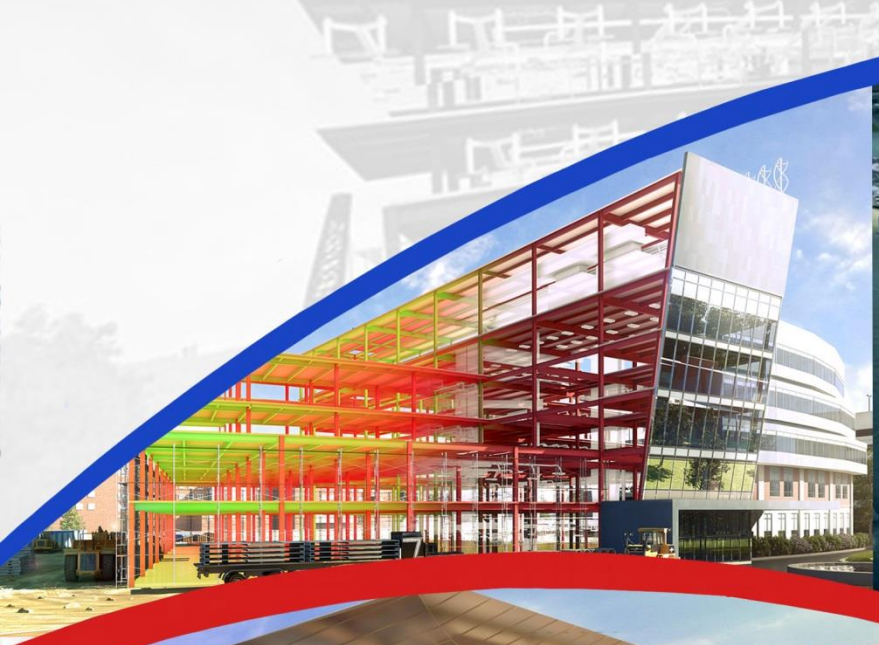
COMPANY PROFILE

BIM Global Ventures Sdn. Bhd.

(A wholly-Owned Subsidiary of HSS Engineers Berhad)



hss BIM

BIM GLOBAL VENTURES SDN. BHD.

buildingSMART

www.hssgroup.com.my

Commitment

We are committed to our core values and corporate mission :

- Maximizing Client value by adopting the latest technologies and innovations
- Improving project efficiency by streamlining work flows to provide high quality services
- Time saving by using a large global team to leverage time zone advantages
- Reducing Client costs by approximately 5 - 20% by harnessing a highly qualified work pool in India

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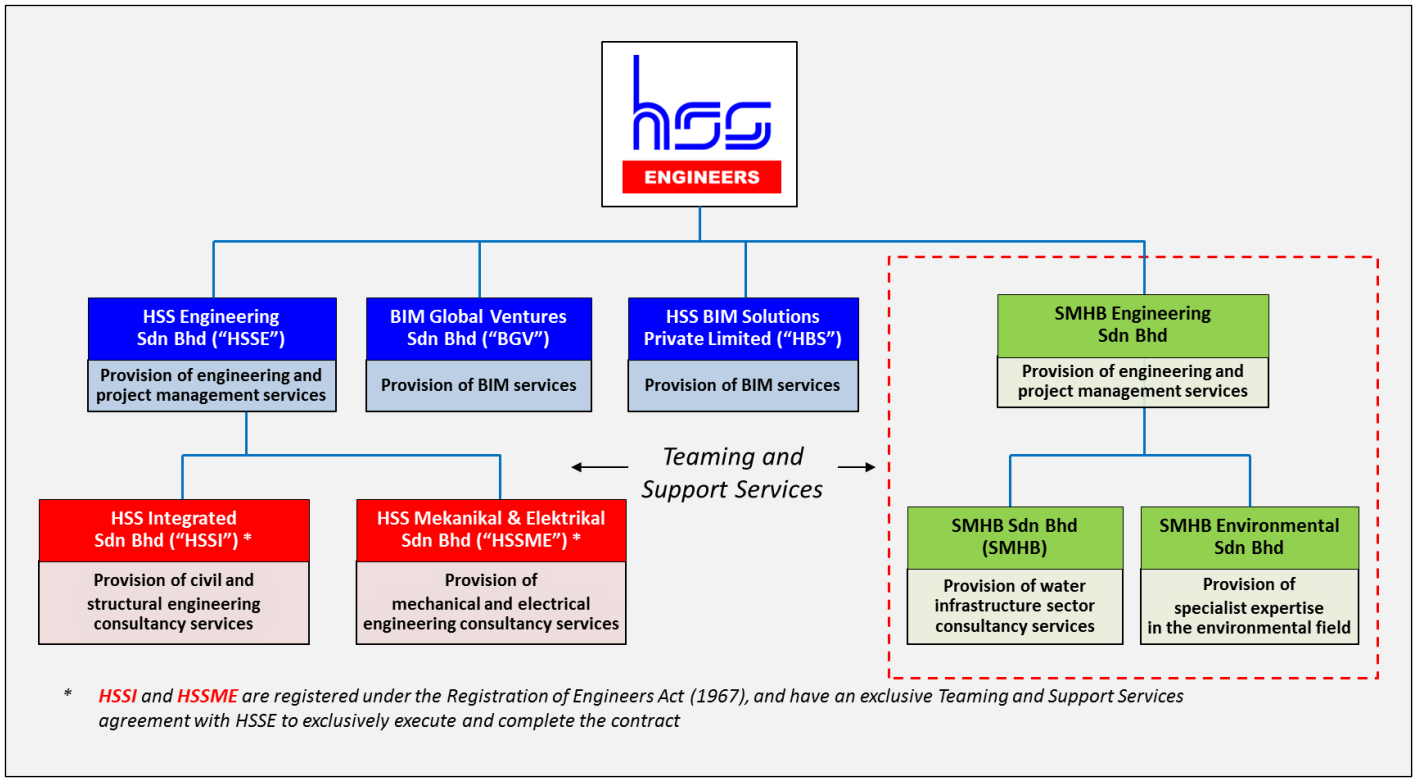
About BIM Global Ventures



BIM Global Ventures Sdn Bhd (BGV)

BGV, was established in July 2012 to strengthen the Group's capabilities through the adoption of Building Information Modelling ("BIM"). The adoption of BIM services extend beyond planning and design phase of a project, extending throughout the building life cycle, supporting processes, including cost management, construction management, project management and facility operation. We support Clients from concept to construction helping them to "minimize the errors and maximize the benefits".

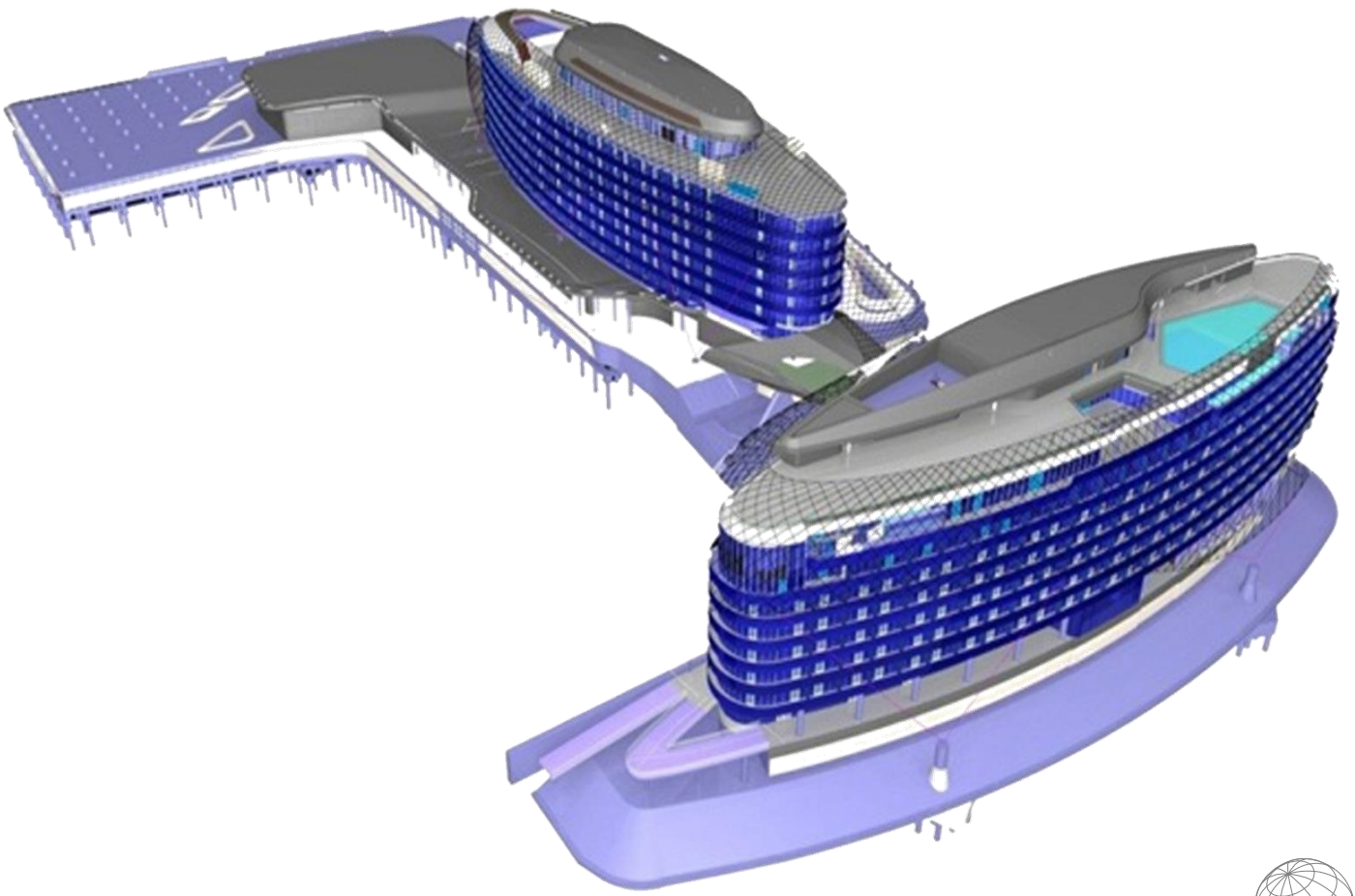
BGV has a team of 100 Revit professionals who have executed more than 150 projects in residential, commercial, institutional, hospitality spaces etc. and has developed a reputation for being an excellent service provider with a team of well trained and experienced staff.

BGV has been implementing BIM in various projects in India, Singapore, Malaysia, Australia and Middle East.

Architectural 3D Modeling

We are extremely adept in providing 3D architectural modeling services, including presentations for the Clients . Our 3D architectural modeling services have been crucial to the successes of many companies in the construction industry. Our 3D Architectural modeling services involve the creation of 3D architectural models and other tailored, business specific models. We have a team of professional modelers who create such models for the benefit of builders to display their layout concept to Clients. Building 3D models is useful, specifically in demonstrating to the Client an overview of the final result. Some of the salient features of our 3D architectural modeling services include:

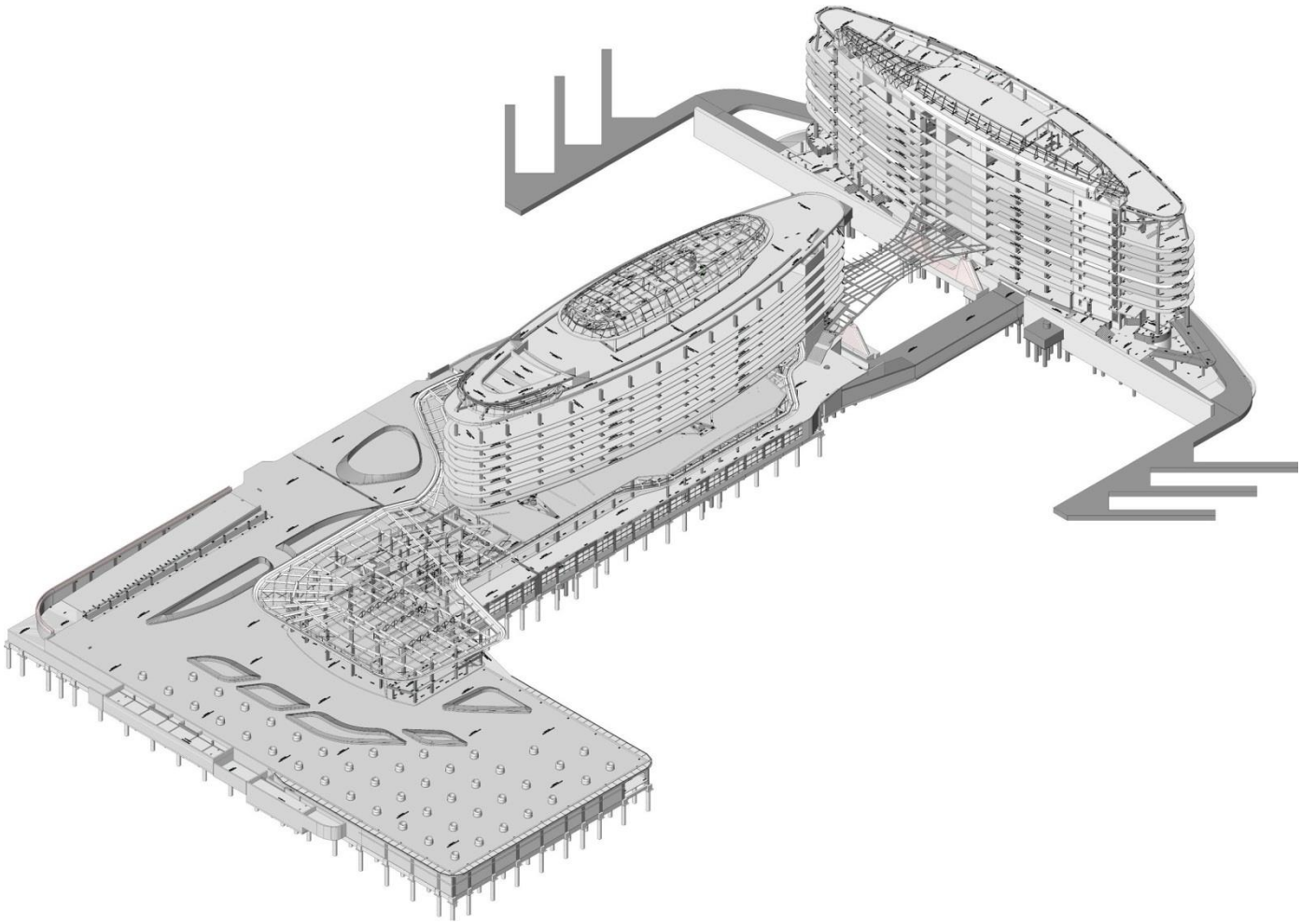
- Accurate 3D architecture models of building parts
- Detailed and precise look and feel of the intended architecture
- Model in consensus with Client's needs
- Feasible models according to the budget
- Alteration and adjustments even after the completion of the project
- Multiple types of models and designs



Structural 3D Modeling

Structural BIM Modeling is an integral part of a building's lifecycle management, starting from it's design to throughout it's lifespan to demolition. Accurately designing and detailing structural requirements while communicating with other trades throughout the design and construction process is key to an efficient and effective design.

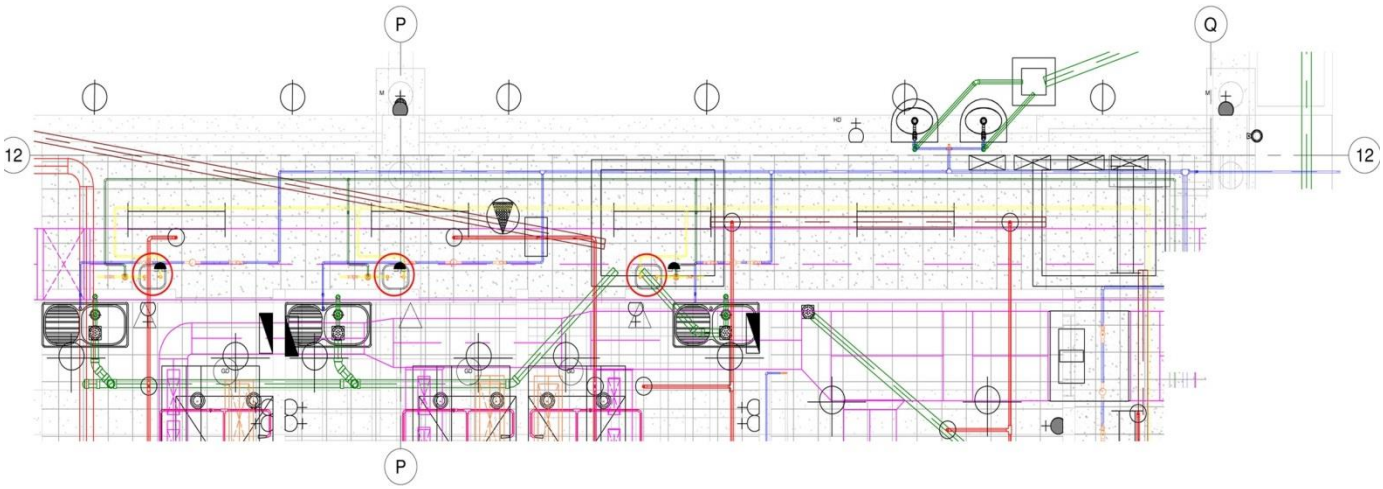
When special design requirements such as blast or progressive collapse are necessary, current practices typically rely on manual calculations, simplified analysis or artistic renditions of the suspected causes of failure. We take accurate Structural BIM Modeling a step further by combining it with advanced design and analytical capabilities to provide superior 3D analysis, culminating in cost savings and safe designs.



Revolutionizing MEP

Proper planning and coordination are the keys to the successful execution of projects in the construction industry. Advancements in 3D technology and the advent of Building Information Modeling (BIM) have revolutionized the Architectural, Engineering and Construction (AEC) industry.

BIM allows stakeholders to create and examine virtual representations of the Mechanical, Electrical and Plumbing (MEP) systems, and other utilities of their project. This virtual construct can be used to generate accurate shop drawings and address any and all design issues before construction begins.



Benefits Of MEP Modeling

- **COORDINATION** : streamlined communications for quick decision making among Architects, Engineers, Contractors, Sub-Contractors and other services during the design and pre-construction phases.

- **EFFICIENCY** : Check the accuracy and completeness of project plans and drawings before starting construction, eliminating delays due to pending Requests for Information (RFI) and Change Orders.

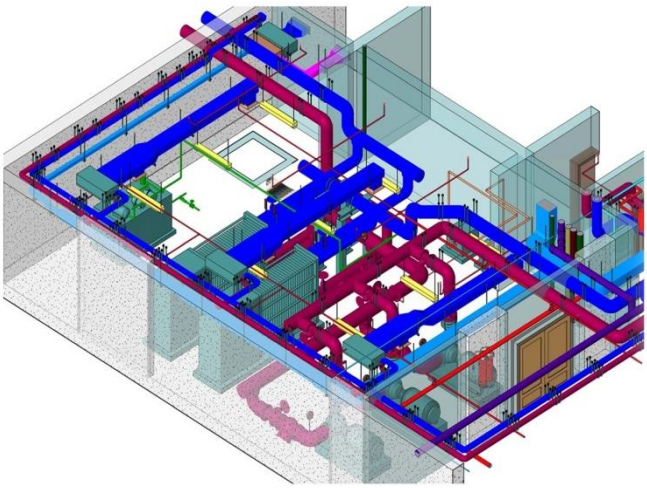
- **SAVINGS** : Pre-construction reviews mean better use of manpower, better quality construction and less waste of time and materials, all of which translates into lower costs.

- **PROJECT MANAGEMENT** : The use of detailed materials such as conflict reports, sleeve drawings, hangers and insert drawings allow for a better look at "the big picture" and aid in the review, scheduling and monitoring of each project from beginning to end.

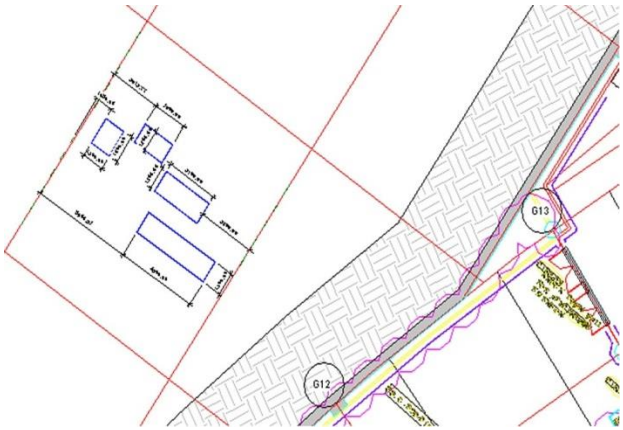
Our clients have reported cost savings of 5 - 20% by successfully implementing BIM.

HVAC

HSS specializes in the virtual construction of 3D BIM models using a range of materials including contract documents, specification sheets, design documents and equipment submittals. A model of the HVAC system, including Hangers, Trapeze and seismic restrainers, is created then augmented using information from architectural, structural and other trade and utility sources. The final model is generated after resolving any potential issues by re-routing ductwork, changing elevations and duct resizing. Value Engineering and Design Validations are also offered.



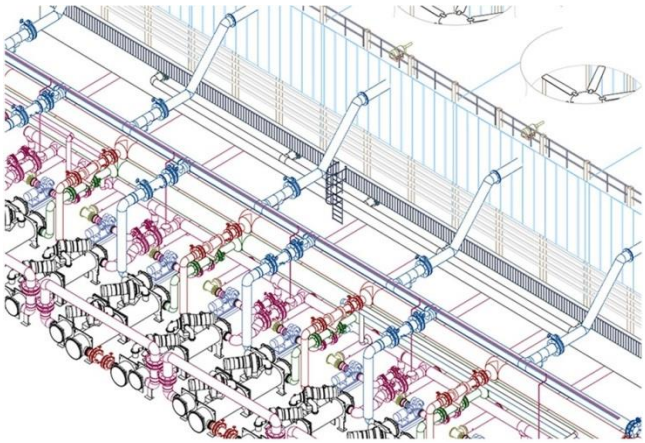
Block Out Drawing



Block out drawings are required before a contractor can begin pouring concrete on the site. Block out drawings are created from the coordinated BIM model after alignment with the architectural grids. Our experienced team keeps the necessary clearances for the block out as per the contract documents and construction codes.

Equipment Layout

Equipment Layouts need to be accurately determined to ensure the proper installation of HVAC equipment. The innovative use of the BIM model provides accurate pad layout with reference to the architectural grids and structural drawings.



Quantity Take-off

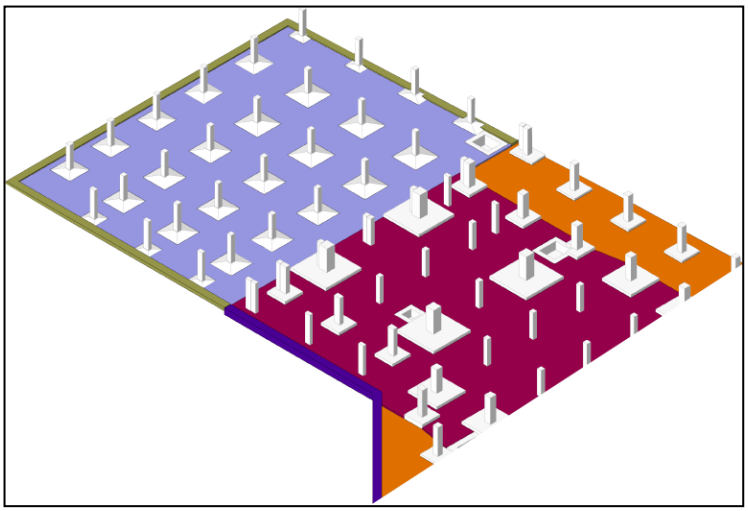
Raft Slab Concrete Quantities

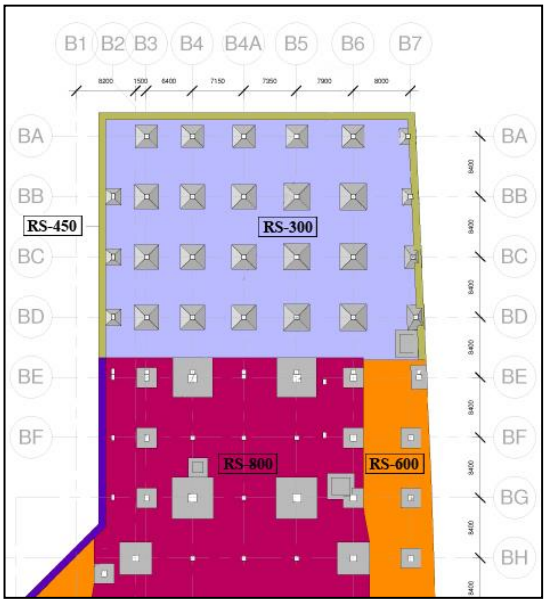
CROSS REFERENCE BOQ

SCHEDULE OF RAFT SLAB - SECOND BASEMENT BLOCK A			
TYPE	TYPE MARK	AREA	VOLUME
600mm-RCC SLAB	RS-600	2309.474 m²	1385.685 m³
800mm-RCC SLAB	RS-800	3181.904 m²	2545.523 m³
900mm-RCC SLAB	RS-900	92.888 m²	83.599 m³
		5584.266 m²	4014.807 m³

SCHEDULE OF RAFT SLAB - SECOND BASEMENT BLOCK B			
TYPE	TYPE MARK	AREA	VOLUME
600mm-RCC SLAB	RS-600	3991.480 m²	2394.888 m³
800mm-RCC SLAB	RS-800	3137.848 m²	2510.279 m³
900mm-RCC SLAB	RS-900	83.019 m²	74.718 m³
		7212.348 m²	4979.884 m³

SCHEDULE OF RAFT SLAB - SECOND BASEMENT BLOCK C			
TYPE	TYPE MARK	AREA	VOLUME
300mm-RCC SLAB	RS-300	1145.652 m²	343.696 m³
450mm-RCC SLAB	RS-450	107.542 m²	48.394 m³
		1253.194 m²	392.090 m³



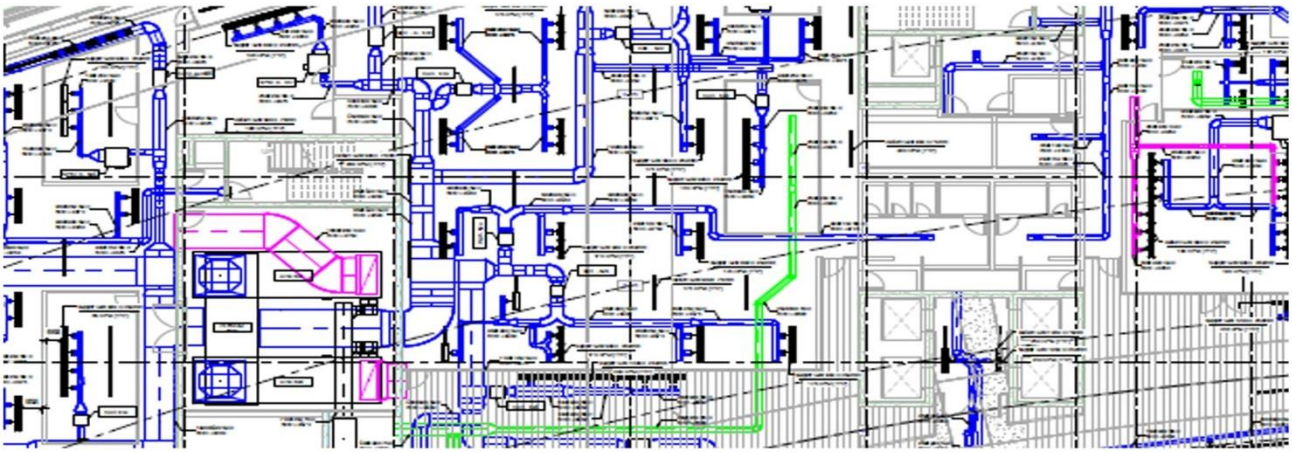


LEGEND:-

- 300mm Thk RCC SLAB
- 450mm Thk RCC SLAB
- 600mm Thk RCC SLAB
- 800mm Thk RCC SLAB
- 900mm Thk RCC SLAB

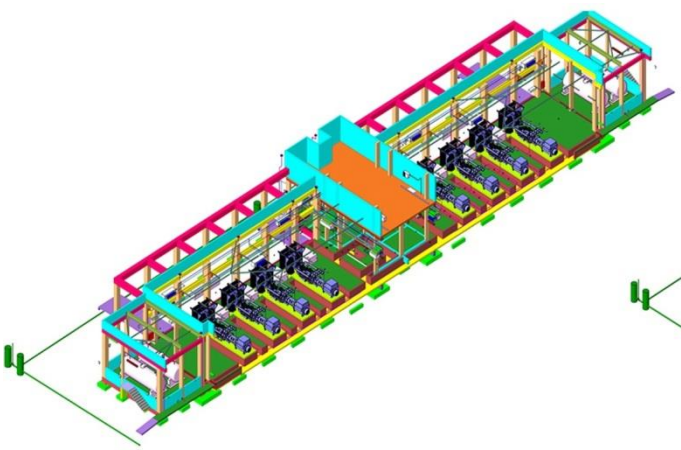
Shop Drawings

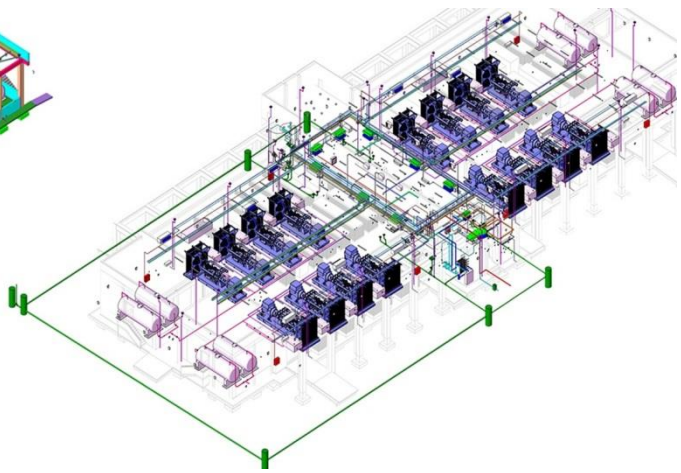
Shop drawings are created based on client standards and are useful for contractors, fabricators, suppliers and manufacturers. These drawings are generated from coordinated HVAC BIM models and are detailed enough to use for workshop fabrication and on-site installations.



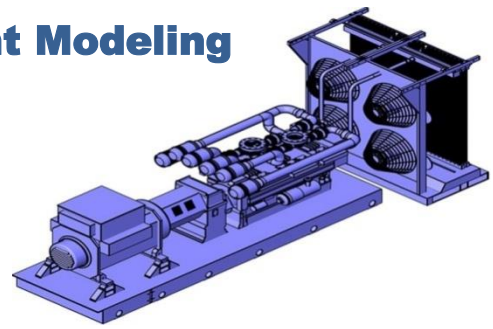
Mechanical Room Modeling

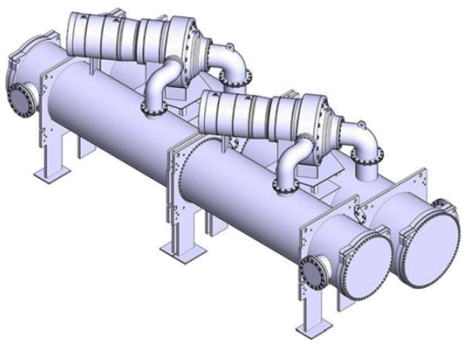
Along with HVAC Duct Modeling, we also can provide detailed mechanical piping models to show equipment locations and piping systems. From this model, we can generate detailed spool drawing for accurate manufacturing and procurement with quantity take-off.





Equipment Modeling

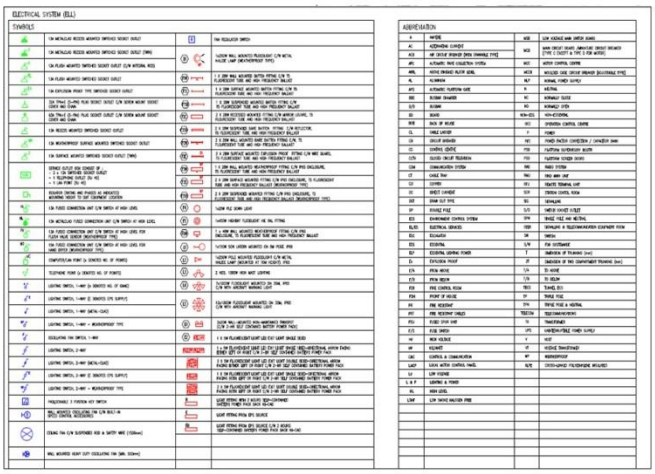


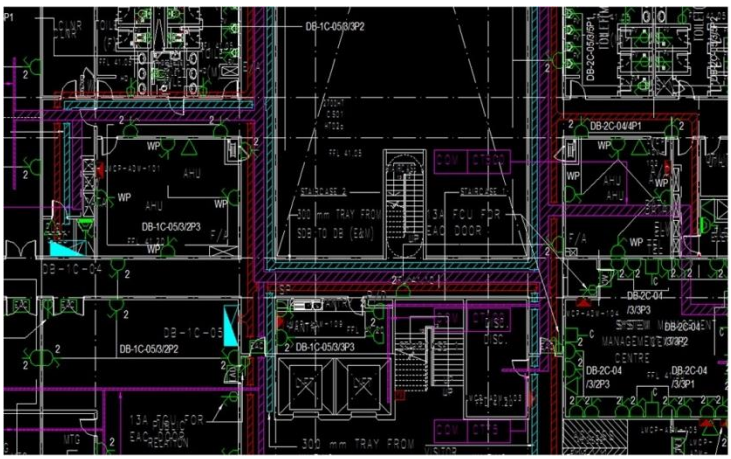


Electrical

We can create a 3D BIM electrical model of all conduits, tray tables, lighting fixtures, fire alarms, and other electrical equipment, based on contract drawings, manufacturer cut-sheets and Client work process and standards.

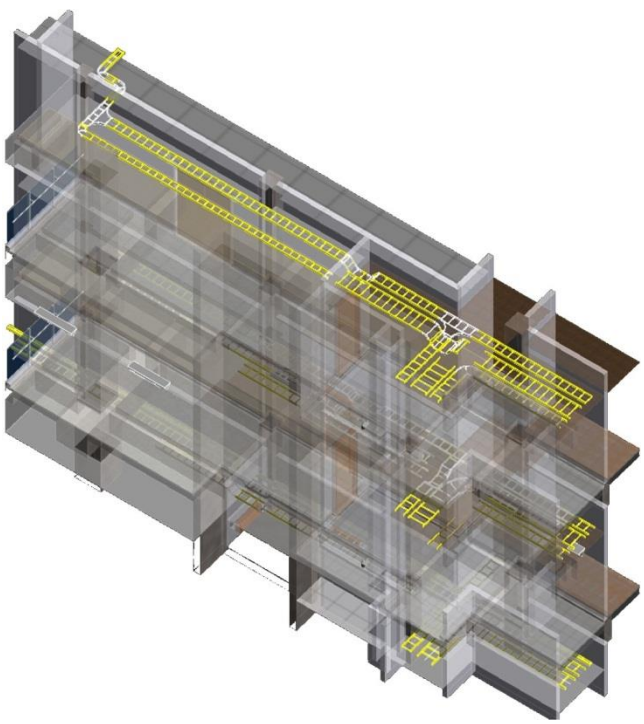
Input Legend & Lighting Plan

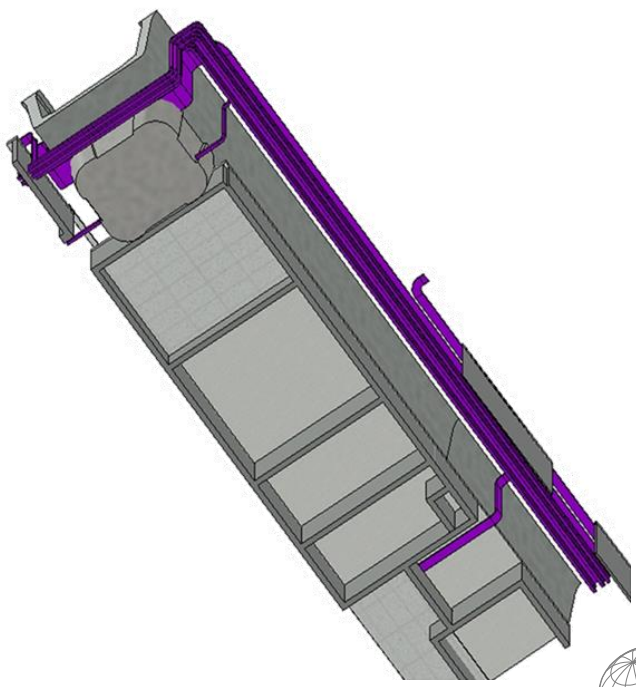




Electrical Model

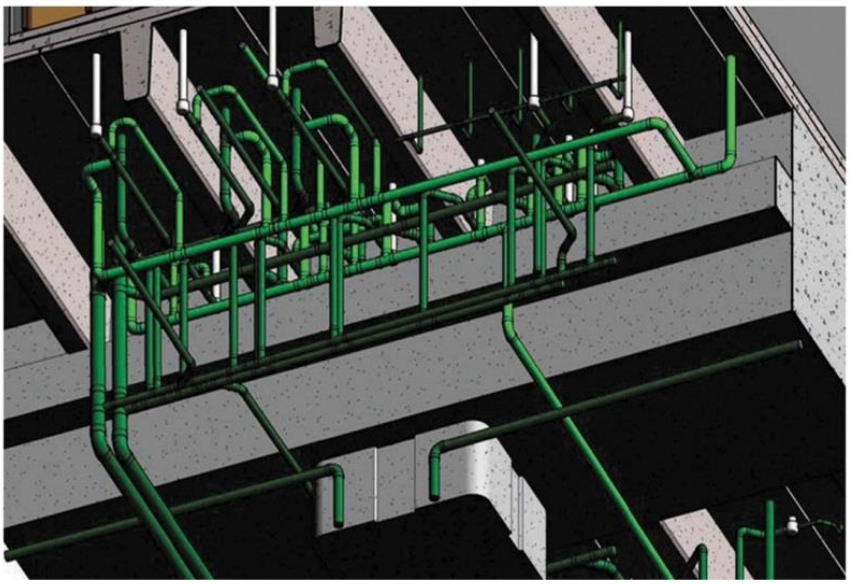
The electrical model is compared to architectural, structural, HVAC and plumbing models and an interference report is created. We redesign the route, fixture, tray layout, etc. based on the interference report. A finalized electrical model is created after resolving any potential issues with other systems. This saves time and money on the site, as all issues are resolved before construction begins.



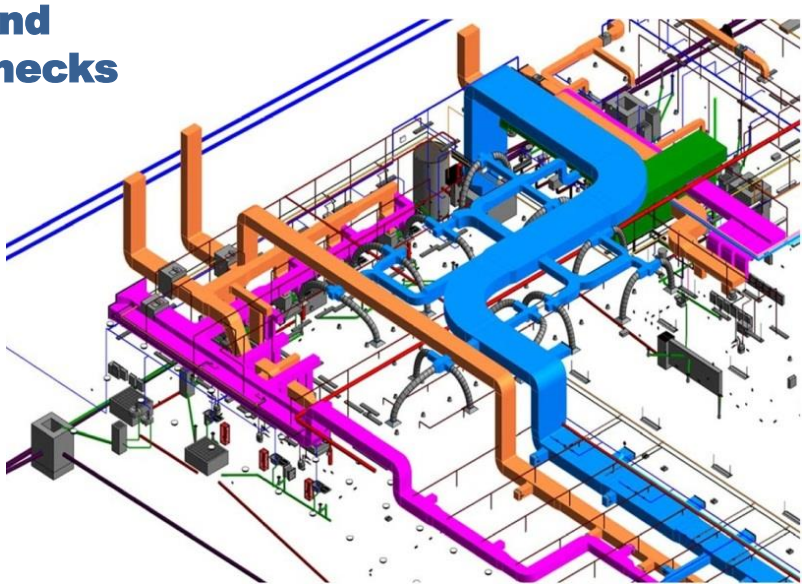


Plumbing

The plumbing model is created from the contract/design drawings in strict compliance with contract specifications, technical submittals and the relevant codes (UNEU or the country/state codes, UPC, NFPA and the local civil defense codes). Then the model is coordinated with all other areas for conflict/clash resolution.



Coordination And Interference Checks

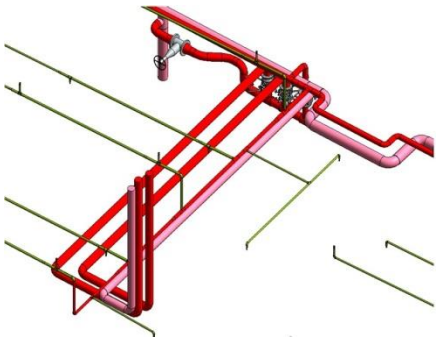


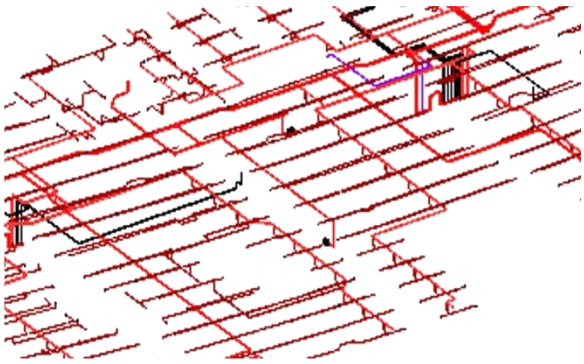
The Coordination Model is created using information from the HVAC, Plumbing, Electrical, Architectural, Structural systems to provide a comprehensive view of all potential conflicts. These are resolved during web-based site coordination meetings, and a final conflict-free plumbing model is created.

Accurate coordinated drawings help the construction team to eliminate RFI's, rework and wastages and enables efficient construction planning.

Fire Protection

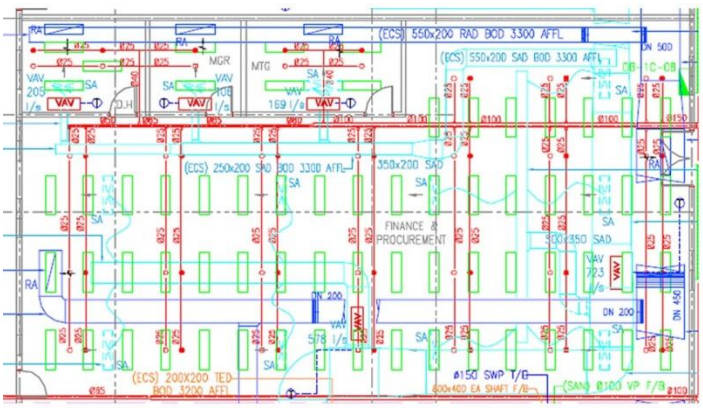
Expanding beyond piping to include fire alarm control panels, pull stations, smoke detectors and many other elements of the total fire protection package. Fire alarm manufacturer Notifier got involved in creating HIM-compliant information about its products in response to demand from the marketplace for product information that could work in BIM. Everything from sprinkler pipes, valves and fittings all the way down to fire alarms, dampers, sealants and caulking will be modeled in BIM. This will ultimately tie to the owner's facility management model.





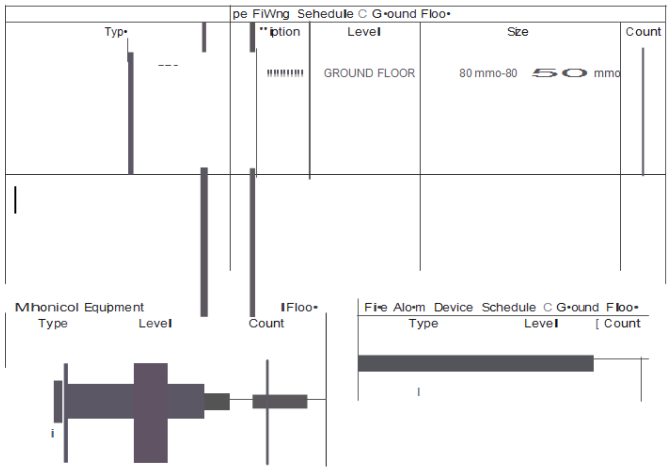
Installation Drawings

We provide detailed installation drawings to help the contractors in planning and installing plumbing services efficiently, saving both time and costs.



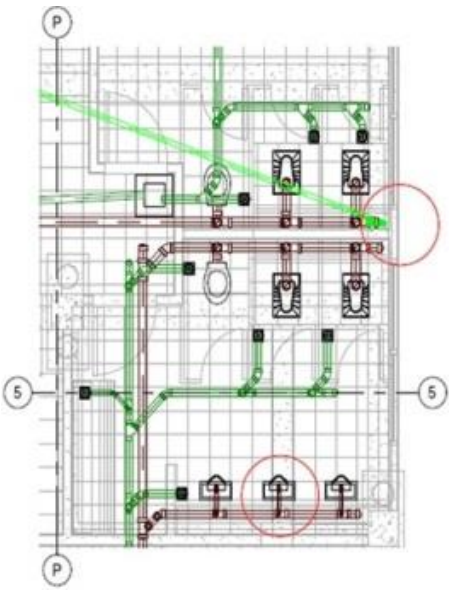
Quantity Take-off

The significant benefit of 3D modeling is accurate quantity information. Quantity take-off can be detailed and tabulated as per the client requirement for procurement, fabrication and installation. It is software generated and automatically updates with concurrently with the 3D model.



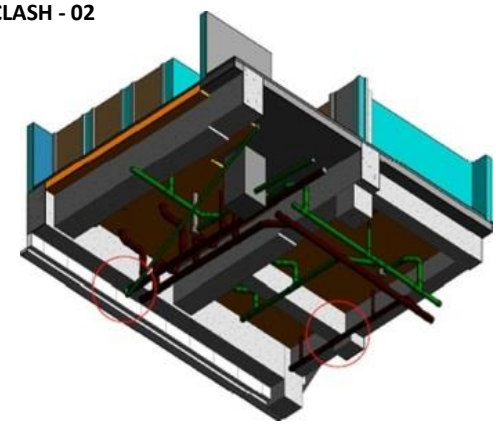
Clash Detection

Clash detection is an important and integral part of the BIM modeling process. Clash detection arises out of the fact that, in BIM modeling, there is not just one model, but several, that are, in the end integrated into a composite master model. Each discipline: structural engineering, MEP engineering, environmental engineering, etc... , creates a model, independently of all the others, based upon the architect's original model, which is the starting point for all the other disciplines. After each of the disciplines has finished their work, the next step in BIM modeling is clash detection, which is the process of finding where the models "clash": Clash detection is not new; it's just that, in the past, clash detection took place on the construction site, when the beam that the structural engineer designed is right in the path of the air conditioning units the MEP engineer located. Huge expenses and costly delays were necessary to fix this "clash detection". In BIM modeling, clash detection takes place during the design phase, so that constructability issues can be resolved before construction begins, saving vast sums of money, time and producing a better building.



Soil & Vent Pipe Passing Through Beam

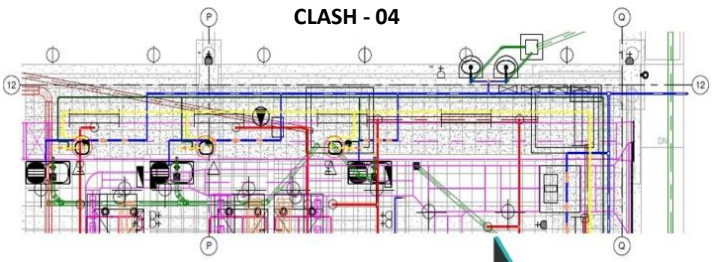
CLASH - 02

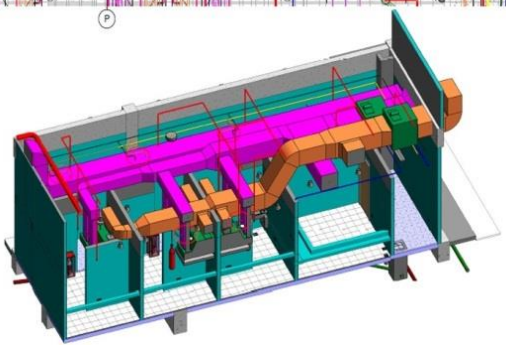


Soil & Vent Pipe Passing Through Beam 3D View

Clash Location :Male & Female Toilet Stall
Soil & Vent Pipe Passing Through Beam 30
Level : Ground Floor
Description : Soil & Vent Pipe Passing Through Beam
Clash Resolution : Clash to be reviewed

CLASH - 04

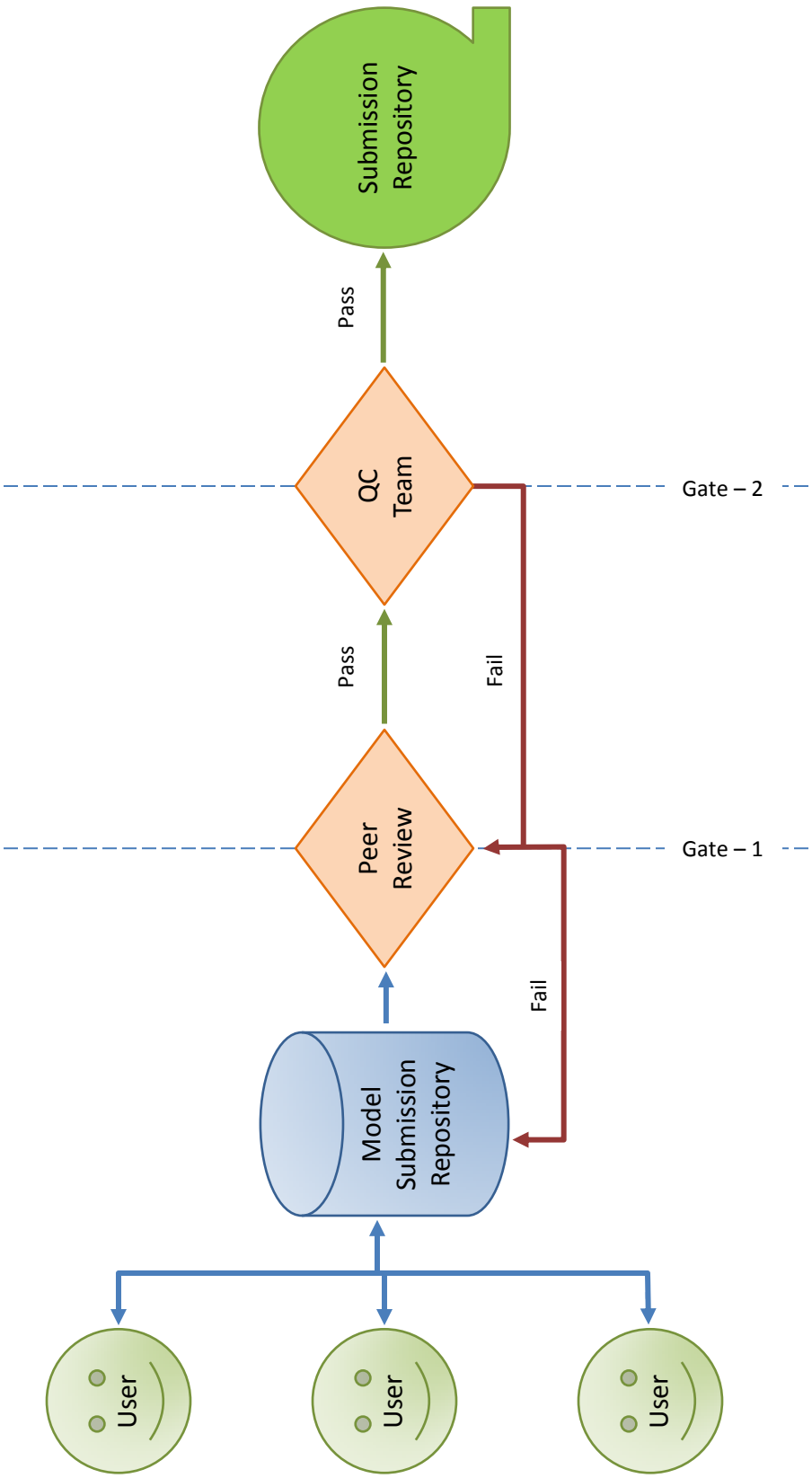




Clash Location: FC-5 & FC-6
Level : Ground Floor
Clash Resolution : Clash to be reviewed

Quality Control Process

QA/QC Approach & Methodology



Why BGV

BGV is a world leader in providing innovative BIM services. Our in-house team of more than 150 experienced architects, engineers and CAD professionals help us provide end-to-end solutions to discerning clients around the world. Our 70,000sq.ft. world-class production facility is equipped with high-end workstations, advanced servers with real time backup and a high speed data and voice network. It is all protected with an uninterrupted power supply with 24 / 7 security system.

Fast Turnaround

Our skilled team of professionals can provide quick turnarounds on complex projects. BGV has managed several large-scale projects across multiple verticals including Hospitals, Health Care Centers, Airports, University Centers, Retail Centers, Convention Centers, Commercial, Industrial and Residential Projects.

Technical Strengths

BGV engineers specialize in the latest BIM software : Revit Software Suite (Revit, Revit MEP, Revit Architecture and Revit Structure), Ecotect Analysis, NavisWorks, Inventor, Civil 3D, Plant Design Suite, Pro/Engineer, Tekla Structure, SolidWorks, Cad Software Suite (CadPipe HVAC, CadDuct(TSI) & CadMEP).

BGV engineers have a deep understanding of global and regional codes and standards. We maintain a consistent level of quality by carefully following the process oriented production and quality control guidelines.

Global Presence

BGV has offices around the world (Malaysia, Chennai, Dubai, Abu Dhabi) so we can help our clients around the clock.

Communication

BGV's Project Managers are available to clients through a number of communication channels including:

- Global telephone network for instant communication.
- FTP over a secured network for file transfers.
- Email for reports and interactions.
- Video and teleconferencing for presentations and conversations.
- Go to meeting conferences with US-based phone systems.

Experienced In BIM Domain

BGV is one of the leading service providers in the BIM domain. We have successfully collaborated with several leading contractors on BIM projects for specialty hospitals, stadiums, universities, apartment complexes, hotels, casinos, large retail centers, high school, airport, commercial buildings, convention center, high rise tower and industrial projects.

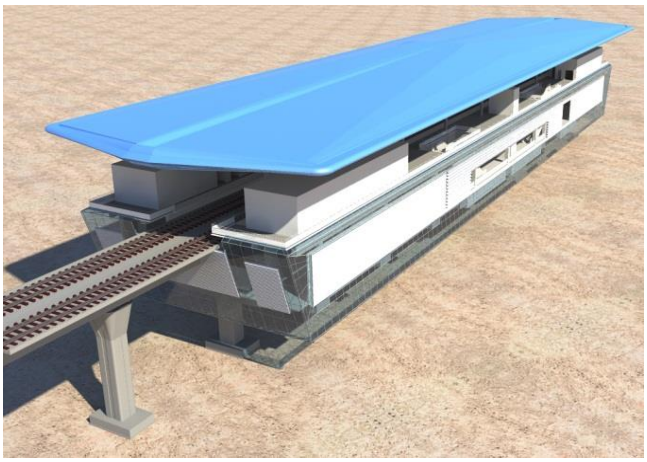
We are currently working on multiple BIM projects including seven hospitals/medical centers, an airport and several other Institutional facilities.

Project Experience

MRT Stations/Depot

Malaysia

THE Klang Valley MRT project involves the construction of a rail-based public transport network which, together with the existing light rail transit (LRT), monorail, KTM Komuter, KLIA Ekspress and KLIA Transit systems, form the backbone of the Greater Kuala Lumpur/Klang Valley region. The project was approved by the Government in December 2010. BIM is being implemented for 24 stations and 2 depots in the Sungai Buloh-Kajang Line 1.



Banyan Tree Signature Project

Malaysia

Proposed 1 Block of Service Apartment and 55 storey Hotel at Jalan Conlay, Kuala Lumpur. The total built up area is about 100,000 square meter which consists of 42 storey of service Apartment (492 units), 3 storey hotel (55 rooms), 7 floors of parking and 3 floors of service apartment facility.

Kajang Utama

Malaysia

Proposed Serviced Apartment on PT No. 33745, 33746 and 33747 measuring a combined area of approximately 4.07 Acres which is known as Kajang Utama Phase 7, Kajang, Selangor. The total built up area is about 1,158,334 sq ft. which consists of Tower 1, Tower 2, Tower 3, Facilities, Podium Parking and Landscape Podium.

Project Experience

Kia Peng Project

Malaysia

Proposed Development of High End Condominium at Lot 82 Jalan Kia Peng, Kuala Lumpur. The total built up area is about 559,220 sqft. which consists of Service Apartment, Parking Facility from Basement 1, Basement 2, Lobby, Level 2 and Level 3 to 7.

UDA Tower A

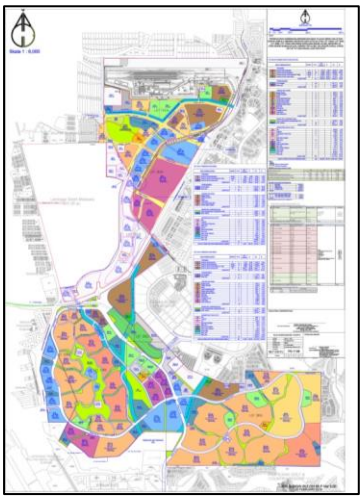
Malaysia

Proposed UDA Corporate Office & Retail on Lot 3344 & 3345, Section 41, Jalan Sultan Ismail, Kuala Lumpur. The total built up area is about 531,980 sq. ft. which consists 40 storey office buildings with 3 office buildings with 3 basements and 5 podium car park and the 2 levels retail.

Kwasaland

Malaysia

Kwasa Damansara Township is a 2,300 ac new township in Sg. Buloh which has been announced as part of the ETP programme. The township aims to be a digital city with residential, commercial and mixed use zones.

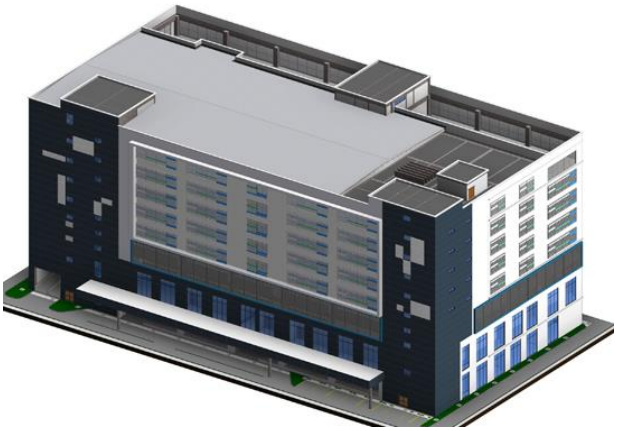


Project Experience

Taman Technology Park

Malaysia

Proposed 9 storey commercial building at Technology park Kuala Lumpur, Malaysia. The total built-up area is about 40,00 sqm with 6 floors for office and retail and 3 floors of parking. The office space is intended for standard chartered bank back end facility and hence the design concepts for the office space is of Standard Chartered's standards and specifications.



Giant Setapak Hypermarket

Malaysia

BIM Specialist service was successfully implemented for the Giant Hypermarket construction in Setapak. The Hyper market is located in Setapak Malaysia. The total built-up area is 13,470 sqm.

Vermont Condo

Singapore

Located in Singapore, this 20 Storey building has a total built-up area of 72,905 sq.ft. It has about 158 Luxury units.

Project Experience

Dubai Pearl Towers

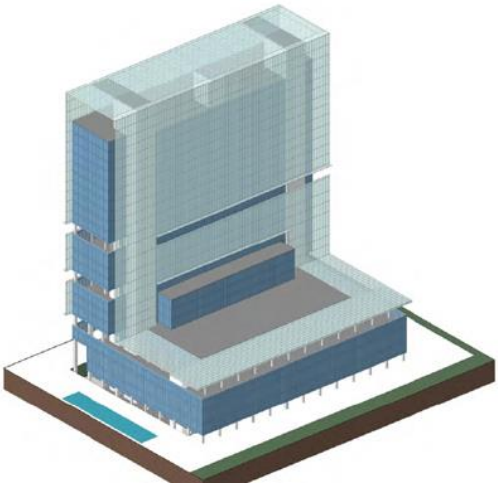
Dubai

The luxury high-rise towers consist of 2,000 units of apartments being part of the Mahara tower, Lulwa tower, Jumana tower, Dana tower and the Omnix North and South towers. The Jumana tower is a 52 storey tower while the Mahara tower is 55 storeys.

Dar Al Riyadh Cancer Hospital

Dubai

The 1,238 bedded hospital includes a cancer centre, emergency service area, VIP wing, research facility, underground parking for 1,200 cars and a nuclear medical bunker. The built-up area for the hospital is 118,000 square meter.



Muscat International Airport

Oman

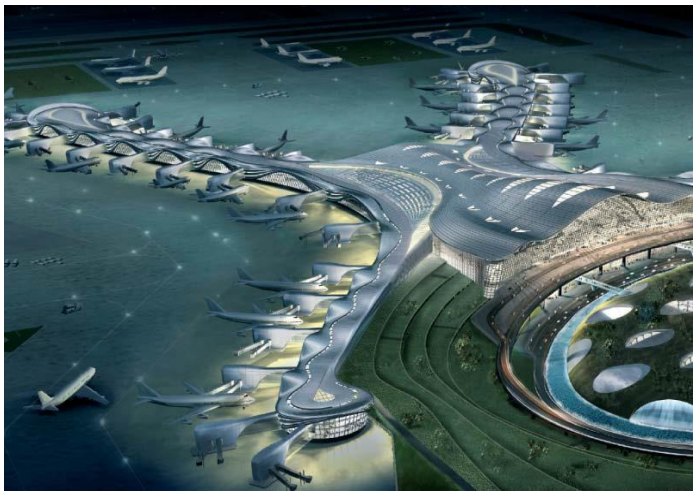
Upon completion the Airport will have the capacity to handle 12 million passengers annually with further expansions planned in three subsequent phases which will boost the airport's annual capacity to 24, 36 and 48 million passengers. The 396,200 sqm airport consist of the North, South & West piers, a passenger transit, a traffic concourse and 3 new runways.

Project Experience

Abu Dhabi International Airport

Abu Dhabi

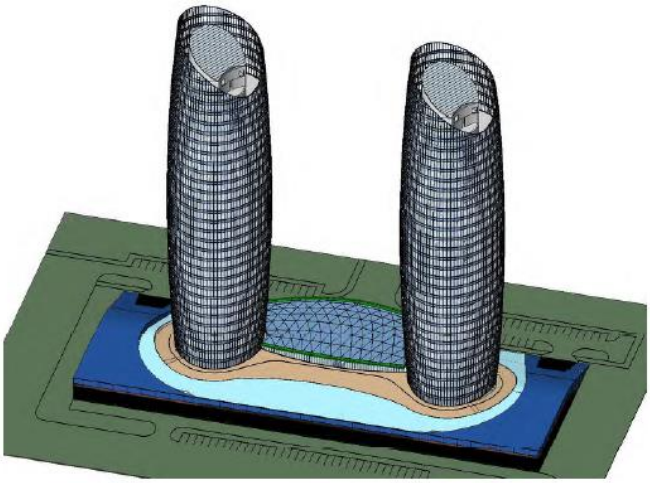
The Airport Building will be a benchmark in airport construction worldwide featuring an undulating roof, inclined facade, 52 meter tall processor ceiling and the use of advance technology with a total build-up area of 702.000 sqm. 84,000 tons of steel will be used for the construction and the terminal building with a roof area of 225.000 sqm and a total facade area of 200.000 sqm. One of the unique aspects in this prestigious project is the effective use of BIM which will enable the project management and progress monitoring in a 3D working environment.



Adic Office Tower

Abu Dhabi

A 25-storey twin office tower. The design concept reflects the client's aspiration to build a pair of office towers that will serve as a landmark for the city of Abu Dhabi while reflecting the aspirations of the 2030 Abu Dhabi Plan. Linked via a podium, the towers will comprise over 75,000 sqm of accommodation, to accommodate approximately 2,100 occupants. The project will transform a total site area of 11,500 sqm. with a unique architectural design.



Yas Marina Hotel

Abu Dhabi

Located within the Yas Marina Circuit, Abu Dhabi, the first new hotel in the world to be built over an F1 race circuit with a built-up area of 85,000 sqm. The hotel embodies various key influences and inspirations ranging from the aesthetics and forms associated with speed, movement and spectacle to the artistry and geometries forming the basis of ancient Islamic art and craft traditions, a perfect union and harmonious interplay between elegance and spectacle. The hotel consist of 499 rooms, 75 suites and 7 restaurants.

Project Experience

ETL IT Park Chennai-One

India

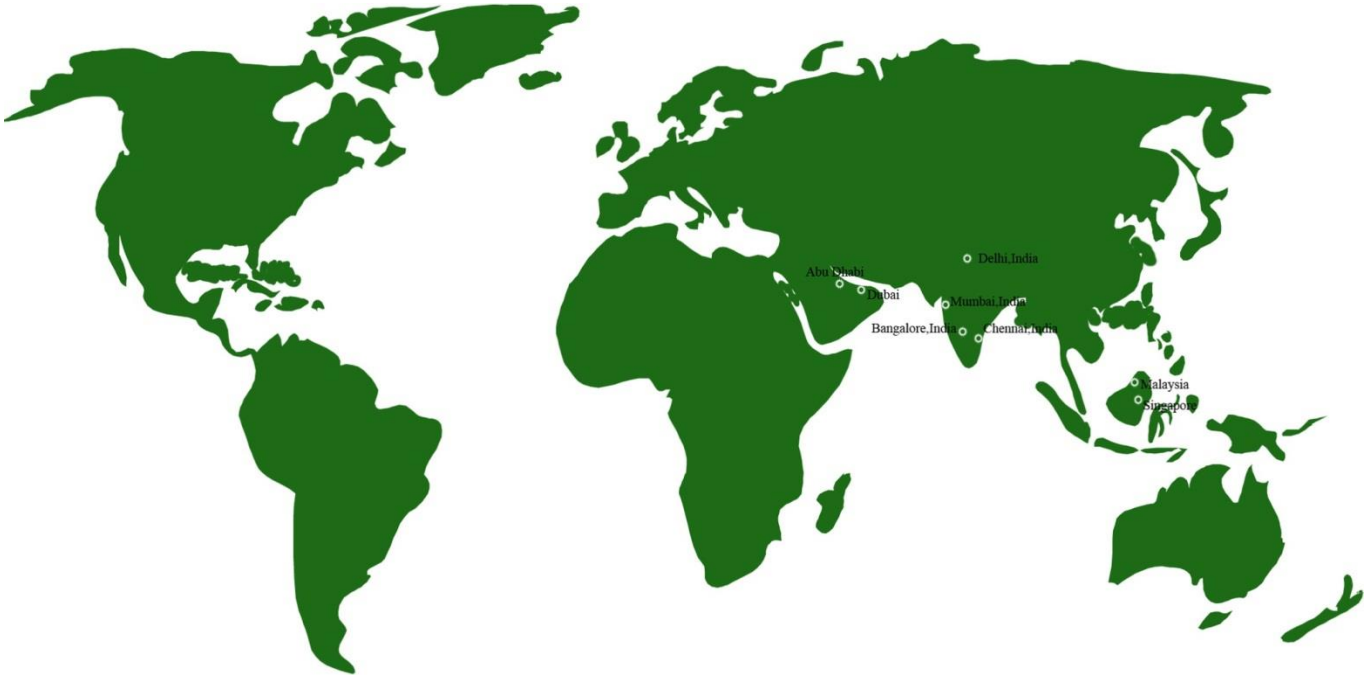
A stilt + 11 Floors building with a total built-up area of 85,000 sqm. The building is called Chennai One complex. A facility for Chennai's leading Information Technology service providers and is certified by the IGBC as a green building.

Sky Vertica

India

Sky Vertica Residential Apartment is located in the city of Chennai, Tamilnadu State in India. A 16 storey residential apartment with a total built-up area of 85,000 square meter.

Why BGV



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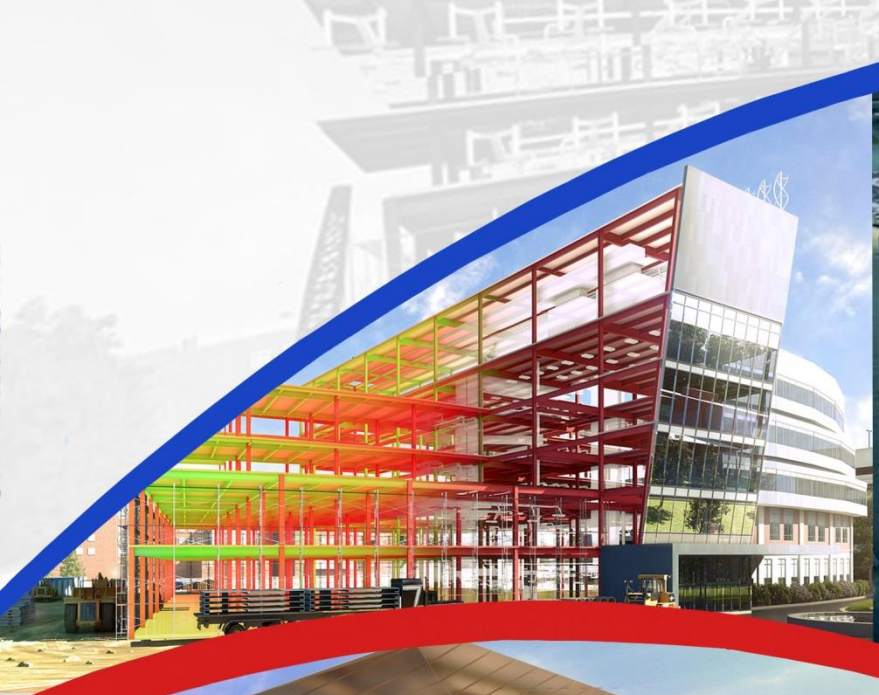

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