



*ROCHE ENGINEERING TECHNOLOGY*



## THE ORGANIZATION

### ABOUT US

We are the provider of BIM Consultations and Info Tech (IT) Solutions with proven excellence. At **Roche Engineering Technology** BIM CAD Drafting and Consulting is one of the leading global providers of CAD drafting and CAD BIM Consulting services. Our quality centric approach and domain expertise has attracted a long list of loyal clients who employ us for all their BIM, CAD drafting, rendering and graphics needs. We provide a comprehensive range of BIM CAD services enabling us to provide customized solutions for your specific requirements.



Our extensive menu of BIM CAD services allows us to tackle any BIM CAD challenges that you might be facing. Our BIM CAD service team includes BIM professionals, CAD Engineers and experts **with deep experience in all aspects of BIM CAD drafting, including BIM and 3D Modelling.**

### OUR MISSION

**Roche Engineering Technology** is committed to delivering informed, BIM Consultation and Information Technology based on superior industry knowledge, a real understanding of the issues that affect both our clients and their customers, and a genuine enthusiasm for what we do. Our aim is to act as a trusted extension for our clients' requirements, producing results that directly and positively impact on our clients' business objectives

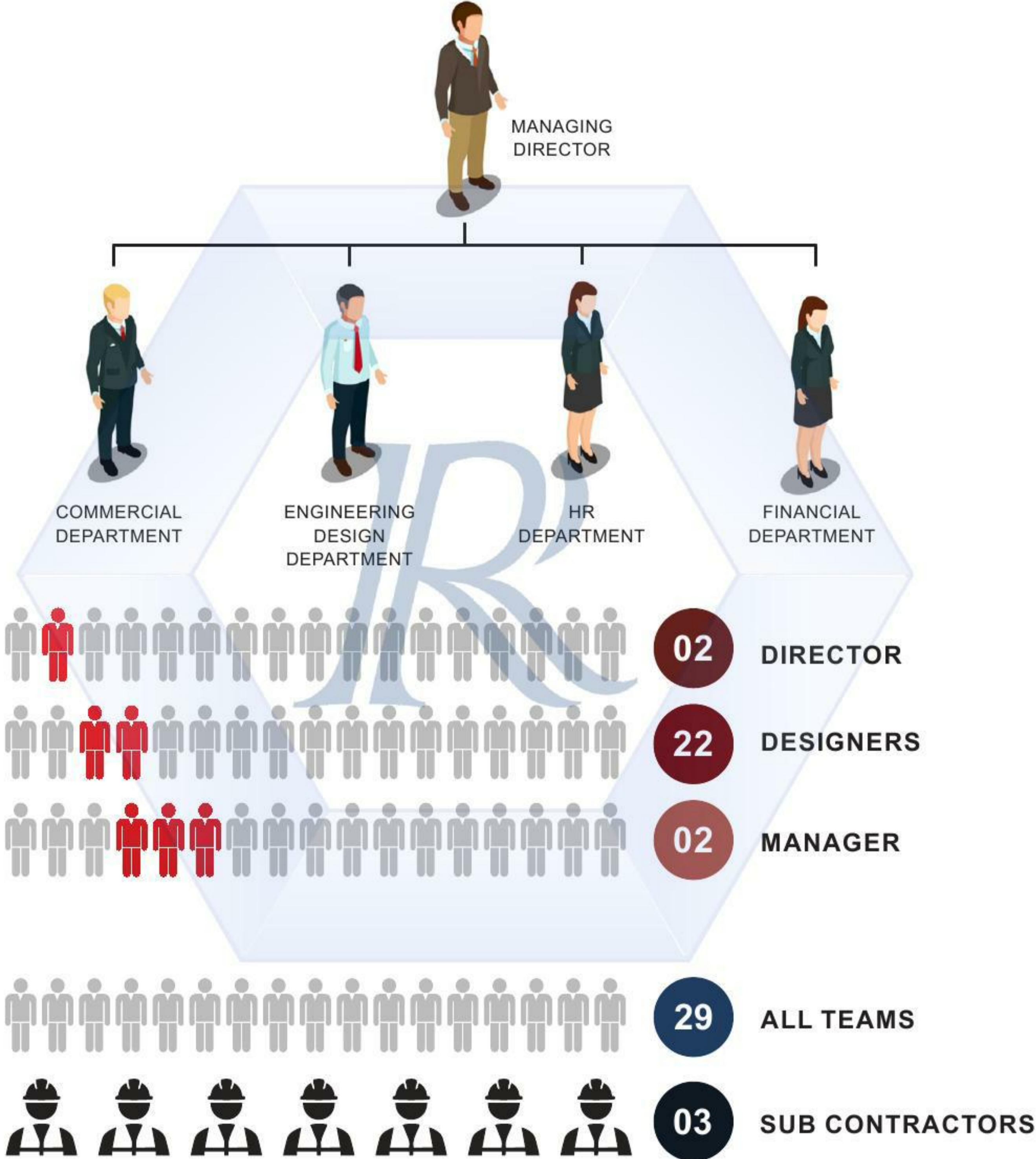


### OUR VISION

Enhancing and sustaining an environment of trust with our customers, through our growth as a leading company in the area of BIM Consultation and Information Technology services.

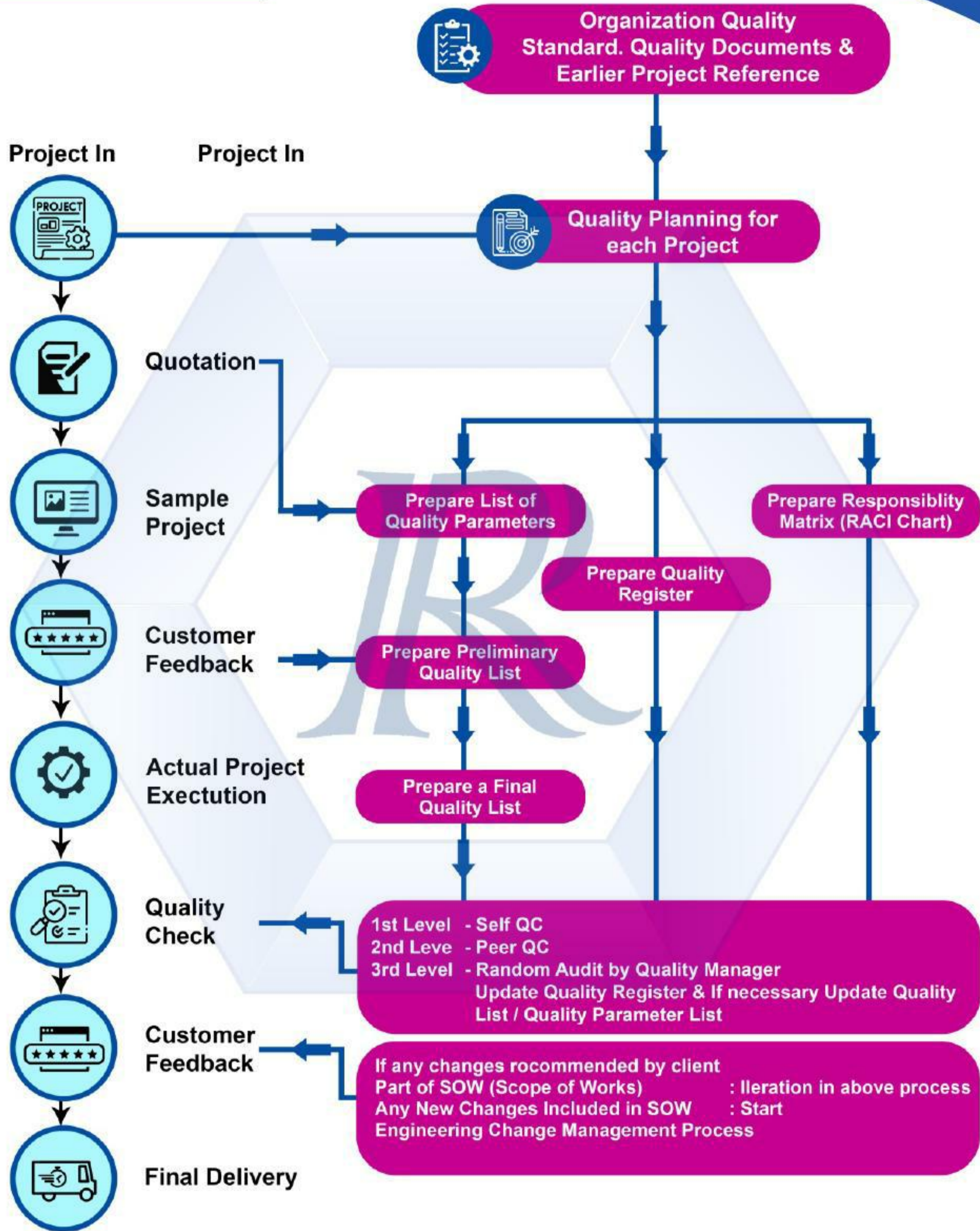


# ORGANIZATION CHART



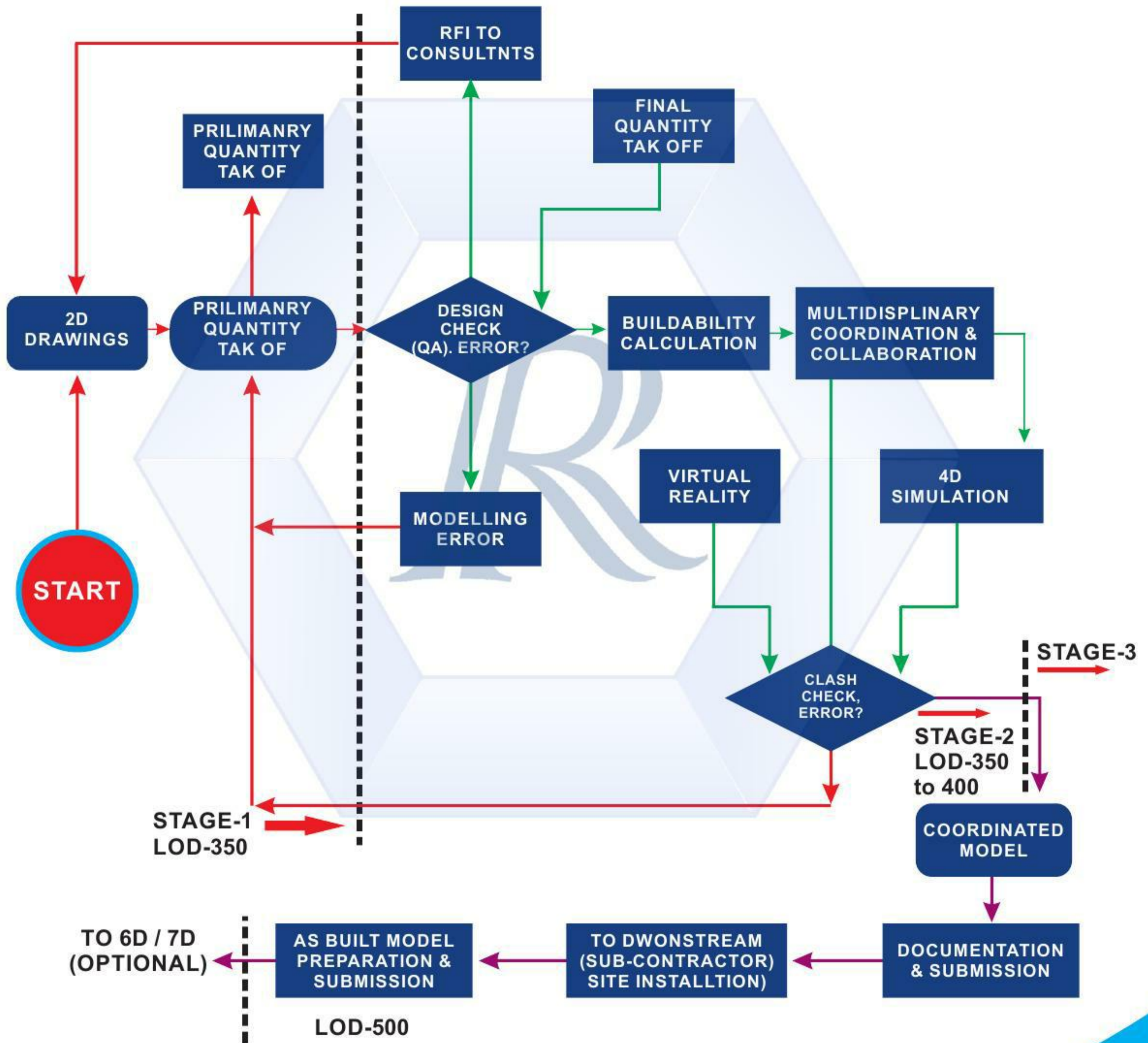


# BIM QA / QC PROCESS





# BIM WORK FLOW





## BIM SERVICES

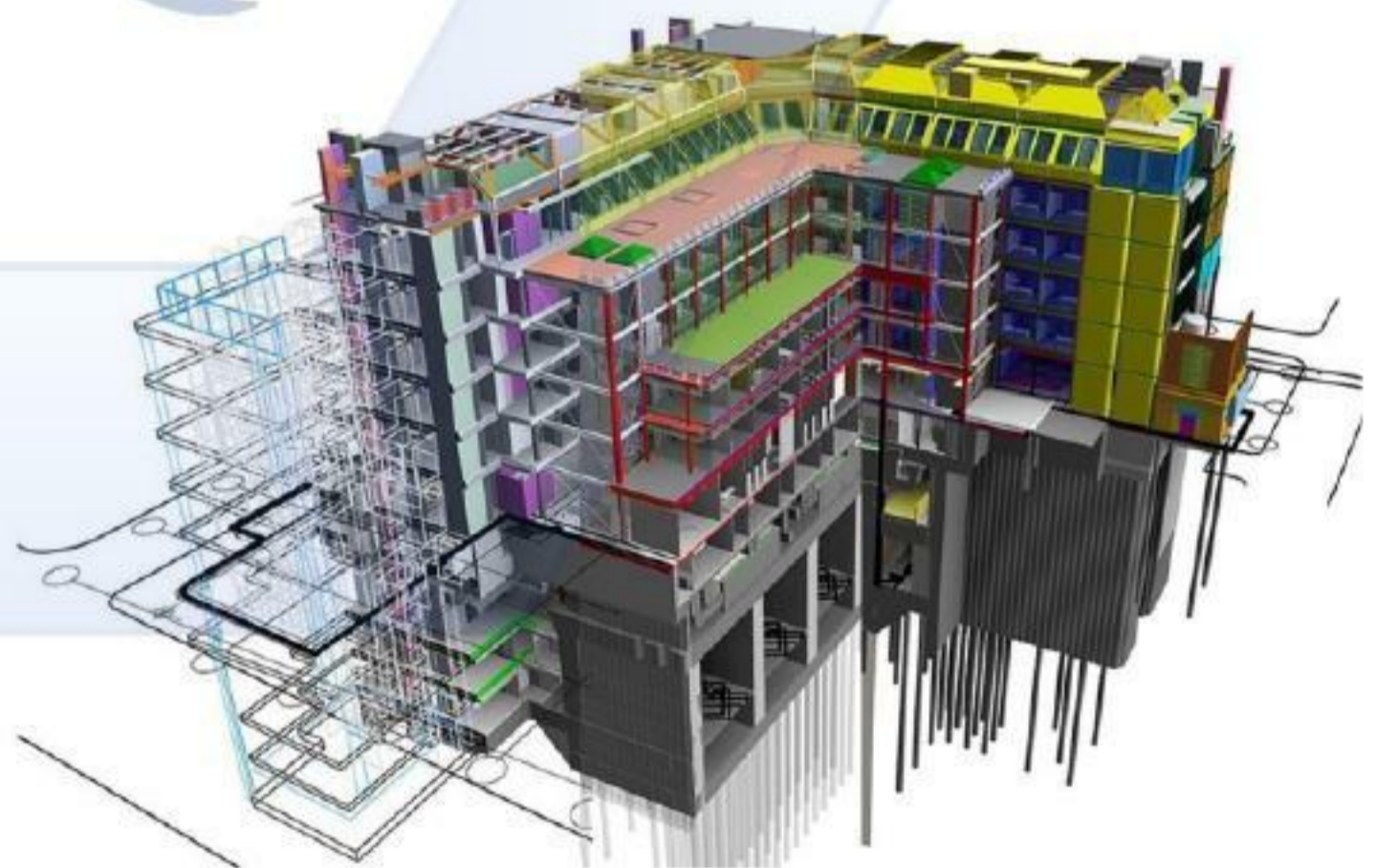
**Roche Engineering Technology** provides BIM Consultancy services and drawing works to consultants, contractors, engineers and steel fabricators serving the needs of engineering industries. We have the capacity and capability to handle multiple projects of various sizes and complexities simultaneously. We provide a range of architectural 3D modelling services to our customers to aid the design, planning and visualization phase of construction projects. Utilizing industry leading technology BIM CAD Drafting Consulting Services creates a virtual model of individual elements or of entire project sites and uses these models as a means of reporting and communicating to all involved in the building process. Visualization, sharing knowledge and expertise allows you to make better collaborative decisions; this is what we call the BIM approach. To be able to achieve this level of collaboration our BIM CAD Drafting Consulting Services specifies the deliverables and defines the requirement of a service to handover. Moreover, it explains to relevant parties the information and detail that needs to be provided at various points in the modelling process and finally provides a specification that can be referenced by contracts and BIM execution plans.



## BIM MODELLING

Building Information Modelling (BIM) enables design implementation while facilitating collaboration and the exchange of information between design teams, architects, engineers and contractors within the design and build environment. We create construction drawing sets directly from BIM models designed for all type of 3D BIM Modelling services. In addition to accurate schedules, a full set of drawings required by construction teams is created from the BIM models.

With BIM technology, instead of starting with modelling, the first stage in the building project lifecycle is to collaboratively discuss design critical features with different project stakeholders and design team members. This level of interoperability provides obvious time and cost benefits; it also allows the entire project team to view the impact of their individual designs on those of others and to resolve the conflicts based on this knowledge. One of the key differences between modern BIM technology and traditional software is that the objects created within BIM models represent actual elements within a construction project. Therefore, the information in the BIM model becomes more useful to designers, installers and cost consultants. This information becomes useful when extracted by design teams and cost management teams.





## ARCHITECTURAL 3D MODELLING AND DRAFTING

We provide a range of architectural 3D modelling services to our customers to aid the design, planning and visualization phase of construction projects. Our architecture design support team uses Collaboration for Revit and BIM 360 Team, a cloud based tool on. This technology helps to connect and collaborate with multiple teams and project stakeholders involved in various stages during the design of an architectural project. Teams in different offices can work on the same model, allowing for seamless collaboration and sharing of project data. This form of synchronized coordination, two-way communication and the ability to review and comment upon a design heavily influences the success of architectural design projects managed by BIM CAD Consulting Drafting.



Our architectural CAD engineering services include 3D modelling, BIM, Constructions Documentation, 2D drafting and detailing, CAD conversion and Point cloud services. Our knowledge and experience of architectural modelling coupled with our extensively skilled team ensure deliverables are of highest possible accuracy and are competitively priced. Complimenting this is our strict and refined Quality Control (QC) process. We invest heavily into understanding client company standards and emphasize on establishing a good working relationship with the client.

## STRUCTURAL MODELLING



**Roche Engineering Technology** delivers structural 3D modelling services to its clients worldwide, spontaneously in extraordinary quality. We have creative professionals who are experts in designing 3D models from 2D drawings with their great innovation and imagination. Our company has proven itself with outstanding work done for clients in fabricating structural 3D models and 3D architectural rendering to get the exact preview and better conception in getting a perfect image of the plan. 3D CAD rendering further helps in providing a 3D picture of structural, mechanical, MEP, architectural and piping processes at low costs. Our team of highly talented and qualified professionals comprises of BIM engineers and modellers who fabricate 3D modelling and architectural 3D presentations for better understanding, with extraordinary amenities in 3D structural modelling services and out source structural 3D modelling.



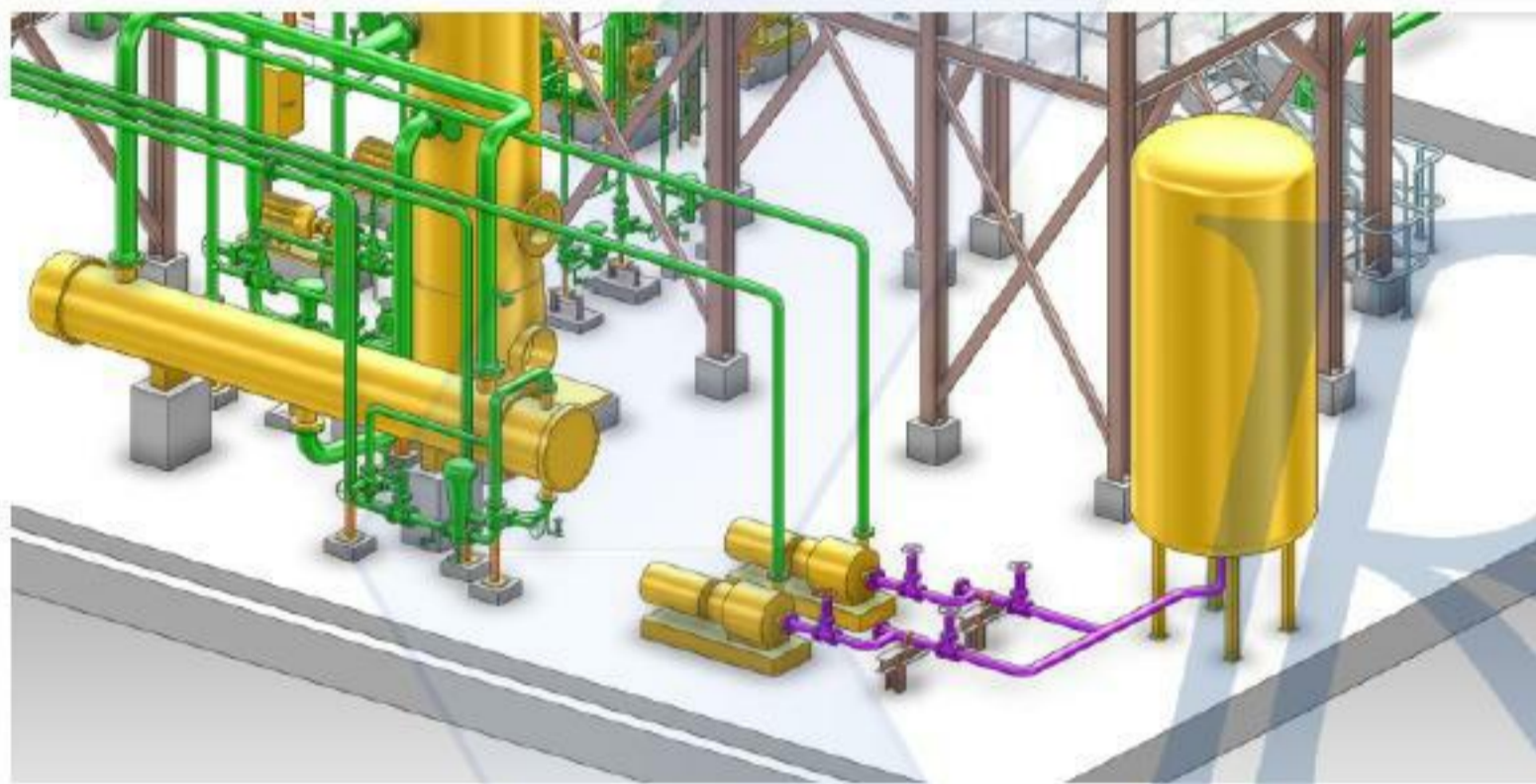
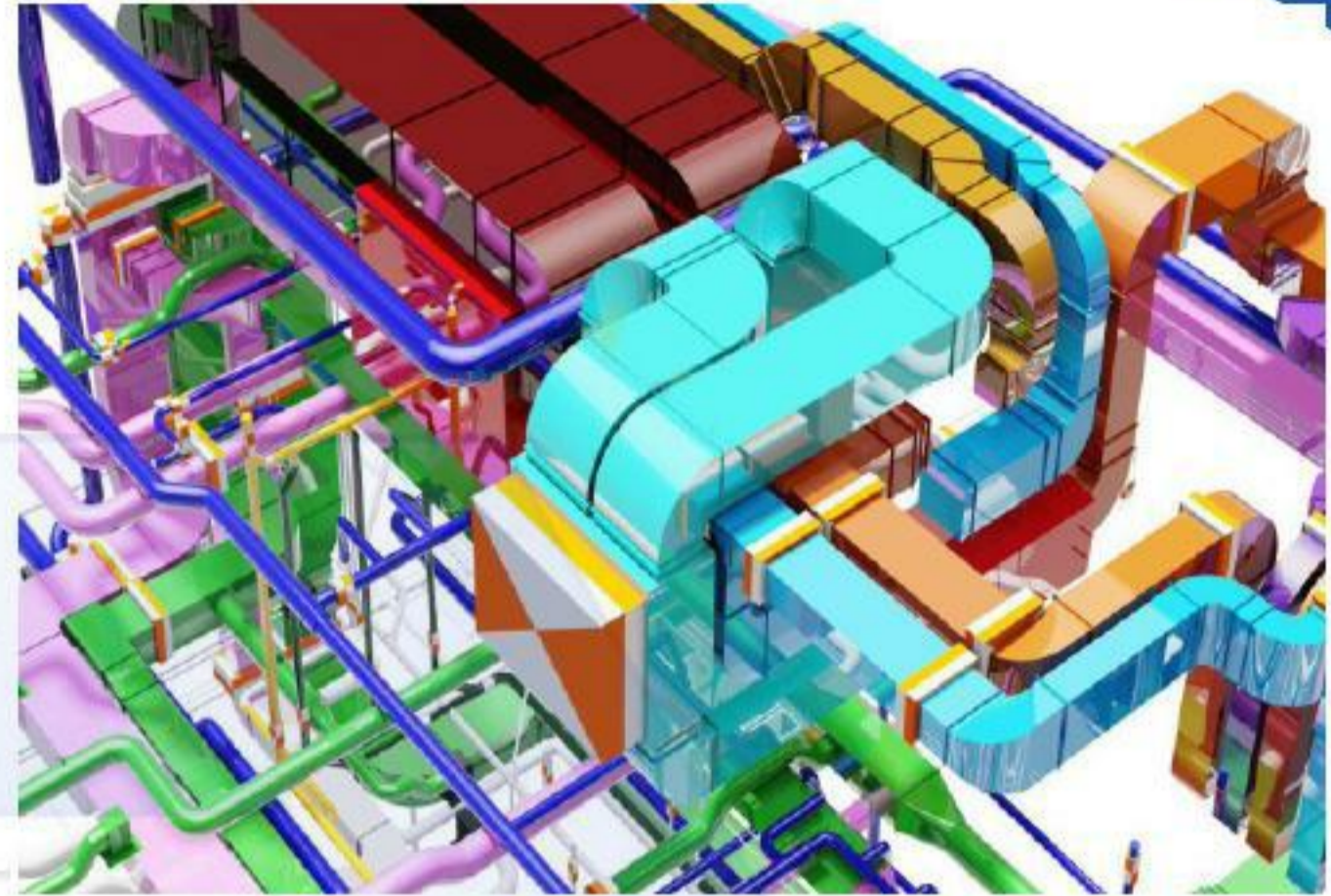
**Roche Engineering Technology** is a reputable brand providing remarkable services in their industry. We have a passionate squad who is well versed and holds expertise in 3D CAD services. We are specialists in 3D modelling and have used it in several projects like commercial, residential and Industrial. We also provide BIM modelling drafting for various segments in construction and with the help of advanced state of the art technology. You will get all the services in a short span of time at reasonable prices and we can tailor 3D structures as per your requirements in an accurate and precise manner.



## MEP MODELLING

We provide Mechanical and Electrical modelling support services to leading designers and multi disciplinary consultants as well as MEP contractors and consultants. Our Proficiency lies in MEP Design Services, MEP Drawings, MEP Drafting Services, MEP Modelling Services, HVAC Design Services, HVAC Duct Design, HVAC Piping Design, HVAC Layout Design, HVAC Drafting Services, HVAC Drawings, and Plumbing Drawings Services.

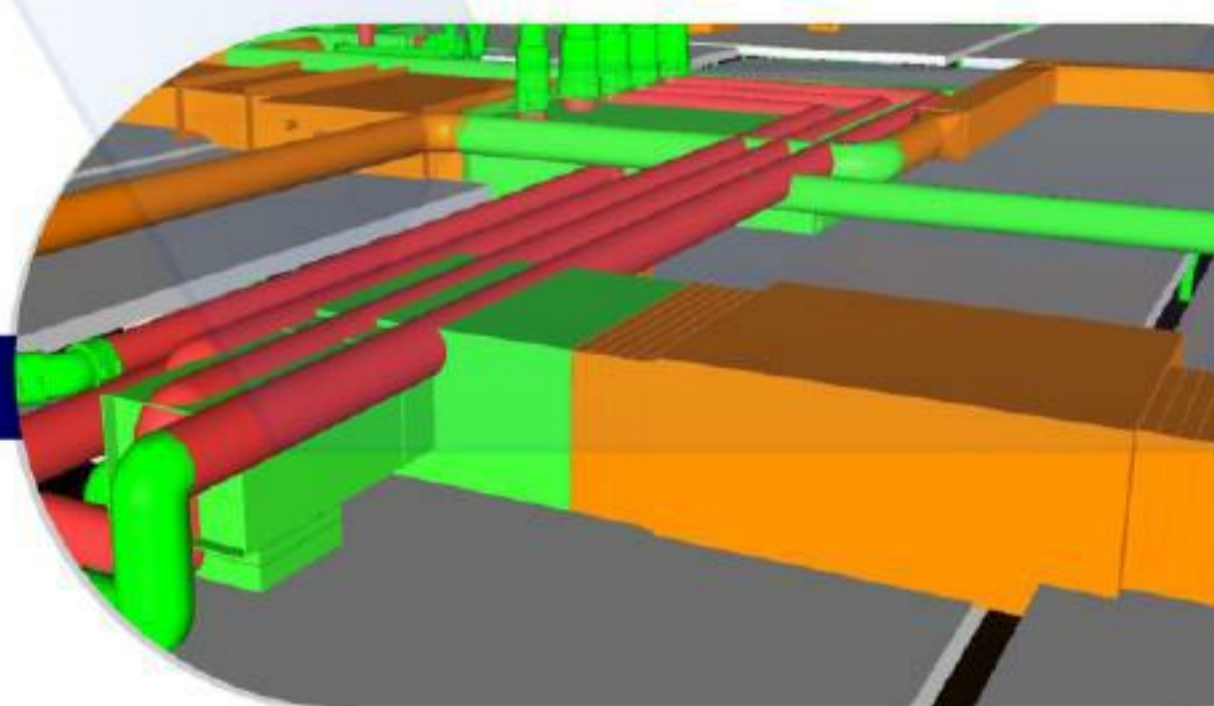
**Roche Engineering Technology** serves Mechanical Electrical Plumbing (MEP), many of the Mechanical, Electrical and Plumbing companies with their design and drafting. Our collective MEP as well as structural models incorporates all aspects such as CAD modelling, electrical CAD, pipe work, and steel structure



modelling. We provide our MEP modelling services on a standalone basis or as part of the complete design including the structure and the services. This is a part of our scope to validate the design and to ensure that the design is clash-free. Where we find clashes, these are redesigned by the respective consultants and then remodelled by us to present a finalized clash-free design. Our MEP modelling experience is extensive and we have undertaken a range of MEP modelling projects.

## MEP COORDINATION/ CLASH DETECTION

**REAL-TIME**  
Clash Detection  
using **BIM**



Our professional MEP BIM Coordination Services include HVAC BIM, Piping BIM, and Plumbing BIM Coordination Services for Mechanical, HVAC, Electrical & Plumbing Contractors/ Engineers. We specialize for providing MEP drafting for all type of buildings. We use advanced software for creating the detailed plan, elevation and section drawings for MEP services which include coordinated and single services drawings to aid further installation teams to reflect our coordination systems during

erection. We provide state-of-the-art coordinated functional shop drawings and coordination services which realistic and ready to be installed. Every step is taken by our team to ensure the drawings we provide are professional, detailed, accurate and of the highest adherence to client standards. The offshore CAD team at **Roche Engineering Technology** lends complete support to your engineering team during the submittal, review, coordination, and post-construction processes.

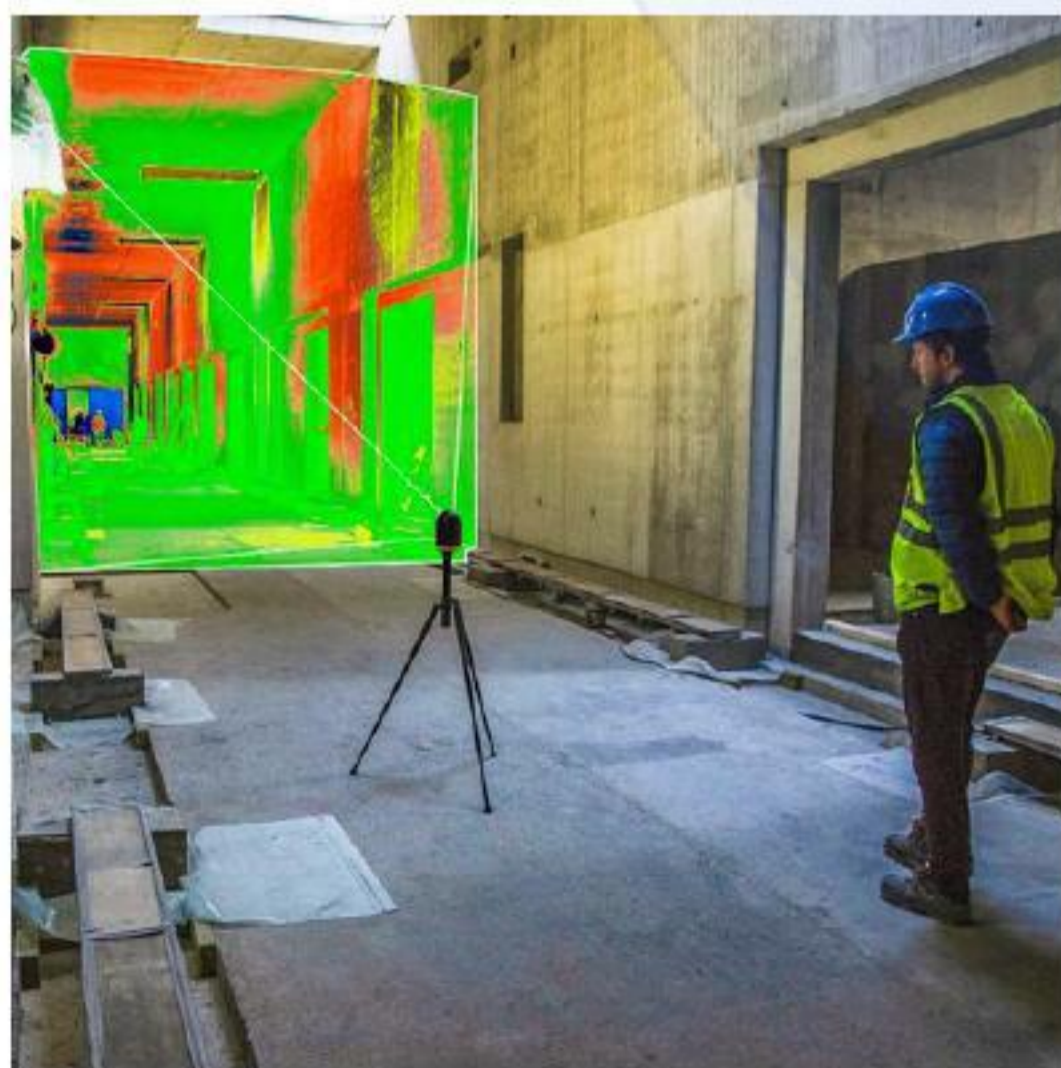




Our experienced team of MEP engineers is proficient in providing competent and effective coordination services catering to a wide range of MEP projects. This comes hand in hand with VDC (Virtual Design and Construction). The main objective of a VDC process is to reduce cost and time by resolving issues that may arise in the construction process, by reviewing them right in the preconstruction design stage by employing our coordination drawing services. This pre-construction check can result in better schedules and well-informed site workmen who may utilize these coordinated drawings to maximize production efficiency and minimize material and cost losses. Coordination drawings are used to include details of work across the various trades wherein the best possible layout for MEP systems may be realized. Horizontal and vertical views are considered during coordination, so as to detect & avoid interference or collision with elements of the building such as structural framing, ceilings, partitions, equipment, lights, mechanical, electrical, plumbing, conveying systems, and other services. Our team would work in collaboration with your engineers such that we function as an extension to the in-house team you have and lend support to them in the virtual construction models.

## POINT CLOUD TO BIM SERVICES

Our highly talented and dedicated expert professionals know how to form BIM Model from point Cloud or Scan model. Scan to BIM Modelling services are used nowadays by a number of sectors including retailers, main contractors and architects. The scan to BIM services are also used by MEP designers, MEP contractors and consulting engineers. The main advantage of Scan to BIM is its ability to analyse the differences between point cloud and model geometry by creating native Revit geometry from a point cloud and to using scan to BIM model, data can be exported or imported in a format understandable by electronic surveying equipment that will enable you to read in survey data for as-built conditions and exporting design data for field verification. Our point cloud



data accurately recreates the as-built environment. Our complete and accurate results enable the design team to make informed decisions quickly. Our improved build cost estimates to reduce the errors and thus, achieve significant cost saving. The biggest usage of Scan-to-BIM is for renovation projects. The respective data is procured with the support of laser scanning technology and subsequently the 3D BIM models are developed. We assure you to provide a professional scan-to-BIM 3D modelling service by employing the latest technology to transform point cloud and laser survey data into refined 3D BIM models.

The Architectural, Engineering and Construction Industry have gradually adopted the 3D workflow that laced into the aptness to apprehend as-built state in 3D. This mentioned new zone for Architectural, Engineering and Construction Industry has gradually adopting new innovations and technology that are adding successively. We believe in novelty with the pinch of long established dedication that has always been our forte. The latest development in renovating ideas is Point Cloud to Building Information Model.



## 4D BIM SERVICES (CONSTRUCTION SEQUENCING AND SIMULATION)



4D simulation helps all the project participants including the architects, contractors, designers and the owners to visualize the whole series of construction events and understand the progress of construction activities throughout the lifetime of the project, link the project construction sequencing or the schedule to 3D BIM model and show the real time simulation of construction sequence in an animated video. The clients can compare the planned and the actual construction schedule throughout the project life cycle, based on 4D presentation. They can explore 4D simulation for supporting construction planning and can assess the impact of proposed design on construction schedule and work process.

4D-BIM (four-dimensional building information modelling) is used for construction site planning related activities. The fourth dimension of BIM allows participants to extract and visualize the progress of their activities through the lifetime of the project. The utilization of 4DBIM technology can result in improved control over conflict detection or over the complexity of changes occurring during the course of a construction project. 4D BIM provides methods for managing and visualizing site status information, change impacts as well as supporting communication in various situations such as informing site staff or warning about risks.





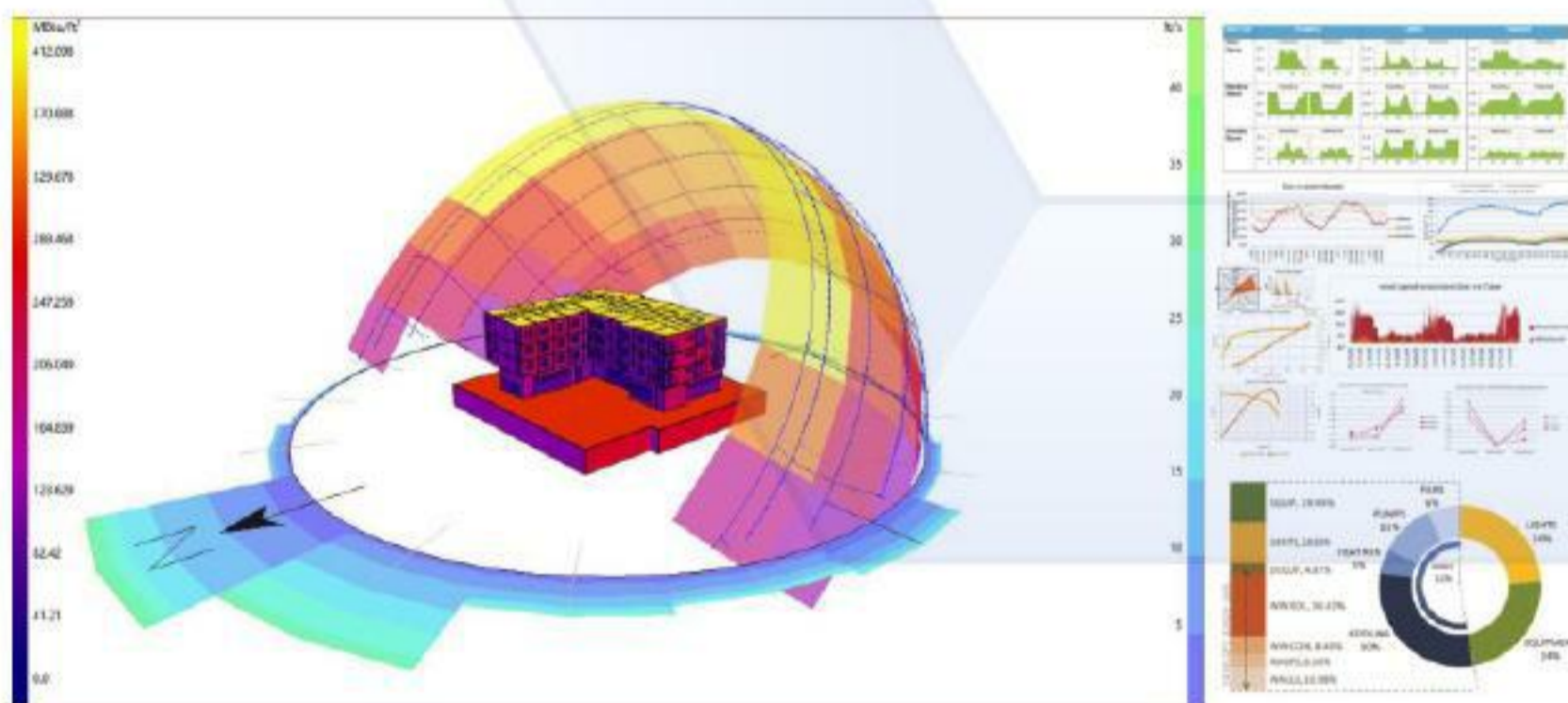
## 5D BIM SERVICES (COST ESTIMATION)

5D-BIM (fifth-dimensional building information modelling) is used for budget tracking and cost analysis related activities. The fifth dimension of BIM associated with 3D and 4D (Time), allows participants to visualize the progress of their activities and related costs overtime. The utilization of 5D-BIM technology can result in a greater accuracy and predictability of the project's estimates, scope changes, materials, equipment or manpower changes. 5D BIM provides methods for extracting and analyzing costs, evaluating scenarios and changes impacts.



Drawing on the components of the information model with the extraction of accurate costs information is what's at the heart of 5D BIM. Considerations might include capital costs (the costs of purchasing and installing a component), its associated running costs and the cost of renewal/replacement down the line. These calculations can be made on the basis of the data and associated information linked to particular components within the graphical model. This information allows cost managers to easily extrapolate the quantities of a given component on a project, applying rates to those quantities, thereby reaching an overall cost for the development. The cost manager may have to get used to working earlier and more iteratively than in a traditional process but the exact importance of roles to be played in overall project delivery.

## 6D BIM SERVICES (SUSTAINABILITY)



6D BIM, an acronym for 6D Building Information Modelling and a term widely used in the Construction industry, referring to the intelligent linking of individual 3D CAD components or assemblies with all the aspects of project life-cycle management information.

6D-BIM (sixth-dimensional building information modelling) helps perform energy consumption analyses. The utilization of 6D-BIM

technology can result in more complete and accurate energy estimates earlier in the design process. It also allows for measurement and verification during building occupation, and improved processes for gathering lessons learnt in high performance facilities.



## 7D BIM SERVICES (PROJECT LIFECYCLE INFORMATION)

7D-BIM (seventh-dimensional building information modelling) is used by managers in the operation and maintenance of the facility throughout its life cycle. The seventh dimension of BIM allows participants to extract and track relevant asset data such as component status, specifications, maintenance/ operation manuals, warranty data etc.

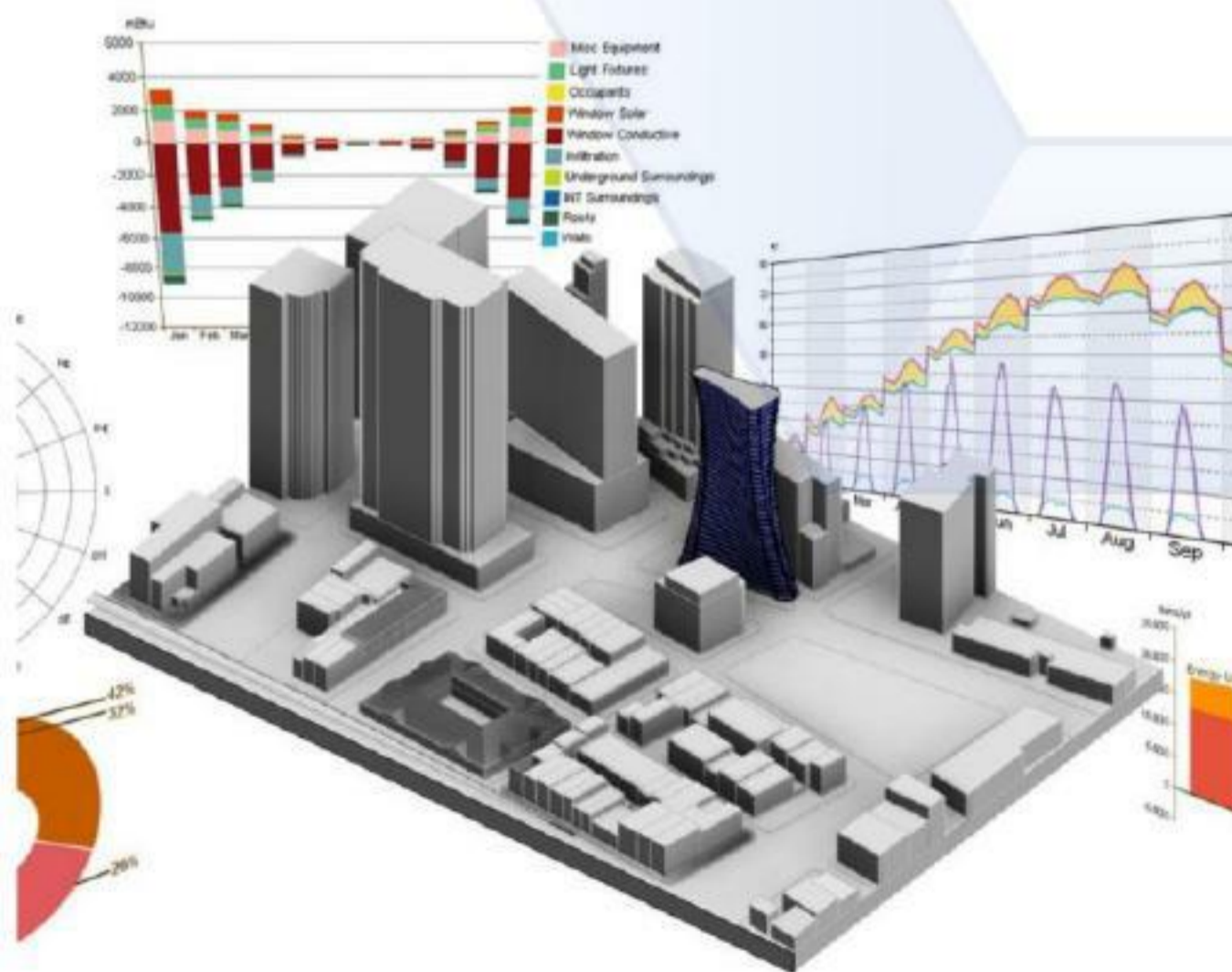
The utilization of 7D-BIM technology can result in easier and quicker parts replacements, optimized compliance and a streamlined asset life cycle management over time. 7D BIM provides



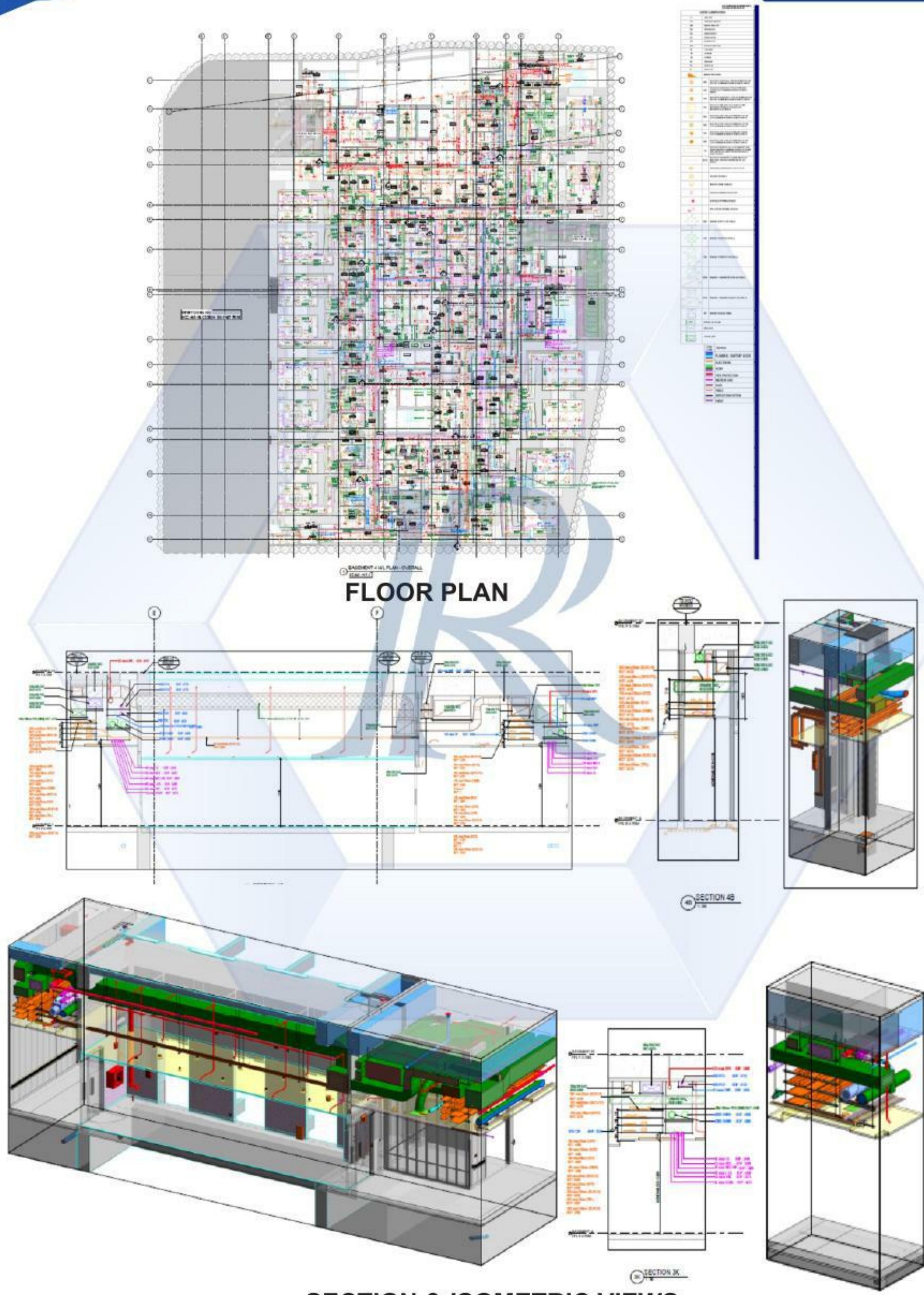
processes for managing subcontractor/supplier data and facility component through the entire facility life cycle.

Sometimes referred to as integrated BIM or iBIM, 7D BIM involves the inclusion of information to support facilities management and operation to drive better business outcomes. This data includes information on the manufacturer of a component, its installation date, required maintenance, details of how the item should be configured, operated for optimal performance, energy performance, along with lifespan and decommissioning data.

Adding this kind of detail to your information model allows decisions to be made during the design process - a boiler with a lifespan of 5 years could be substituted with one expected to last 10, for example, if it makes economic or operational sense to do so. In effect, designers can explore a whole range of permutations across the lifecycle of a built assets and quickly get an understanding of impacts including costs. However, it is at handover, that this kind of information really adds value as it is passed on to the end-user.



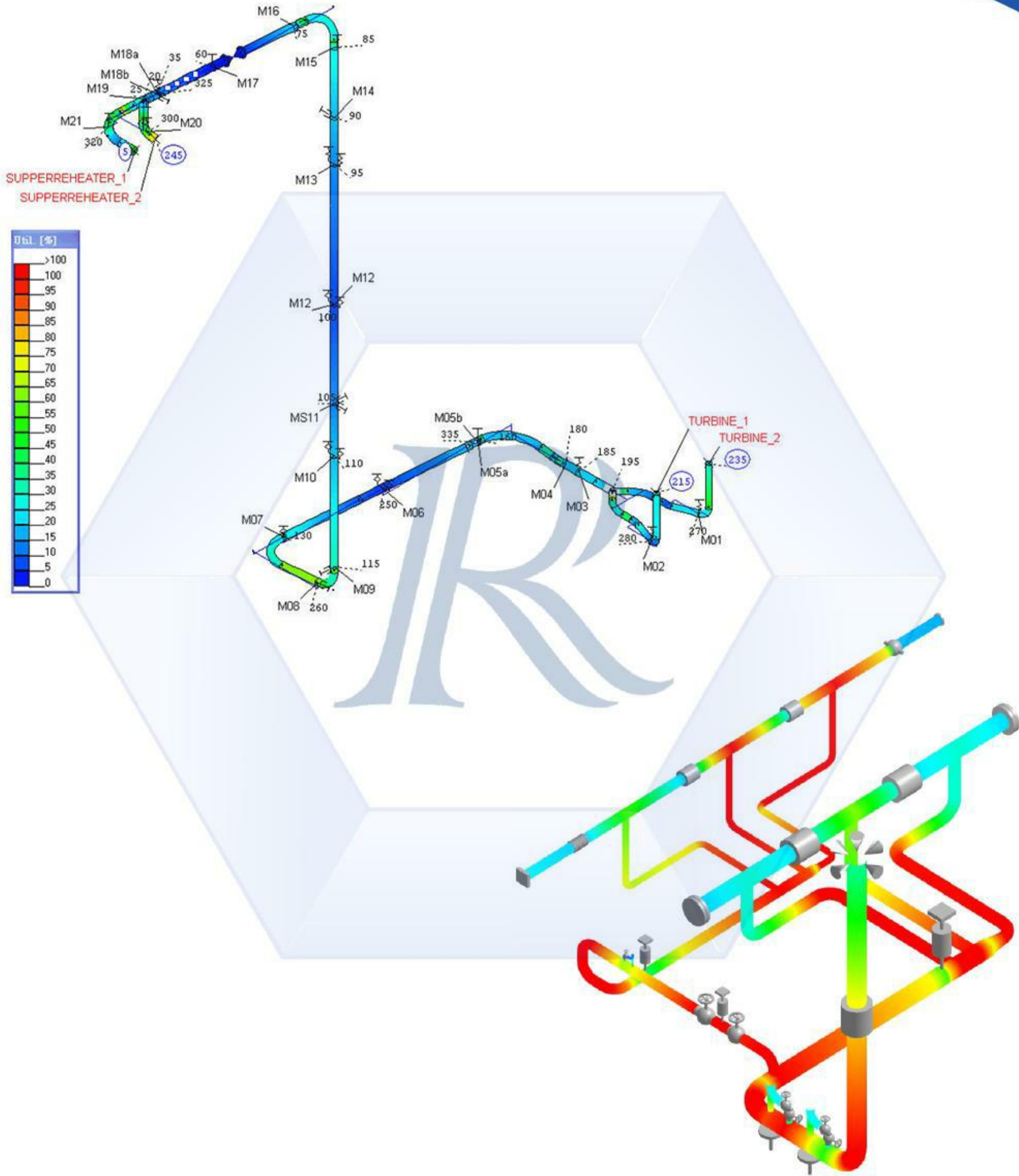
A model offers an easily-accessible and understood way of extrapolating information. Details that would have been hidden in paper files are now easily interrogated graphically. Where this approach really comes into its own is in allowing facilities managers to pre-plan maintenance activities potentially years in advance and develop spending profiles over the lifetime of a built asset, working out when repairs become uneconomical or existing systems inefficient. This planned and pro-active approach offers significant benefits over a more reactive one - not least in terms of costs. Ideally the information model should continue to develop during the in Use phase with updates on repairs and replacements added in. Better yet, a myriad of operational data and diagnostics can also be fed in to inform decision making still further.



SECTION & ISOMETRIC VIEWS



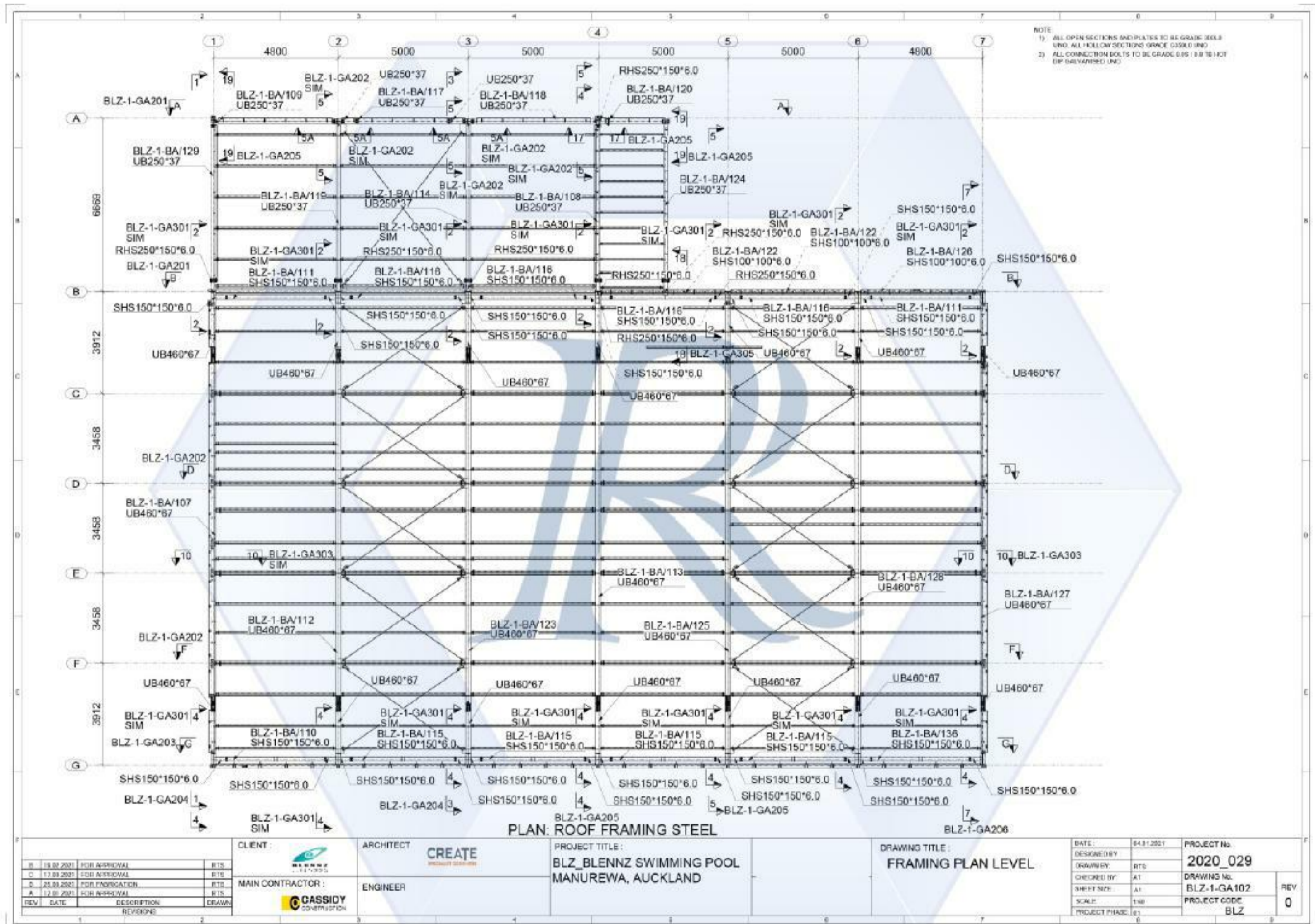
# DIGITAL DELIVERY





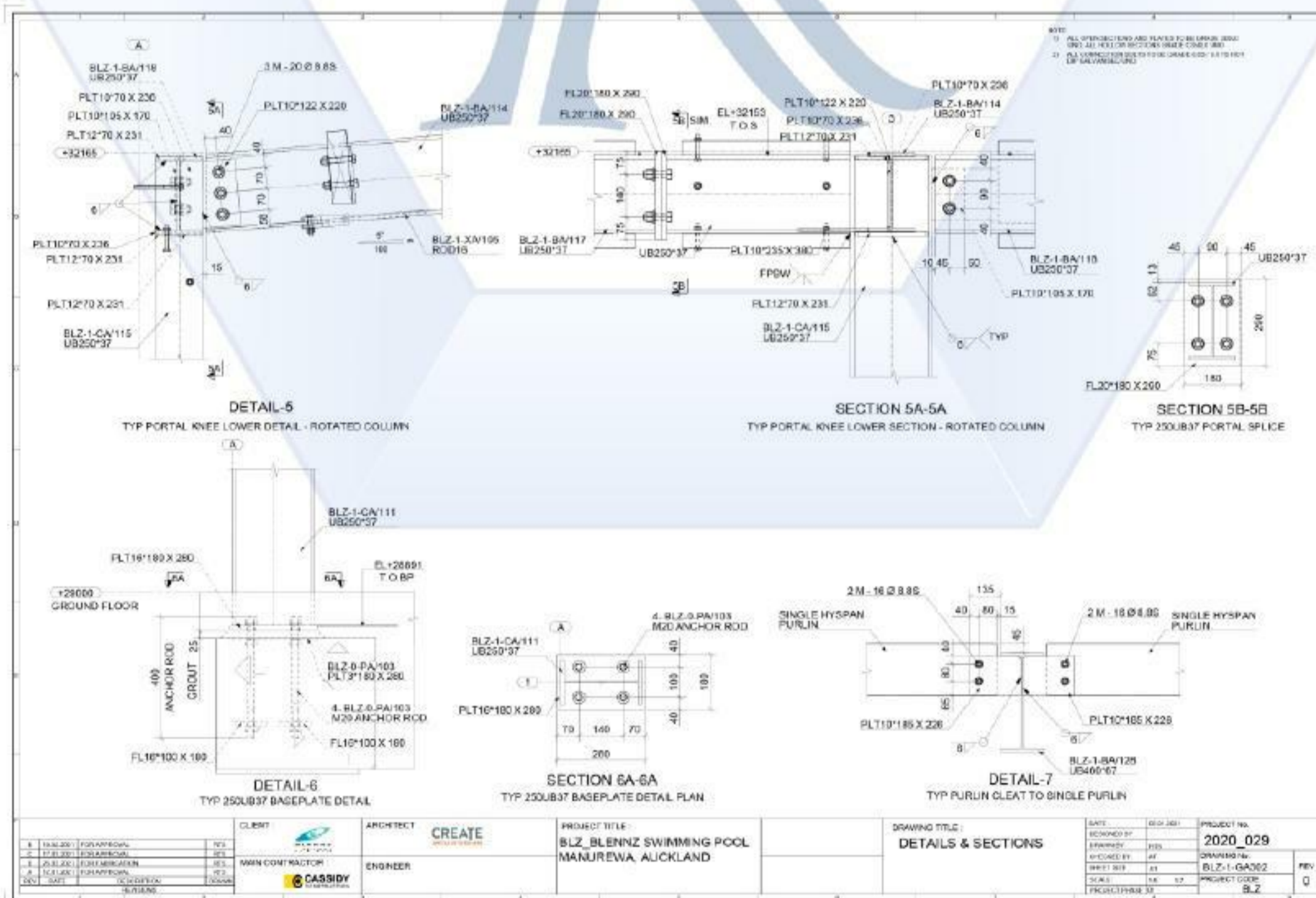
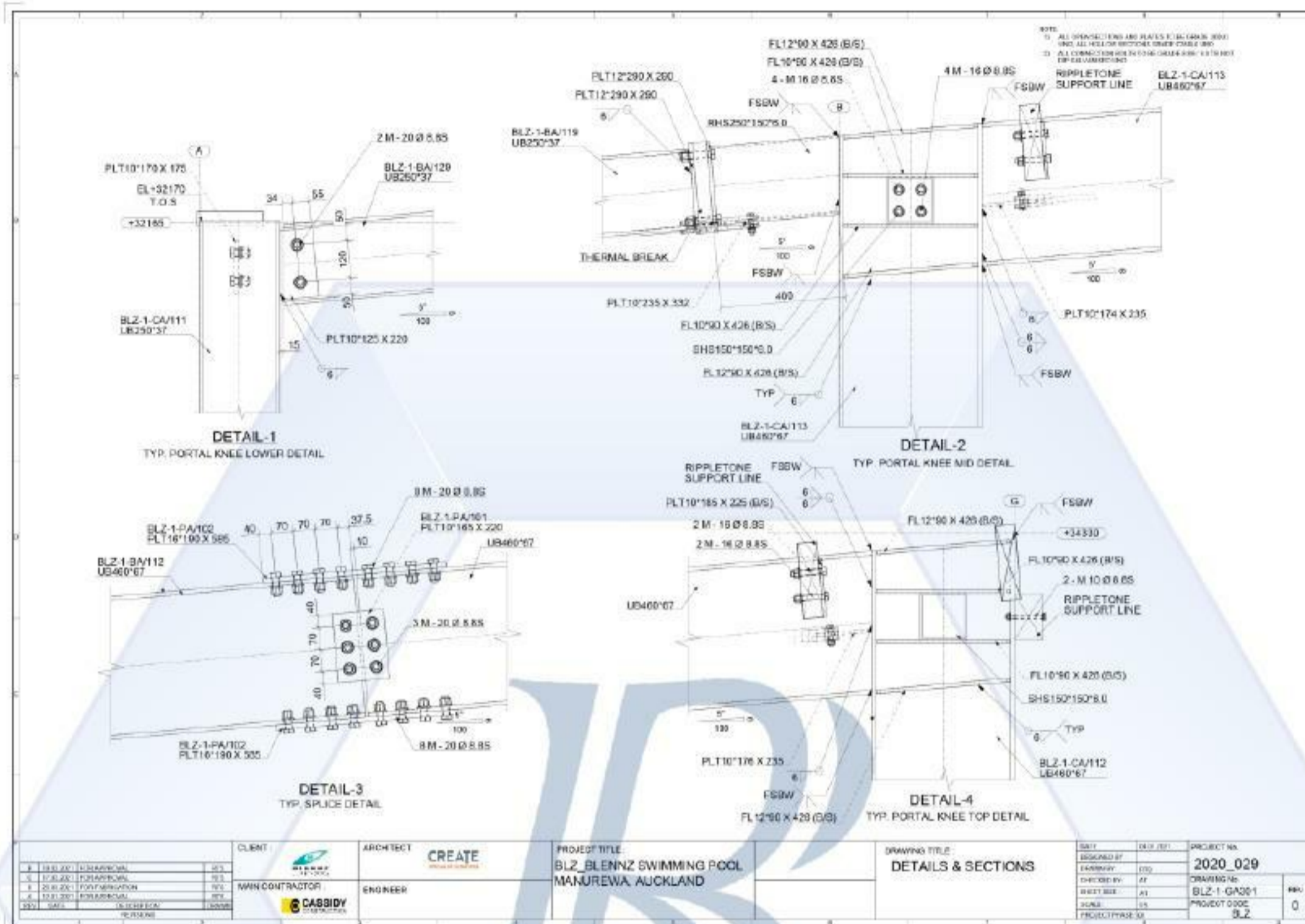


DIGITAL DELIVERY

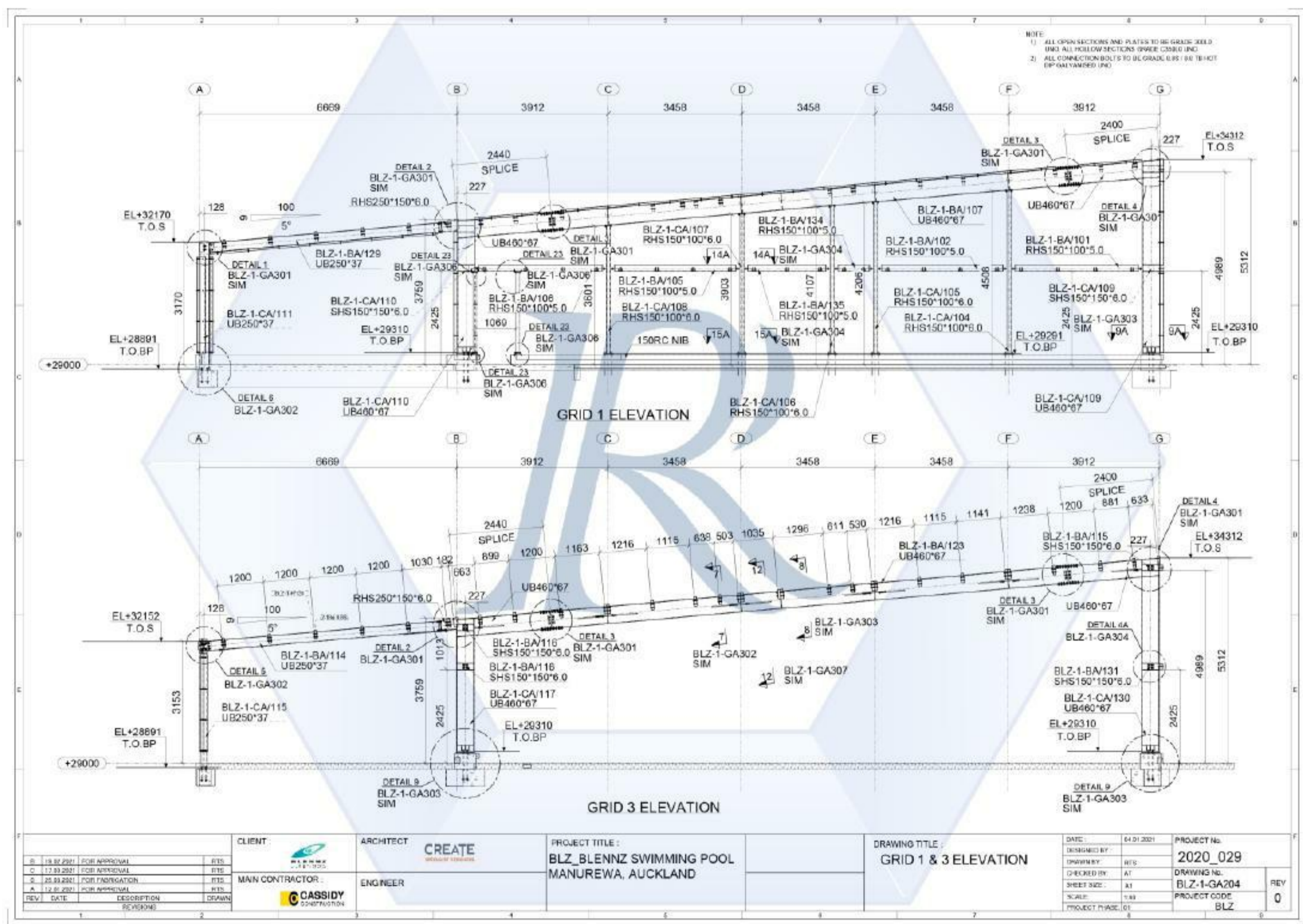


ERECTION DRAWING

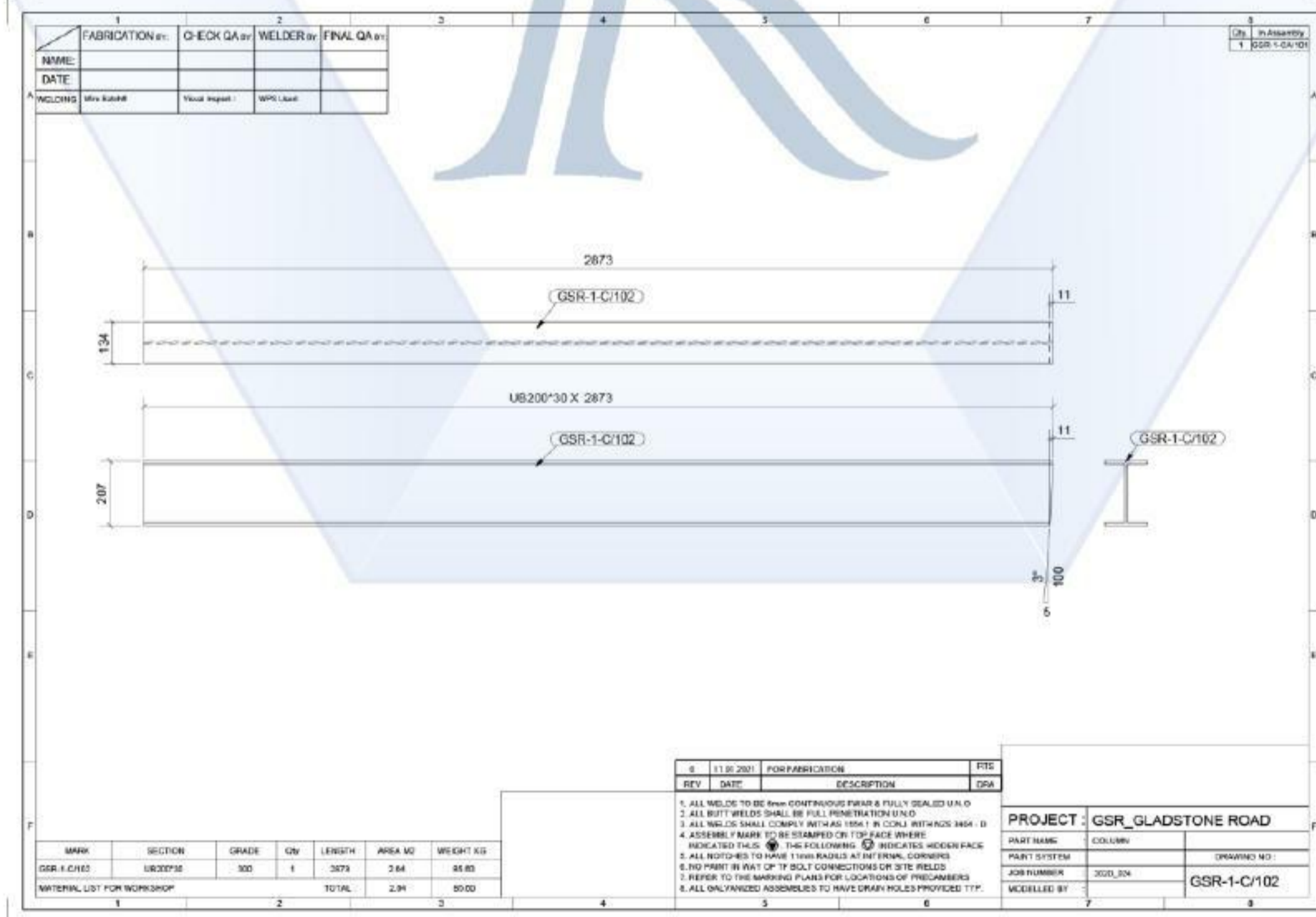
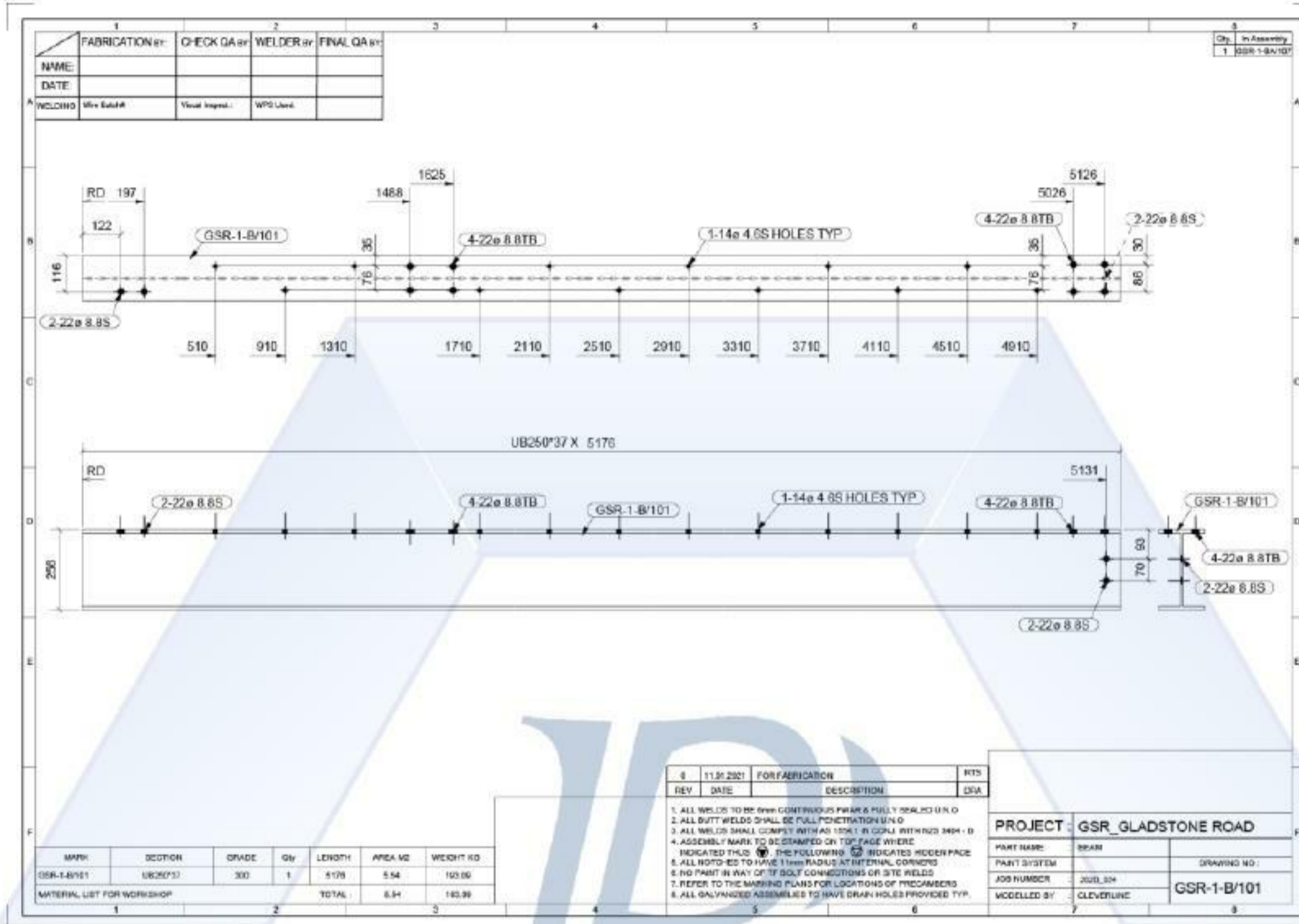




DETAIL DRAWINGS



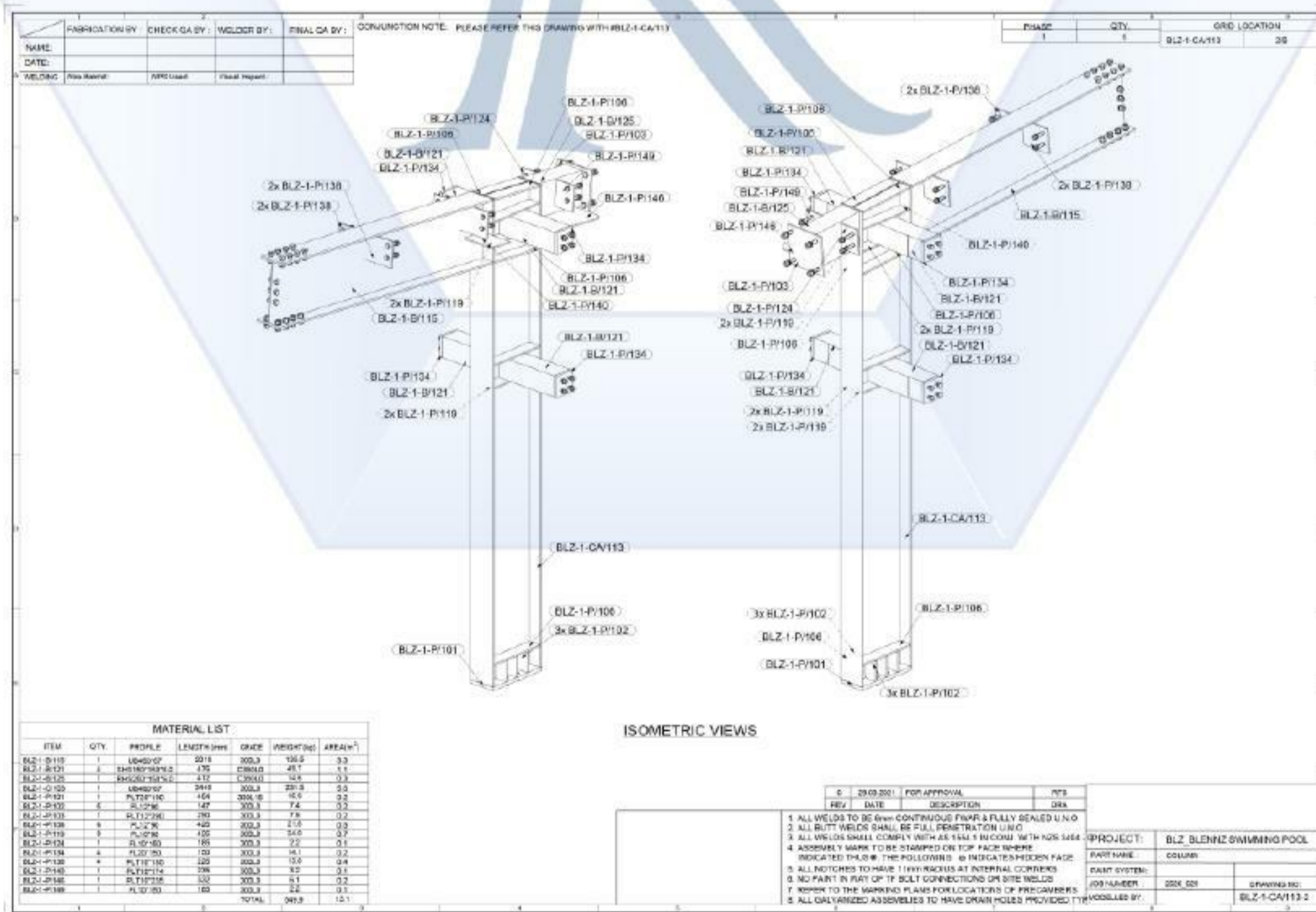
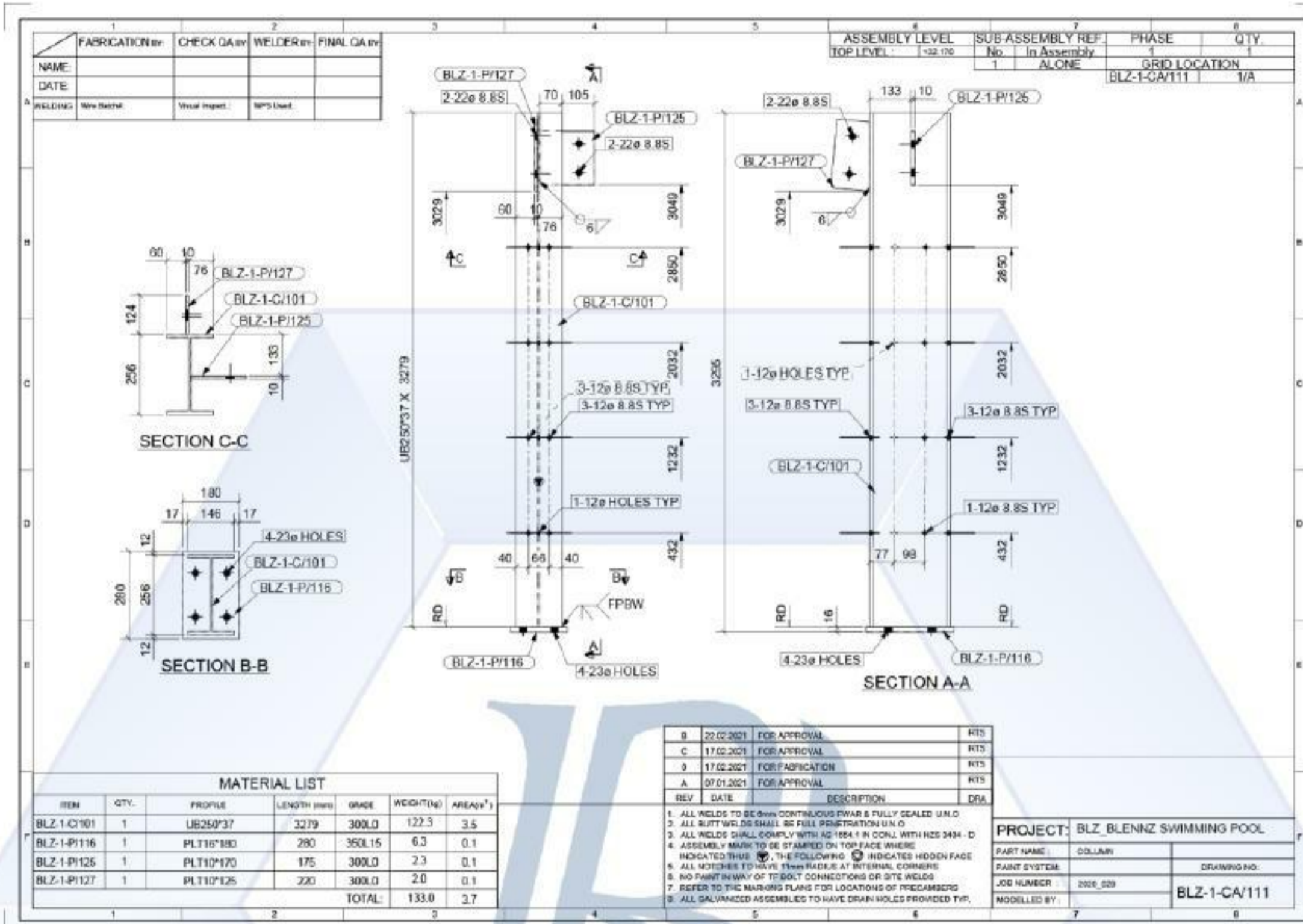
SECTION DRAWING



SINGLE PART DRAWINGS



DIGITAL DELIVERY



ASSEMBLY DRAWINGS



## DRAFTING SERVICES

### DATA LEGACY CONVERSION

We provide timely and accurate manual conversion of PDF sketches or scanned hard copies of drawings into AutoCAD DWG two-dimensional model with added semantic value to give more direct control of the draft. 2D drawings are essential for communicating ideas in industries to make the drawings easier to understand for people who use familiar symbols, perspectives, units of measurement, notation systems, visual styles, and page layout.

We do not use conversion software programs, as the results may be more tedious to work with; the DWG file can often be messy, and all of the elements will end up on the same layer. It can also be difficult to obtain accuracy or precision, especially for hand drawn and scanned drawings. All converted drawings will be manually converted, full scale 1:1, dimensionally accurate and layered to match the original documents



### 2D TO 3D CONVERSION



**Roche Engineering Technology** offers a flexible range of solutions, including the upgrading of existing 2D plans into 3D models. This is done through a site or facility survey, unless the client has an accurate and updated plan, which we can also proceed straight to performing the CAD to BIM conversion. We have experience working with floor plans across a variety of formats, including PDF and produce fully parametric models by retaining complex shapes as in-place families.

### 2D DRAFTING SERVICES

2D drafting is essential to accurately and unambiguously capturing all the geometric features of a product or a component. This provides all the required information that will allow a manufacturer to produce a component. Though 3D drafting is much more detailed, many companies still prefer 2D drawings as they are simple. Outsourcing 2D drafting services can not only reduce your costs by almost 50%, but it also lets you focus on your core competencies.

Roche Tech Solutions has been working with companies of 2D design needs. Whether it is a simple sketch, a full-scale 3D model, or even a detailed drawing, we can convert these into highly precise 2D representations.

At Roche Tech Solutions, we understand that accuracy is extremely important in 2D drafting and drawing. Therefore, we provide results that are clean, accurate, and easy to understand.

#### OUR 2D DRAFTING SERVICES COVER:

- Corrections to existing 2D drafts involving standards change in materials used and manufacturing details
- 2D exploded views of an assembly
- Engineering Change Request (ECR)
- 2D drafts or manufacturing drawings using reverse engineering methodology on existing physical components
- Orthographic, axonometric, and perspective projections from 3D models
- 2D details from 2D assemblies or vice-versa

#### WE HAVE WORKED WITH NUMEROUS CLIENTS ACROSS MULTIPLE INDUSTRY VERTICAL WHICH INCLUDE:

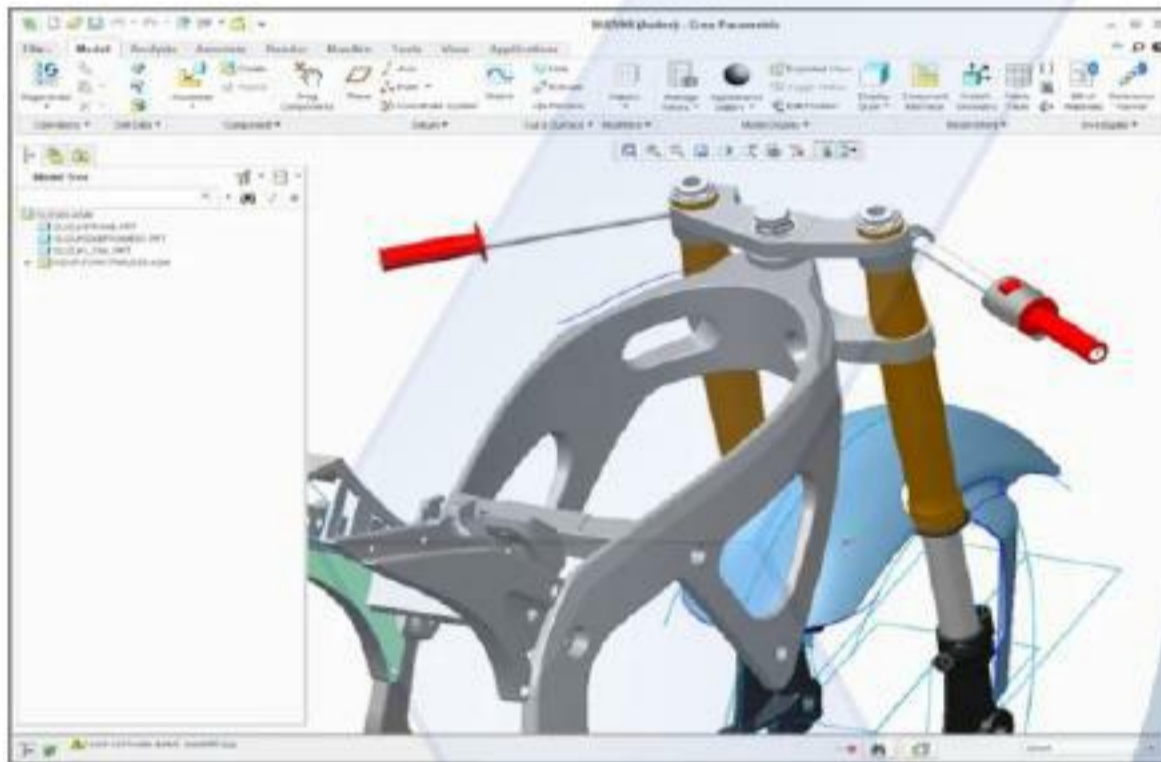
- Air Conditioning & Refrigeration (HVAC)
- Manufacturing
- Automotive
- Aerospace
- Piping
- Marine Vessels
- Civil / Architectural



## PRODUCT DESIGN & DRAFTING SERVICE



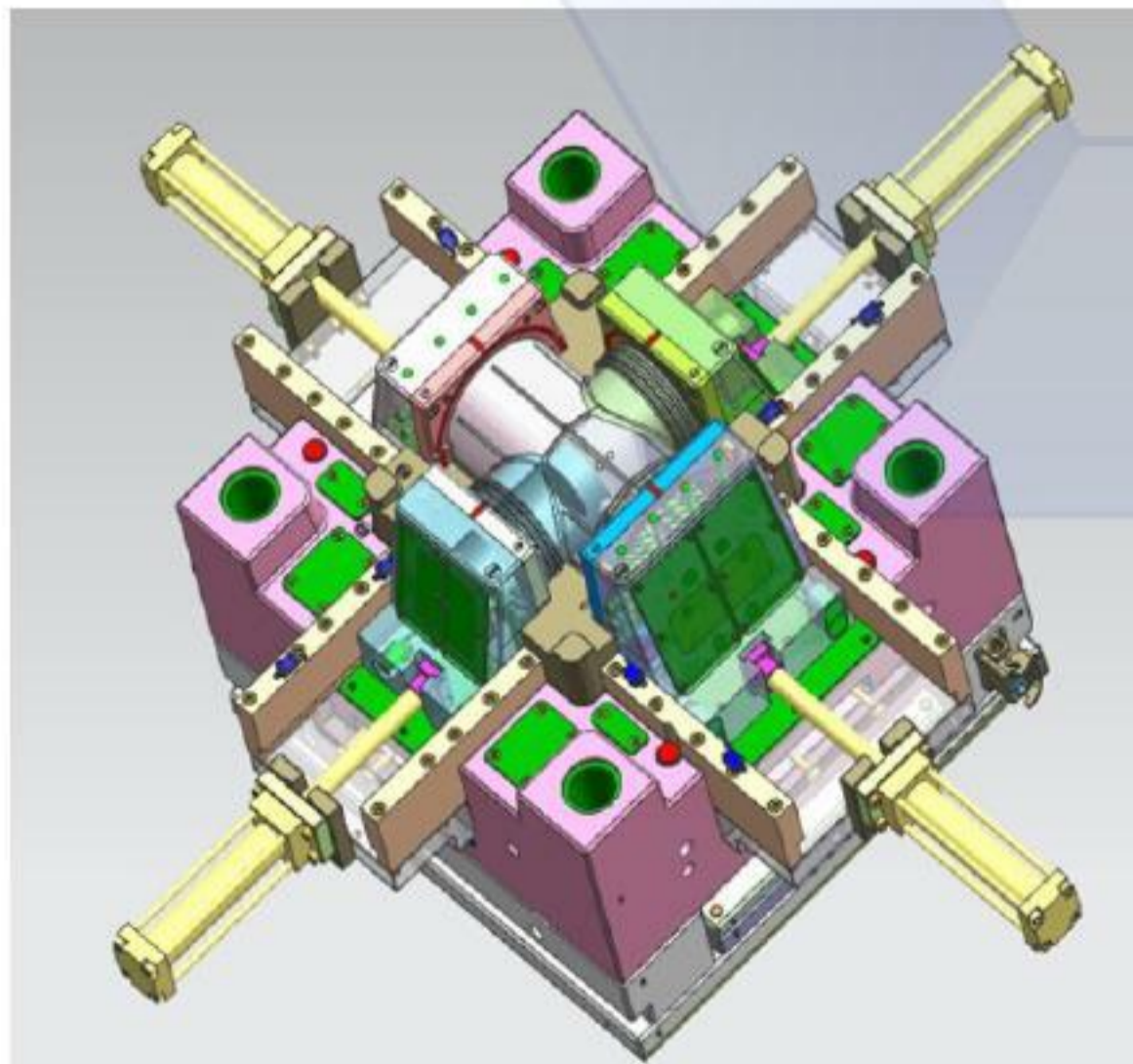
From the functional requirement of products, product designs evolve. In addition, other design parameters like fit, assembly and aesthetics are taken into consideration during the evolution of design. The material for the product, the shape and size to withstand any static and dynamic forces, the structural rigidity to absorb vibrations and process of manufacture to suit the economy of scale are other important criteria to be considered. All the relevant analysis and simulations are carried out, by the use of software, to know up front the suitability of the design to meet the intended requirements.



### OUR IMPECCABLE INDUSTRIAL / PRODUCT DESIGN SERVICES

- Product design and detailing services
- Development of batch quantity and supply services
- Re-mastering and data migration services
- Mock-up development services
- Reverse engineering services

## MOULD DESIGN & DRAFTING SERVICES



The longest path in product development is mould making and hence there is always a growing need to compress the time in making moulds. The most important phase of this activity is mould design, which needs good technology and expertise to design first time right moulds or minimize the number of iterations needed to build the right mould. 3D mould design is an extended activity of 3D part modeling. During the process of part modeling the factors influencing the mould design like parting surfaces, release drafts, profiles formed by slides and gating locations are considered. 3D part models formed with this consideration are the basic requirement to separate core and cavity models and slides. Cooling circuits, ejection systems, runner and gating systems are added with the core. We follow standard mould base like DME, HASCO, FUTABA, LKM to complete the mould design only in 3D model with Assembly views, Material list and part details as per the customer specification if customer requires Process chart, Electrode design.



## INFORMATION TECHNOLOGY SERVICES



At **Roche Engineering Technology** it is our mission to help our Clients realize both tangible and measurable results for our Information Technology service and consulting requirements. We deliver high-end quality solutions that are a direct result of the methodologies adopted by our resources to enable our Clients to deploy software at various locations quickly and efficiently

Our clearly defined testing procedures, which include rigorous testing prior to Client release, are essential to our Client deliverables. Our focus at **Roche Engineering Technology** is to ensure that our final deliverables achieve the zero-defect level. We work very closely with our Clients to fulfill their vision, yet maintain sensitivity to effectively manage costs, while improving the overall quality of their application portfolio.

## SOLUTION DEVELOPMENT

**Roche Engineering Technology** is a leading solution development partner and its development expertise and experience are rooted in strong development methodology based on internal and industry best practices. Ranges of services offered include E-Business / E-Commerce, Enterprise Application Development, Database engineering and architecting

We have expertise in many development technologies, including .NET / C# / VB.Net, PHP, and Laravel Frame Work. Databases serve as the backbone of enterprise applications by providing efficient, structured, and usable organization and storage. We provide expertise in Microsoft SQL Server, Oracle and MySQL.



## PRODUCT ENHANCEMENT AND SUSTENANCE

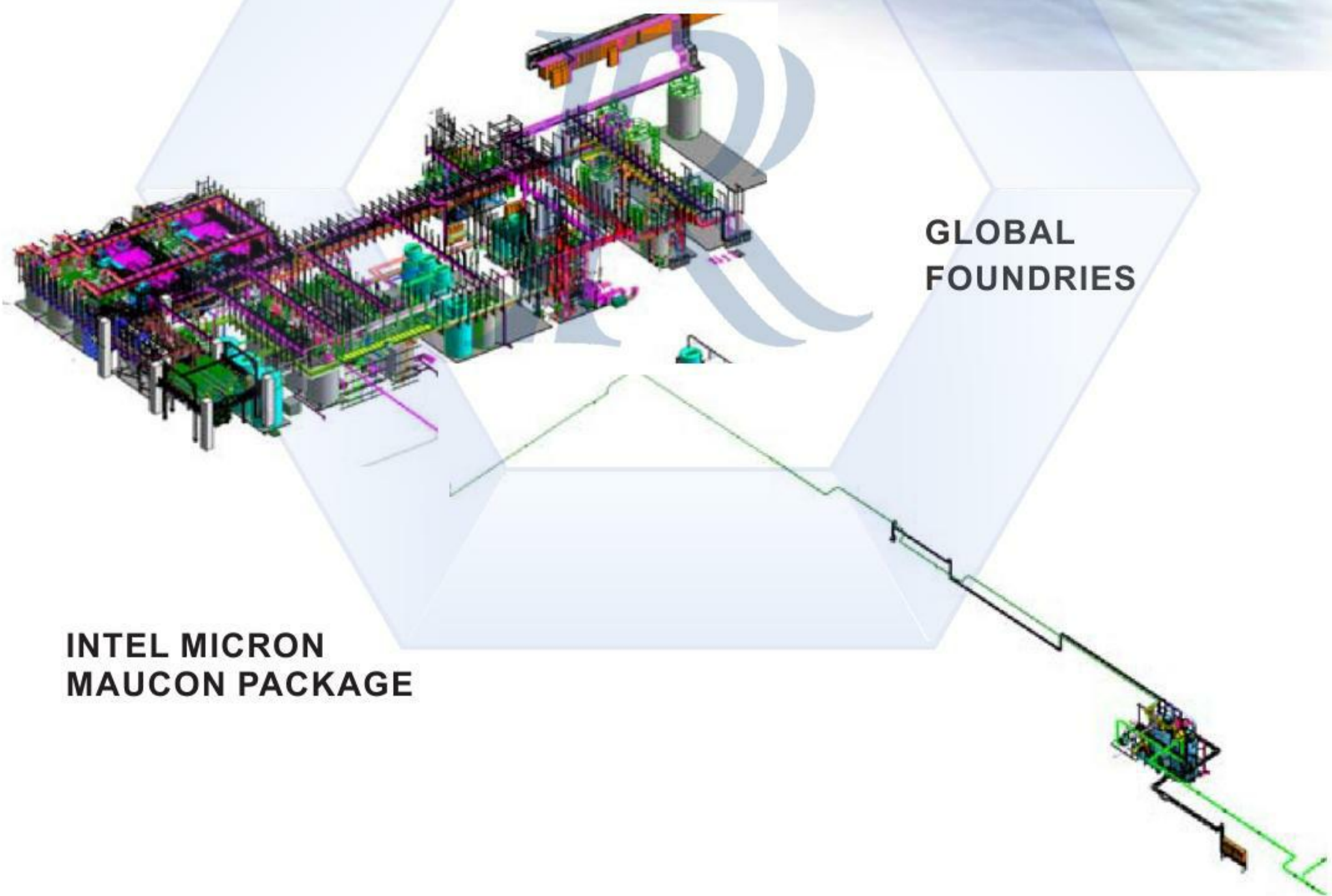
**Roche Engineering Technology** is a leading solution development delivers customized feature enhancements, bug-fixes and release management on the product. Our team augments your in-house team to bring a more powerful, feature rich product to market in the same time frame, or support your existing products in its entirety so you can concentrate on building new products or versions.





**BIM PROJECT REFERENCES:**

**MOBILE SEA WATER  
DESALINATION PLANT  
THAILAND**



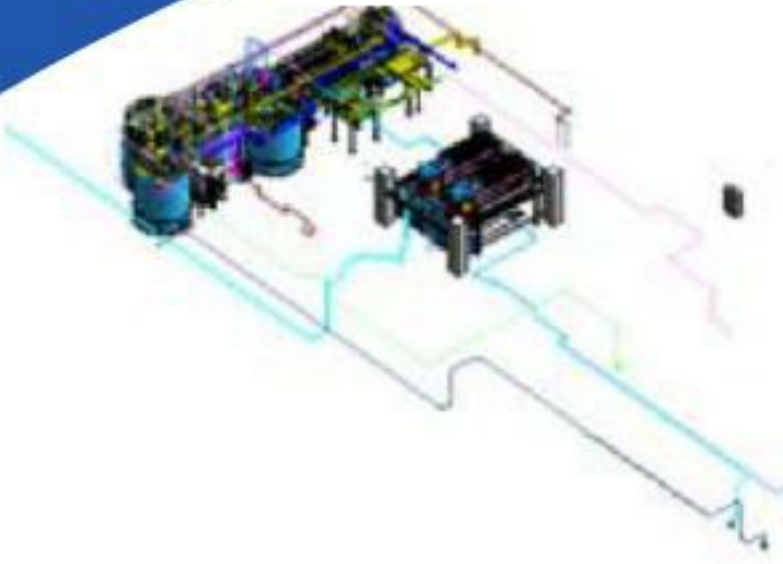
**GLOBAL  
FOUNDRIES**

**INTEL MICRON  
MAUCON PACKAGE**

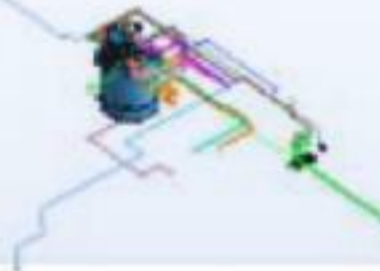




## BIM PROJECT REFERENCES:



**INTEL MICRON  
HFW-4 PACKAGE**



**BEST WORLD  
SINGAPORE**

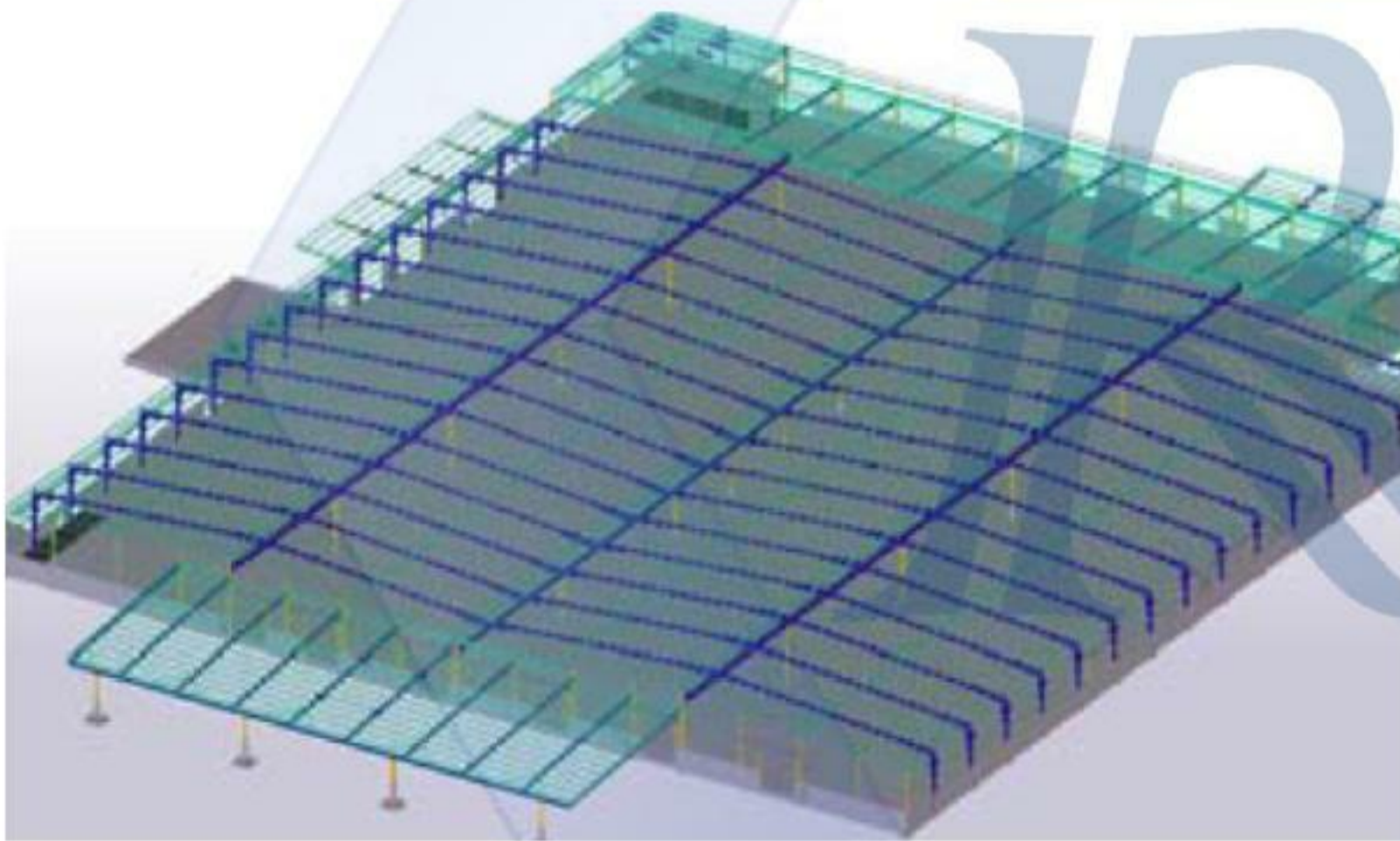
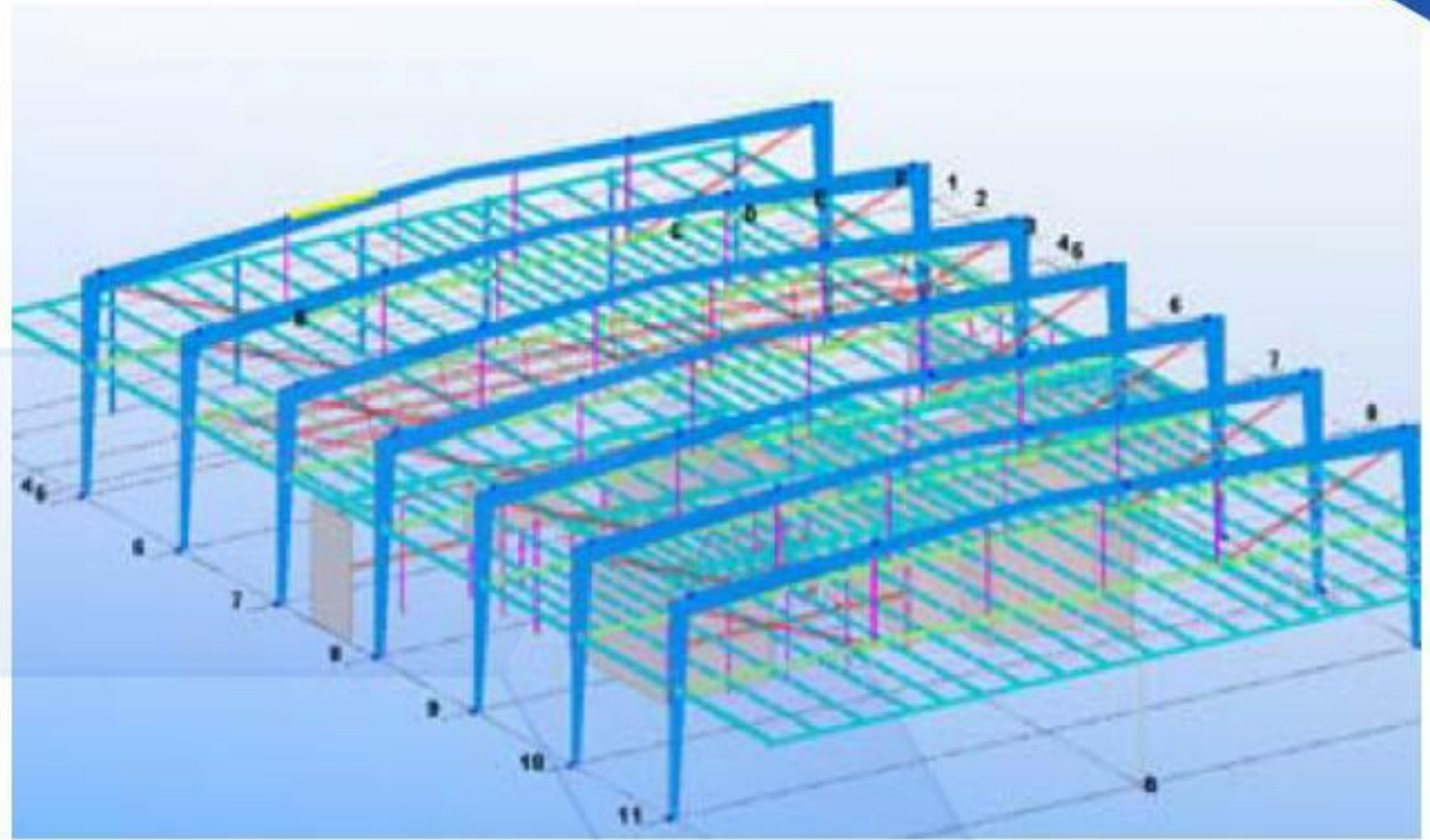


**VIADUCT QT HOTEL  
NEW ZEALAND**



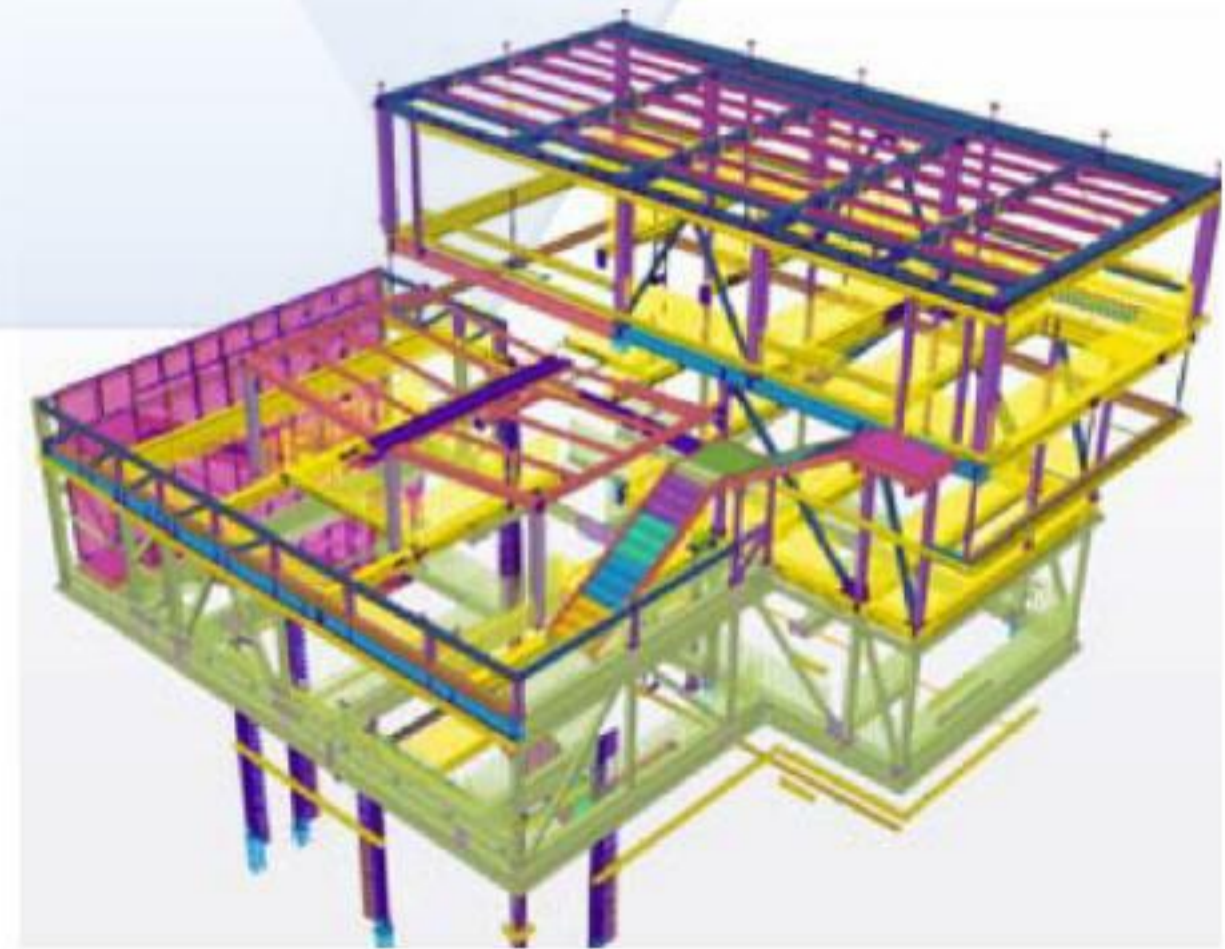
**BIM PROJECT REFERENCES:**

**FLOX PROJECT  
NEW ZEALAND**



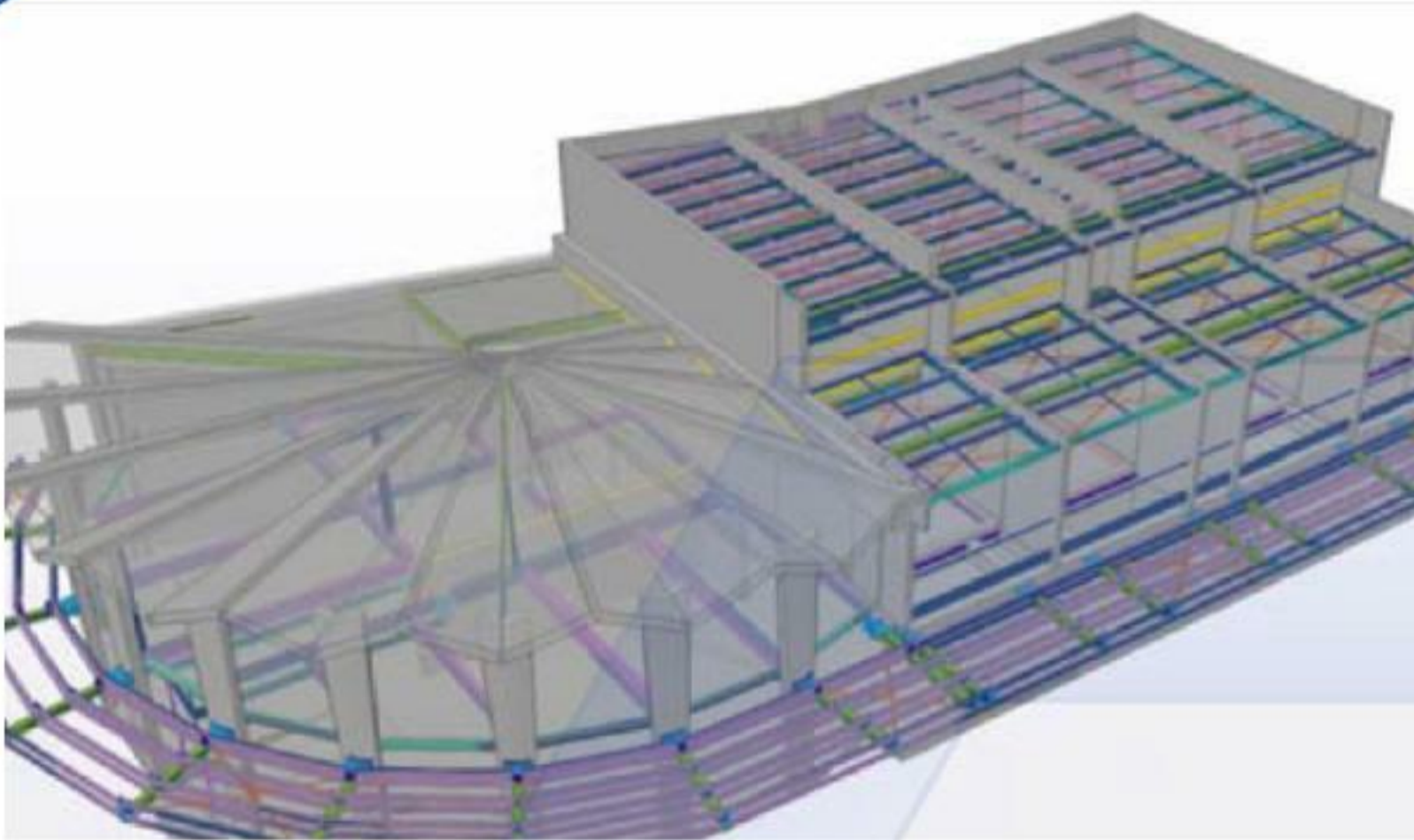
**TRADE DEPOT  
NEW ZEALAND**

**POLLEN STREET  
NEW ZEALAND**



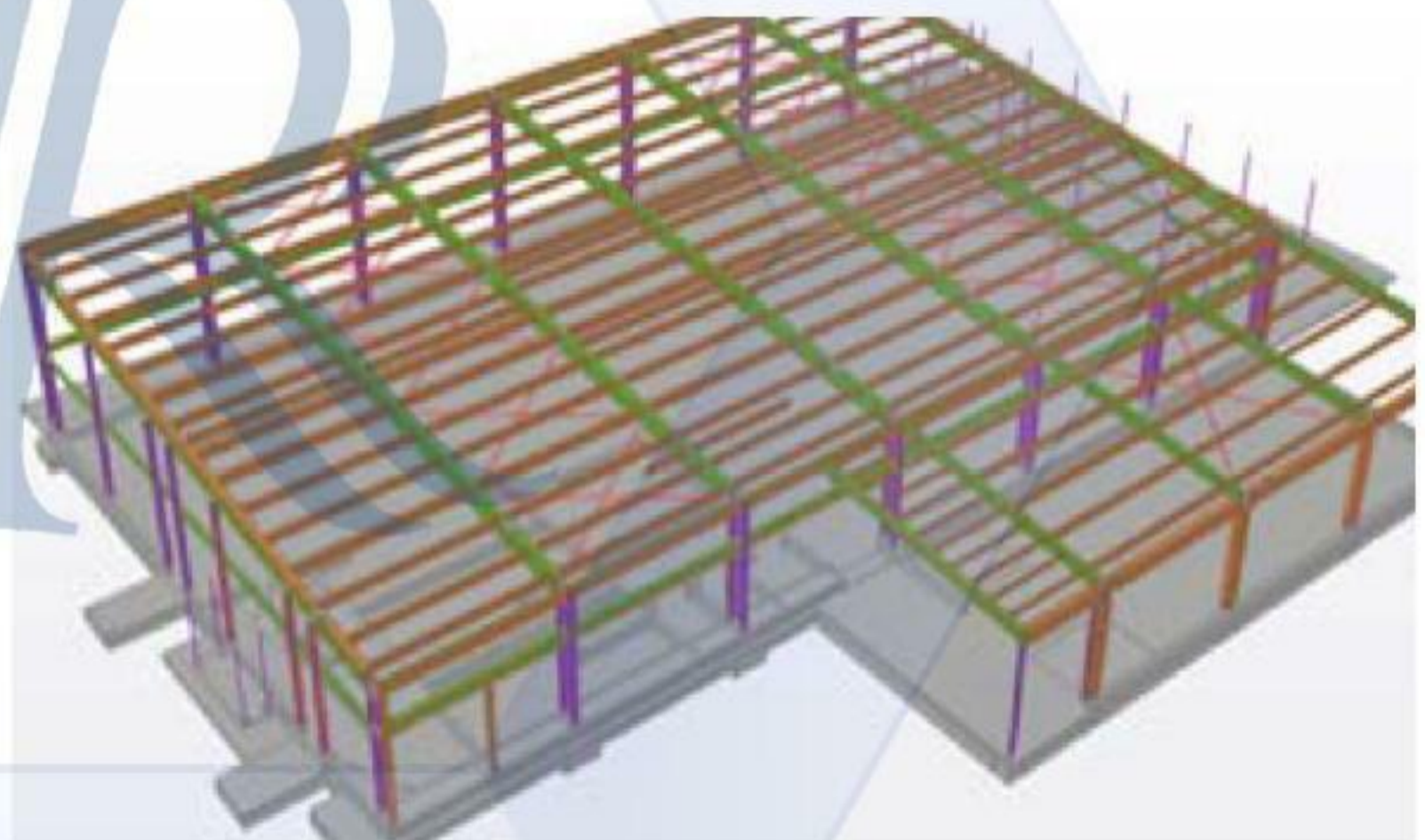


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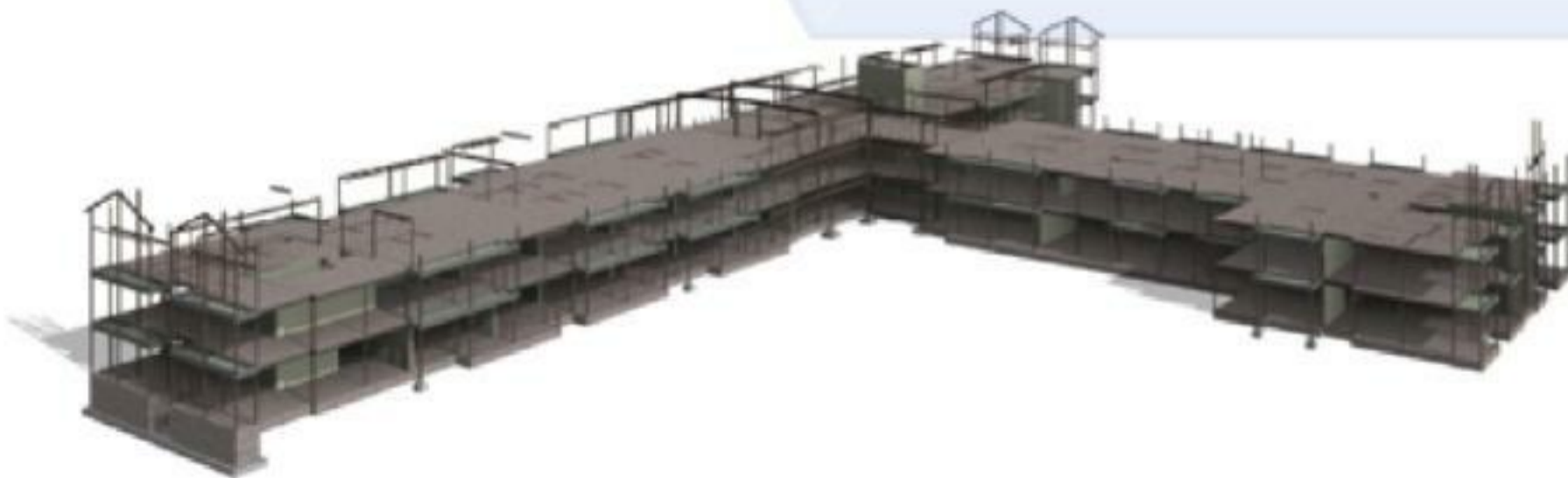


**TODD PLAZA  
NEW ZEALAND**

**BLZ SWIMMING POOL  
NEW ZEALAND**



**LADY ALLUM STAGE  
1 NEW ZEALAND**





**BIM PROJECT REFERENCES:**



**JURONG ISLAND  
DESALINATION PLANT  
SINGAPORE**



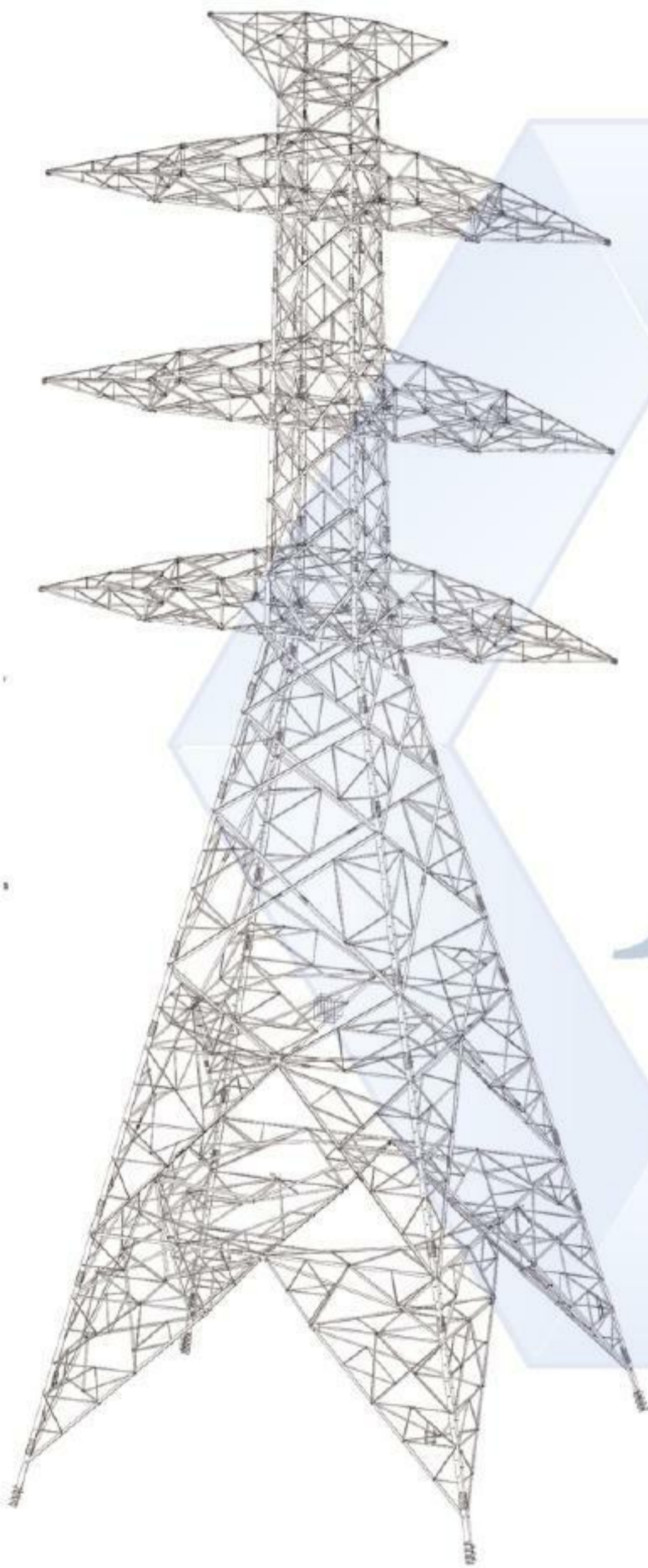
**TUAS SPRING  
DESALINATION PLANT  
SINGAPORE**



**INTEGRATED WASTE  
MANAGEMENT FACILITY  
SINGAPORE**



## BIM PROJECT REFERENCES:



Name : OHTL Tower  
Owner : Suadi Electricity Company  
Capacity : 380 Kv  
Location Details : Riyadh  
Country : Saudi Arabia

Name : SIN Tower  
Owner : Suadi Electricity Company  
Capacity : 380 Kv  
Location Details : Riyadh  
Country : Saudi Arabia

Name : TA3N Tower  
Owner : Suadi Electricity Company  
Capacity : 380 Kv  
Location Details : Riyadh  
Country : Saudi Arabia

Name : DES Tower  
Owner : Suadi Electricity Company  
Capacity : 380 Kv  
Location Details : Riyadh  
Country : Saudi Arabia



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