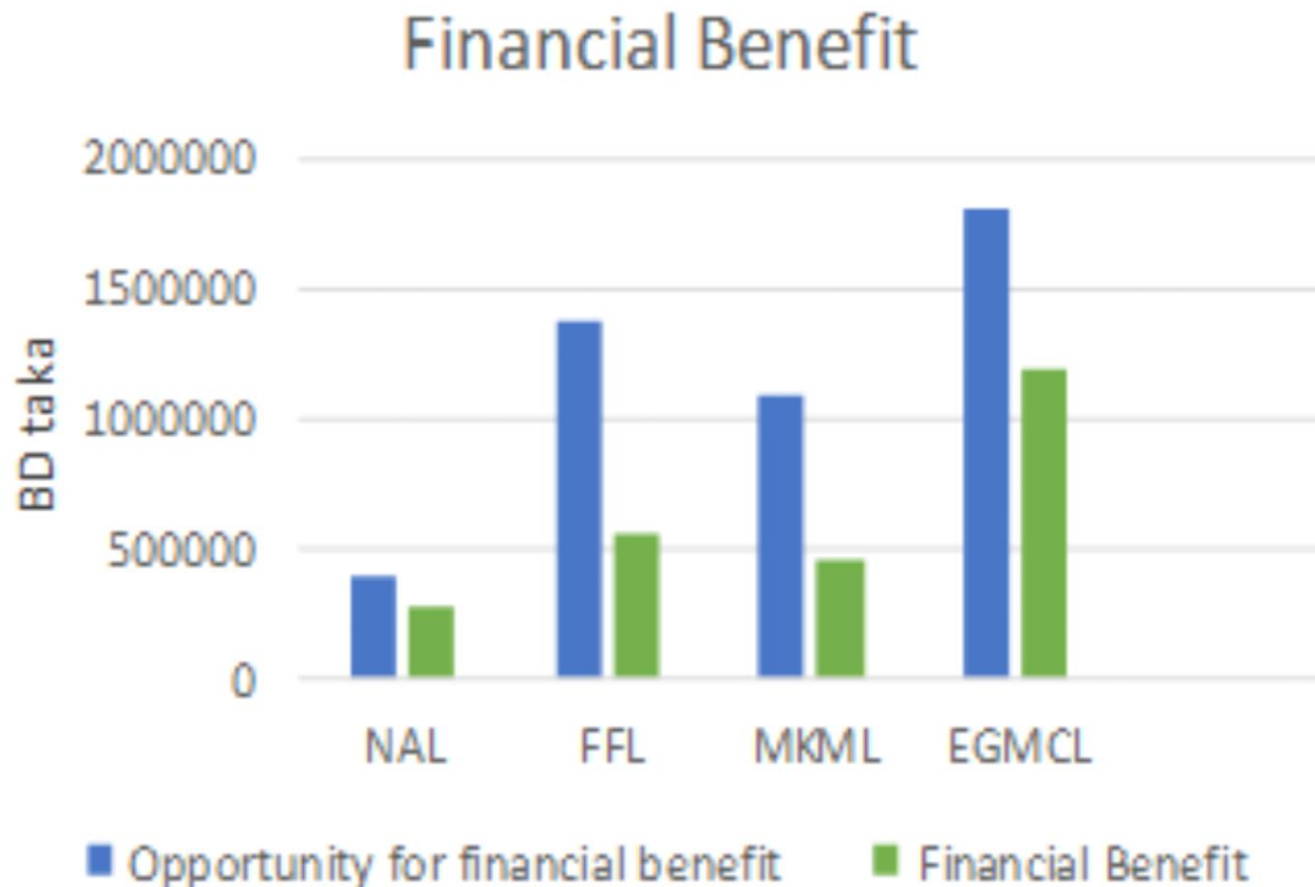
NAL- Next Accessories Ltd

FFL- Fakir Fashion Ltd

MKDML- Metro Knitting and Dyeing Mills Ltd

EPIC-Epic Garments Manufacturing Company Ltd

Calculation: Value for money and ROI



- ▶ Return on investment for RWHS is high
- ▶ Reducing dependency on groundwater, eventually contributing to environmental sustainability
- ▶ Controlling water logging in factory caused by heavy rainfall due to climate change
- ▶ Helping for getting score for LEED certificate as well as helping to meet other compliance

CONCLUDING REMARK

Thanks

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