

## COMPANY

**Vivek Bhole Architects Pvt. Ltd.**

## LOCATION

**Mumbai, India**

## SOFTWARE

**Autodesk®Revit®****Autodesk®3ds Max®**

# Utmost luxury living in harmony with eco-conscious practices using BIM

Autodesk Building suite helps NeoModern realize an award winning dream project on a grand scale in Mumbai, India.

"Architecture is modeled on life. It doesn't give a second chance to make a first impression." Keeping this simple statement in mind, various impressive spaces are designed in One Avighna Park and Revit proved to be the tool of choice in realizing a dream.

The apartments design is villa-esque with each room having an attached eco-deck with personal plunge pools. Careful consideration given to the eco-decks ensured the resident's privacy from the floor above. Revit's 3D visualization facilitated helped us in achieving this realistically."

—**Mr. Vivek Bhole**  
Principal Architect  
VBAPL



Image courtesy of VBAPL

**Established in 1996, Vivek Bhole Architects Pvt. Ltd. (VBAPL) is acknowledged as one of India's leading architectural practices, which has contributed significantly to the skyline of Mumbai. Founder and Principal Architect Vivek Bhole has shaped the firm as a multidisciplinary design consultancy with over 200 professionals committed towards a common vision of achieving innovation in the built environment.**

VBAPL follows a multi-faceted design philosophy that inherently seeks to create unique solutions catered to individual's needs while being aesthetic, functional, economical, sound and sustainable. With more than 15 years of experience, Vivek Bhole has played an integral role in the practice's expansion; duly ensuring that the highest standards of management, technical excellence and design quality are maintained at par with international requisites.

This comprehensive provision of success in collaboration services has allowed VBAPL to build a wide spectrum of projects for both

reputed multinationals and emerging enterprises across commercial, retail, hospitality, residential, healthcare and institutional genres along with townships, SEZ and IT Parks.

VBAPL initiated BIM in its practice with Autodesk Revit in 2011 and applied it successfully to various projects with differing scopes such as residential townships on a contoured site, contemporary building architecture, and interior work. The software's elaborate features significantly improved collaboration between people and processes throughout design, documentation and construction, which was imperative for VBAPL given the scale of their work and participants. Vivek Bhole, Principal Architect, VBAPL, emphasizes, 'Through BIM, Autodesk® Revit® supports our core mission in a way that no other design process can do'.

Autodesk suite of BIM products, especially Revit, played a crucial role in the three crucial aspects considered in this project - Design, Material and the Execution Process.



Image courtesy of VBAPL

|                       |   |
|-----------------------|---|
| <b>Category:</b>      | Luxury Residential  |
| <b>Architects:</b>    | Vivek Bhole Architects Pvt. Ltd.  |
| <b>Developer:</b>     | Avighna India Ltd.  |
| <b>Configuration:</b> | Twin 64-storey Residential Towers + 1 Commercial + 7 Rehabilitation Towers. |
| <b>Built-up Area:</b> | 4 Million Sq. Ft.   |
| <b>Location:</b>      | Mumbai, India   |
| <b>Status:</b>        | 56/61 floors completed.   |

The podium facade treatment includes over 12000 sq. m. of area with more than 4000 fins. It was very difficult to calculate the quantity of fins. A long personal, double height ecodeck with a 1.2 meter deep plunge pool is attached to every apartment. Sun shading devices are used to block the vision. Revit was the key to detect, redesign and rectify these features.

—Mr. Prathamesh Pawaskar  
Head of Department  
VBAPL

## The Project

One Avighna Park is a pre-certified platinum rated green building and 7 Star Rating by

CARE in the real estate category and has been awarded 26 International Asia Pacific Property Awards including Best Residential High Rise Development in the entire World for two consecutive years: 2012 and 2013.

## Challenges

The most prominent challenges in the project are also its most prominent features:

1. Jogging Track on top of the 9th floor.
2. Tusk-Shaped Columns at the entrance.
3. Crown on top of the building.
4. Maintenance in the long term.
5. Clash Detection.

Initially, the jogging track was designed to go around just a small portion of the roof-top area and was mostly flat or sloped. With the revised design the track is now curved and sloping in three directions which was difficult to visualize using just 2D drawings.

The four tusk-shaped columns are the most prominent features of the building and are located near the entrance. The challenge faced with the column lies in their curved form which has a curvature in all three dimensions.

The next prominent challenge was the design of crown on top which gave the building its identity. The design was revised several times and updating this information into construction drawings was a time consuming process with previous methods.

## The Solution

Revit was used to model the 3D curves and slopes of the jogging track using massing and modeling techniques prevalent in Revit. This along with 3D visualization possible only with Revit helped in laying out the jogging track without any clashes with the surrounding landscape and facilities.

“One Avighna Park is a symbol of tasteful opulence and eco-conscious luxury living with innovative features like rain-water harvesting, natural light and ventilation, ample greenery for temperature control, solid-waste management, use of low-emission eco-friendly material, and intelligent energy-efficient LED lighting systems.

The apartments are designed for optimal use of air-conditioning considering natural airflow and wind directions which saves energy costs. Revit from Autodesk suite of BIM softwares proved to be of immense help in designing, planning and execution of all these features.” Says Mr. Vivek Bhole, Principal Architect, VBAPL.

BIM helped move on in each phase of the project from setting out of floor levels to clash detection of structural and MEP.

The complexity faced on execution of curvilinear and sloped form of the floor of E-Level was executed well using 3D visualization of Revit.

BIM’s 3D coordinates drawing helped on execution of the toughest phase, the huge tusk-shaped column which is an architectural character located at the entrance.

Also the structural & MEP synchronization cantilever projection on each floor which serves as the exterior aesthetic element of the design was solved using Revit.

—Mr. Sushil Kumar Varma  
Senior Associate  
VBAPL



Roof-top Jogging Track with Curved Slopes

Image courtesy of VBAPL

The modeling of the tusk-shaped columns was done using the coordinates feature in Revit and the data was conveyed via auto-generated drawing to construction site.

Maintenance which was perceived as the biggest apprehension faced by residents moving into a new building was addressed head on by tying all long term contracts in advance.

Dedicated and focused two years were dedicated to conceptualize the design of the project and ensure that all the practical and sustainable aspects were taken care of using Revit using its collaboration features.

“VBAPL needed a tool for clarity in visualization so that various teams and consultants could understand circumstances before execution and address them to avoid wastage of time, material and money. Revit served this purpose to our satisfaction.” Says Mr. Darshit Patel, Revit Designer, VBAPL.

The modeling of the tusk-shaped columns was done using the coordinates feature in Revit and the data was conveyed via auto-generated drawing to construction site.

This helped in both visualizing and revising the aesthetically shaped columns several times without compromising on drawing delivery times to the site.

It was prerequisite for VBAPL to visualize the residential project in 3rd & 4th dimensions so that their various teams and consultants could understand and manage project execution within the shortest stipulated time, material and money.

We used Revit extensively during all phases of the project and the collaborative nature of Revit was a crucial element in a multi-team environment.

—**Mr. Darshit Patel**  
Revit Designer  
VBAPL

- shapes.
- Precise schedules and quantities could be created within no time which helped in project costing even with frequent design changes.
- Revit made available the facilities of clash detection and in case of high-rise residential buildings, this proved to be very vital.
- The camera visualization technique helped in providing a privacy factor to each apartment in the building which was earlier detected only by onsite inspection.

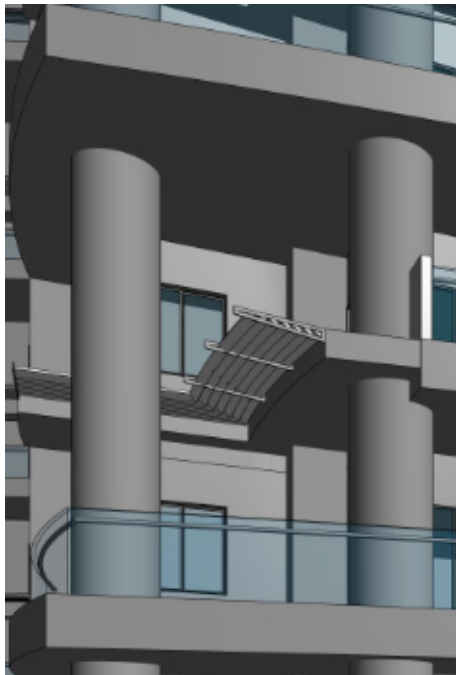
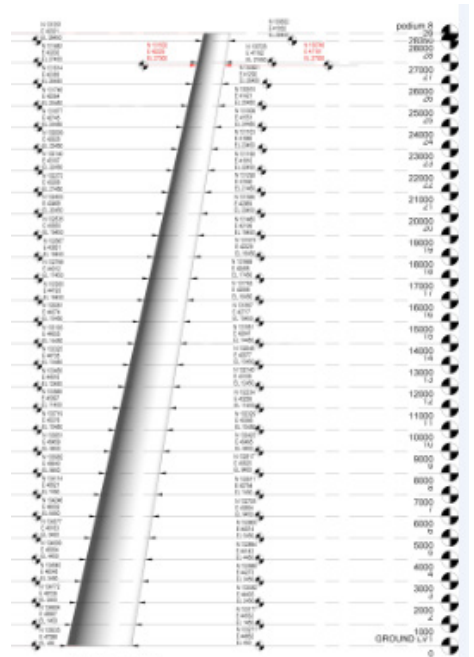


Image courtesy of VBAPL

Each apartment has a pool on the personal terrace and view point from the apartment on the floor above was crucial in planning the layout of the pool as well as the terrace itself.

The camera visualization technique in Revit helped us in providing a privacy element to each apartment in the building which could earlier only be detected only onsite inspection.

—**Mr. Manoj Patel**  
Senior Associate  
VBAPL



The Tusk-shaped Column  
Image courtesy of VBAPL

## The Result

- Revit proved to be a very versatile solution during the project and helped in visualizing and modeling of complex aesthetic