

CYPE2024

cype

Software for
Architecture,
Engineering and
Construction

English edition

40 YEARS OF CONSTANT INNOVATION

INDEX

2023 is a special year because we're celebrating our anniversary - **we're turning 40!**

Four decades of commitment, hard work and passion to offer high-quality cutting-edge solutions to all Architecture, Engineering and Construction professionals.

Ever since it was founded in 1983, CYPE has been a pioneer in the creation and development of technical software for the industry. **Over the years we have grown, evolved and adapted to the market's changes and needs in order to offer complete and efficient solutions**, combining analysis accuracy, reliability, simplicity and speed to our more than 120,000 users worldwide.

We started out with tools for structural design, and quickly evolved towards construction management and facility system design. We then expanded our offer with solutions for urban infrastructure and, most recently, we have included tools for architecture and energy planning. **Today, our range of solutions is both wide and complete, covering our clients' needs in all aspects of the construction process.**

This milestone we are now celebrating wouldn't have been possible without the help and support of all our customers and partners. They are the reason we have made it this far and will continue to evolve day after day. **Our commitment to continuous innovation and improvements continues to be our driving force and our main goal.** That's why we keep investing in research and development, incorporating advanced technologies into our products and keeping them up to date with the latest codes and regulations.

On CYPE's 40th anniversary, **we'd like to express our gratitude to everyone who has placed their trust in us during this time, to everyone who has worked hand in hand with us to make our projects a reality, and to everyone who is a part of this big family.**

As we look to the future, we are excited to continue developing innovative solutions that meet our customers' ever-changing needs. **The same commitment and dedication to innovation that has brought us this far will continue to drive us forward.**

Yours sincerely,
The CYPE team.



ARCHITECTURE



Architectural modelling is the first step in most BIM projects. During this phase, the building concept begins to take shape, and the spaces, uses, ergonomics, configuration and aesthetics of the building are established. Within CYPE software, this task is carried out in **CYPE Architecture**, which allows professionals to **develop an architectural model from the sketch phase through to the development of a detailed BIM model**.

Defining the **exact location of a building by means of a coordinate system** and including topographical and urban planning data in the project can be carried out using the **Open BIM Site** tool.

Thanks to the thermal and acoustic characterisation and the **description of the building's constructive elements** that can be carried out in **Open BIM Construction Systems**, the model can be completed with additional data. Once the architectural model

is correctly defined, the project will be ready to receive more layers of information and to add the other disciplines to the workflow in order to complete the final model.

Coordinating and ensuring the quality of the final model are the main aims of the **Open BIM Model Checker** program.

Once the model has been developed, two very important phases of the construction project cycle can be carried out. On the one hand, generating the project's **bill of quantities** using **Open BIM Quantities**, based on the properties of the developed model. On the other hand, **extracting floor plans**, elevations, sections, construction details and perspectives, using **Open BIM Layout**, in order to generate the set of deliverables that make up the graphic documentation of the project.



CYPE Architecture

Architectural design and modelling of buildings, integrated in the multidisciplinary collaborative Open BIM workflow.



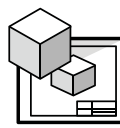
Open BIM Site

Defining the initial conditions of a project site including establishing the geographical location of models, managing different types of maps, and entering topographical surfaces, parcels and buildings, among others.



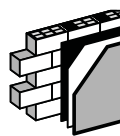
Open BIM Model Checker

Reviewing BIM projects and managing incidents.



Open BIM Layout

Composing plans with 2D and 3D sections and views that have been created based on BIM models in IFC format from the same BIMserver.center project.



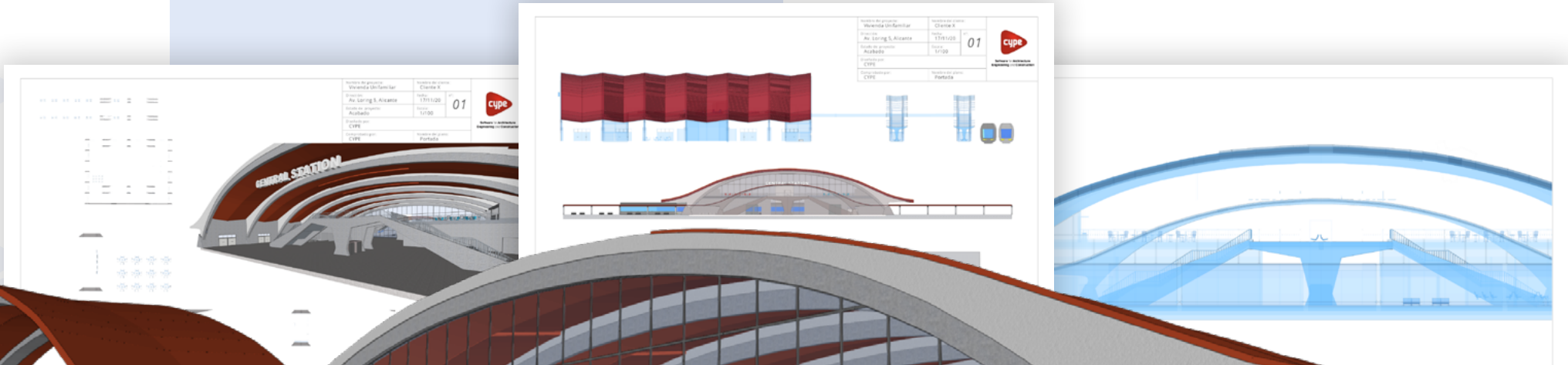
Open BIM Construction Systems

Describing the construction systems that make up the building envelope and interior partitioning system.

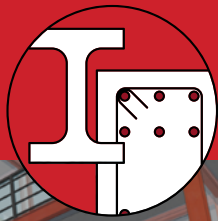


Open BIM Quantities

Generating the quantities and cost estimations of BIM models defined in the BIMserver.center platform.



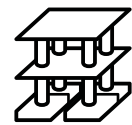
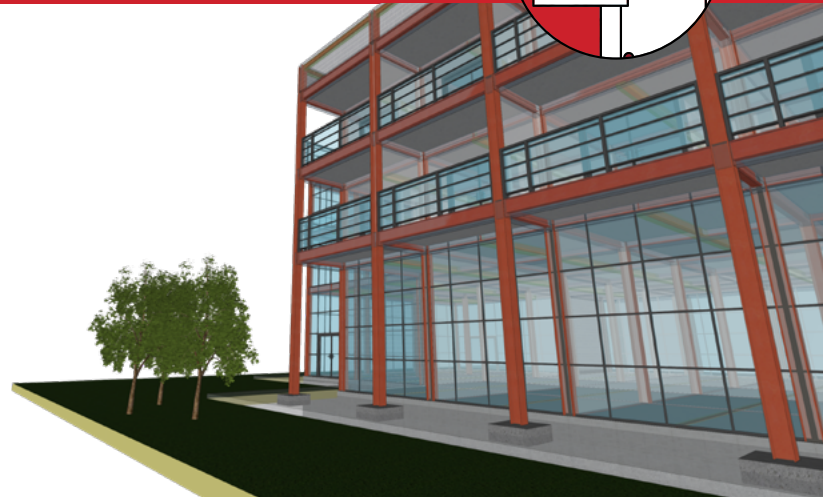
STRUCTURES



The durability, stability and safety of buildings rely on rigorous structural design and analysis. CYPE is specialised in this field due to their initial approach and extensive experience in the speciality of analysis and design of complex or high-rise structures.

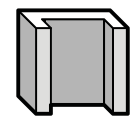
CYPE has the best offer on the market in applications for the modelling and structural analysis of buildings, with highly detailed analysis justification documents for new structures or structural rehabilitation of buildings, either in reinforced concrete, steel, timber, aluminium, composite structures or in structural masonry elements.

Used by thousands of technical offices for structural analyses and controlling bodies all over the world, the software developed by CYPE guarantees **maximum reliability in analyses and allows users to propose technical and economical structural solutions for the project.**



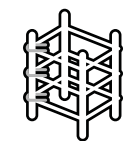
CYPECAD

Modelling, analysing and designing reinforced concrete, steel and composite structures as well as structural masonry elements.



StruBIM Shear Walls

Designing reinforced concrete shear walls in accordance with codes ACI 318-11, ACI 318-14, NTC-RSEE 2017, Eurocode 2 and Eurocode 8.



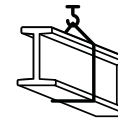
StruBIM Rebar

BIM modelling of reinforcement in reinforced concrete structural elements.



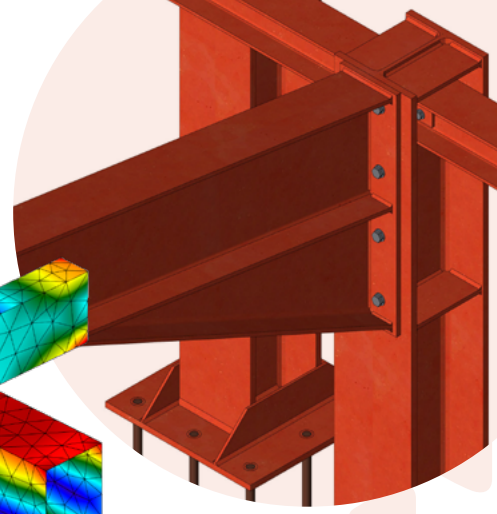
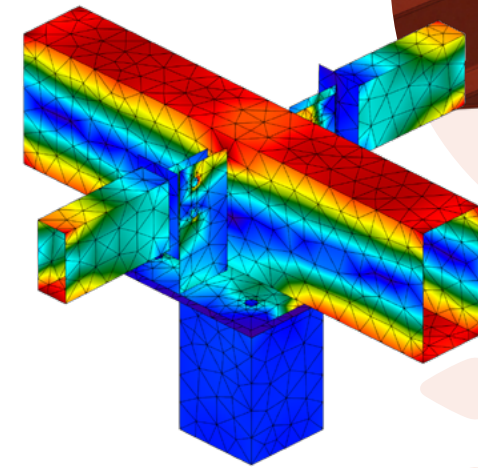
CYPE 3D

Modelling and design of steel, timber, aluminium or reinforced concrete trusses and structures.



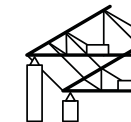
StruBIM Steel

Modelling steel structures including all the necessary elements (sections, plates, bolts, welds and anchors) to define their manufacturing. The program offers shop drawings in DSTV format as a result.



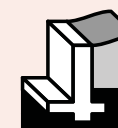
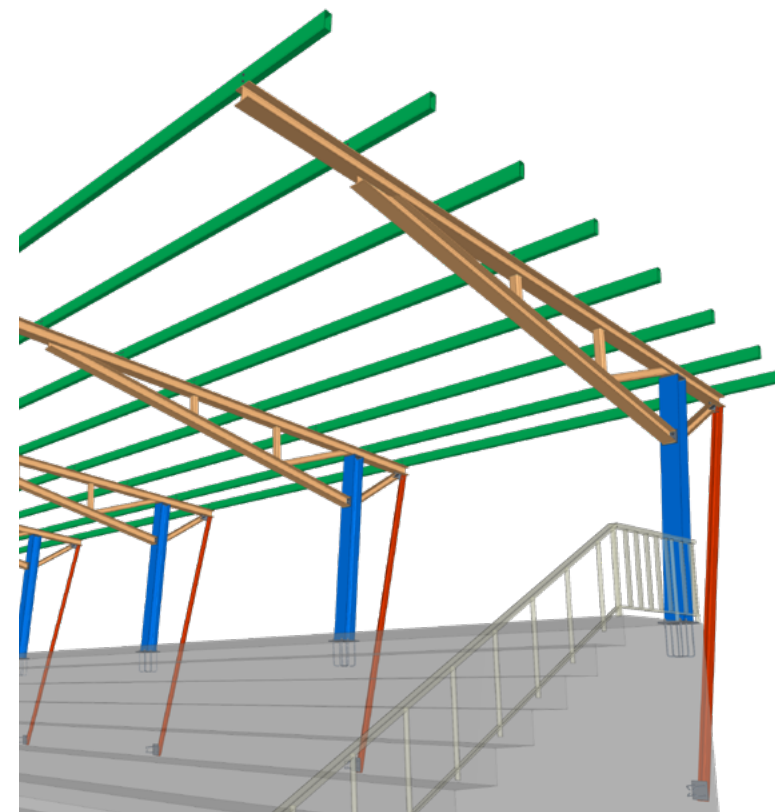
CYPE Connect

Modelling and analysing steel-to-timber connections using finite elements.



Portal frame generator

Creates the geometry and loads of frames made up of rigid nodes and roof and floor trusses in a quick and simple way. Provides users with the design of roof and lateral façade purlins, optimising their section and separation.



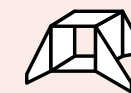
StruBIM Cantilever Walls

Designing and checking reinforced concrete walls, working with cantilever, for soil retention, both on strip footing and on capping beams.



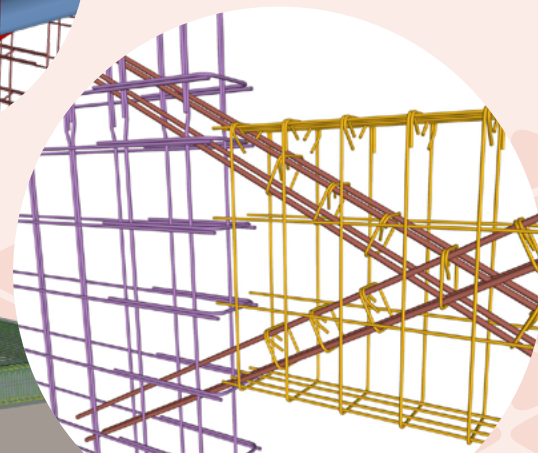
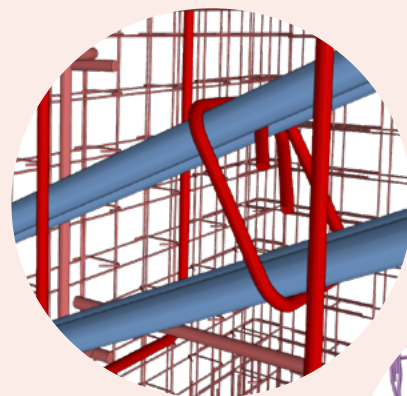
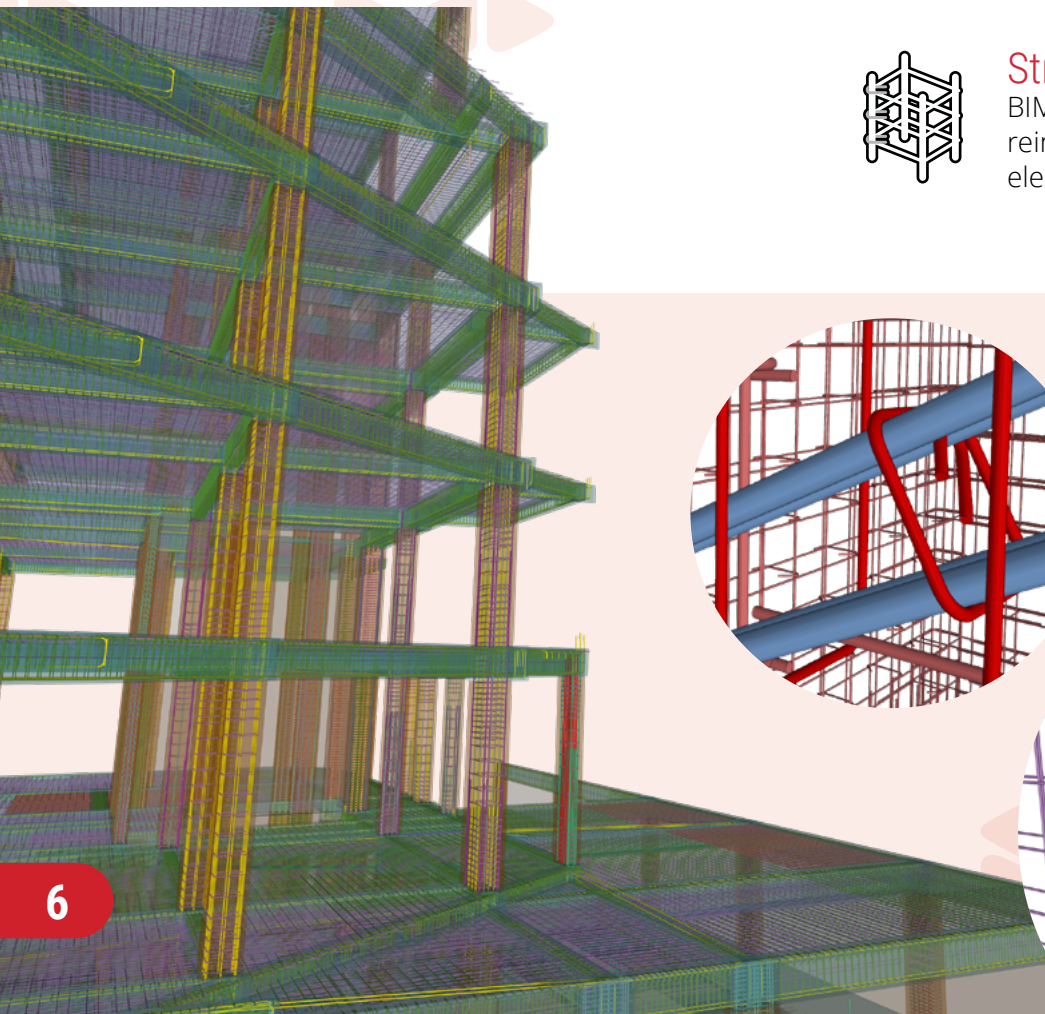
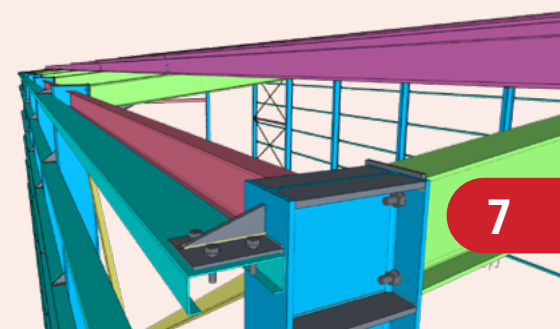
StruBIM Embedded Walls

Analysing, designing and reinforcing reinforced concrete walls, concrete piles, mini piles and metal sheet pile walls.



StruBIM Box Culverts

Designing and checking reinforced concrete frames used in road underpasses and drainage works.



ENERGY AND ACOUSTIC SIMULATION



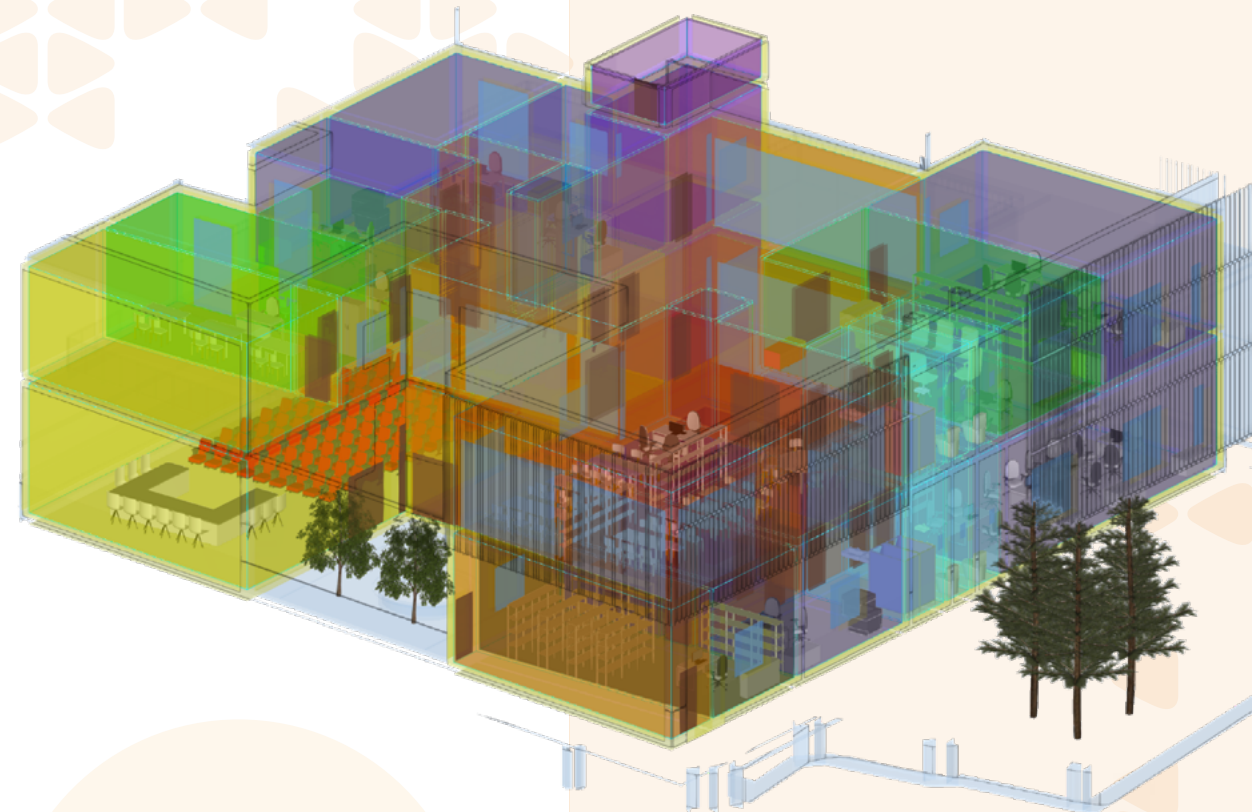
Nowadays, optimising the energy performance of buildings is a priority for all project developers, whether they are constructing new buildings or renovating existing ones. To this end, the energy efficiency analysis of the project should be carried out as early as possible to allow the recommendation of a bioclimatic design of the building as well as the necessary energy efficient and economical systems.

With CYPE's **CYPETHERM** software range, dedicated to the energy simulation of buildings, the thermal engineer has all the tools to **ensure the inhabitants' comfort and reduce the buildings' energy consumption**.

Energy analysis including the **certification of compliance with different codes**, obtaining specific energy labels (Effinergie, HQE, BREEAM, LEED, etc.), dynamic energy simulation, studies of singular points... all associated with a digital model to guarantee the increase in quality and project productivity.

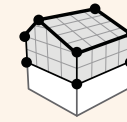
Providing a comfortable visual environment promotes the well-being of those occupying the building. Additionally, daylight-oriented design and proper management of artificial lighting can significantly reduce energy consumption.

With **CYPELUX**, the lighting designer has a simple and comprehensive tool for **designing the building's lighting system** (normal and safety lighting) and compliance checking with codes or certification requirements.



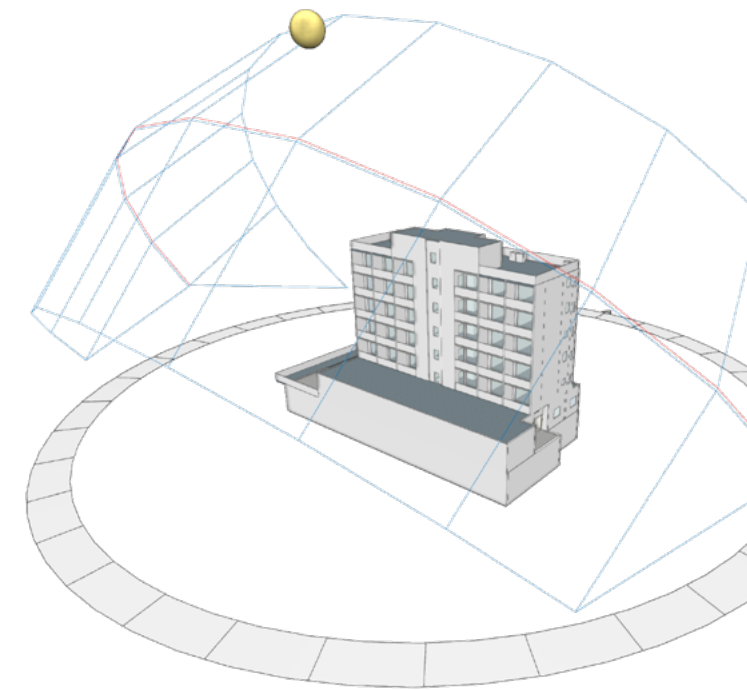
IFC Builder

Creating and maintaining exportable 3D models in IFC format.



Open BIM Analytical Model

Generating geometric analytical models from architectural models in IFC format, used in thermal and acoustic analyses.



CYPELUX

Lighting analysis of lighting installations, including Radiance software developed by the Lawrence Berkeley National Laboratory.



CYPELUX EN

Designing the lighting system of the building and meeting the requirements of the EN 12464-1 code.



CYPELUX LEED

Justification of the natural lighting requirements necessary to obtain the LEED v4 certification.



CYPETHERM LOADS

Analysis of the thermal load of buildings according to the Radiant Time Series Method (RTSM), proposed by ASHRAE.



CYPETHERM EPlus

Energy modelling and simulation of buildings with the EnergyPlus™ calculation engine.



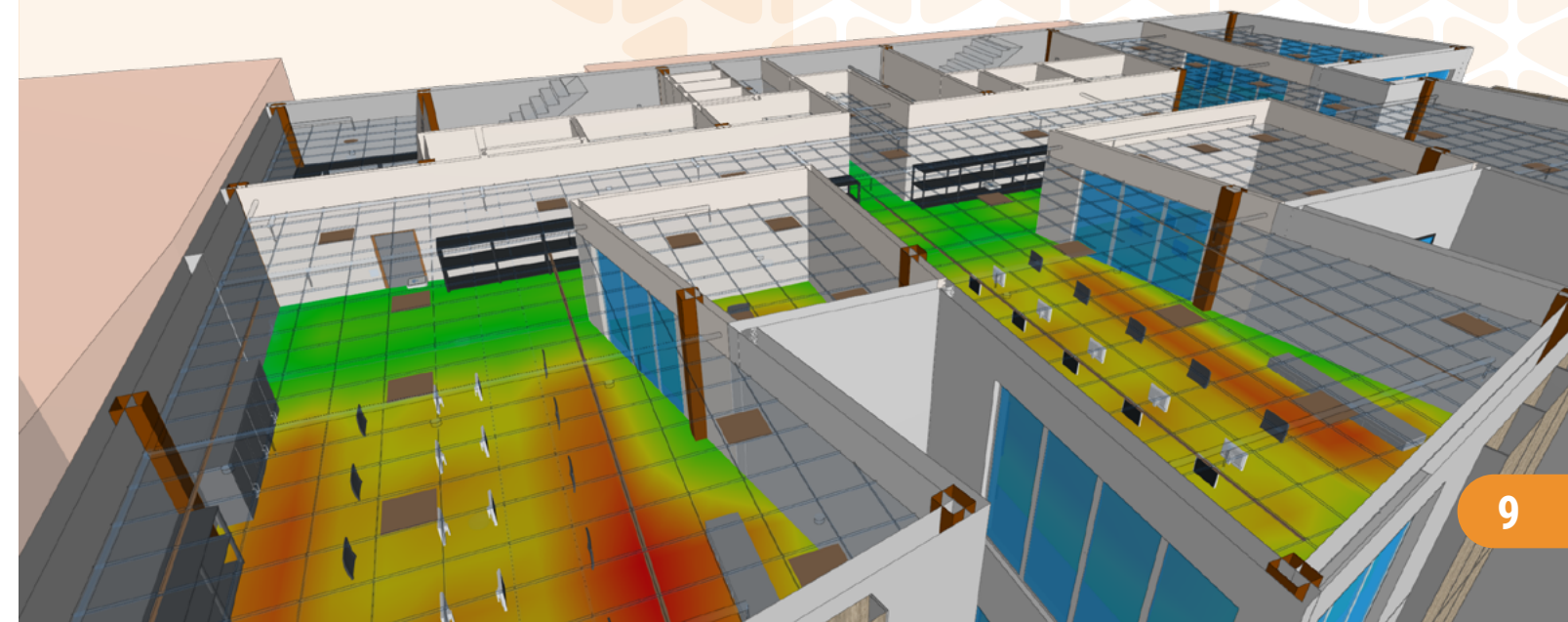
CYPETHERM Improvements Plus

Energy audit of the building and analysing possible improvement measures, with energy and economic analyses.



AcouBAT by CYPE

Analysing and checking sound insulation and proofing using the AcouBAT analysis engine, designed by the French organisation, CSTB.



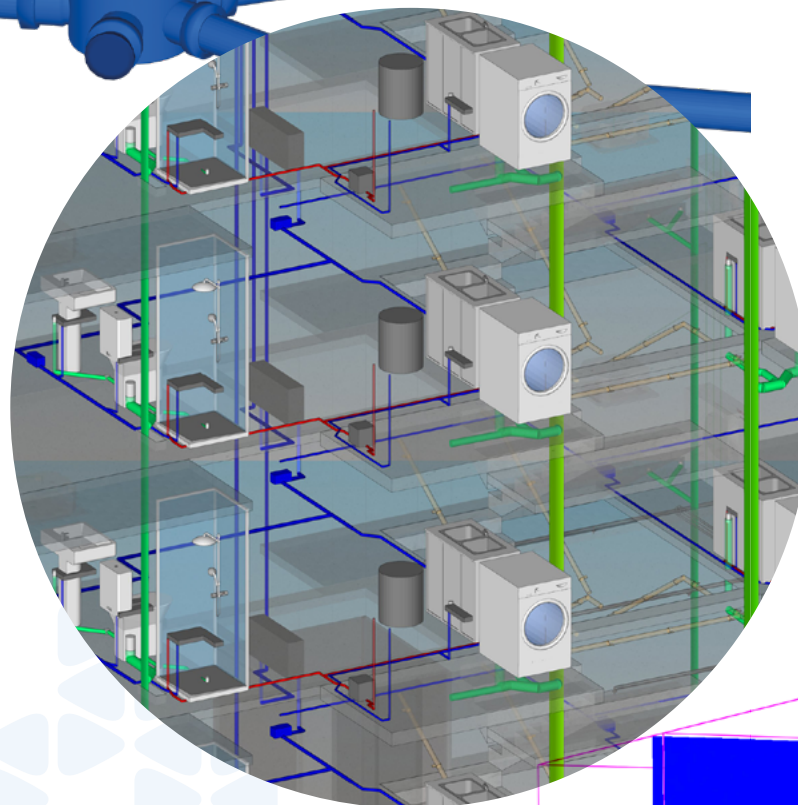
PLUMBING AND WASTEWATER



Among the building's technical networks, water supply and drainage play a particularly delicate role during the life of a building by ensuring the hygiene and comfort of its occupants.

Pipes must be designed and possible interactions with other disciplines (other technical networks, creating openings for installations in the structure, etc.) must be foreseen.

With **CYPEPLUMBING** software, **designing water supply and drainage networks** combines graphic input with technical and code analyses, allowing both supply and drainage networks to be entered directly into the BIM model in order to visualise the 3D layout of the remaining networks and the project structure.



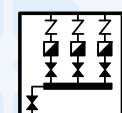
CYPEPLUMBING Sanitary Systems

Design of wastewater and rainwater installations.



CYPEPLUMBING Water Systems

Design of water supply installations.



CYPEPLUMBING Schematic diagrams

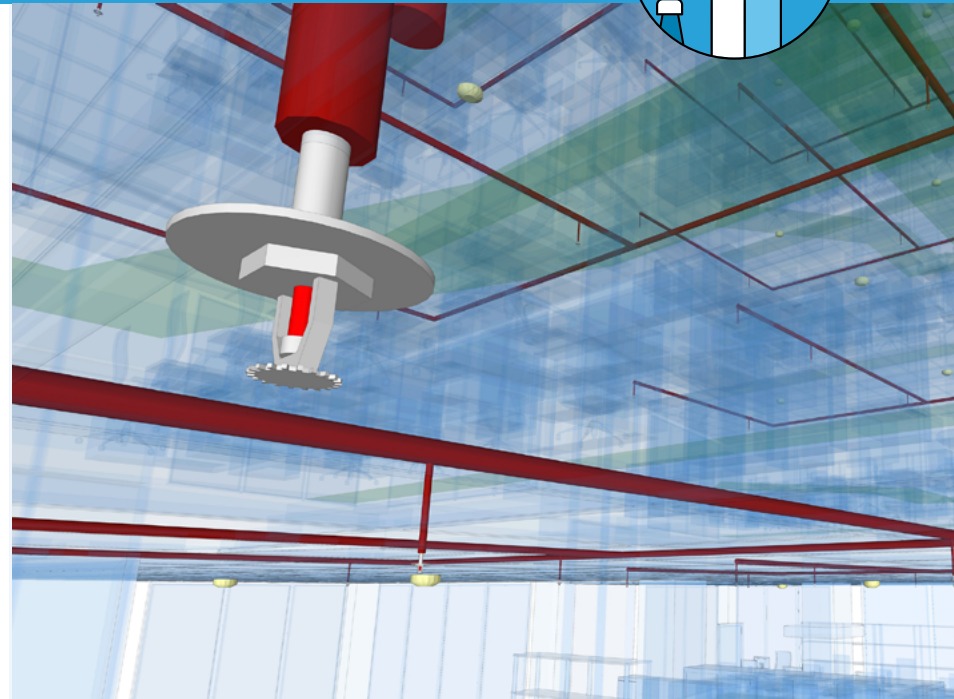
Creation of diagrams for water supply installations.



CYPEPLUMBING Solar Systems

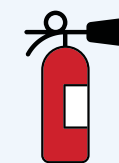
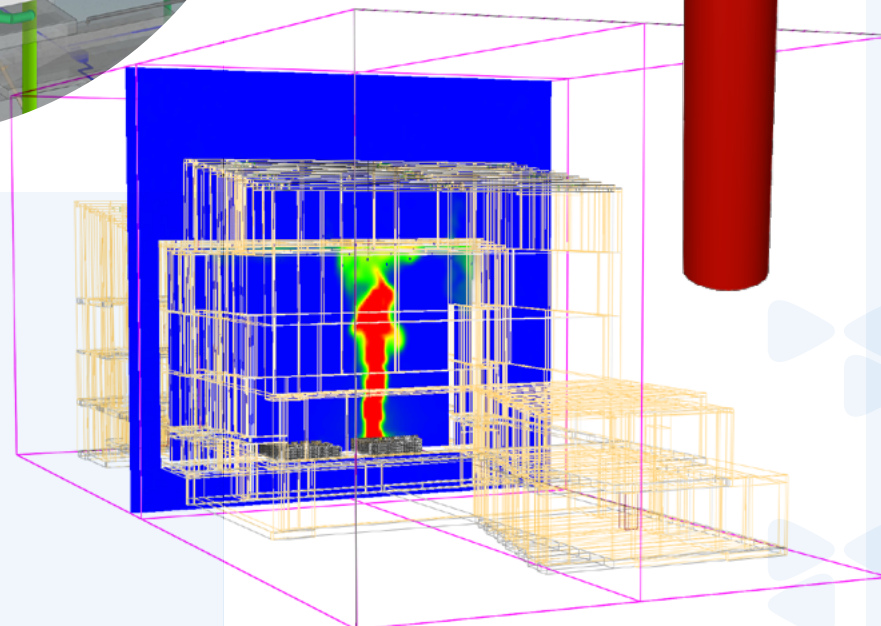
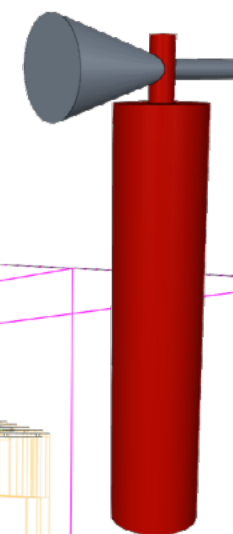
Design of solar thermal collection installations.

FIRE PROTECTION



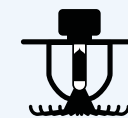
The compliance of a public building project with fire regulations has a major impact on the architectural design of the project. CYPEFIRE makes it easier for architects and specialised architectural firms to adapt their design in accordance with fire regulations at a very early stage.

Fire safety engineering helps to complete the code approach by assessing fire risks. To do this, **CYPEFIRE FDS** allows the **proper functioning of the fire installation design to be simulated**: proper detection, flame and smoke propagation control, and the feasibility of escape routes.



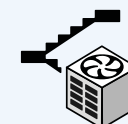
CYPEFIRE

Design of fire protection installations. Passive (compartmentation, propagation and evacuation routes) and active (protection installations) means of protection.



CYPEFIRE Hydraulic Systems

Design of hydraulic systems for fire extinguishing installations. Includes American software "EPANET 2".



CYPEFIRE Pressure Systems

Design of pressure differential systems in accordance with the European EN 12101-6 code.



CYPEFIRE FDS

Design of complex building models to run fire evolution simulations using the fluid dynamics computational standard FDS (Fire Dynamics Simulator).



CYPEFIRE FDS Viewer

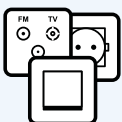
View of the results generated by the Fire Dynamics Simulator.

ELECTRICAL SYSTEMS



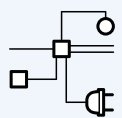
The design of high, medium and low voltage networks requires a precise layout of units, an efficient network layout and a strict application of the codes associated with each type of system.

The CYPE software suite for electrical systems, **CYPELEC**, simplifies the execution of all **layout, path, analysis and design operations** in an Open BIM collaborative workflow that allows a direct link to be established for interactive work between the technical offices on the digital model of the project.



CYPELEC Electrical Mechanisms

Layout of the terminal electrical and telecommunications mechanisms based on an architectural model hosted in BIMserver.center.



CYPELEC Distribution

3D implantation of the distribution of circuits and loads for electrical installation projects.



CYPELEC Core

Design of low voltage electrical installations in accordance with international IEC standards.



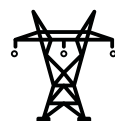
Open BIM Lightning

BIM modelling of safety installations against lightning risks using lightning rods with early streamer emission (ESE).



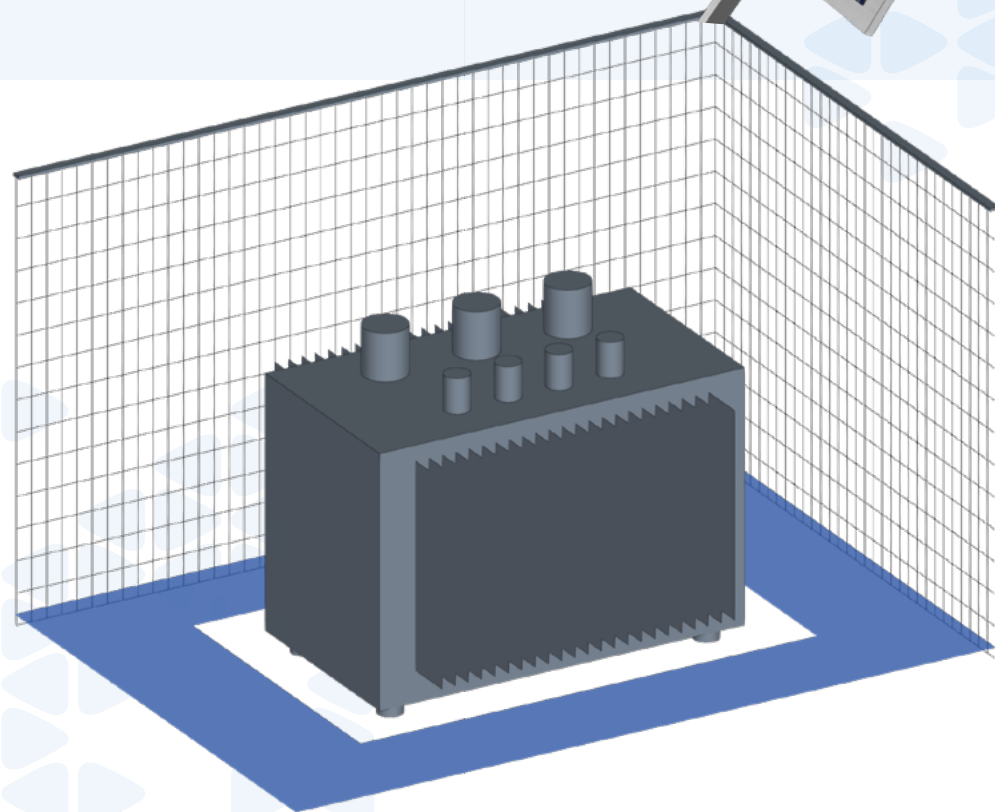
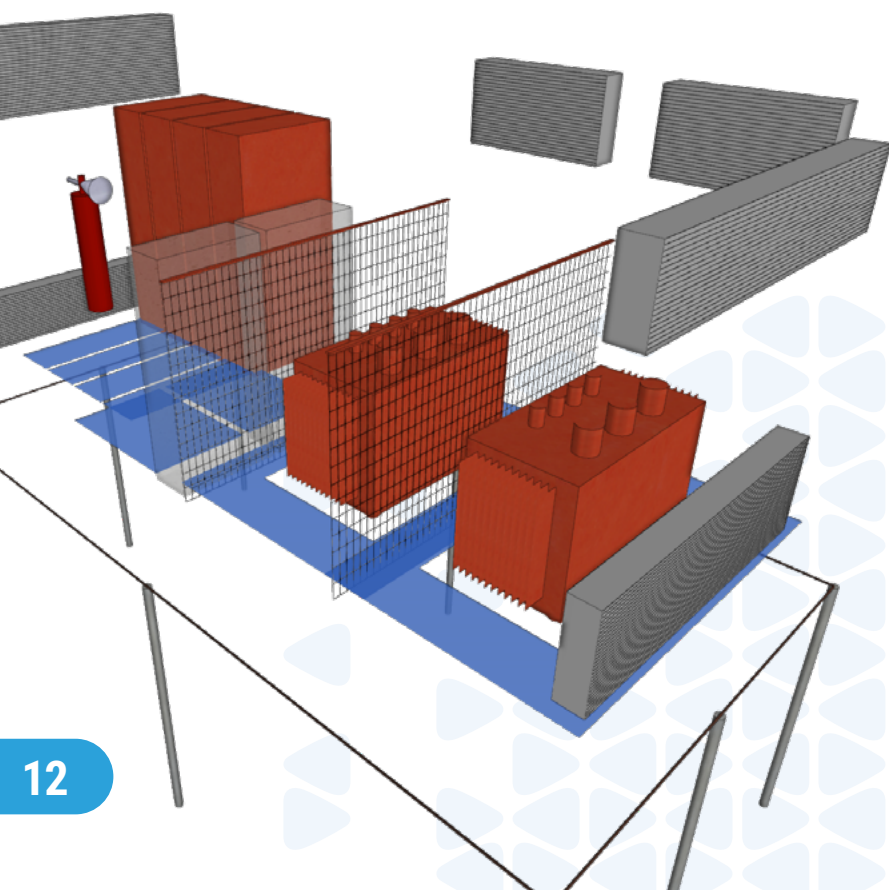
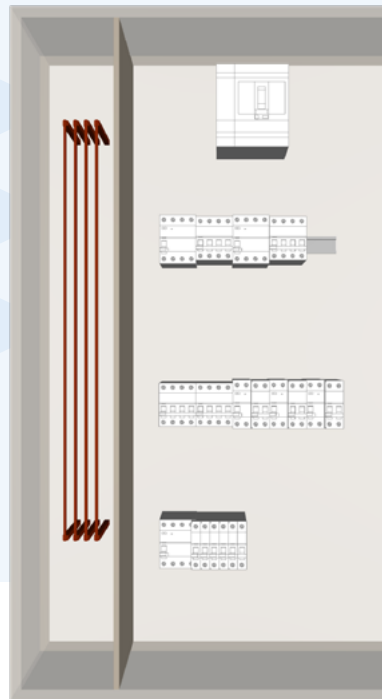
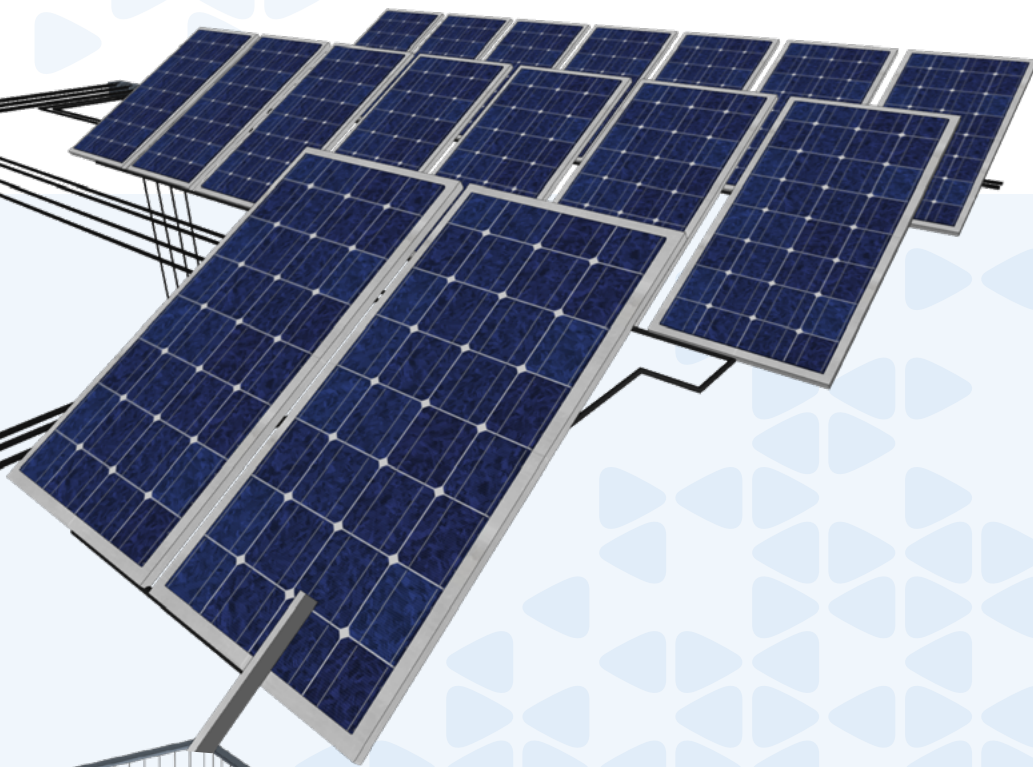
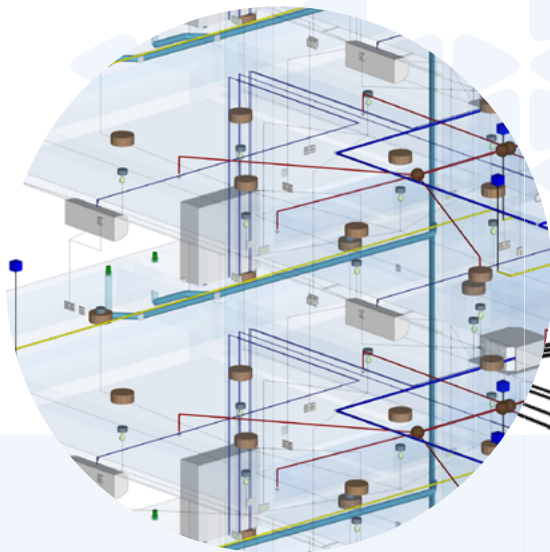
CYPELEC PV Systems

Design of photovoltaic systems.



CYPELEC Networks

Electrical power systems analysis. Charge flow and short circuit in high, medium and low voltage installations.



CYPELEC Multiline

Draws the multi-line diagram of an electrical installation.



CYPELEC Switchboard

Design of distribution panels.



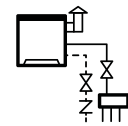
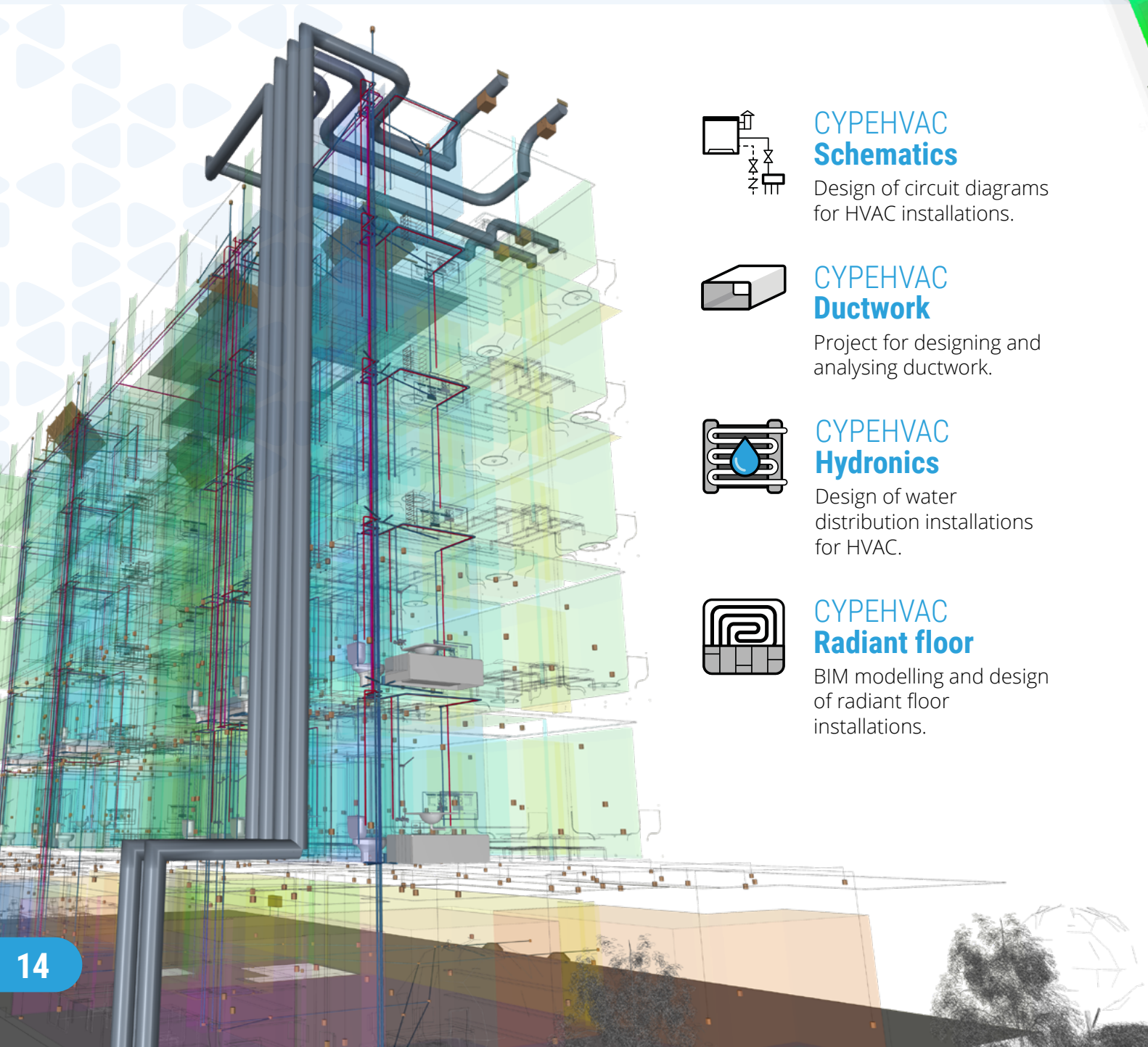
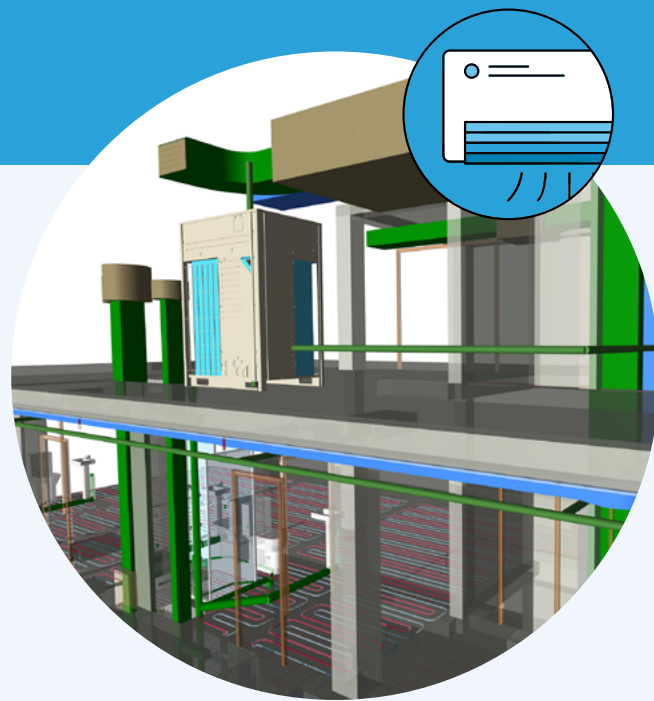
CYPELEC Grounding IEC

Design of grounding installations in accordance with the IEC 60364-5-54 code.

HVAC SYSTEMS

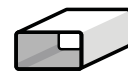
The correct implementation, layout and optimal design of an HVAC system actively contributes to the energy efficiency of the building as well as the comfort of the occupants, thus promoting the economical maintenance of the systems.

With CYPE, the technician in charge of **air conditioning projects** has access to accurate thermal load analyses (EN 12831 and ASHRAE method), designs the hydraulic, ventilation or cooling distribution systems, and prepares the plans and diagrams and the calculation report for their projects.



CYPEHVAC Schematics

Design of circuit diagrams for HVAC installations.



CYPEHVAC Ductwork

Project for designing and analysing ductwork.



CYPEHVAC Hydronics

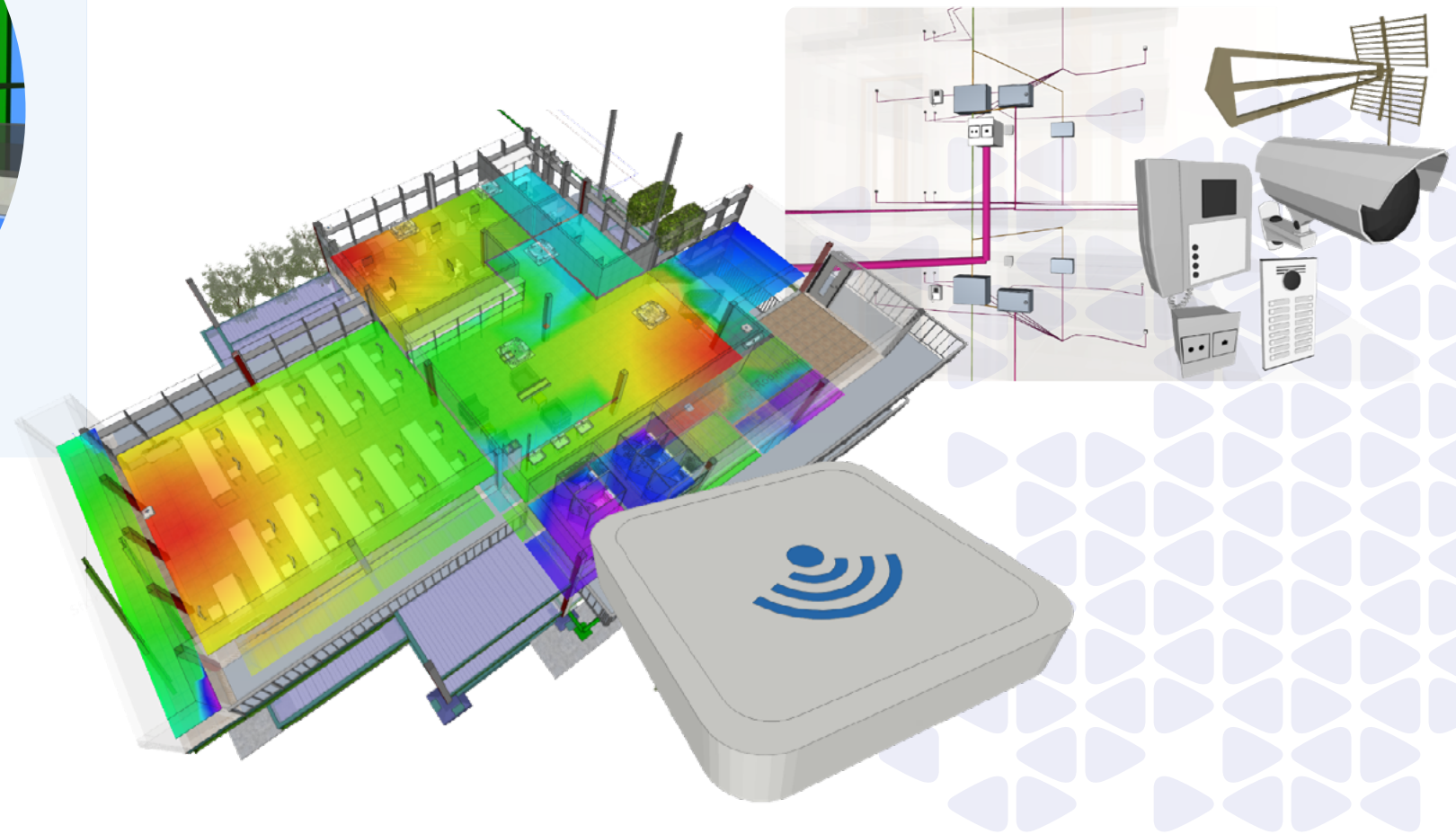
Design of water distribution installations for HVAC.



CYPEHVAC Radiant floor

BIM modelling and design of radiant floor installations.

TELECOMMUNICATIONS



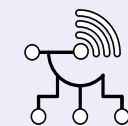
The BIM methodology is also available for telecommunications professionals. The **CYPETEL** software range helps these professionals in all project phases, from **modelling of installations to network calculations**, and even the generation of drawings, lists of materials and calculation report.

For wireless installations, **CYPETEL Wireless** provides an innovative use for BIM models, allowing users to carry out a **visual analysis of the strength of the network signal** to be implemented in their project.



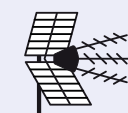
CYPETEL Wireless

Open BIM tool that allows architectural models to be imported into IFC format in order to carry out signal coverage studies of wireless telecommunications installations such as Wi-Fi and Bluetooth networks.



CYPETEL Schematics

Analysing and designing telecommunications system diagrams.



CYPETEL Systems

BIM modelling of the infrastructure of telecommunications systems.

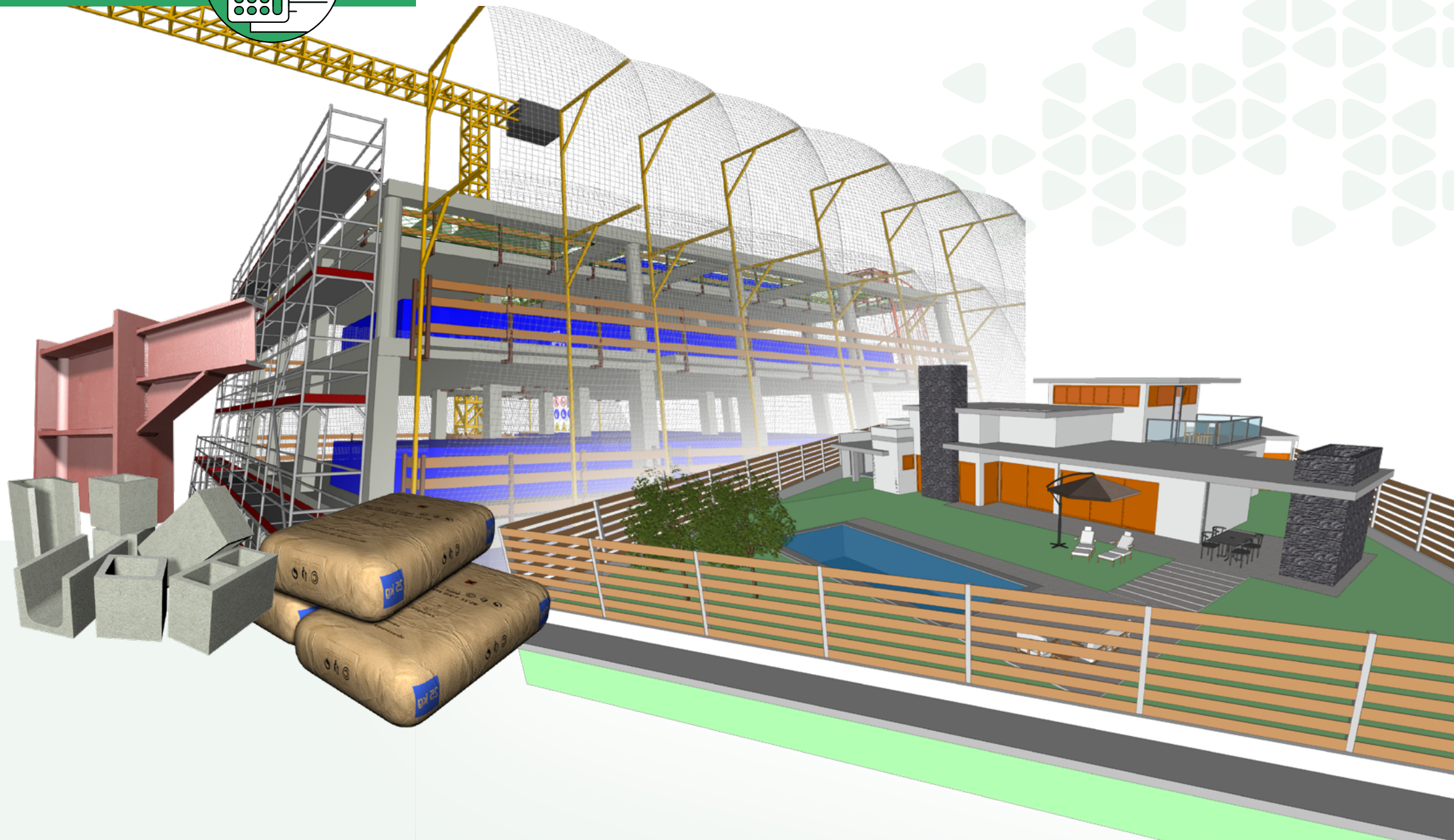
PROJECT MANAGEMENT



A project at its most advanced stage will consist of several layers of information and several BIM models. Ensuring the quality of the models and making sure everything is in the right place can be a complex task and **Open BIM Model Checker is the ideal tool for inspecting models, creating issues and detecting geometric collisions.**

With **Open BIM Cost Estimator**, the **cost of the project** can be estimated in just a few minutes, and with **Open BIM Quantities**, **all quantities can be extracted from the BIM model of the project** and a complete bill of quantities can be created. **Arquimedes** is a multi-featured program, ideal for establishing **customised cost databases, calculating quantity details** and accurately breaking down the cost of construction projects.

With the design already completed, it is now time for the construction phase, where proper **planning of collective protection equipment and signs** is essential for the workers' health and safety. With **Open BIM Health and safety** it is possible to develop a BIM model with all these details.



Open BIM Cost Estimator

Automatic estimation of the total construction cost during the preliminary phases of the architectural project.



Open BIM Quantities

Generating the quantities and cost estimations of BIM models defined in the BIMserver.center platform.



Open BIM Model Checker

BIM project review and incident management.



Open BIM Health and safety

Creating drawings in which the graphics and diagrams required for defining the preventive measures adopted in the Health and Safety Plan are developed. Also, generating exportable quantities of those health and safety elements or units established in said Plan.



Arquimedes

The most complete tool for quantities, bills of quantities, certifications, specifications, and user and maintenance manuals for the building.

INTEROPERABILITY

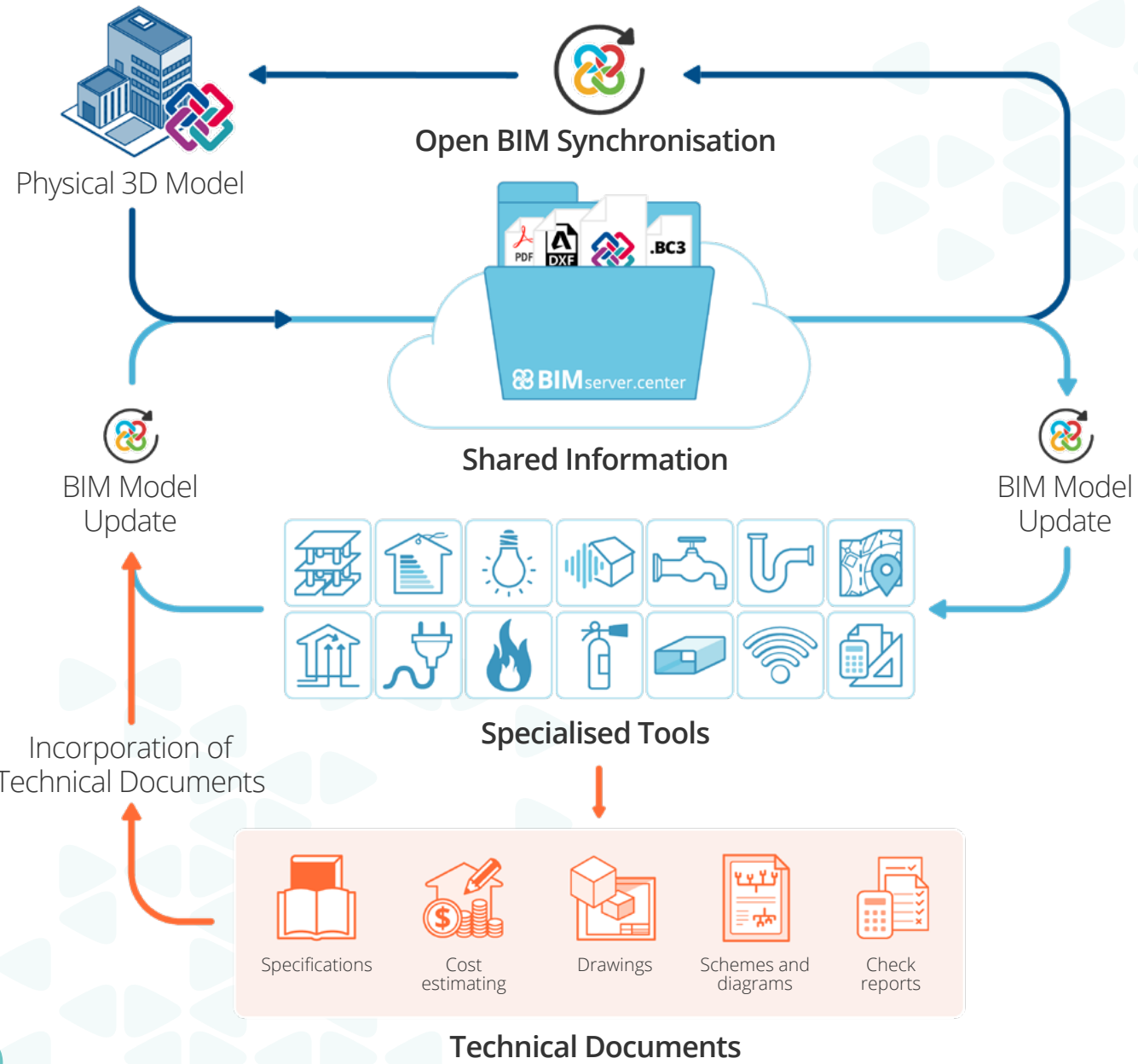


The **Open BIM working methodology** allows all the agents involved in the development of the project, in its execution and even its subsequent maintenance, to be able to consult and immediately work on the project, to optimise the technical options in an interactive way between each discipline, being able to control and exploit the project data, respecting the scope and responsibility of each of the agents at all times.

CYPE's Open BIM technology provides more and more **possibilities for collaborative work between the different disciplines of the project**, between each application of each

discipline and finally between the project agents themselves: developers, architects, engineers, control bodies, manufacturers, etc.

With more than **110,000 users**, BIMserver.center is undisputedly the **perfect platform to host a BIM project**, set up a team, collaborate, review and visualise the BIM model on the web, or with augmented reality and virtual reality applications.



BIMserver.center Web
For consulting, visualising and managing the projects developed and stored in BIMserver.center.



BIMserver.center Education
The platform for exclusive educational use that uses the integrated Open BIM workflow via the professional platform BIMserver.center.



BIMserver.center Corporate
Via BIMserver.center Corporate, companies and organisations of all types and sizes can now manage their teams and BIM projects in a better way.



Augmented Reality
For the immersive experience of visualising your projects in augmented reality, exploring inside the models.



Virtual Reality
For managing and inspecting projects hosted in BIMserver.center, within a virtual environment.



BIMserver.center Mobile
For consulting, visualising and managing projects developed and stored in BIMserver.center.



Plugin Open BIM Revit™
Plug-in for integrating Revit into the Open BIM workflow via IFC files.



IFC Uploader
For attaching IFC files to BIMserver.center projects, generating the glTF 3D visualisation files.



StruBIM Uploader
Application for incorporating structural models produced with different structural analysis applications, including analysis results, into Open BIM projects hosted on the BIMserver.center platform.

The most professional technical support

A complete team of experts in Architecture, Engineering and Construction is available to CYPE Software users for answering queries on how to use our programs. The **technical support service is exclusive and free of charge for CYPE software users and is available worldwide.**

CYPE also offers its users the option of being trained by means of **thematic seminars, both through webinars and face-to-face training.** This training is adapted to the needs of new users, if the training is targeted on getting to know the program, and to expert users, when the training is aimed at perfecting skills.

CYPE software is developed by integrating numerous national and international standards and regulations in all related disciplines.

Using a BIM working methodology and the BIMserver.center platform allows users to offer additional value and remain competitive in the export market by using software that is adapted and internationally recognised.



Additional information
at **cype.com**

More information

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