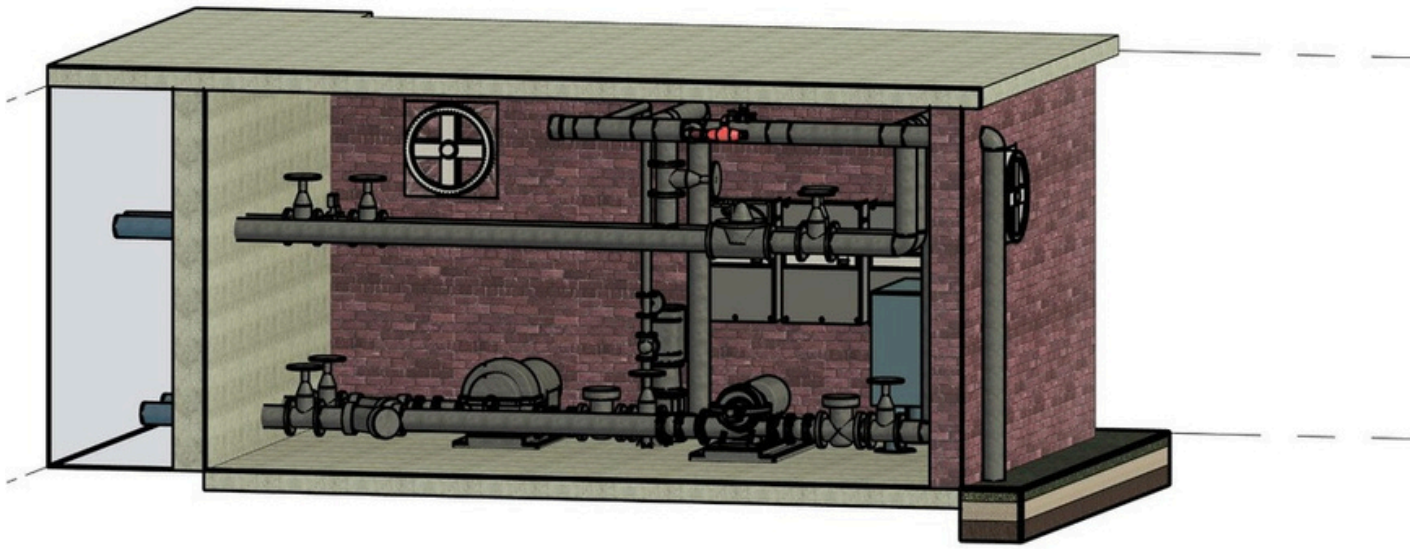


CASE STUDY

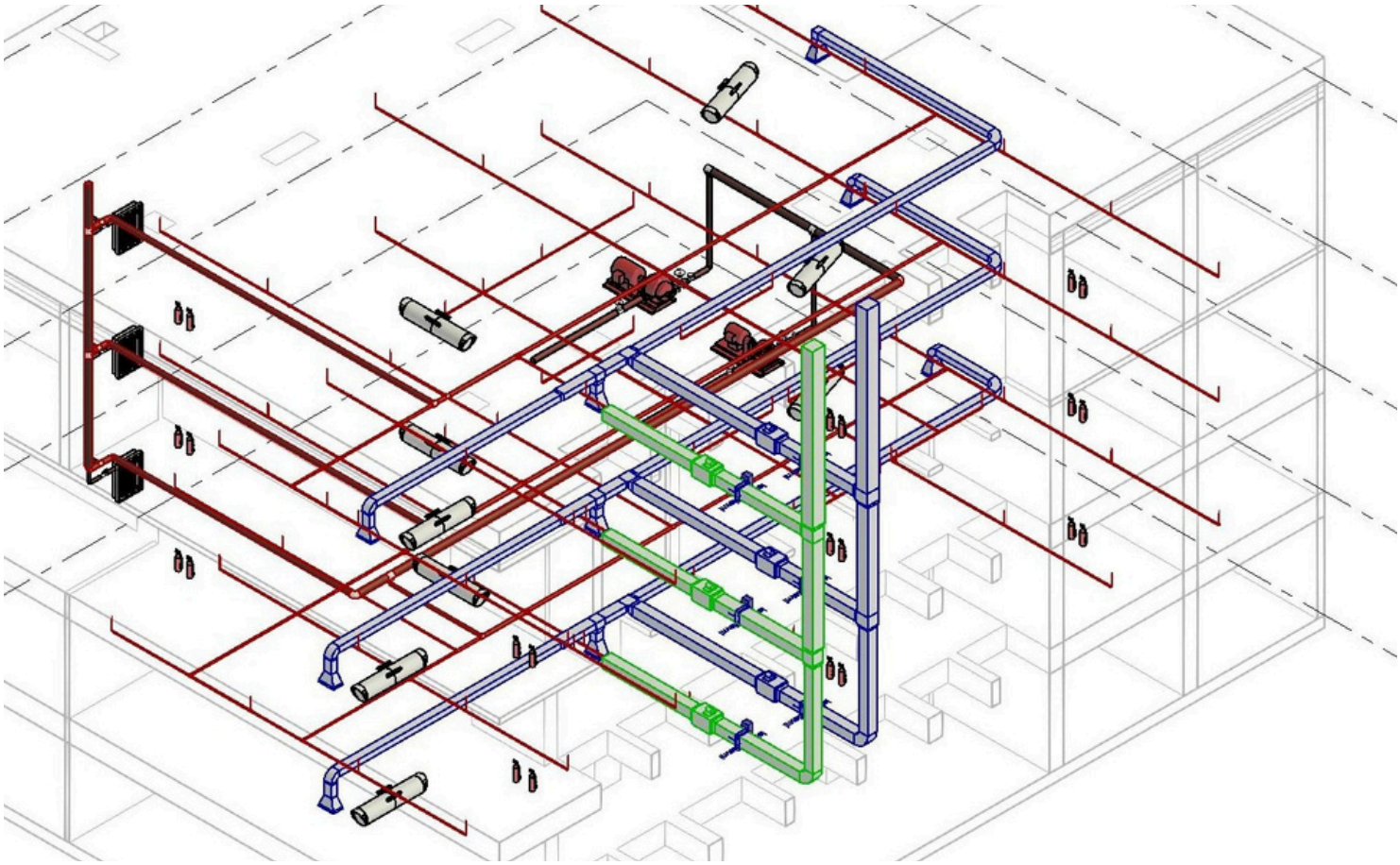
Case Study: AutoCAD Plumbing Design for Residential and Commercial Project

PREPARED BY

Innovative Station Ltd.

innovative STATION LIMITED

Client: A plumbing contractor seeking detailed AutoCAD designs for residential and commercial plumbing systems to ensure compliance with local codes and seamless installation.
Objective: Develop accurate and efficient AutoCAD plumbing drawings, including water supply layouts, drainage systems, and gas piping, to improve construction efficiency and reduce errors.



CHALLENGES

- Precision & Compliance: Highly accurate plumbing layouts that adhere to industry codes and standards (IPC, UPC, and local regulations) are required.
- Complex Plumbing Systems: Needed to design plumbing systems for multi-story buildings with intricate drainage and water supply networks.
- Clash Detection: Using BIM coordination, prevent conflicts with other MEP (Mechanical, Electrical, and Plumbing) components.
- Scalability: Ensure the drawings can be adapted for future modifications or expansions.

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OUR APPROACH

we bring ideas to life through cutting-edge CAD design services

Work Processes

- Requirement Analysis & Planning

1.Conducted a meeting with the client to understand the project's scope and specific plumbing needs.
2.Reviewed architectural and structural drawings to align plumbing layouts accordingly.

- AutoCAD Drafting & Design Development

1.Created 2D plumbing layouts detailing pipe routes, fixture locations, and valve placements.
2.Developed 3D plumbing models to visualize pipe distribution and identify potential conflicts.
3.Included sanitary, stormwater, and potable water supply designs, ensuring optimal flow and minimal pressure loss.
4.Used layering techniques in AutoCAD to separate different plumbing components for better clarity.

- Compliance & Quality Check

1.Verified designs against national and local plumbing codes to ensure approval from regulatory bodies.
2.Integrated clash detection analysis using Revit and Navisworks to prevent conflicts with other building systems.
3.Conducted a final peer review and quality check to eliminate errors before submission.

- Client Review & Revisions

1. Shared the initial draft with the client for feedback and adjustments.
2. Incorporated requested changes and ensured all annotations and dimensions were clear.

- Final Delivery & Documentation

1. Delivered CAD files (DWG, PDF) with layer breakdowns and detailed legends.
2. Provided Bill of Materials (BoM) listing necessary pipes, fittings, and fixtures.
3. Supplied installation guidelines for plumbing contractors to ensure accurate on-site execution.

Result

- Improved Efficiency: Provided precise plumbing layouts that reduced installation errors by 35%.
- Regulatory Approval: All designs passed local code inspections without revisions.
- Cost Savings: Optimized pipe routing to reduce material waste and labor costs.

Conclusion

By leveraging AutoCAD for precise plumbing system designs, the client successfully optimized installation processes, reduced costs and ensured compliance with industry regulations. The project demonstrated how detailed CAD drafting can enhance construction efficiency, improve coordination, and prevent costly mistakes.