

# EXCELLENCE IN WATER MANAGEMENT - 2009

An Initiative by  
Paharpur Business Centre  
&  
Software Technology Incubator Park  
Nehru Place Greens, New Delhi

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## Company Profile & Service Portfolio

- Ø We are a SME in the Service Sector and care for environment has been intrinsic to our business strategy since our inception in 1990.
- Ø Began operations with an equity capital of less than INR 809,000 & a current net worth of INR 670.95 Millions
- Ø Turnover for F.Y. 2008-09 is INR 215.84 Millions
- Ø We are a GOI recognized private STP
- Ø PBC is a one-stop-shop for companies planning a foray into the Indian Market
- Ø An independent seven storied building with an area of 50,000 sq.ft. providing Instant Start-up on a “plug & play” basis
- Ø A Suite of 28 support services for our clients
- Ø Commitment to UN Global Compact

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## Company Profile & Service Portfolio

- Ø Centrally Air-Conditioned with IAQ conforming to ASHRAE Standards, USA
- Ø IAQ provided in Business Centre is based on Bio –Technology borrowed from NASA, USA
- Ø Our building has been declared as one of the healthiest buildings in New Delhi by Government of India in Sep 2008
- Ø We are actively engaging with Lawrence Berkeley National Laboratory & Oakridge National Lab, USA to take the IAQ in the building to the next level
- Ø We are working towards achieving USGBC LEED EB certification targeting Platinum rating for our building, by early 2010
- Ø Five International Quality Certifications / Operational standards

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## PBC™-STIP Snapshot

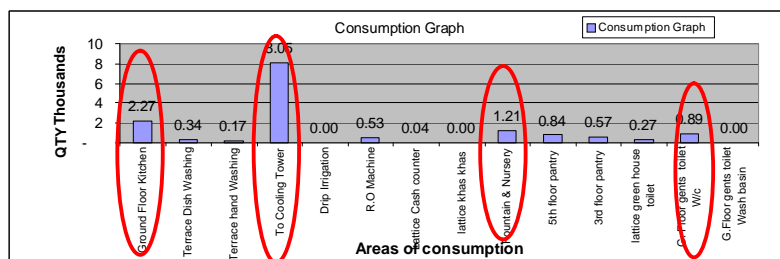
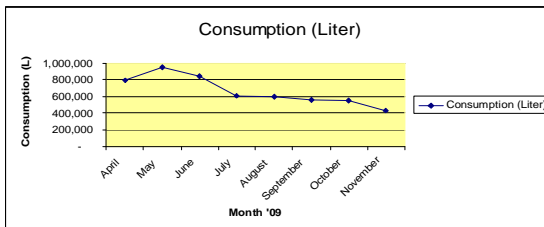


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# Water Consumption Scenario at PBC™-STIP – An Overview

Month	Consumption (Liter)
April	795,510
May	951,140
June	838,340
July	609,780
August	602,460
September	557,670
October	546,680
November	427,080
<b>Total Consumption</b>	<b>5,328,660</b>



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# Projects Implemented for Reduction in Potable Water Consumption

- Ø Replacement of 27 flush valve based water closets (WC) in the building by cistern based 4/2 Liter WC
- Ø Replacement of 14 water based urinals by waterless urinals
- Ø Replacement of 29 washbasin water taps with sensor based taps
- Ø Placement of conductivity meter in the cooling tower water line to provide systematic and controlled bleed off
- Ø Use of hydroponic system for growing plants
- Ø Use of Native indoor plant species, we have total 1200 plants in the building
- Ø Use of soap free waste water from kitchen for Gardening and Vermi-compost pit
- Ø Use of Drip irrigation system for 140 plants in balconies

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## WC Replacement Project

Replacement of 27 flush valve based water closets (WC) in the building by cistern based 4/2 Liter WC

Water Savings per day: 4,343 L

Water Saving per month: 108,575 L

Water Saving per year: 1,302,900 L

Present Consumption per year :  
1,305,096 L

Investment: Rs. 264,688

ROI: 5 years



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## Waterless Urinal Project

Total no. of New Urinals replacing sensor based Urinals: 14 spread over seven levels

Water Savings per day: 750 L

Water Saving per month: 19,500 L

Water Saving per year: 225,000 L

Present Consumption: Zero L

Investment: Rs. 72,800

ROI: 15 years



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## Sensor Tap Project

In all washrooms 29 sensors taps are installed for optimum use of water and ensuring zero wastage

Flow rate: 5 LPM

Water Savings per day: 210 L

Water Saving per month: 5,290 L

Water Saving per year: 63,430 L

Present Consumption per year: 42,286 L

Investment: Rs. 142,100

ROI : 27 years



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## Details of Other Potable Water Saving Projects

### Dish Washer (GE make)

- Ø It helps in optimal use of water while dish washing.
- Ø Now we use average 240L of water per day as against 360L used earlier



### Soap Free Water for Gardening

- Ø Approximately 150 liters of soap free wastewater is generated from Kitchen and Dish washing area
- Ø The wastewater is reused by channeling the flow for irrigation purpose and for the vermicompost pit (as shown in picture)



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## Details of Other Potable Water Saving Projects

### Use of Native Plant Species:

- Ø These species i.e. Gulmohar, Sanseveria, Pilkhan, Arjun etc require minimum watering as they are adapted to local environment.



### Drip Irrigation:

- Ø All 160 planters in the balconies are watered through drip irrigation system.
- Ø We use average 2500L per week as against 3900L used earlier



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## Details of Other Potable Water Saving Projects (Recently Implemented)

### Hydroponics Culture for growing plants:

- Ø It helps in water conservation as it re-circulates the same water with 5-10% make-up water, thereby eliminating the daily watering process.
- Ø Reduced water evaporation as compared to plants that are planted in the soil



### Conductivity Meter

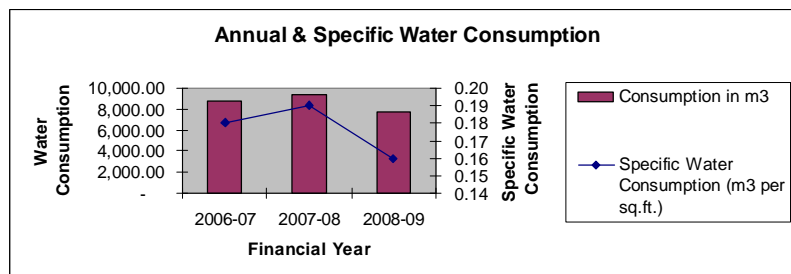
- Ø We have put conductivity meter in condenser water line for online measurement of water hardness. This will help us minimize unnecessary bleed off.

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## Annual Water Consumption & Per Capita Consumption Data

Year (April to March)	Occupancy	Consumption in m3	Specific Water Consumption (m3 per sq.ft.)	Per Capita Consumption for Base Load Occupancy	Per Capita Consumption Including Moving Crowd
2006-07	122	8,757.17	0.18	95.97	59.98
2007-08	130	9,355.09	0.19	102.52	64.08
2008-09	125	7,763.76	0.16	85.08	53.18



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## Monitoring & Reporting System

- Ø Accurate measurement is the heart of any Monitoring and Reporting System. We have 35 calibrated water meter in our building
- Ø The Engineering Department in PBC captures & analyzes the water consumption data from the calibrated meters
- Ø QA Department reviews measurement & Calibration methodology and it is checked and verified during Internal Audits, surveillance and third party audits under ISO-9001 & ISO-14001
- Ø The Daily report of water & energy consumption is shared with the CEO for his inputs & major improvement decision
- Ø Quarterly internal audits are carried out to analyze the efficiency of the water management system and for continual improvement

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## Monitoring & Reporting System

Water is measured at the following locations:

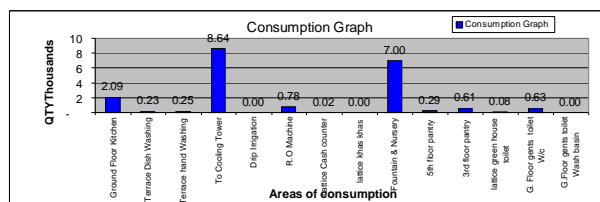
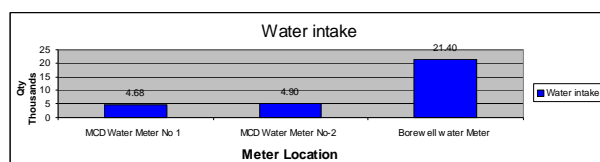
### Ø Input

- Ø Municipality line 1
- Ø Municipality line 2
- Ø Borewell water line

### Ø Output (Consumption Points)

- Ø Washrooms
- Ø Cooling tower makeup
- Ø Drip Irrigation
- Ø Kitchen & pantries

## Snapshot of Water Monitoring & Reporting System



Ground Floor Kitchen	2,090
Terrace Dish Washing	229
Terrace hand Washing	250
To Cooling Tower	8,640
Drip Irrigation	-
R.O Machine	782
Lattice Cash counter	16
Lattice khas khas	-
Fountain & Nursery	7,002
5th floor pantry	291
3rd floor pantry	608
Lattice green house toilet	83
G. Floor gens. toilet W/c	626
G Floor gens. toilet Wash basin	-
GF A Side	-
GF B Side	-
1st Floor A side	-
1st Floor B side	200
2nd Floor A side	-
2nd Floor B side	-
3rd Floor A side	340
3rd Floor B side	310
4th Floor A Side	180
4th Floor B Side	-
5th Floor A Side	400
5th Floor B Side	330
6th Floor A Side	-
6th Floor B Side	-
MCD Water Meter No 1	4,680
MCD Water Meter No-2	4,900
Borewell water Meter	21,400
To Domestic Water tank	8,500
To Fire tank	17,820
Return From cooling tower	11,290
<b>Water used at the above locations</b>	<b>22,377</b>
<b>Total water taken in the under ground tank</b>	<b>30,980</b>

### Water Report Sample



## Creating Awareness : Stakeholder & Community Engagement

- Ø Awareness Program for School Children, Employees, Clients, Community around us
- Ø Celebration of Earth Day, Environment Day etc as official events of the organization
- Ø Regular Interaction with School children to sensitize them to the various issues relating to Environment & Water Management
- Ø In-house Employee Awareness Programmes
- Ø Information Dissemination to in-house clients through TFT/Display Monitors installed at Strategic locations including washrooms
- Ø Creating Awareness through our annual Communication on Progress (COP) & CSR/CR reports.



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## Creating Awareness : Stakeholder & Community Engagement

- Ø Till a couple of years back there were no 4/2 L cisterns available in India. We engaged companies like Cera, Hindware & Orient ceramics and urged them for solution.
- Ø Our CEO has been actively interacting with chairman of Delhi Jal Board for getting a STP in a public park near our office for irrigation of plants.
- Ø The initiative of water conservation at PBC™-STIP runs across all verticals.
- Ø We are constantly talking to our supply chain and sensitizing them on the water issues.
- Ø In our new project-GreenSpaces™ we have been able to reduce our potable water demand from 45 L to 20 L with the help of learning from this building

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## Rain Water Harvesting At PBC™ - STIP

- Ø PBC™-STIP collects the rainwater from the roof with a total catchment area of 2,165 sq.ft.
- Ø The average water recharged to ground is 101,900 Liters / year during 2008-09
- Ø It has been calculated with 2008-09 annual rainfall of 611mm in Delhi and run off coefficient of 0.90
- Ø This has been possible with the help of inputs from Centre for Science & Environment (CSE) & TERI



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## Learning From ISO Operational Standards

- Ø Whatever gets Recorded and Monitored, gets done
- Ø Importance and Relevance of 'do-document-do' & CAPA
- Ø To capture data related to all water source and consumption points in the building for getting a complete water statement
- Ø Periodic surveillance audits help in replicating best practices & learnings from other organizations
- Ø To engage with vendors and sub contractors for finding new avenues for continual improvement in the area of water conservation.
- Ø Setting and meeting objectives for water reduction through Environment Management Programs (EMPs) under ISO 14001 Operating Standard

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## Anti Pollution Initiatives Taken

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- Ø We are a Service Industry in the Real Estate Sector and our operations do not contribute to any Hazardous Water Pollution
- Ø We are using eco-friendly & Green Seal certified cleaning agents which have minimum impact on discharge water
- Ø Some of the Green Cleaning Agents that we use are Stride, Glance, Crew etc from Johnson Diversey
- Ø We use 100% eco friendly, natural & least toxic Pest control agents i.e Maxforce, Solfac, Roban & Borax etc
- Ø Though we do not have Sewage water treatment plant due to paucity of space we still have installed Grease Trap in the kitchen waste water outlet
- Ø We are constantly engaging with the authorities for setting up of a common STP for Nehru Place Greens area.

## Awards & Accolades

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- Ø Selected by CII as one of the four companies in India for Corporate Sustainability Management Systems and were showcased at the World Summit for Sustainable Development, Johannesburg in 2002
- Ø Awarded the GreenTech Silver Award in Year 2002 for Environmental performance & innovative initiatives in the field of Environment.
- Ø Received Ethics is Good Business award in December 2005 from the Former President of India, H.E. Dr. A. P. J. Abdul Kalam
- Ø Received Certificate of Merit from IMC Ramakrishna Bajaj National Quality Award 2006 in the Small Business Category

## Awards & Accolades

- Ø Awarded Golden Peacock Award for Environment Management in June 2007
- Ø Awarded the GreenTech Gold Award in service sector for outstanding achievements in Environment Management in July 2007
- Ø Received Commendation Certificate from Delhi Transco Ltd. on our effort towards promotion of Energy Efficiency & renewable energy measures in 2007.
- Ø Received "Special Jury Recommendation Award for Innovative System Design in IAQ" from Bry-Air in 2008.
- Ø Received G-Cube Shristi Award for Good Green Governance on April 22, 2008 from the Honorable Chief Minister of Delhi Ms. Sheila Dikshit.

## Road Ahead

- Ø We are building the world's greenest & most energy efficient building, GreenSpaces, a notified SEZ with a covered area of 1.75 M sqft and an Asia Pacific Partnership (APP) Flagship Project. Follow our progress at [www.greenspaces.in](http://www.greenspaces.in). It will be USGBC LEED Platinum & TERI GRIHA Certified Building.
- Ø Its water related Salient features are as under:
  - Ø Zero discharge of waste water
  - Ø Treated Waste Water for Flushing, Cooling Tower and landscape
  - Ø Terrace rain water will be captured, stored and used for cleaning of basements, car washing, landscape irrigation etc
- Ø Our Project GreenVilla™ registered under IGBC for platinum certification, under Green Home category. 8,400 ft<sup>2</sup>, 17 bed room with support facilities, it is under construction, located in NCR area-Faridabad.
- Ø USGBC LEED EB O & M Platinum certification for PBC™-STIP- its under progress. We are in our Performance Period

## Road Ahead

- Ø Learnings from these initiatives have motivated us to launch our Green Integrated Facility Management Business – Micromanage
- Ø We plan to divert all the HVAC system condensate to our domestic water tank by early 2010
- Ø We have already got the RO reject water tested for reusing it to water plants
- Ø Our target is to involve 20% of our stakeholders/subcontractors in water management initiatives in 2010
- Ø Last but not the least as part of our EMP, our target is to reduce the borewell water consumption by 15% over last year

## Drivers for Water Sustainability-Larger Picture

- Ø Himalayan Glacier shrinking rapidly and could disappear by 2035-as per Yvo de Boer, Exec. Secretary –UNFCCC at the Delhi Sustainable Development Summit 2008
- Ø River Ganges & Indus would become seasonal rivers rather than year around River
- Ø Himalayan eco-system can alter the lives of 700 million people who live in the region.



**Jab Ganga Sookh Jayegi....Tab Kya??**

## USE WATER DO NOT MISUSE

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**THANK YOU!**

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