

SUCCESS STORY

# Innovation at the heart of the CMU in Geneva



PROJECT DETAILS :

**Project area:** 102,000 sqm

**Rooms :** 3008

**PROJECT TYPE :** Electrical renovation

**BIM PROJECT MANAGER :** swissBIM

**Owner:** OCBA

**Architect :** DEPLANTA

**General contractor :** MDS

**Electrical engineer :** BG



RÉPUBLIQUE  
ET CANTON  
DE GENÈVE

POST TENEBRAS LUX

## SUCCESS STORY

**In the heart of the Canton of Geneva, the University Medical Center is in the middle of a huge electrical renovation project. The company SWISSBIM was chosen to manage this ambitious project. The challenge is great because it is necessary to be able to work in an occupied site and to have the capacity to manage the data at all stages of the building's lifecycle. In this project, it is the I in BIM that is at the heart of the process. Indeed, it is necessary to be able to collect, analyze and sort all the building's electrical data so that it can be used in the Operation and Maintenance Management phase. Dylan MARTINS, director and Emré AKKAIA, BIM project manager, explain the challenges, their approach and their vision.**

### 1. CAN YOU DESCRIBE YOUR PROJECT?

**DYLAN MARTINS:** The project involves an occupied site renovation of the CMU. The work began in 2020 and will continue until 2024. The renovation specifically concerns the electrical part of the CMU, including the upgrading of certain elements such as airlocks, cabinets, etc. The total surface area of the project is 102,000 m<sup>2</sup>.

It should be noted that the project is a hybrid one, as we are currently in the execution phase, but the operating approach is also at the heart of our concerns, as the building continues to live. The fact that we are on an occupied site and that the services offered will be maintained requires agility and flexibility in the management of this project.

In terms of the team, we have different players. The client is OCBA, the architect is DEPLANTA, the general contractor is MDS (its mission is to manage the works), the electrical engineer is BG, the operator is the University of Geneva. SWISSBIM's mandate covers the entire project management in BIM, from BIM project management, to BIM coordination to BIM management, including data management.

### 2. WHEN WAS DROFUS FIRST USED? AT WHAT STAGE OF THE PROJECT?

**DYLAN MARTINS:** The solution was implemented in the summer of 2021, a little over a year ago. The project was in the design stage at that time. Since the client wanted to use dRofus for the operation of the building, the solution was implemented on the project early enough to be able to manage the data upstream. One of the objectives was to be able to list the existing CMU data in order to carry out a complete inventory. We needed to have all the data and associated information in one place. This notion of centralized data was essential to avoid the situation where each person (or stakeholder) had his own database with different information and different naming rules. Then, things evolved and our customer saw the potential of dRofus to optimize the management of this data in the operational phase. This is how the installation of electrical systems and the integration of the final data in the QR code quickly came into play in order to keep this database alive throughout the building's lifecycle.

### 3. WHAT WERE THE MAIN REASONS FOR USING DROFUS ON YOUR PROJECT?

**DYLAN MARTINS:** dRofus allowed us to implement several use cases. Firstly, to take stock of all the equipment with their degree of maintenance of ELEC function, because we needed to be able to compensate for a power cut, for example. This clearly allowed us to optimize the management of the equipment on this specific project because we were in an occupied site. Then, we were able to create a "power" parameter for the equipment, so that the electrician could size his emergency panel.

dRofus also clearly allowed us to work collaboratively thanks to the synchronization with the digital model. Before using dRofus, we clearly could not anticipate and the data was not managed at all. The tool has really allowed us to be operationally efficient. Of course, Excel could allow us to move forward, but not as quickly.

In addition, the QR codes from dRofus web installed on each new electrical panel were intended to make the panel builder's life easier. In concrete terms, it is important to understand that dRofus is useful at all stages of the project and building life cycle: design to identify and size them, execution to install them and, of course, in the operating

phase. The benefit is therefore total for our project.

There is also the question of inventory management, but we have not yet made use of this use case to its full extent.

To date, we are working with 4 ARCHI models, 1 ELEC/MCR model, 1 HVAC model and a "chilled water" model that are all connected to dRofus. All the models of the project were made with REVIT. In addition, we used APIs to have all our parts updated in our EXCEL, which avoids us having to export. This allows a real-time update in EXCEL of the data implemented in dRofus.

#### 4. WHAT WERE THE ISSUES YOU HOPED TO SOLVE WITH DROFUS?

**DYLAN MARTINS:** There are quite different trades in BIM and this generates trade issues. For example, the modeler must initially draw all or part of a structure. In a BIM process, he is also asked to integrate data, which is more the responsibility of the engineer.

It is the whole issue of the LOIN that is questionable in reality. Because the data is now mostly implemented in the model, which makes it considerably heavier. However, the modeler does not really need this LOIN data to size the object to be modeled.

With dRofus, we can simplify this paradigm. The modeler draws in REVIT for example, but the information is integrated into the dRofus database by an engineer. We thus have two "actors" instead of one, and a much clearer distribution of roles. It is up to the engineer to enter the data into dRofus. This avoids clutter in case of high LOD/LOIN. Today, if we had to put all the information contained in dRofus in the model, it would be much too heavy. This makes it possible to manage the LOIN on the BIM project: we can say that we want LOIN 200 in REVIT but LOIN 500 in dRofus. Moreover, with dRofus, we can structure the information as we wish, without any constraints imposed by the modeling software. This was an important point in the management of our project.

#### 5. WHAT WERE THE REQUIREMENTS FOR USING THE SOFTWARE?

**DYLAN MARTINS:** The specifications emphasized one major aspect: the availability of unique and reliable data for operators. This was

*Thanks to dRofus, we have considerably reduced the amount of exchanges between project teams, and we limit the errors and loss of information related to these exchanges. We now have a single platform that centralizes the data and all our technical documentation. We have created a bridge between the project and operations by linking the project/operations teams.*

*Emré Akkaya, BIM coordinator*

for fairly simple use cases:

- Project data management
- Implementation of facility management on the building and its operation
- Management of equipment and stocks
- ...

All this thanks to a unique platform used for communication between the different project teams, the operating departments and the institutions.

#### 6. HOW HAS DROFUS IMPROVED YOUR DAILY WORK PRACTICES? HOW HAS THE SOLUTION HELPED YOU IN CONCRETE TERMS?

**DYLAN MARTINS:** There are three clear benefits to using dRofus:

- Firstly, the solution has really enabled better sharing of information between the operator, which is the University of Geneva, and the project owner/manager, which is the OCBA.
- Secondly, it has also enabled a truly collaborative management of

## **The compartmentalization of data is the death of data and its dissemination.**

*Jean-François Mantelli, project director at the cantonal office of administrative buildings in the canton of Geneva.*

the project, between several divisions that do not have the same needs (the electricity department, for example, does not have the same needs as the inventory management department)

- Finally, it has led to a significant reduction in unnecessary emails and exchanges. The agents played the game well and went to the database to get the information. dRofus thus became the reference for the project team and the agents as well as for the operations department.

Moreover, dRofus was very helpful on many points in a very concrete way. Indeed, it has allowed us to keep all of the project's premises files up to date, to size the electrical emergency equipment, to make the existing data reliable for future new projects, and to carry out a precise inventory of all of the CMU's premises.

### **7. WHAT FEATURES DID YOU USE FIRST?**

**DYLAN MARTINS:** dRofus offers many valuable features for project management. It is a solution that has the advantage of being customizable. As far as we are concerned, we retain the tool's ergonomics and the ease with which we can create and manage local files, the geolocation of the tables to which we will return later with the QR codes.

We also like the possibility of differentiating access rights, which allows for a great deal of agility and security in the management of the project.

Also, the fact that we can integrate diagrams and technical documents into the database is a plus for us, as it allows us to manage our data more precisely.

There is also the Excel import/export and Revit plugin which made the task of implementing the data in dRofus easier.

I will finish by talking about the Web version which was much more used than the client version thanks to its viewer for the geolocation of equipment and premises. The principle of color schemes allowed us to optimize the organization of the project team's schedule and to anticipate certain key actions. We called this the "announcement deadlines".

### **8. WHAT WERE THE MAIN RESULTS AND DELIVERABLES EXPECTED FROM DROFUS?**

**EMRE AKKAYA:** Today, the final deliverable is really the QR codes, especially the ones on the boards, parts and inventory. That's what everyone will see first.

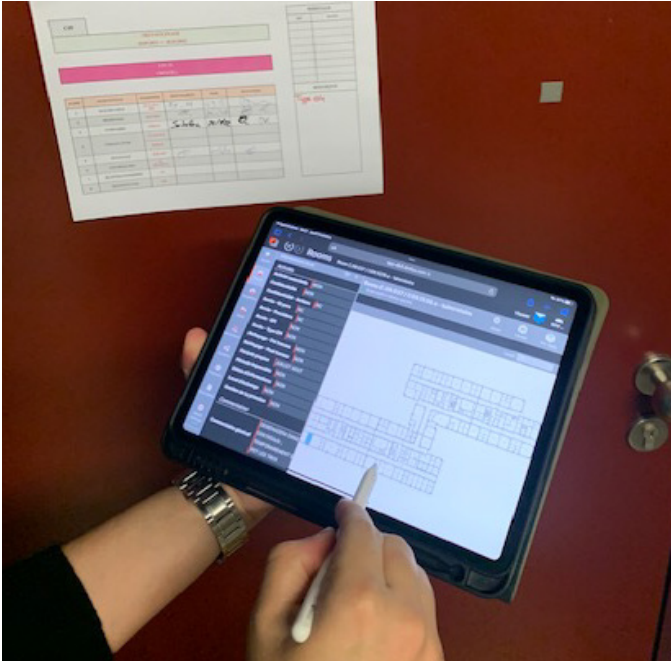
There's also dRofus web and all the associated technical documentation (electrical).

### **9. DID THE USE OF DROFUS EVOLVE AS THE PROJECT PROGRESSED?**

**EMRE AKKAYA:** The use of dRofus has allowed us to extend our scope of action and to implement other use cases that we had not imagined at first.

For example, the addition of QR codes for the curative and preventive maintenance of the panels and those for the management of the premises, stocks and spare parts.

cdRofus is a solution that can also address maintenance issues, even if the initial use is more for design and execution. Because all the data is classified, qualified and targeted. If you want to change a circuit breaker, for example, you can prepare for the intervention by scanning the QR code associated with the last work order with the changed parts, photos of the previous intervention, etc. and thus have the next intervention validated more quickly. There is a continuity and traceability of information.



The user has access to information related to the QR code



The user scans the QR code generated by dRofus

## 10. WHAT ARE THE FUTURE APPLICATIONS OF THE SOFTWARE ON YOUR PROJECT?

**EMRE AKKAYA:** dRofus will clearly help us optimize the overall management of stocks. For example, the person in charge of stock management will receive a box of valves, he will be able to create a new dedicated item in dRofus, associate a specific quantity to it and indicate the destination of this box (either it stays at the CMU or it goes to another building). He will be able to edit a QR code that he will stick on the box and at each request of this supply, he will scan the QR code and update the volume of his stock while indicating where the

valve will move. The procedure remains to be refined but the principle of stock management is there and should make everyone's life easier.

**dRofus is the operating reference  
for the building**

**Dylan Martin**, Director SWISSBIM

## ABOUT DROFUS

The leading planning and data management solution for the global building industry. dRofus is a unique planning, data management and BIM collaboration tool that provides all stakeholders with comprehensive workflow support and access to building information throughout the building lifecycle. We are committed to Open BIM and as part of the Nemetschek Group, our aim is to deliver the best possible, most innovative and most successful AECO software solutions.

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