



HEAD OFFICE BUILDING FOR NAVI MUMBAI MUNICIPAL CORPORATION



30TH JANUARY 2014

Godrej Green Building Consultancy Services

- Established on 1st January 1992
- First Corporation in the country which is direct Conversion of village Gram Panchayat into Municipal Corporation.
- Serves more than 1.2 million population of Navi Mumbai
- NMMC administers an area of 108.63 Sq.km



- Houses various Administrative, Engineering departments, Political Head offices and General Body hall under one roof
- Project is visualized as imposing and expressive, an identity of the corporation which has proved itself successfully in a very short time span.
- Project is visualized as imposing and expressive, an identity of the corporation
- Commitment to green development





ARCHITECTURE

- SITE RESPONSIVE AND FUNCTIONAL PLANNING & CIRCULATION
- FAÇADE DESIGN IS INSPIRED BY NEOCLASSICAL STYLE ARCHITECTURE MODELED IN MODERN MATERIALS
- USE OF LOW MAINTAINANCE MATERIALS
- PROPORTION, SYMMETRY AND VOLUMETRIC BALANCE
- USE OF INNOVATIVE AND STATE OF THE ART TECHNOLOGY
- HVAC FULLY BMS INTEGRATED



STRUCTURE

- DESIGN OF PT SLABS IN TYPICAL FLOORS
- DESIGN OF BEAMS IN FLOOR GRID SYSTEM AT THREE DIFFERENT LEVELS OVER CENTRAL SPAN OF 43 M
- DESIGN OF CENTRING-SHUTTERING OF 20 M HEIGHT
- STRAIN MEASUREMENTS
- TYPICAL DESIGN OF FLOATING COLUMNS AND GALLERIES



GREEN BUILDING

- EFFICIENT BUILDING ENVELOPE WITH HIGH PERFORMANCE GLAZING
- EFFICIENT LIGHTING SYSTEM
- ENERGY EFFICIENT HVAC SYSTEM
- LOW-FLOW PLUMBING FIXTURES
- WATER REUSE
- RAIN WATER HARVESTING
- NATIVE AND ADAPTIVE VEGETATION CONSUMING LESS WATER
- AMPLE LANDSCAPE
- BIOGAS GENERATION PLANT
- USE OF LOW VOC PAINTS, SEALANTS

PROJECT ACHIEVEMENTS FOR OUTSTANDING DESIGN FEATURES:



**LONGEST POST TENSIONED
PT BEAM SLAB SYSTEM**



**LARGEST GLASS REINFORCED
CONCRETE (GRC) DOME
(37.314M DIA & 16.409 M
HIGHT)**



**TALLEST NATIONAL FLAG 222
FT**

PROJECT BRIEF

GOLD certified under LEED for New Construction (NC) rating system

-Plot Area: 20000 Sq.m.

-Built up area: 33258 sq.m.

Architects: Hiten Sethi & Associates

LEED Consultants: Godrej & Boyce – GBCS

Structural Consultant: Sanghvi & Associates

-Plot no. 1&2, Sector 15A, Belapur Village, Thane, Navi Mumbai



SPECIALIZED SERVICES INCORPORATED IN PROJECT

ARCHITECTURAL FEATURES	PERMANENT FINISHES SUCH AS ;
	COMPOSITE STONE DRY CLADDING, STRUCTURAL DOUBLE GALZING, GRC FINISH
STRUCTURAL DESIGN	SPECIALIZED PT SLAB SYSTEM IN RCC
	PT BEAMS AND SLAB FOR 43.20 M SPAN
	43.2 M DIA DOME IN GRC & STEEL FRAMEWORK
	PROOF CONSULTANCY FROM VJTI
HVAC	2 x 400 T WATER COOLER CHILLER BASED
ELECTRICAL SERVICES	33 KV SUBSTATION, DG & ALL LT WORKS
PLUMBING SERVICES	SEWAGE, WATER SUPPLY WITH 0.15 MLD STP
FIRE FIGHTING SERVICES	SPRINKLER SYSTEMS, FIRE DETECTION & ALARM
FAÇADE LIGHTING	FAÇADE AND LANDSCAPE LIGHTING SYSTEM
LANDSCAPE DEVELOPMENT	PLOT AREA DEVELOPMENT AS PER SITE CONDITION
	ADDITIONAL AREA OF 12000 SQ.M DEVELOPMENT AS FOREGROUND
	100% RWH THROUGH BOREWELLS & COLLECTION TANK
RAIN WATER HARVESTING	
SECURITY & ACCESS CONTROL	HI-TECH SECURITY SYSTEMS, CCTV SURVEILLANCE
AV AND PA SYSTEMS	HI-TECH AV SYSTEM FOR MAHASABHA
	VIDEO CONFERENCING FACILITY, PA SYSTEM
BUILDING MANAGEMENT SERVICES	ALL SPECIALIZED SERVICES INTEGRATED ON BMS
GREEN BUILDING CERTIFICATION (LEED)	AIMING FOR GOLD RATING

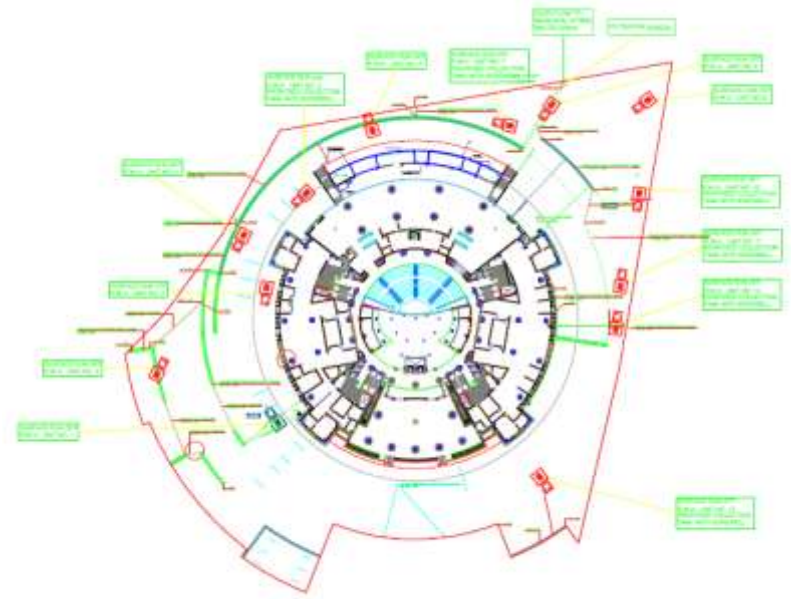
SUSTAINABLE FEATURES



ENERGY EFFICIENCY AND GREEN MEASURES

THE BUILDING HAS BEEN REGISTERED WITH LEED-IGBC FOR GREEN BUILDING CERTIFICATION AIMING FOR GOLD RATING. THE PROJECT HAS BEEN APPROVED BY MOEF AND MPCB.

- **RAIN WATER HARVESTING:** 13 NOS. GROUND WATER RECHARGE PITS FOR HARVESTING THE SURFACE RAINWATER AND COLLECTION TANK FOR TERRACE RAINWATER HAVE BEEN CONSTRUCTED TAKING INTO ACCOUNT THE RAINWATER CALCULATIONS FOR THIS ZONE.
- **BIO GAS PLANT:** AS A PART OF SOLID WASTE MANAGEMENT, THE KITCHEN WASTE WILL BE RECYCLED TO GENERATE COOKING GAS FOR THIS FACILITY.
- **SEWAGE TREATMENT PLANT OF 0.150 MLD.** AND A WATER PURIFICATION SYSTEM IS INSTALLED. THE TREATED WATER IS DESIGNED TO BE REUSED FOR COOLING TOWERS, FLUSHING OR GARDENING.



ENERGY EFFICIENCY AND GREEN MEASURES

- **LANDSCAPE:** TREES AND SHRUB SPECIES THAT CAN SUSTAIN IN THE SALINE SOIL AND GROUND WATER CONDITIONS HAVE BEEN SELECTED. SHADE GIVING TREES ARE PLANTED AT OPEN PARKING AREAS.
- **IRRIGATION SYSTEM** IN THE FORM OF DRIP LINES AND SPRINKLERS HAS BEEN LAID TO MAINTAIN THE GREENS WITH MINIMAL WATER CONSUMPTION.
- **USE OF SUSTAINABLE MATERIAL:** GRC AND MANUFACTURED STONE ARE USED FOR DRY CLADDING. THIS ENSURES, A VENTILATED FAÇADE KEEPING THE INSIDE SPACES COOLER. THE **GLASS USED IN DOUBLE GLAZED STRUCTURAL/CURTAIN GLAZING** IS SELECTED AS PER ENERGY SIMULATION IN THE LOCAL CLIMATIC CONDITIONS. THE INTERIOR WORKS ARE ALSO CARRIED OUT USING MODULAR FURNITURE IN MDF ETC.
- **WATER COOLED CHILLERS**



- BASIC AMENITIES WITHIN 800 M RADIUS
- BUS ROUTES AT 248 M



- ELECTRIC CHARGING STATIONS FOR FOUR WHEELER AND TWO WHEELER



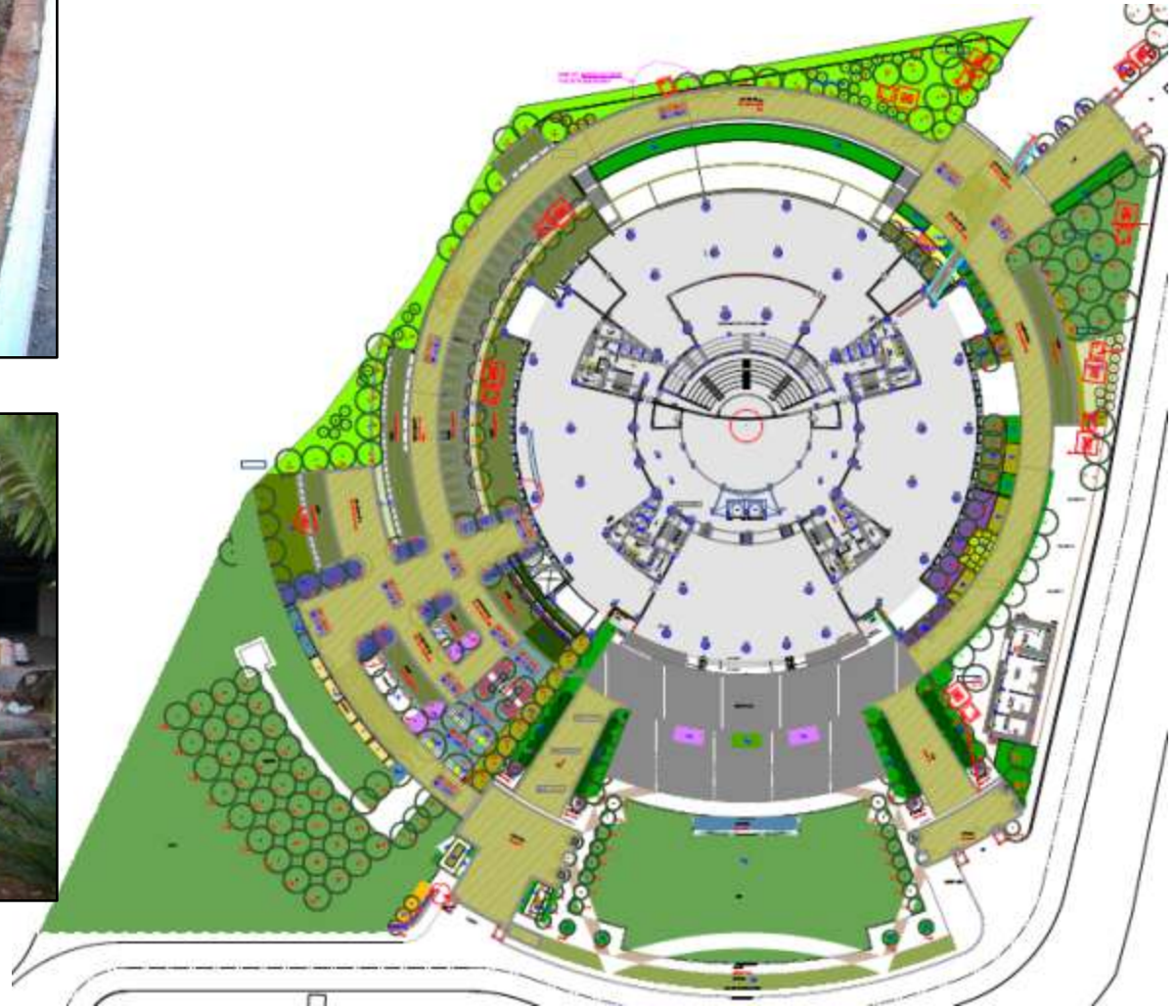
- ROOF TOP AND SURFACE RAIN WATER HARVESTING SYSTEM



- 100% HEAT REFLECTIVE ROOF



- 33 % OF LANDSCAPE AREA



WATER EFFICIENCY



Sensor Faucets,
low flow fixtures



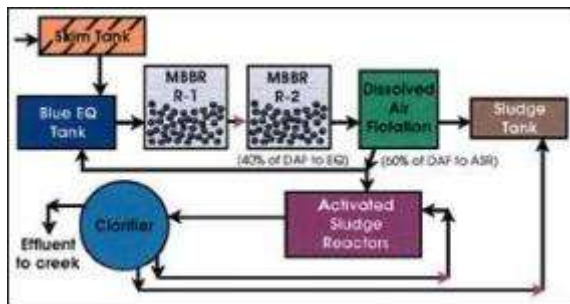
**NO POTABLE
WATER FOR LAND
SCAPE:**

Drip irrigation,
Recycled water

STP 150 CUM,
Recycled water for
Irrigation, flushing
and 50% HVAC

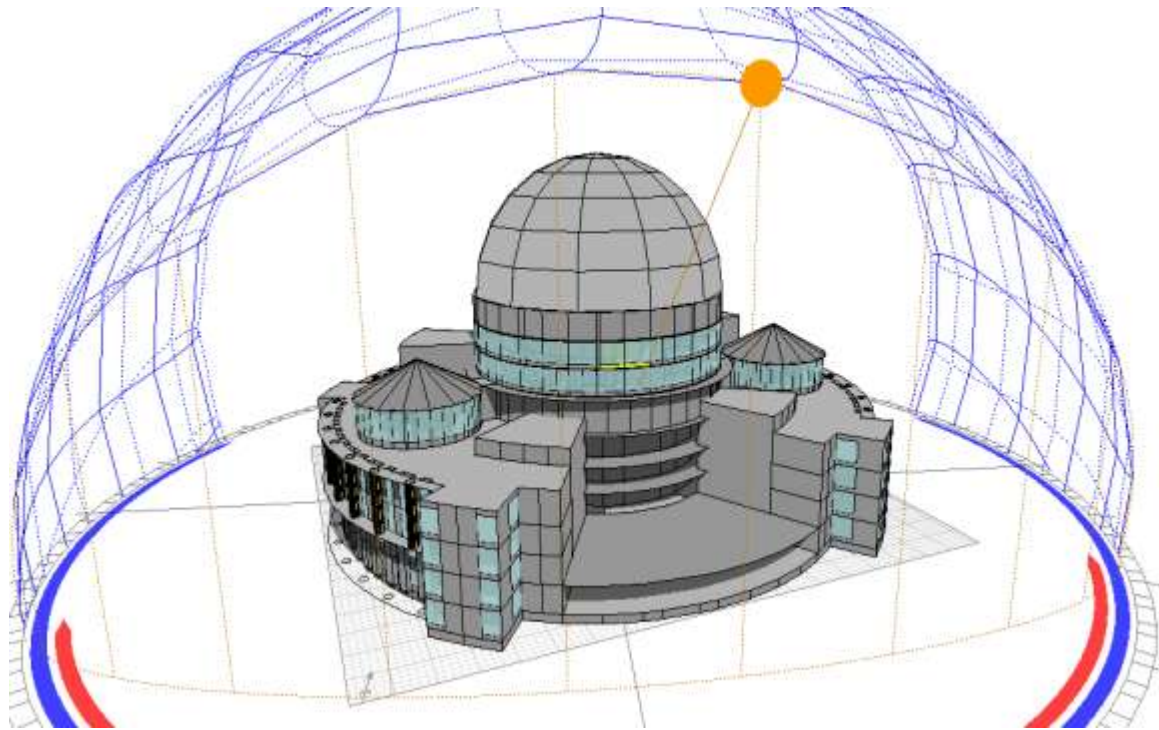
61%

Potable water
reduction

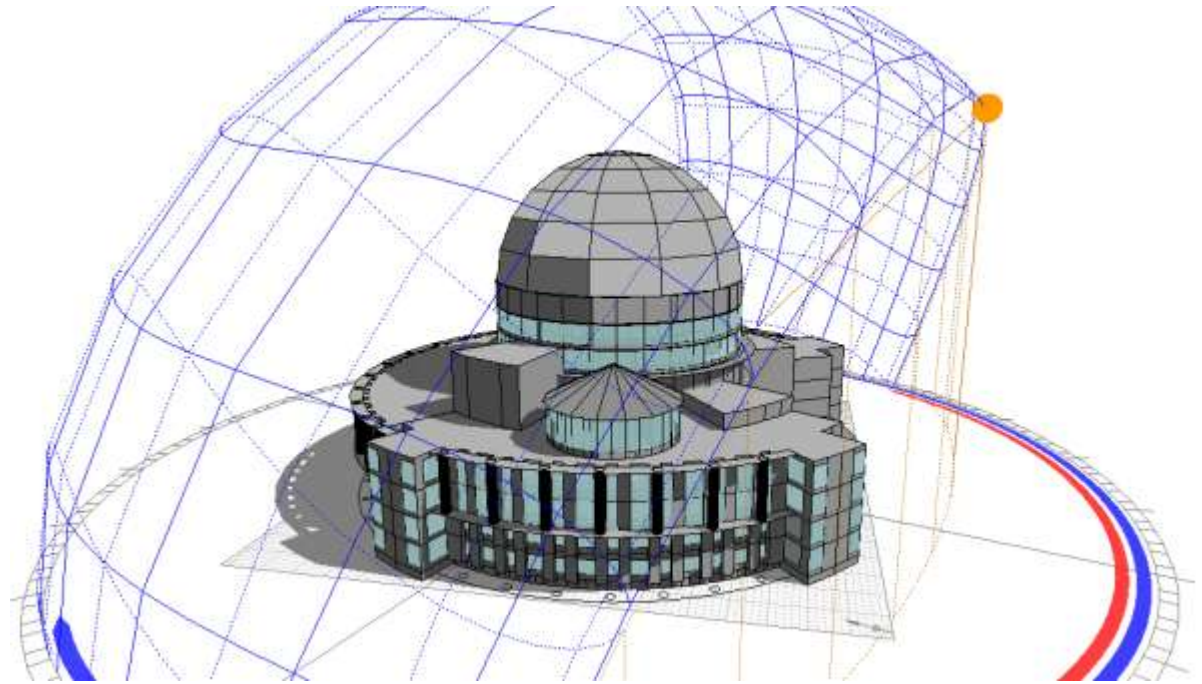


**44.7% WATER
SAVING IN
DOMESTIC AND
FLUSHING**





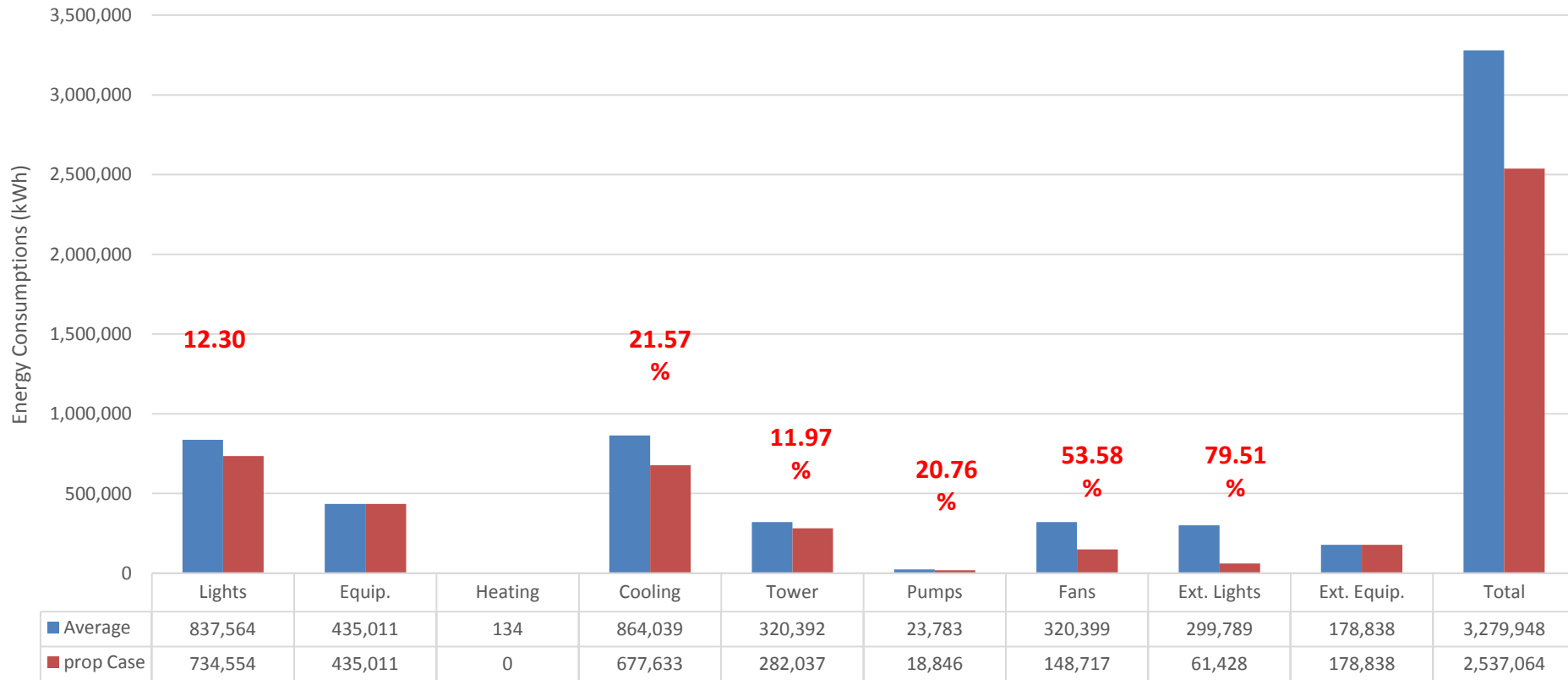
- Excellent shading
- Under-deck Roof Insulation
- High Performance Glazing
- Energy Efficient Lighting Design
- Energy Efficient external lighting



- High Performance HVAC system with water cooled centrifugal chiller having COP of 6.17
- Heat recovery units
- Demand control ventilation
- Variable primary chilled water pumping system and VFDs in AHUs

ENERGY AND ATMOSPHERE

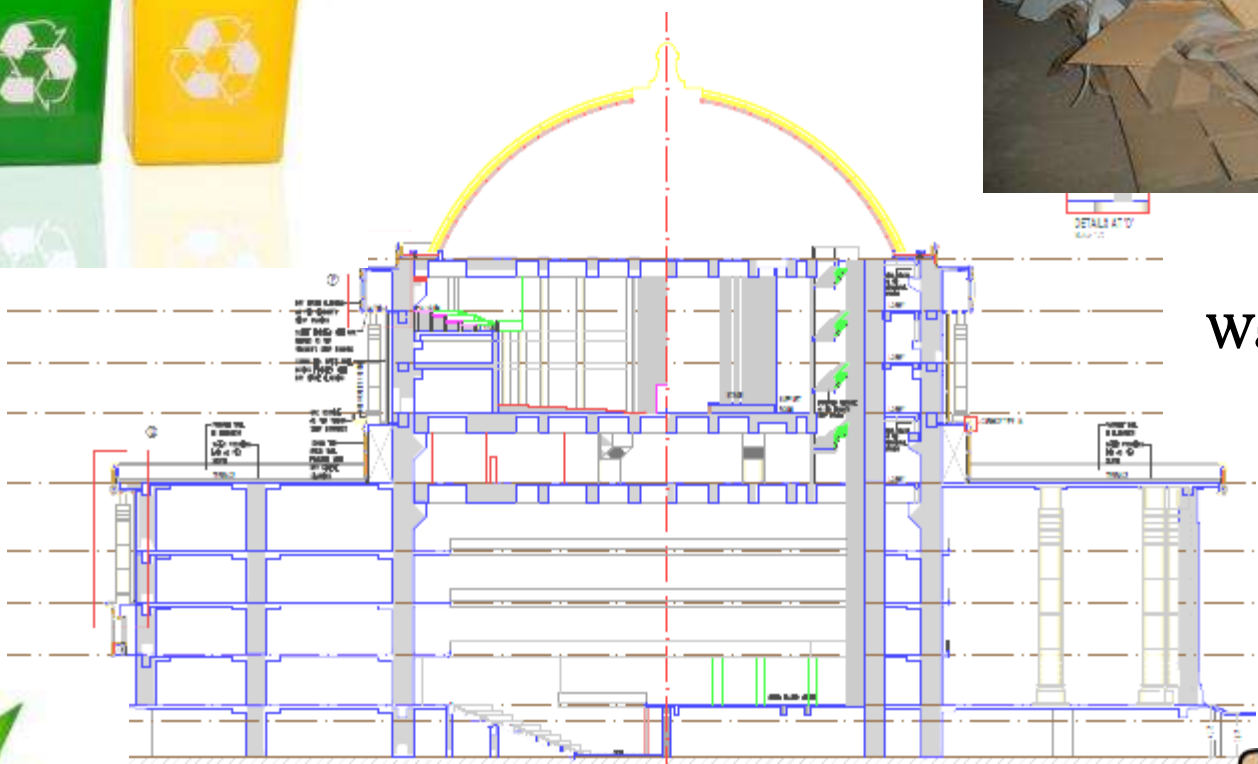
22.6% Savings with Base Case



MATERIALS AND RESOURCES



Recycling of operational waste

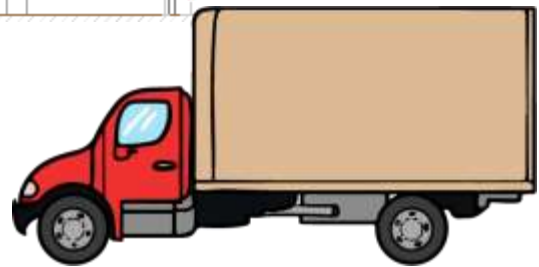


100%
Construction
Waste Diversion
from landfill

16.34 %
Recycled
Content



55.23 % Regionally
Manufactured
20.95 % Regionally
Extracted





- Enhanced Fresh Air- 30 % Extra than ASHRAE 62.1

- CO2 Monitoring System

- Construction IAQ Management as per SMACNA Guidelines



INDOOR ENVIRONMENT QUALITY



- Use of LOW VOC content materials
- CRI certified Carpets
- Urea-formaldehyde free composite wood and agri-fibre products
- Thermal comfort design as per ASHRAE-55



- **WATER USE REDUCTION**
- **CONSTRUCTION WASTE MANAGEMENT**
- **RECYCLED CONTENT**
- **REGIONAL MATERIALS**
- **ACCREDITED PROFESSIONAL**

THANK YOU