

**HOLISTIC DESIGN**

Green Boulevard, developed by leading green developers, The 3C Company, is based on a holistic design principle, outlined to be a green structure.

The project was built keeping in mind the notion that buildings should consume less as in the current scenario conventional buildings consume far more energy than any other sector of our economy.

It is estimated as per the building simulation results that the active and passive features of the Green Boulevard, together help in saving 40 percent energy from other standard office buildings in the country.

The project is the world's largest LEED Platinum-rated building in Shell and Core

category by the US Green Building Council. The 3C Company was determined to develop a building which is energy-efficient, propagates cost savings, reduces impact on the environment, and improves living and working conditions.

**THE LOCATION**

The project has a built-up area of one million sq ft (approximately) and is located in Sector 62, Noida. It is home to multinational corporations such as Accenture, Sapient, Universal Crescent Power and Nokia-Siemens.

**TIMELESS COURTYARDS**

Courtyard is a timeless spatial element of Indian architecture; it continues to be as valid today as before. It contributes to spatial quality beautifully by bringing in subdued light and creating serene environment. Courtyard hence performs multifunctions - being a light well, a microclimatic generator and a landscape element and a social space. This concept has been taken care of in the project.

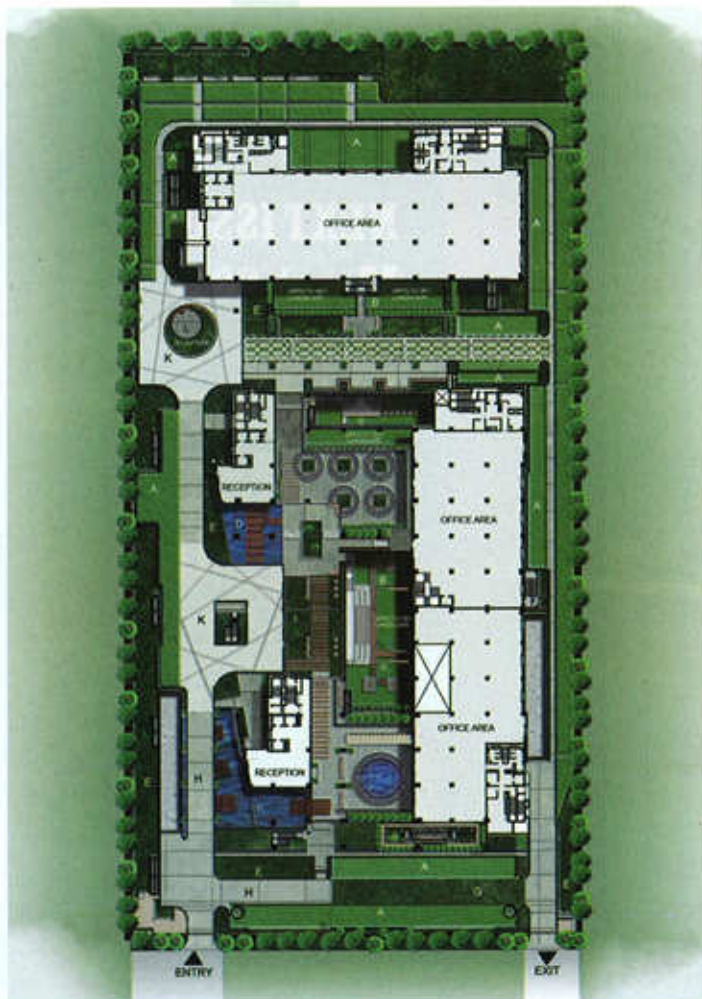
**NATURAL LIGHT**

Series of landscape-sunken courts allow diffused natural light into lower ground area housing cafeteria, gym and offices. The lower ground areas remain cooler as these are sunk & surrounded by plants on all sides.

The nature's walk is created across the campus amalgamating ground and lower ground with the intent of making people walk every day through this landscape before entering their workplace. This would make the occupants feel close to nature and inculcate appreciation and sensitivity towards the environment. Paintings and sculptures (made out of waste) are part of this landscape with the intent of creating awareness on global warming.

**THE FACILITIES**

With facilities such as an amphitheatre, gym, cafeteria and shops, all the three towers are designed around shaded landscaped courts with shallow water bodies & plants, which are placed strategically along the wind



The ground floor plan

direction to help cool the ambient temperature of the campus. These are staggered horizontally and vertically, giving each one visibility from the road as well as ensuring harnessing of daylight without shadowing each other.

**THE PARKING AREA**

More than 85 percent parking is kept in the basement, with the entry-exit ramps in closest proximity to the site's frontage (vehicular traffic limited to the periphery thus maximising green areas). This maximises landscape areas, reduces heat island effect and increases on-site rainwater infiltration. More than 40 percent of the open areas have been landscaped with native plants.

**EFFICIENT DESIGNING**

The building depth has been optimised to capture natural daylight and maximise views. Computer-simulated building model was created and sun path analysis was done to design building fenestration and sun-shading devices to get in glare-free natural light and reduce heat ingress into the building. All the exterior shading systems are designed to get in glare-free light. Pre-cooled fresh air, the heat recovery wheel and free cooling during fair weather further help in energy conservation.

The longer facades of the three buildings have natural north-south orientation ensuring diffused natural light from the north while the clever horizontal projections cut off the high sun from the south side.

**USE OF ECO-FRIENDLY MATERIAL**

The wall composition followed is a combination of 9" thick brick wall + 50 mm air gap + 25 mm extruded polystyrene + 4" AAC block.

The window to wall ratio has been kept as only 21.60 percent. Double insulated high performance glass has been employed to balance daylight and views. U-value of the selected glass composition is 20 Btu/hr sq ft which is far superior to conventional practice of using single glazing with thermal conductivity of 1.15 Btu/hr sq ft.

A layer of 75 mm thick extruded polystyrene insulation laid over - deck in combination with finished white cement flooring help in minimising the heat gain through roof.

Lighting power density is limited to .8w/sq ft as against allowable 1.3w/sq ft by the National Building Code.

**ZERO-DISCHARGE FEATURE**

Entire rainwater is collected and directed to harvesting tanks. Sewage is 100 percent recycled and treated and the recycled water is used for cooling tower makeup, gardening and flushing. Solar water heating, drip irrigation, native and low water consuming plants are adopted for efficient water management strategies.

Use of regional, reused, recycled building materials has been maximised to conserve natural resources.

As part of the construction management plan, the project managers and the labourers at the construction site have been extensively trained to minimise wastage and store wastage in allocated areas for further use or recycling. Construction waste was properly segregated and more than 95 percent is diverted from landfill by reusing, recycling or handing over to designated agencies.

(Bhardwaj can be contacted at b.vidur@gmail.com)



The emphasis is on natural light

**SNAPSHOT**

Project	Green Boulevard
Client	Meriton Infotech Pvt Ltd
Architects	Design & Development
Other Consultants	Spectral Services Consultant (Service Consultant) & Pioneer (Structural Consultant) & Other Consultants
Commencement Date	February 2007
Date of Completion	July 2008
Cost	Rs 150 crore
Area	700,000 sq ft approximately (leasable area)
Location	Noida