

ingho.

ENGINEERING AND FACILITY MANAGEMENT

www.inghofm.com

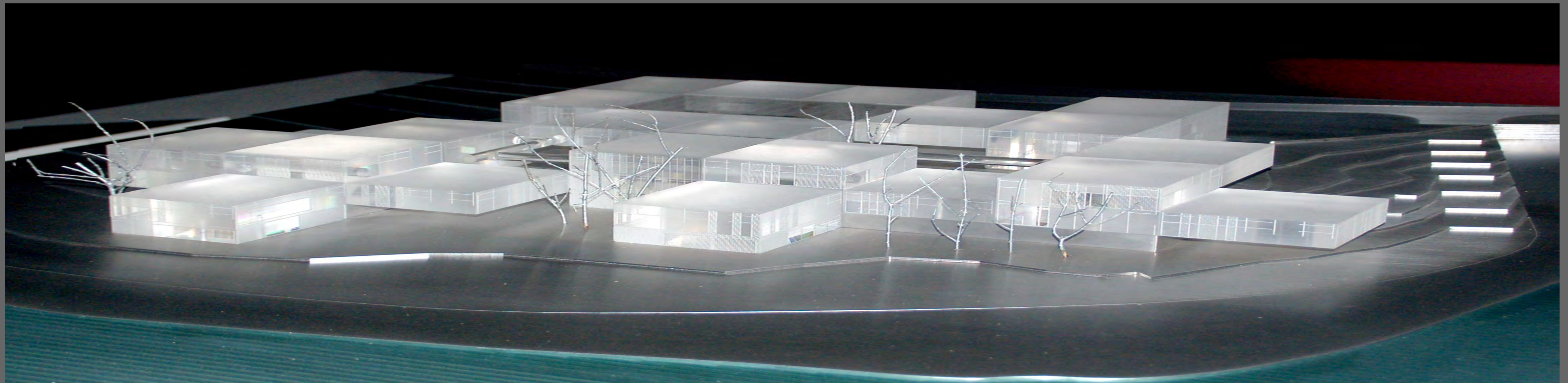
WHO ARE WE?

- ✓ Founded in 2004.
- ✓ Specialists in the Health and Unique Building Sector
- ✓ Location: Malaga, Munich, Lima, Santiago
- ✓ +700 hospital projects, +50 audits
- ✓ Energy inventory to 337 health centers
- ✓ Energy management systems in several hospitals
- ✓ Projects in: Spain, Peru, Arabia, Russia, Senegal, Ecuador, Algeria, Bolivia, Angola, Nicaragua, Guatemala, China, ...



INGHO is an engineering company created in 2004 by independent professionals that provides consultancy services related to facilities, energy management, environmental impact, cutting-edge technology, equipment planning and facilities management. Our team strives to provide value-added solutions to our customers.

We are involved in the building operation through facilities maintenance audits, Software tools implementation for the improvement of the energy and facilities management. We also provide planning for renovation projects and energy audits.



WHY CHOOSE US?

Our commitment to our customers

We understand the key factors and the risks associated with your business. Our involvement is proactive to help you achieve your goals in an efficient way.

We offer our customers innovative and operative solutions suited to their requirements

Our team is committed to delivering designs with the latest technological advancements in the sector. We also develop in house R&D to give innovative and verified solutions to our customers

Committed with deadlines

We are aware of the importance of complying with the expected delivery dates. We envision our engineering work as a crucial part of a design team and in order to be successful on it we give great importance towards managing our work in an efficient way

We maintain our deliverables to high standards

Since we use the best and innovative project management, design and calculation software tools.

EXPERTS IN THE HEALTH SECTOR

INGHO has developed an in-depth knowledge in the health sector. Most of our consultants are professionals who have worked in operations and management roles in public hospitals, buildings fitted with complex equipment and facilities. Our experience in this field and our technical skills allow us to overcome any challenge in the engineering and building sector : services, residential or industrial.

Our working ethic is based on taking responsibility of our project design to achieve the objectives defined by the architect and the property developer. We join efforts and work together in search of the most suitable solution from an economic and technical point of view, as well as integrating building services into the architectural concept of the building.

We are experts in the development of equipment plans for buildings. We are capable of covering everything from high-level concepts of building engineering to minutest details of furniture



OUR CUSTOMERS



OUR VALUES – THE ADDED VALUE TO OUR CUSTOMERS

CREATIVE AND PASSIONATE



We offer innovative solutions based on our in-depth expertise and the best practices in the sector, which are the result of our curiosity in technological advances. However, we always consider the practical approach of the solutions and we control the risk for the final customer.

FOCUSED IN CUSTOMER NEEDS



We understand and share our customer's objectives to give complete solutions and meet 100% of the customer's requirements.

PARTNERSHIP



Teamwork with our external partners is one of our core values, we are a further cog in the wheel enabling the information to flow naturally to a developed and integrated concept design.

COMMITTED WITH THE EXCELLENCE



We are strongly committed to our customer to provide high-quality deliverables respecting deadlines. Our excellent project management procedures reduce the risks in order to offer an outstanding service.

ADDED VALUE

The added value that INGHO brings to technical proposals comes not only from the **experience of the team** but also from the firm's innovative approach. INGHO is active in various **research and development projects** in which it collaborates in the development of Buildings making them more comfortable for its occupants, more energy efficient and more environmentally friendly.

We are involved in building operations, complete maintenance audits and implement software to improve energy and facilities management. We are also involved in facilities renewal and energy audits.

Besides **project design and technical assistance management**, our **services also include consultancy, feasibility assessments, procurement of licences and permits, basic and detailed engineering, technical assistance during construction and kick off, maintenance planning and turnkey projects.**

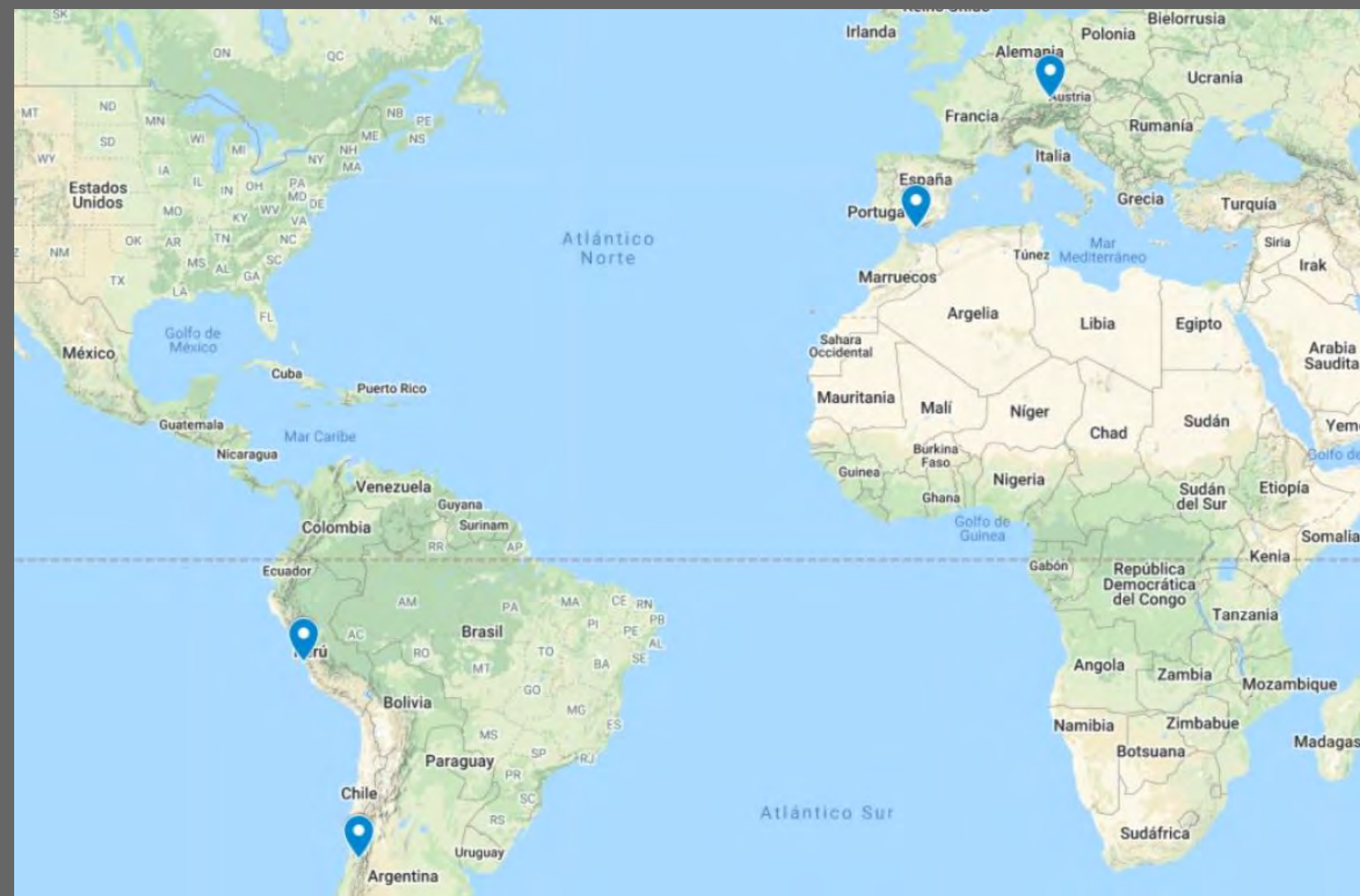


LOCATIONS

INGHO is a company with a well-defined international presence, which is one of the key factors of the company's success. Nowadays, **more than 75% of our revenues are linked to projects developed worldwide**. Due to our success in Latin American market, we have established a permanent office in Peru to support our projects in that area.

MAIN HEADQUARTERS

Parque Tecnológico de Andalucía
Iván Pavlov, 2-4 2º 13
Edificio Hevimar II
29590 Málaga



OFFICE IN LIMA (PERÚ)

Calle Cantuaria, 160
Oficina 606
15074 Miraflores – Lima

OFFICE IN MÜNCHEN (ALEMANIA)

Lindberghstraße 19 D
80939 München

OFFICE IN SANTIAGO (CHILE)

La Concepción 141, Of. 203 -
Providencia - Santiago

OUR TEAM

All **INGHO** consultants have extensive experience in the design and implementation of unique buildings and, in particular, construction and facilities management, having they all played responsibilities in the field of general services (facilities management) **INGHO** is capable of incorporating highly specialized personnel in the disciplines covered by the service, which will be called to participate on those matters that require their expertise.



BOARD OF DIRECTORS



SALVADOR RODRÍGUEZ

DIRECTOR, PARTNER

Industrial Engineer at ICAI. (Universidad Pontificia de Comillas). From 1993 to 2004 Salvador has worked as General Services Director for the public company Hospital Costa del Sol at Marbella (Málaga). In 2004 co-founded INGHO FM and since then he is the general manager



MANUEL GALLARDO

DIRECTOR, PARTNER

Industrial engineer and Phd at University of Málaga. In 2004 co-founded INGHO FM and since then he is the technical director. Besides, from 2013 he is working as lecturer in the department of Máquinas y Motores Térmicos at Industrial Engineering School - University of Málaga.

SERVICES OFFERED

ENGINEERING



CONSULTANCY
SERVICES AND
INSTALLATIONS
AUDITS



BIOMEDICAL
ENGINEERING



ENVIRONMENTAL
AND ENERGY
MANAGEMENT



PROJECT
MANAGEMENT



EQUIPMENT PLANNING AND FACILITIES MANAGEMENT

ENGINEERING

ENGINEERING

We deliver engineering services included the construction planification and schedule, the cost assessment, based on 3D modelling using **BIM** software tools. We can also apply **LEED or BREEAM** principles to the building design and we also can participate in the certification process.



The **knowledge areas or types of facilities** in which we can provide added-value solutions are: air conditioning, electricity, plumbing, sanitation and water treatment, power plants for thermal energy production (including solar power plants, cogeneration, ...), medical gases, automation communications or transportation. Below you can access additional information for each type of installation.

SERVICES OFFERED

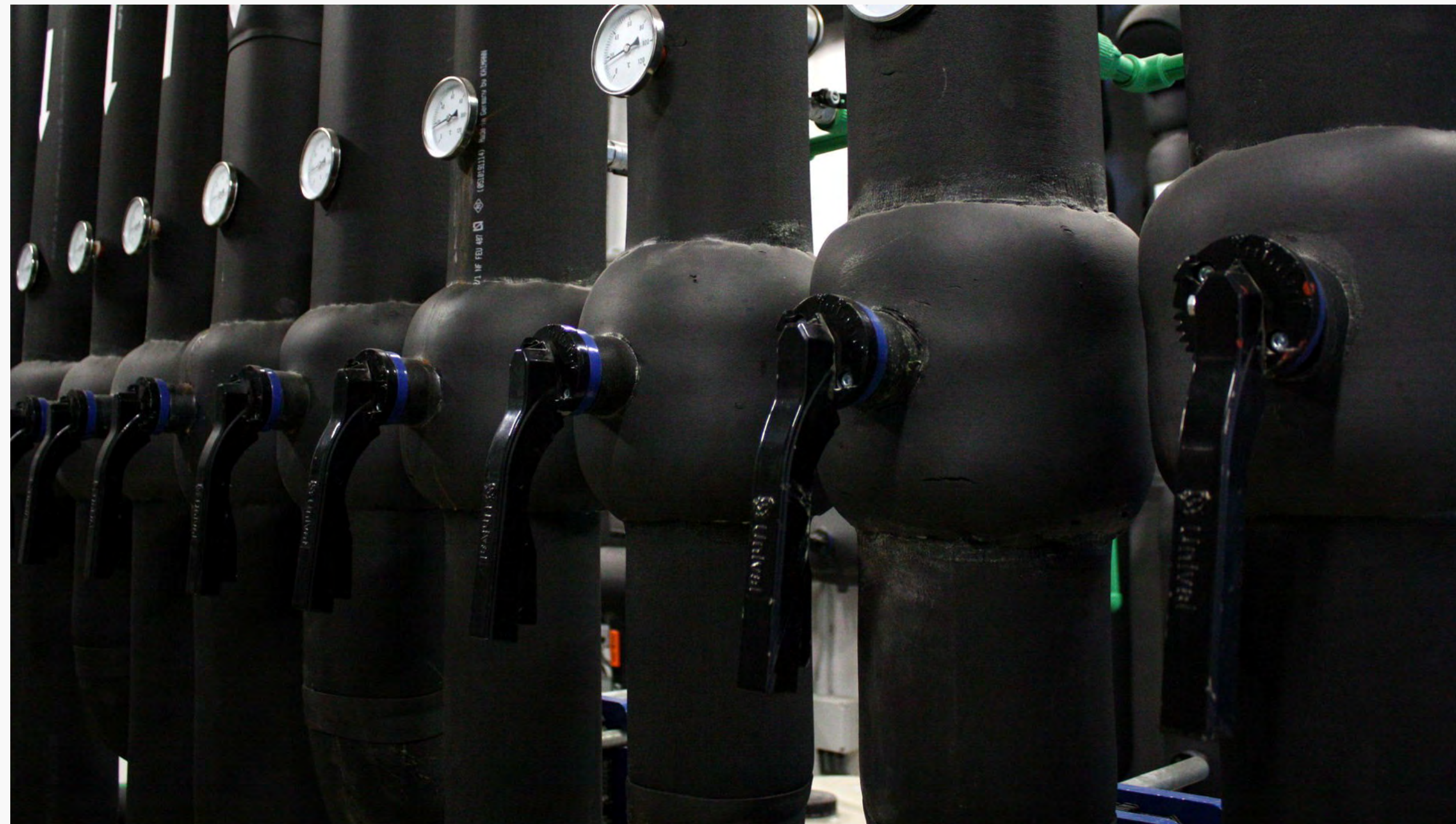
- ✓ Engineering projects.
- ✓ Facilities project management during construction; schedule, technical and economic control.
- ✓ Technical assistance for the supervision during construction for architects, construction or installation companies.
- ✓ Evaluation and facilities audits, energy efficiency. Requirements assessment. Regulation and normative accomplishment.
- ✓ Project Management.
- ✓ Maintenance engineering.



CONSULTANCY SERVICES AND INSTALLATIONS AUDITS

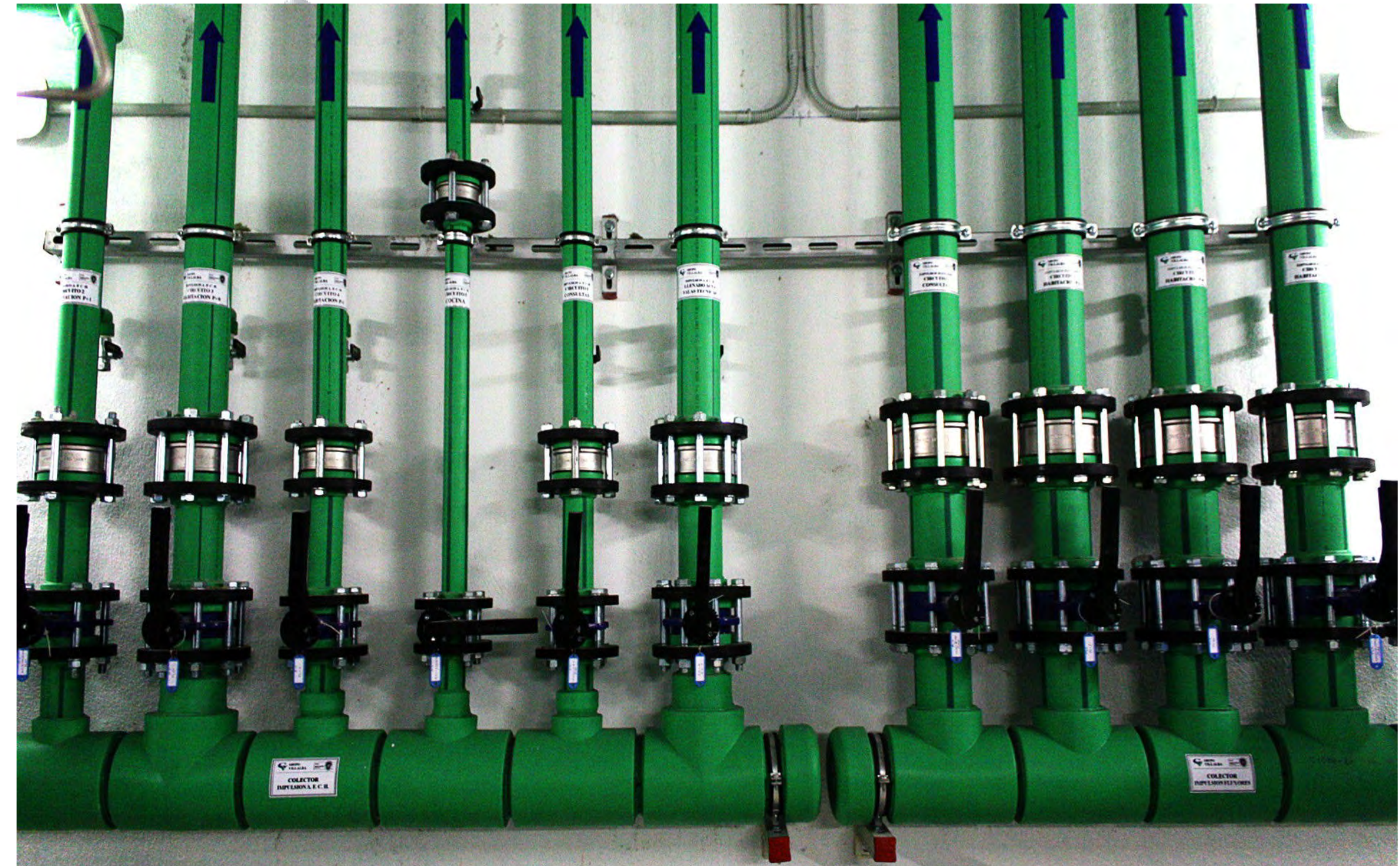
CONSULTANCY SERVICES AND INSTALLATIONS AUDITS

INGHO has a multidisciplinary team of engineers. They have the necessary experience to collaborate with building owners as well as infrastructure and building users. Our team can provide assessments advice of installations and make recommendations to improve building efficiency and sustainability. These recommendations are based on our design and operational experience.



SERVICES OFFERED

- ✓ Facilities audits.
- ✓ Compliance with current standards and regulations of existing and proposed developments.
- ✓ Maintenance plans and life-cycle analysis.
- ✓ Legionella treatment.
- ✓ Maintenance contracts.
- ✓ Optimisation of energy consumption.
- ✓ Emergency and self-protection plans.



BIOMEDICAL ENGINEERING

BIOMEDICAL ENGINEERING

Engineering knowledge applied to solve problems in health sector is considered a new branch of science, **INGHO** has been working on this combination from its beginning. There is a huge potential in mathematics, physics or electronics to improve the services provided in hospitals.

We are aware of the complexity of hospital management, because of its size (area, equipment number,...) and also because of the difficult adaptation of old facilities with new technologies. Our deep expertise in engineering and management in this sector enable us to give innovative solutions to improve the provided services and simplify internal procedures.



SERVICES OFFERED

- ✓ Electromedical and laboratory equipment plans.
- ✓ Inventories.
- ✓ Maintenance plans.
- ✓ Maintenance audits.
- ✓ Technology assessment.
- ✓ Patient safety.
- ✓ Consultancy (legal certifications, procurement models, receipt and implementation of equipment, training,...).



ENVIRONMENTAL AND ENERGY MANAGEMENT

ENVIRONMENTAL AND ENERGY MANAGEMENT

Environmental and energy management sets a clear **continuous improvement cycle for energy and environmental performance of buildings**. First, the current performance of a building is assessed, and then action plans are developed to improve the energy consumption and environmental impact of the building.

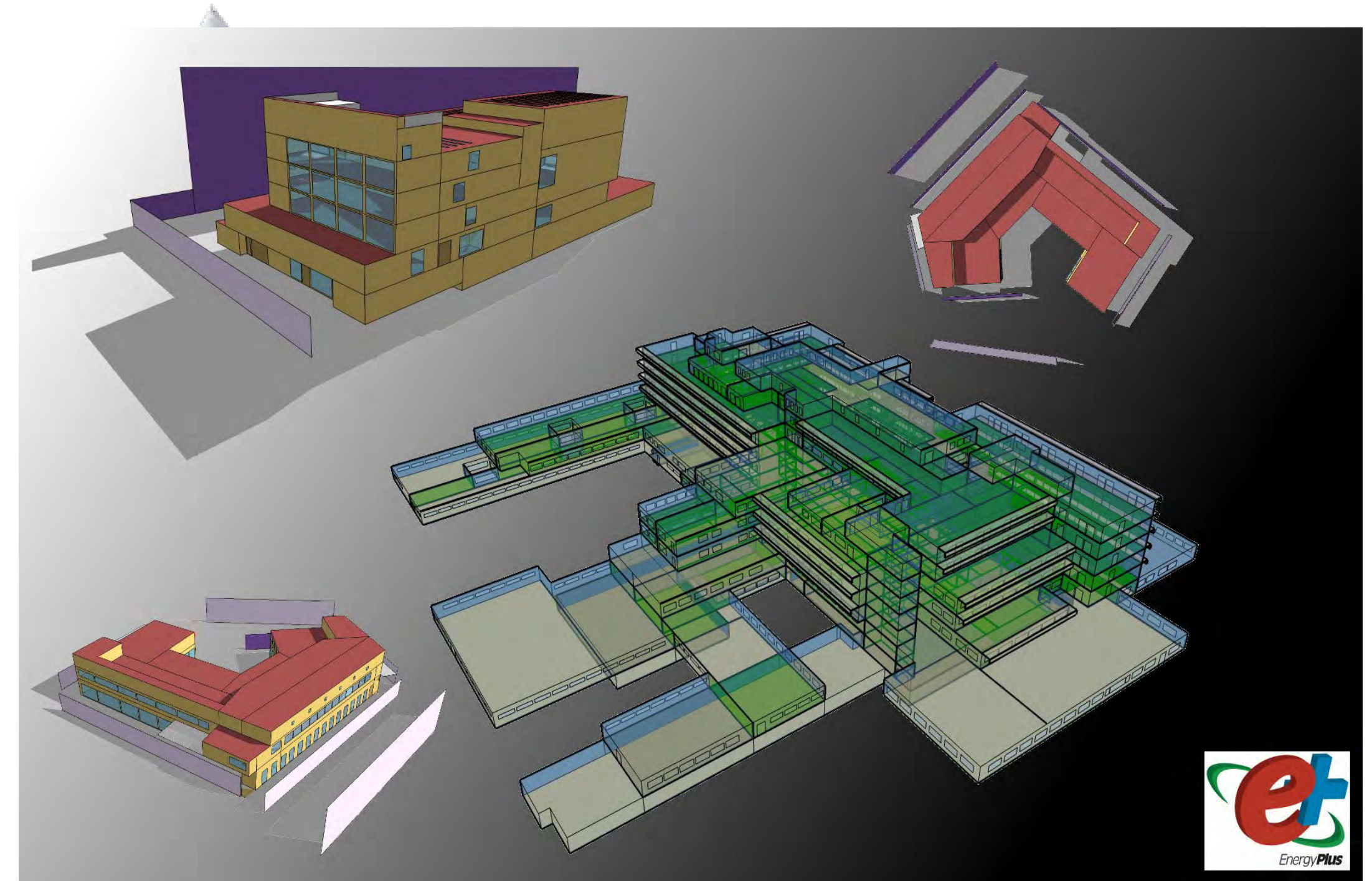
INGHO develops and operates software tools and methodologies to identify and evaluate the most relevant energy aspects to be improved in a building. The building simulation models enable the definition of scenarios. Energy performance is analysed for each scenario and potential solutions are compared. The scenarios may include infrastructure simulations and/or supply contract conditions.

INGHO has got an outstanding and extensive experience in energy audits for buildings of different uses and types, our team has developed a methodology that integrates the simulation of energy consumption for a full year using well-recognized Software as Energy +. Our approach when developing energy audits allow to quantify the potential savings of the individual or joint measures, both for active or passive measures. Our clients value very positively our methodology and the quality of the deliverables, besides our contribution with innovative solutions.



SERVICES OFFERED

- ✓ Energy diagnosis and audits to assess the performance of the whole building or systems.
- ✓ Consumption indicators analysis.
- ✓ Building energy performance modelling considering improvement measures to reduce energy demand and improve equipment performance.
- ✓ Measurement and verification under EVO standards.
- ✓ Carbon footprint life-cycle assessment.



PROJECT MANAGEMENT

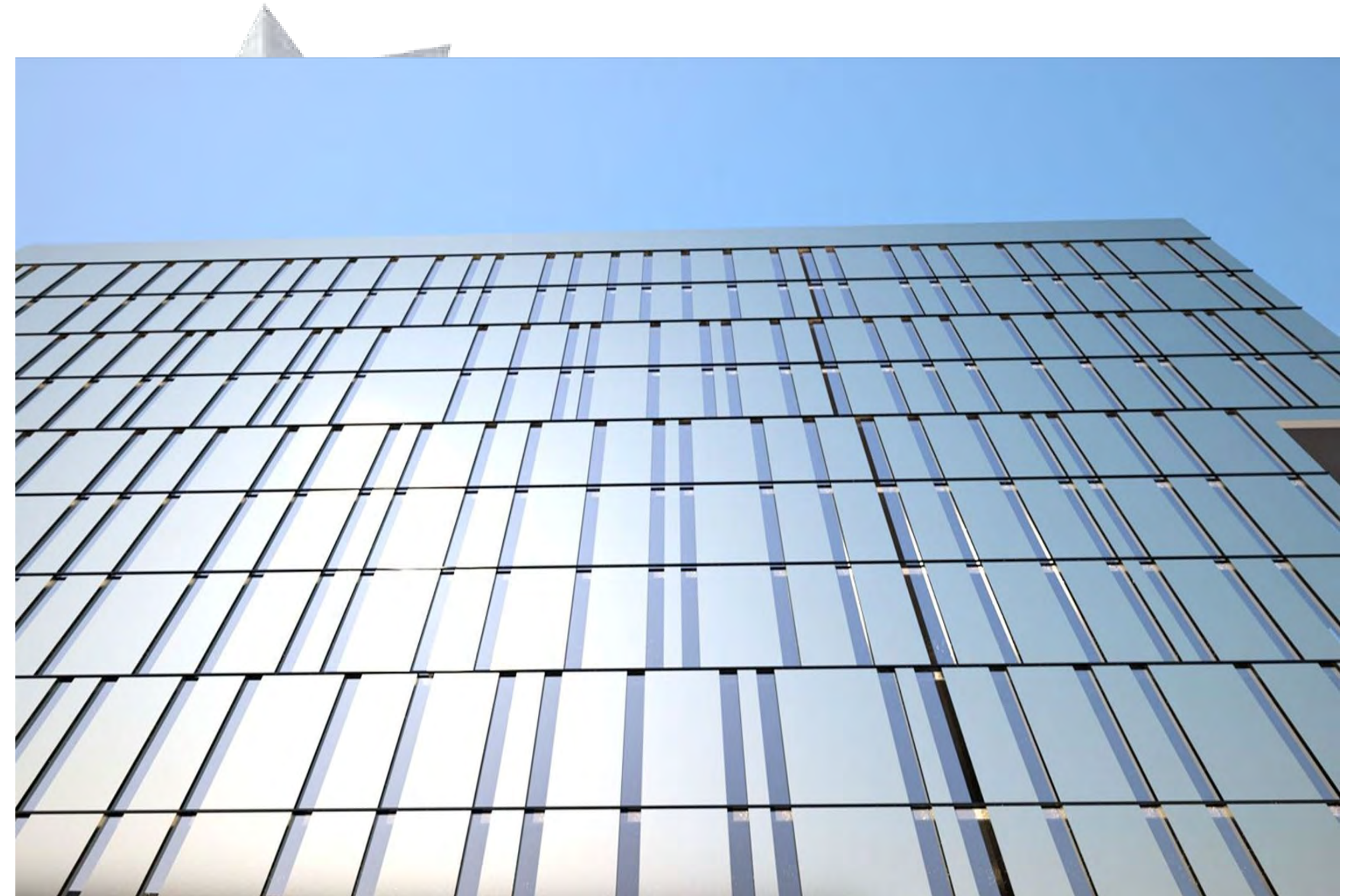
PROJECT MANAGEMENT

INGHO has identified the execution of projects on time, within budget and properly documented according to high-quality deliverables as the key factors that matter to our customers. We provide project management services covering all stages of a project. Our main aim is to comply with customers' expectations related to project execution.



SERVICES OFFERED

- ✓ Project Management.
- ✓ Contractor support during project construction.
- ✓ Budget control.
- ✓ Deadlines compliance control.
- ✓ Management during construction works.
- ✓ Compliance with the safety plan.
- ✓ Software implementation to monitor and control project execution.



EQUIPMENT PLANNING AND FACILITIES MANAGEMENT

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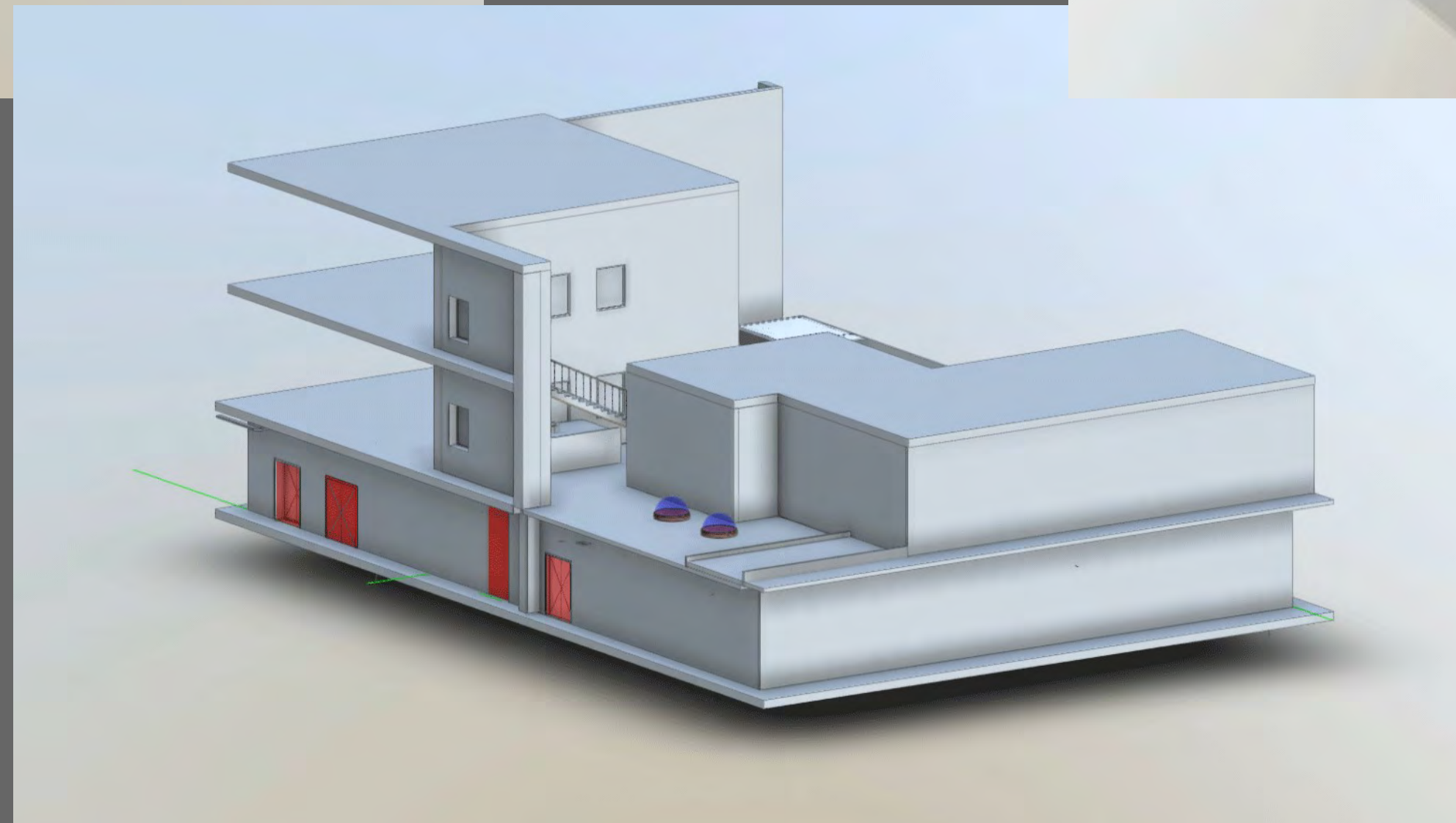
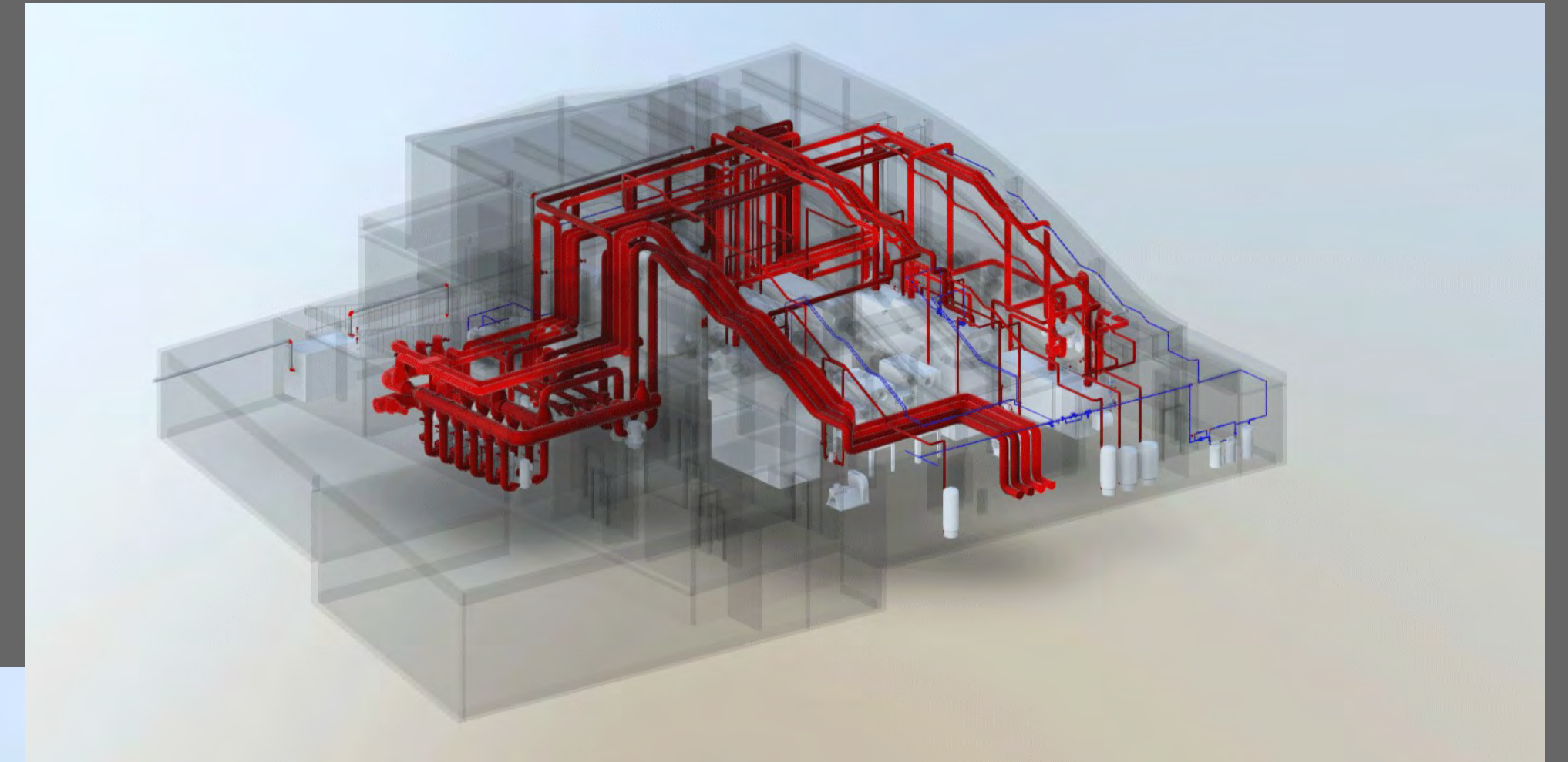
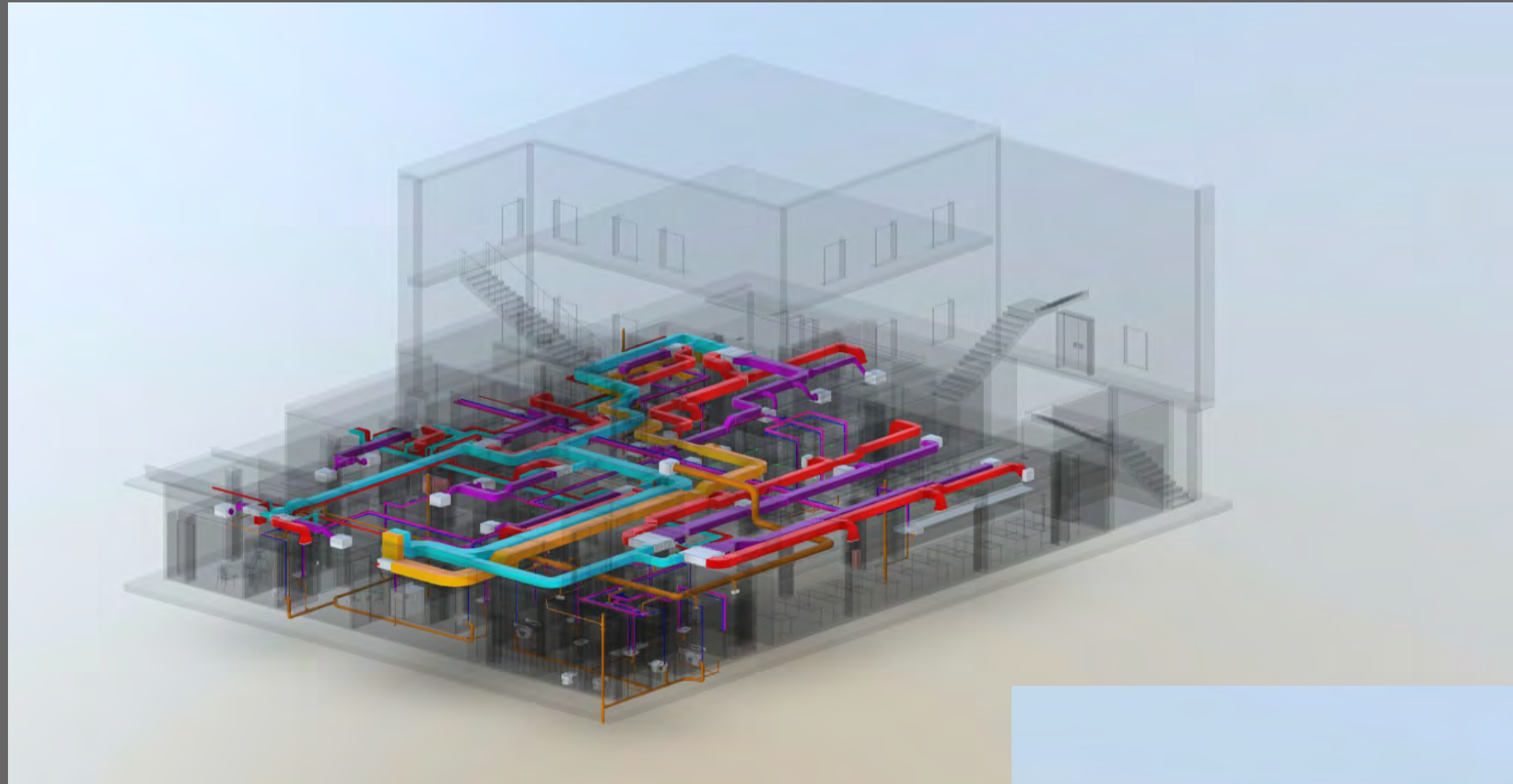
Equipment plans have a special relevance to building owners. Equipment installed in a building must be properly managed due to the large quantities associated and their highly specialized characteristics.

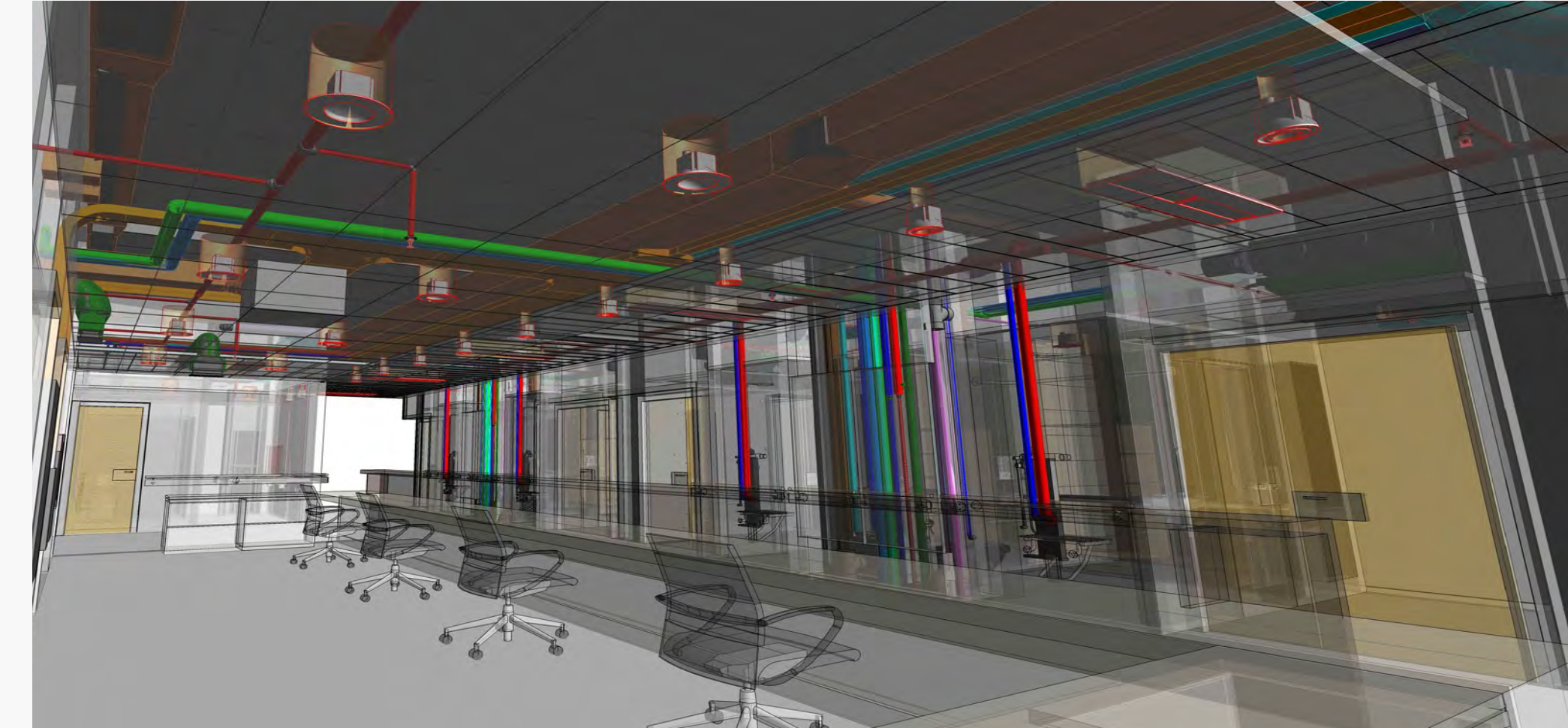
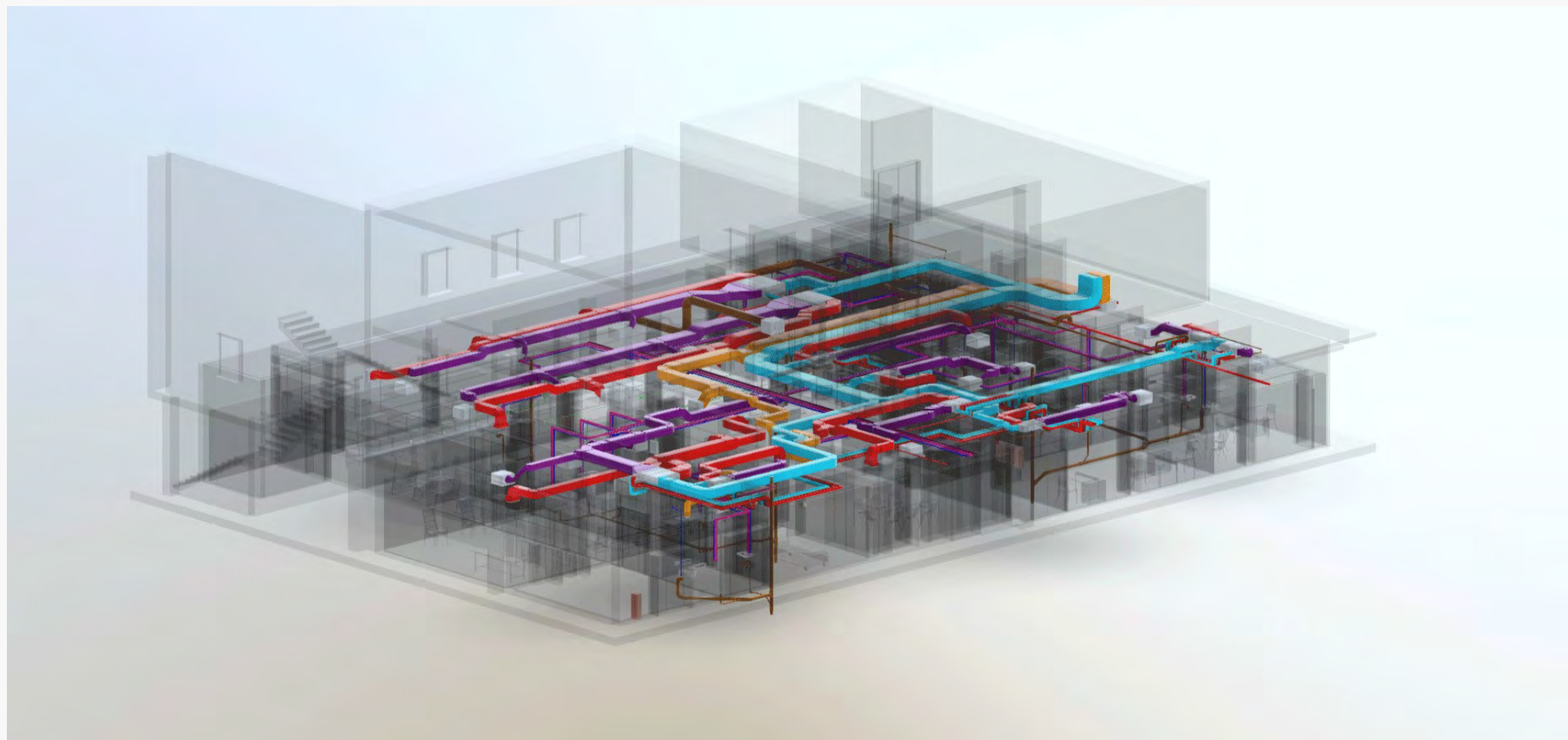
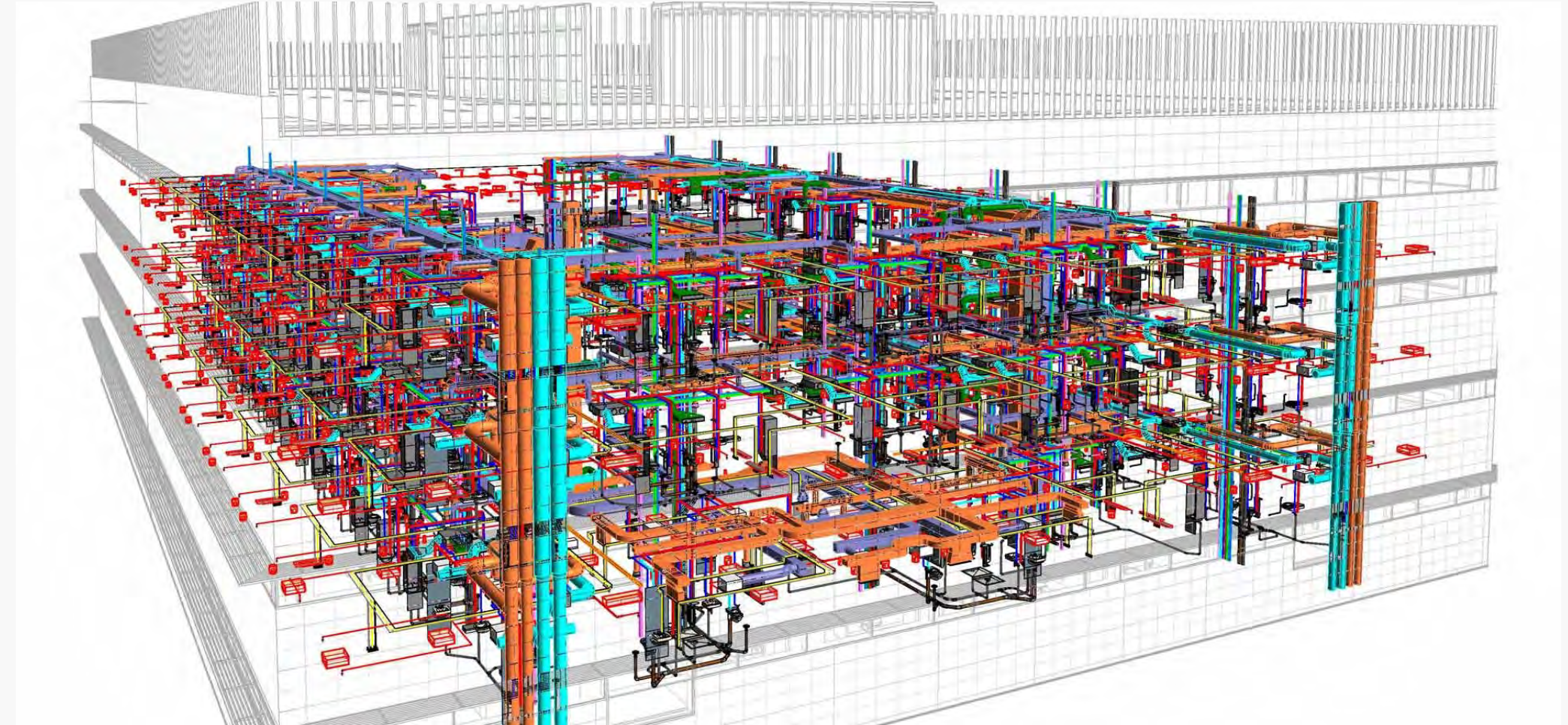
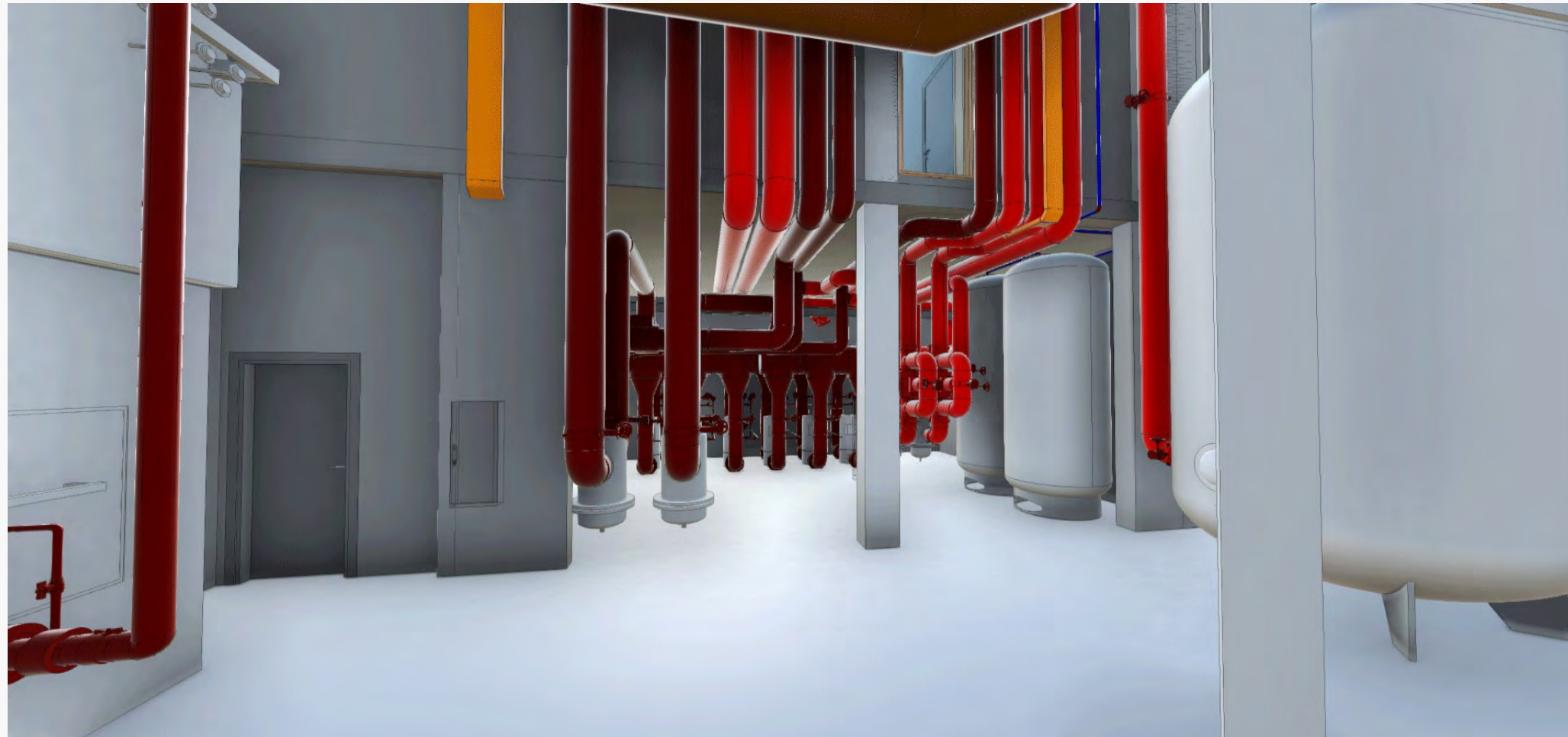
Maintenance costs in some cases can be as high as 40% of the construction cost. The definition of a maintenance plan in which the main needs and technical requirements are defined for each equipment is becoming a necessity. The required space, the electrical and plumbing requirements of the installation as well as the environmental conditions for each piece of equipment are critical aspects that must be foreseen and coordinated in advance to avoid conflicts during project implementation.

The owner will use the equipment plan as the foundation to manage the assets of the building. Activities such as scheduling of maintenance services, cleaning, catering, laundry, transport, compliance with regulations, the environmental impact of the activities undertaken in the building, the optimization of internally or externally managed services, and many others are topics that are becoming more important and are taking valuable time from managers of companies based in the building, which is not part of their core business.

INGHO has developed a web platform (GRIDE), that enables and support the realization of equipment due to the versatility of the platform related to the information that is able to keep and treat.

BIM METHODOLOGY





IN-HOUSE DEVELOPMENT

INGHO has developed different software tools to improve the management of engineering projects. These tools have been designed based on more than 10 years experience in the sector. Some of them are described below.



Gríde

HERRAMIENTA DE GESTIÓN PARA LA REALIZACIÓN DE INVENTARIO DE EQUIPAMIENTO EN EDIFICIOS



Innovation is embedded in the DNA of INGHO, it helps us to improve our internal processes and define solutions for our customers that go beyond their expectations

GESPIÓN

GESPIÓN platform is a document management tool that enables the **creation of technical specification** documents that describes the equipment and installations that are included in an engineering project for facilities, civil works and architectural aspects. On the one hand, this platform includes a full database with all the information needed to identify the minimum requirements prescribed in the project according to the defined quality standards. Besides, GESPIÓN can help to define the technical part of the tender document of an engineering project, based on the selection of individual technical specifications defined in the database. The technical specifications include information that define the **minimum requirements** of a product to be installed in a specific construction project. These requirements are focused on: technical characteristics; documentation to be delivered before, during and after the construction; details (drawings, figures,...); BIM documents; quality control requirements before and after the installation; maintenance tasks...

GESPIÓN platform has been fully developed by INGHO Facility Management S.L. This Software tool has been developed based on more than 10 years of know-how in the sector and will ease the work for engineering, construction companies and equipment manufacturers. This platform provides an answer to real market needs identified by our engineering team during project execution; our commitment with innovation, our aim to improve the quality of the delivered projects and the efficiency in the use of resources, was the beacon when defining this platform.

The main guarantee of success is providing support to an expert engineering team by implementing this type of tool among companies in the sector.

GRIDE

GRIDE platform is a SW tool that supports the implementation of equipment inventory in complex buildings (such as hospitals, laboratories, ...). This platform is born as a requirement identified when completing inventory before the relocation for these type of buildings.

This platform enables the categorization of different equipment and furniture items, eases the data structure required for the inventory and also allows the storage of information linked to each piece of equipment: brand, model, serial number, age... A **QR code** is assigned to each piece of equipment, it is updated in the database through a mobile device, all this information supports the decision-making and the identification of all the equipments involved in the inventory.

Each of the equipment inventoried are allocated to a specific location in the building. The definition of the data structure is open to adapt to the customer needs and allows the level of detail required in the definition of the inventory to be set. The application also supports uploading of pictures and technical information.

SUSTAINABLE CONSTRUCTION

Sustainability applied to building construction implies a major change in the approach to design and construction of buildings. Raising awareness regarding **environmental and social impact** is a reality in modern society and has been expressed in a set of laws and regulations that rule the building construction process.

European Directives and national laws have evolved to a model in which the use of natural resources must be optimized; the production of waste and energy consumption must be reduced; neighbourhoods must address social inclusion and improve the quality of life for citizens.

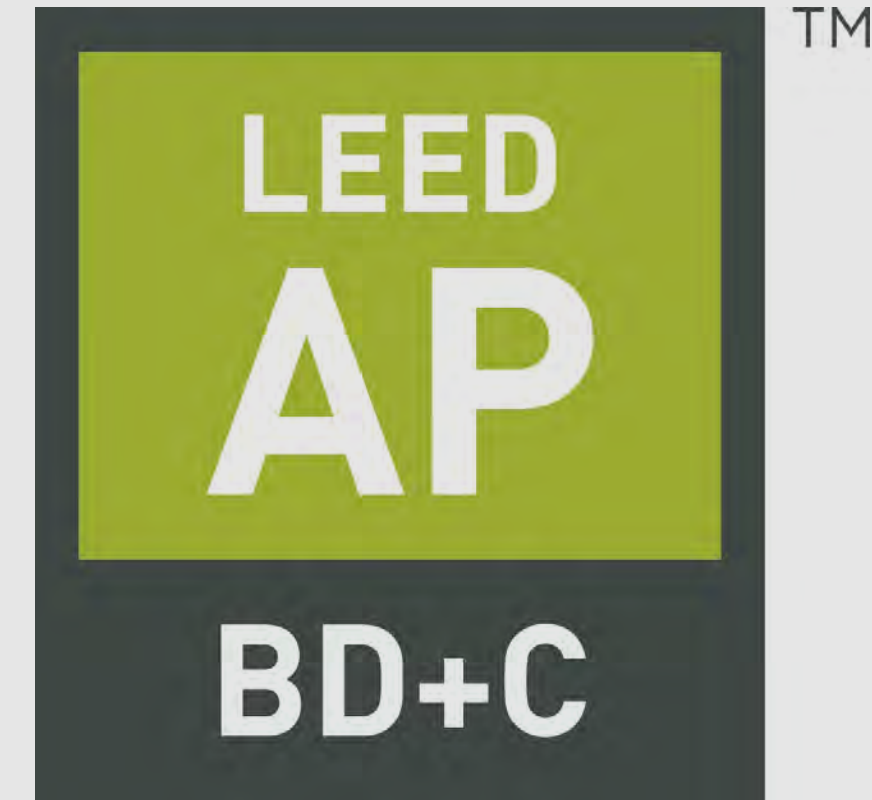
The law sets the minimum requirements that must be met for everyone and implements the foundations for sustainable cities. However, new and more restrictive standards have been defined to highlight those buildings with a major environmental impact **LEED and BREEAM** certification schemes are two of the most extended tools worldwide: they define the actions and commitments to reduce the environmental impact of the building over its lifespan..

The advantages related to these certifications do not only affect the environment. Indeed, there is a direct economic benefit linked to the reduction of generated waste and decrease in water and energy consumption that generates benefits over the building's lifespan.

BREEAM®



CERTIFICATIONS



ISO 9001
BUREAU VERITAS
Certification



ISO 14001
BUREAU VERITAS
Certification





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