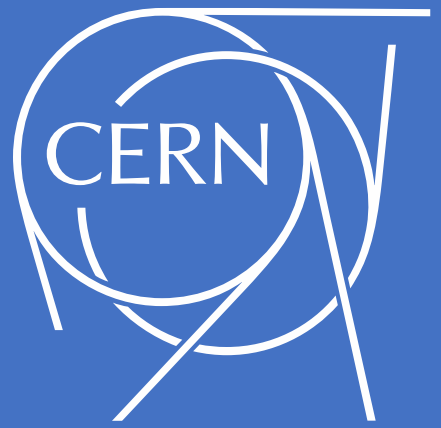


Site and Civil Engineering Department Technical Seminar: **HEALTHY WORKSPACES**

How does architecture impact your work?

Araceli Alvarez Escobar

CERN, 15th January 2024

Agenda

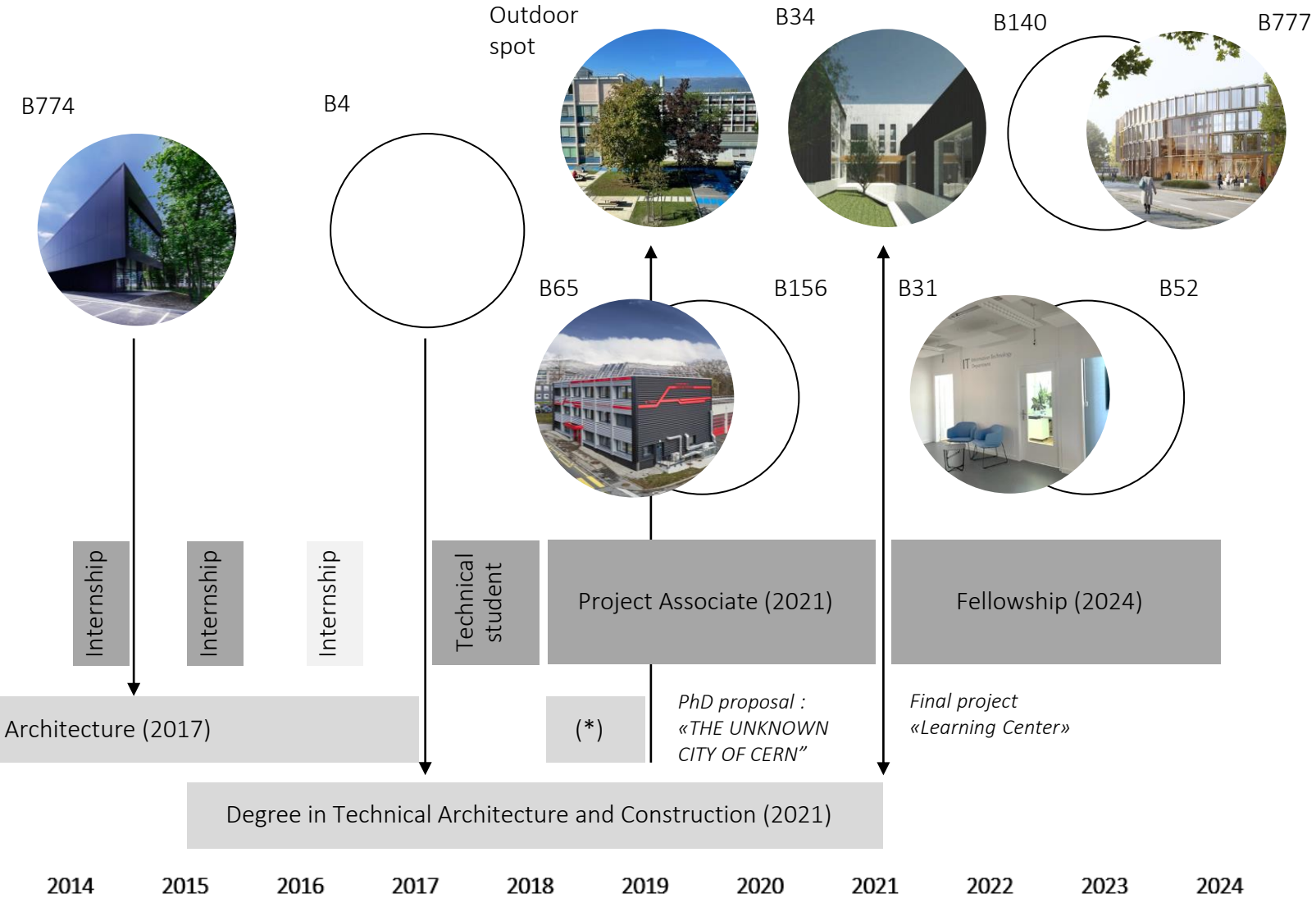
1. Introduction
2. Five W of Healthy Workspaces
   - What does «healthy workspaces» mean?
   - Why «architecture»?
   - How have workspaces changed?
   - When have regulations been updated?
   - Who is CERN?
   - Where is CERN in terms of workspace?
3. New vision
   - Interior spaces
   - Office space
   - Shared spaces
   - Exterior spaces
4. References
   - CERN projects
   - External projects
   - Articles
5. Summary

INTRODUCTION

CERN

Escuela Técnica Superior de Arquitectura La Salle, RAMON LLULL UNIVERSITY (Barcelona)

Local Government of Archidona, Málaga “Construction and urbanism department “



WHAT does «healthy workspaces» mean?

WORKSPACE

- Place in which you work, such as your desk in an office.

- The architectural typology of office buildings encompasses more functions and expands the program's spectrum; The contemporary configuration integrates numerous "third places".

- The workspace has different scales, especially at CERN. Our workspace starts already from the moment we cross the CERN gate and ends with the dimension of our table or the transparency of our office's door.

HEALTHY

- Physiologically healthy (ergonomics, air quality, natural and artificial light….)

- Psychologically healthy (motivation, collaboration, interaction, exchange, integration, equality…)

- Healthy habits and wellness (walking, moving, spending time outside …)

WHY «architecture»?

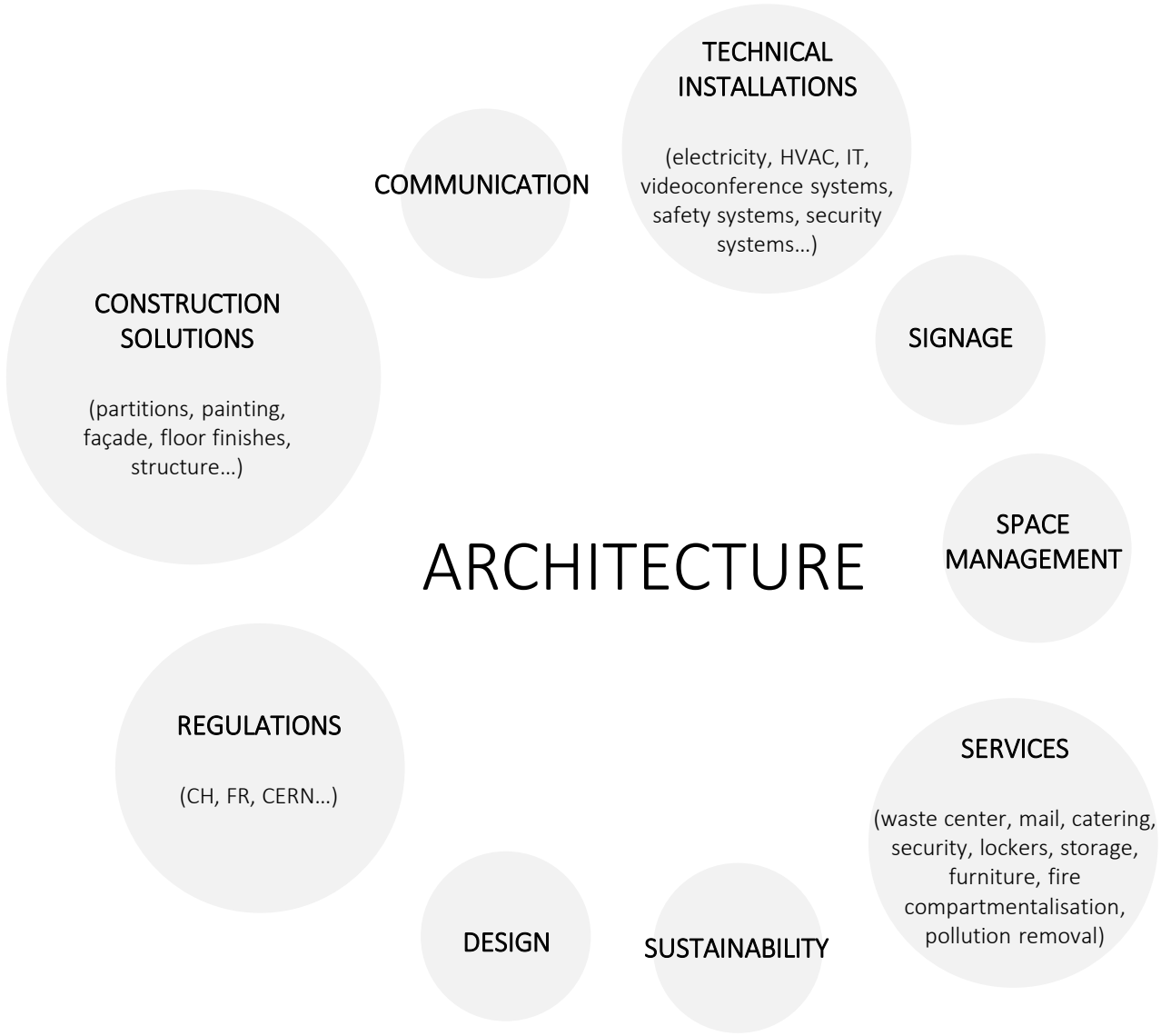
ARCHITECTURE

“Architecture is the art and science of designing **buildings** and other physical structures.

A wider definition often includes the design of the **total built environment** from the macro level of town planning, urban design, and landscape architecture to the micro level of construction details and, sometimes, furniture.

The term “Architecture” is also used for the **complex or carefully designed structure** of something.”

“What is Architecture?” (Medium)

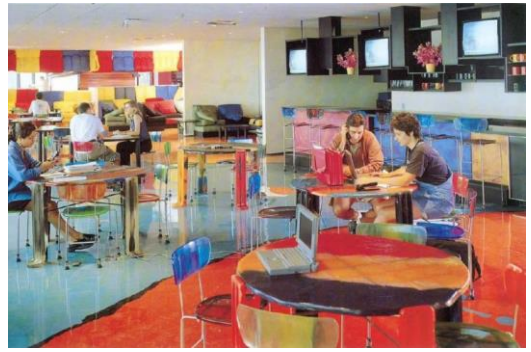


HOW have workspaces changed?

Early 20 century Frederick Taylor (factory layout and manager's offices)

1950s - 1960s "Action Plan" offices (three sided movable partitions)

1970s-1980s
Cubicle farm design



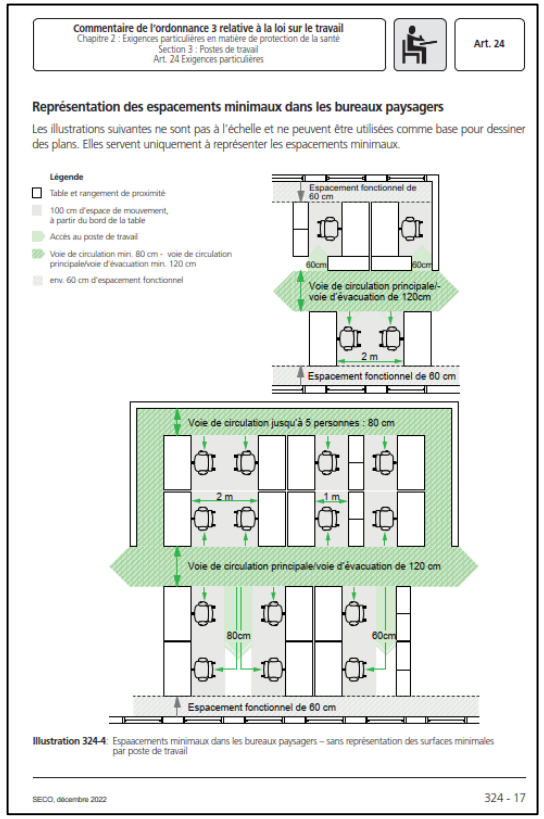
1990s-2000s
Hot desking office and digitalisation

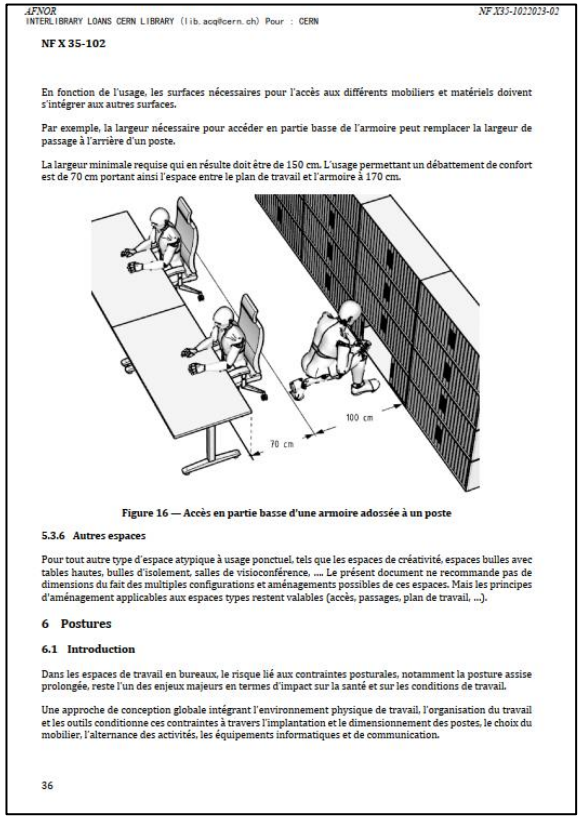
21 century The Biophilic approach, flexible offices and collaborative spaces, sustainability

Post – Covid Telework, enterprise social media and new technological innovation

TODAY Multi-space offices
References:
The Hive - Headquarters HP (CCHE) ***> Space diversity***
The Truth About Open Offices (Harvard Business Review) ***> Flexibility***
Architects and their impact on office buildings (Rethinking The future)

WHEN have regulations been updated?





CERN Space Management Policy

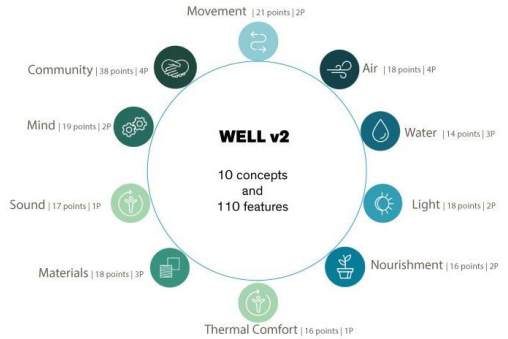
The process to produce a Space Strategy will engage with all Departments and Units at CERN. Profiting of the existing Space Management Forum (SMF), SCE proposed a work plan that:

- Defines space regulatory framework for offices and common space management (HSE)
- Working group “Official guidelines for offices and common space allocation”
- Working group ”Space processes, tools and operational procedures”
- Working group ”Space management data and KPIs”

The WELL Building Standard (V2)

Vehicle for buildings and organizations to deliver more thoughtful and intentional spaces that enhance human health and well-being.

Set of strategies that aim to advance human health through design interventions and operational protocols and policies and foster a culture of health and well-being.



Swiss code (since 12/2022):
Commentaire de l’ordonnance 3 relative à la loi sur le travail

NF X 35-102 (since 02/2023):
Ergonomie — Conception ergonomique des espaces de travail en bureaux

CERN SPACE MANAGEMENT POLICY
(on going)

WELL Building Standard
(international certificates being used as an inspiration for CERN)

WHO is CERN?

POPULATION

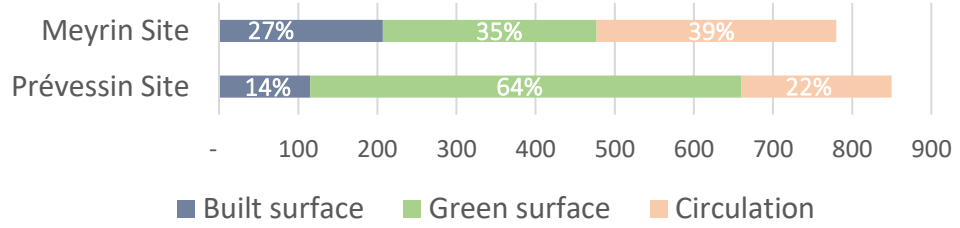
- Diversity of contract durations and ages
- Potential change in the organization's structure every 5 years
- Diversity of activities, services and professional profiles
- International environnement
- General interest in innovating, learning and collaborating
- Knowledge based organisation
- Human beings (perception of colours, proportions, forms…)

ARCHITECTURE

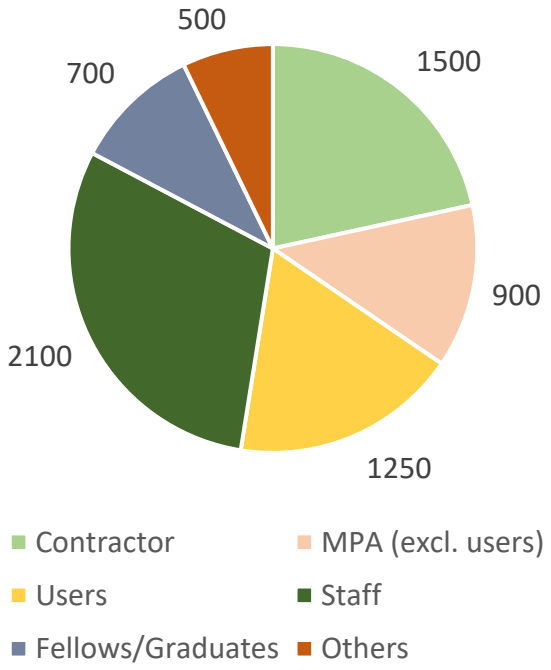
- Science-driven architecture (priorities, requirements, budget…)
- Diversity of building typologies
- High number of existing infrastructures and furniture
- Fixed location
- Uncertainty on the future spatial needs
- Variable density (urban vs countryside)

TERTIARY INFRASTRUCTURES AT CERN (m2)

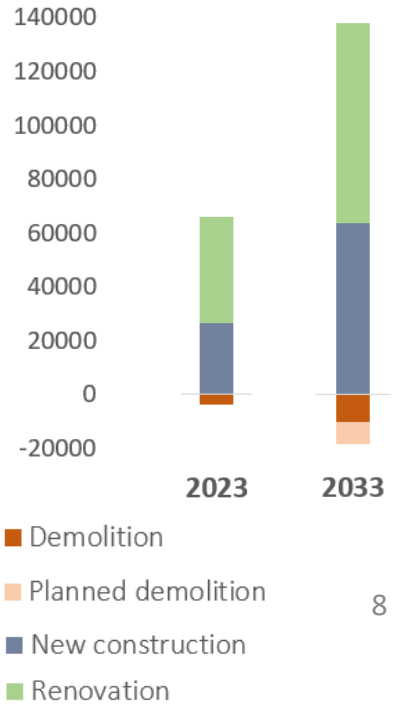
SITE DENSITY (Km2)



SITE DAILY OCCUPATION (people)



IMPACT ON SURFACE (m2)



WHERE is CERN in terms of workspace?

Staff and Fellows Survey 2023: Comments about CERN buildings

Real estate conditions

«It's nice to see that, even I work in a completely outdated infrastructure, I can see other buildings being refurbished and often 3D images of future buildings».

- Space management

*«A **centralized space management policy** would allow to improve space utilization, improving monitoring and equity in the space distribution.»*

*«Things move so slowly at CERN that we miss opportunities. An organization like this should be **more advanced regarding space management**».*

- Space offer

*«**More collaboration spaces** (break rooms, outdoor spaces for meetings and lunch…) are needed, as well as improving the current office space quality».*

- Future vision

*«The current work environment **impacts on CERN's image** and on the morale of its population. **CERN can't achieve its mission** if its built environment keeps being neglected».*

*«The constructed site needs **cleaning and rethinking** with a more modern work culture like approach and not only accepting how buildings are currently distributed only because of historic reasons.»*

- Space quality

*«Work conditions are **getting worse**, making CERN not attractive anymore».*

What does the Organization do well?

Development opportunities

Salary & benefits

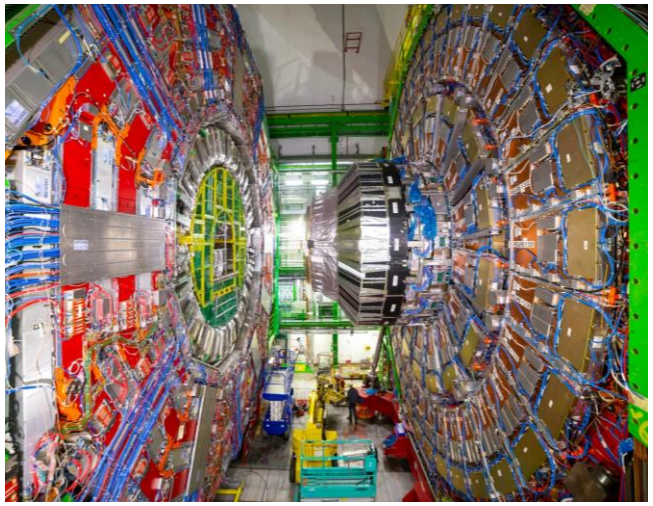
Work pressure

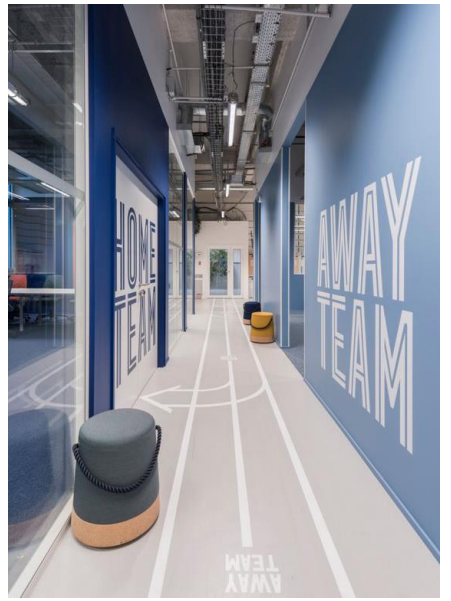
Collaboration

Other

NEW VISION: Interior spaces

- Combine different kinds of spaces in a **“multi-space office”** > answer to different types of activity and professional profiles
- Façade, structure and finishings **modularity** > give flexibility
- Increase **shared areas** > promote exchange and common services
- Design **efficient distributions** > giving various uses to a space
- **Communicate** > direct discussions with future users to guide and publish what is being done to give a sense of evolution
- Use **reversible** construction systems
- Use **easy maintenance** construction systems and materials > Visible installations, openable windows, …
- Work with the **existing** > every existing building has its own schema and particular elements that must be put into value
- Use **visual effects** and **signage** > colour contrast is an easy low-cost way to make spaces more understandable and user-friendly
- Increase **energy efficiency** > space management, updated technical installations
- Increase **safety** > upgrade in terms of safety regulations



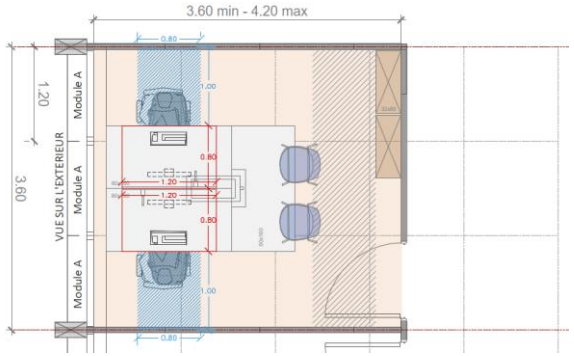


Inspirational images

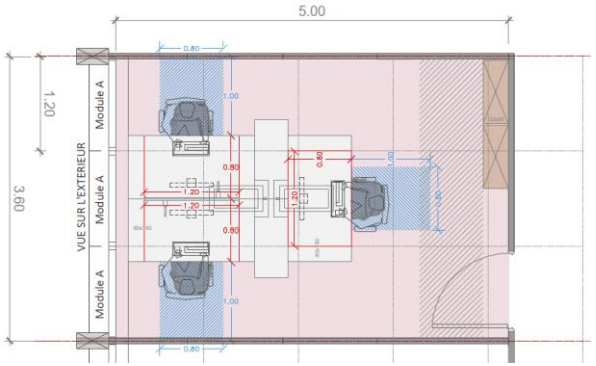
NEW VISION: Office space

- Façade module (natural light)
- Lighting systems
- Installations distribution
- Doors and partitions transparency

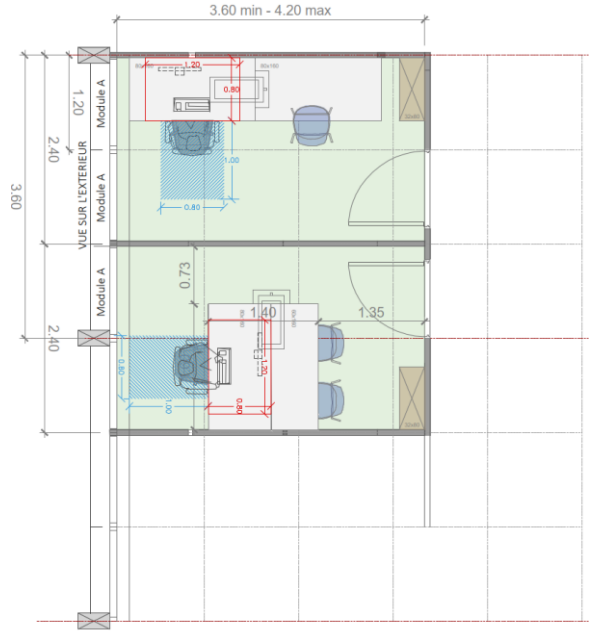
T2 – 15m2



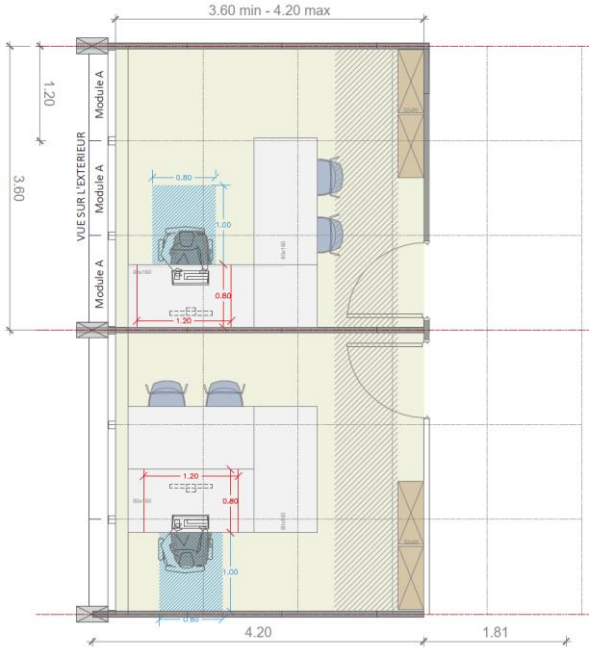
T3 – 18m2



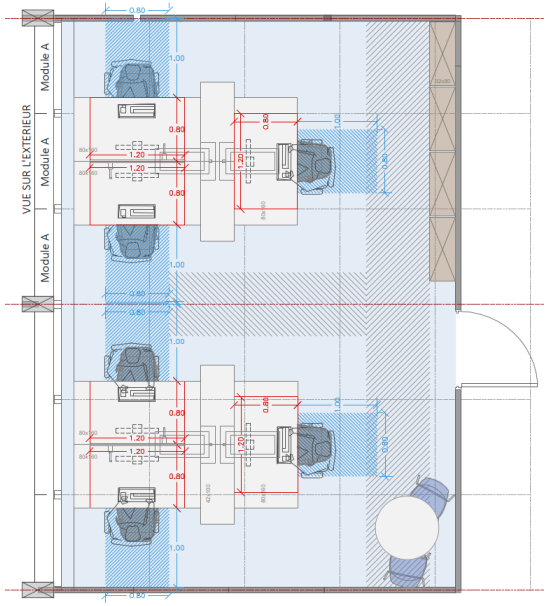
T1 – 10m2

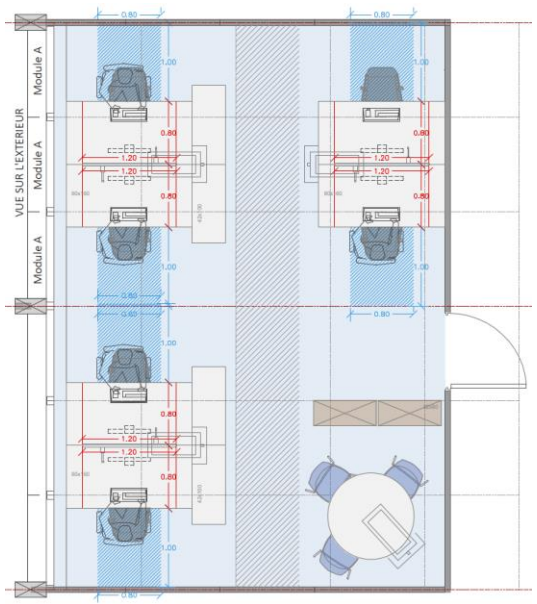


T0 (Manager Office) – 15m2



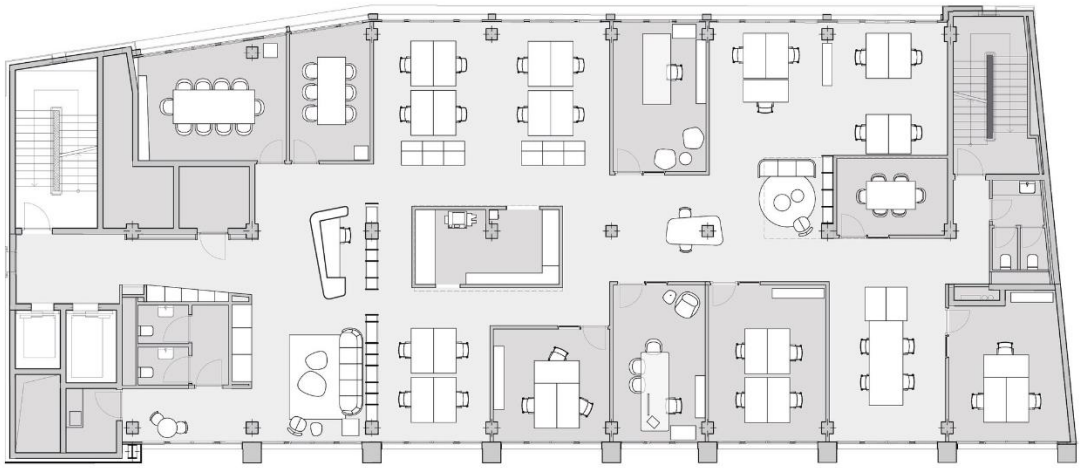
T6 – 36m2

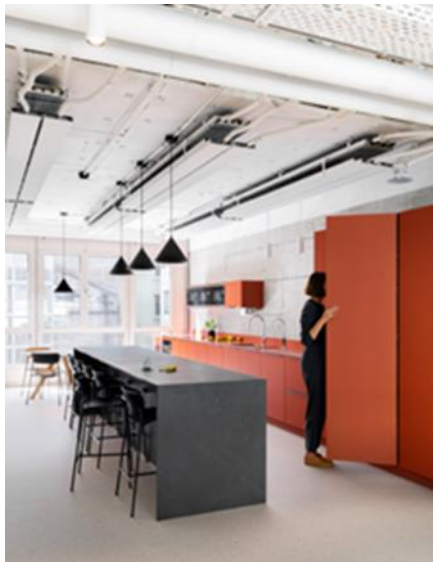




NEW VISION: Shared space

- Variable spaces
- Print corners with waste center and material storage
- Phonebooths and small meeting rooms
- Painting and signage
- Collaborative areas
- Meeting rooms



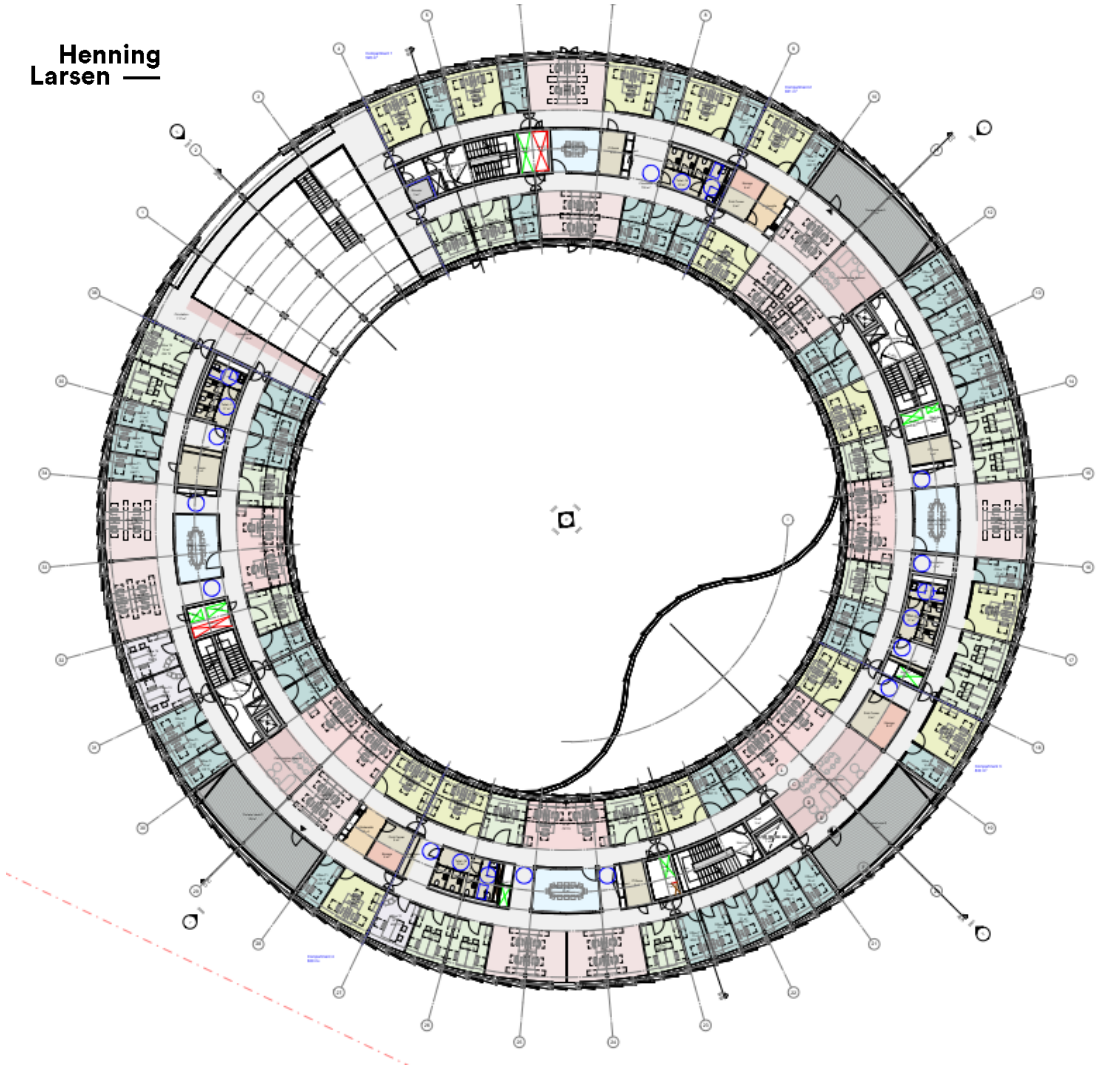


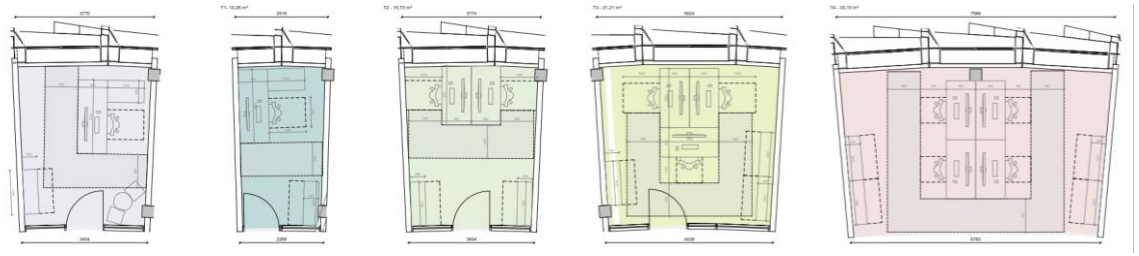
CCHE Geneva office

REFERENCES: CERN projects

BUILDING 777 (PREVESSIN SITE)

On going design by the Henning Larsen architecture offices.



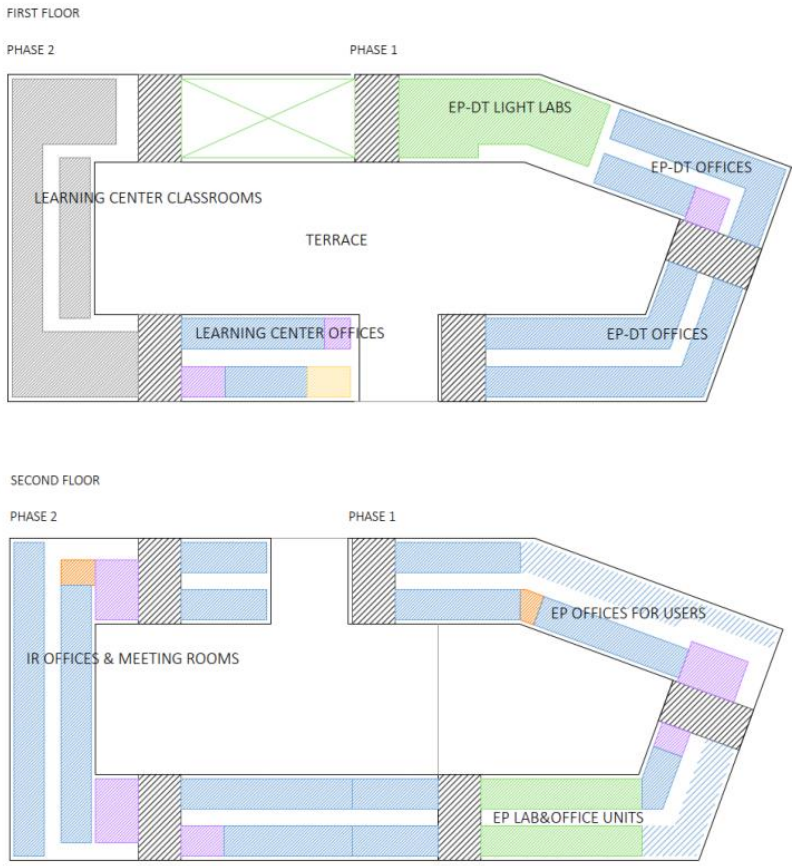


Working in direct proximity to:

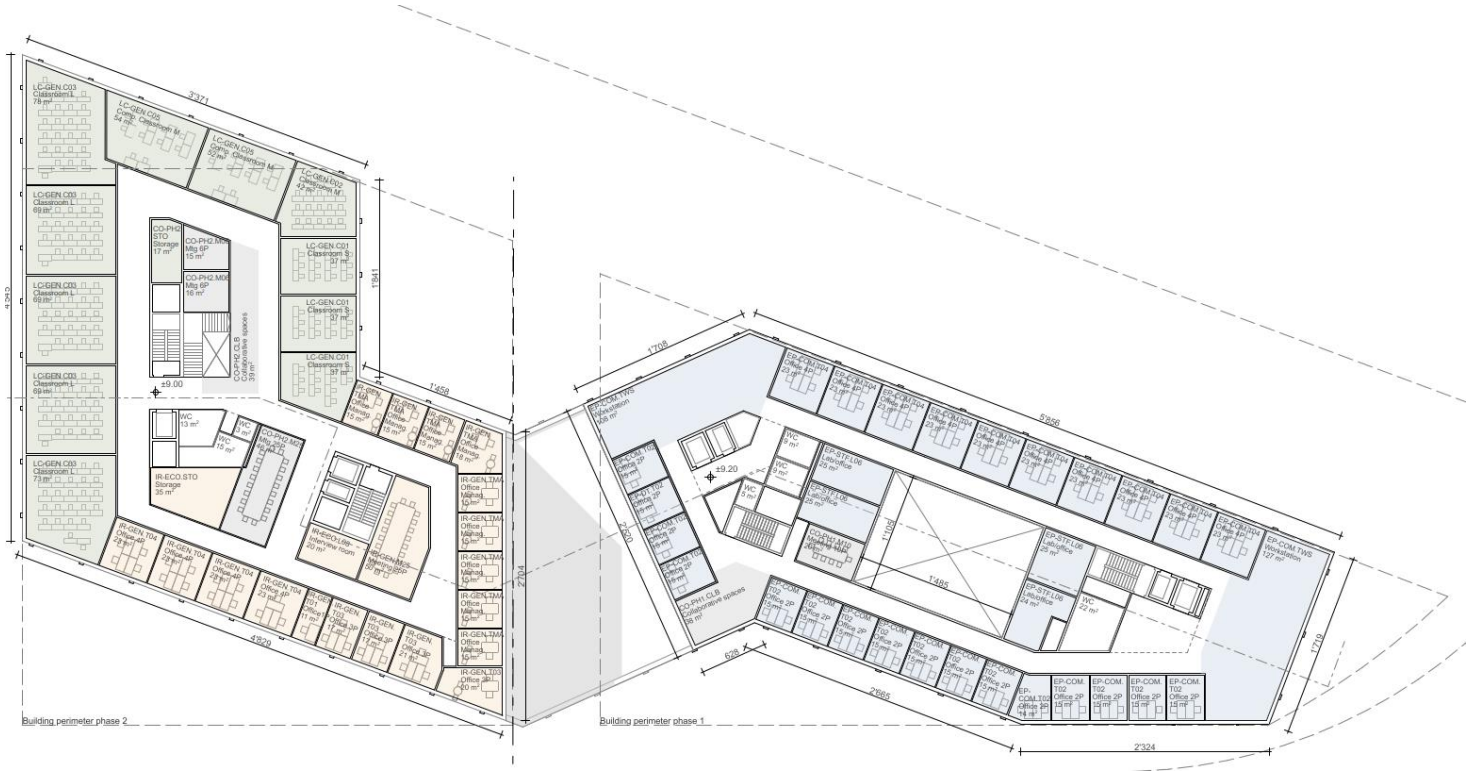
REFERENCES: CERN projects

BUILDING 140 (MEYRIN SITE)

On-going design competition (tender)



Pre-feasibility study (CERN SCE Department

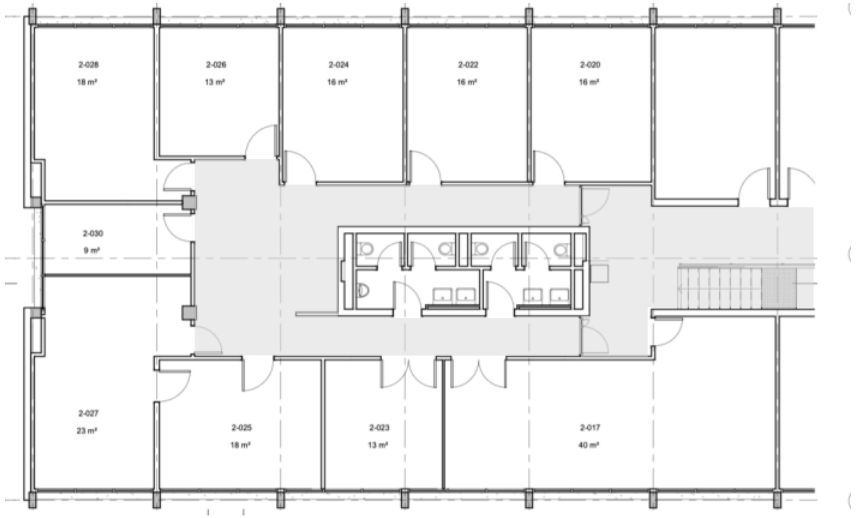


Reference Design (by the CCHE architecture office)

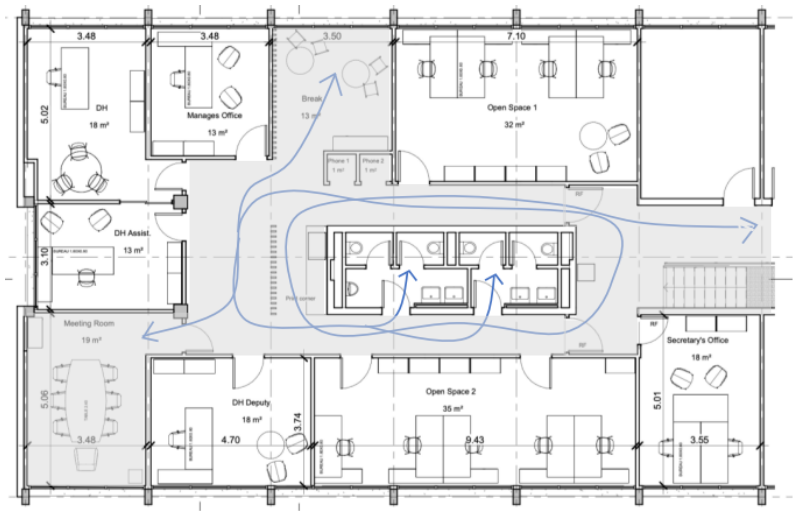
REFERENCES: CERN projects

BUILDING 31 2nd floor (IT Department)

Before



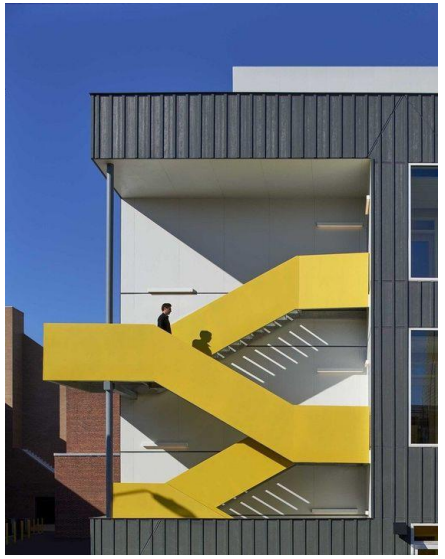
After



Gained 5 new workstations, 1 new meeting room, 1 new collaborative room (with 2 floating workstations) and 2 phone booths

NEW VERSION: Exterior space

- Increase **shared areas** > promote exchange
- Combine different **kind of spaces** > answer to different types of activities
- **Communicate** > direct discussions with users working nearby, totems with information about the project and the location, publications announcing these new areas…
- Create a **module** and a system that can be repeated around the site in different locations
- Use **easy maintenance** elements and materials
- Work with the **existing**
- Use **visual effects** and **signage**
- Increase **safety** > revision of the walking and cycling circulations and
- Foster **soft mobility**



Inspirational images

REFERENCES: CERN projects

Outdoor Spot 6 (IT area)

Before

After

REFERENCES: Articles

- Architects and their impact on office buildings - RTF (re-thinkingthefuture.com)
- Workplaces Have Changed – And It's Time They Change Again (forbes.com)
- https://wearetwo.com/office-design-what-it-was-and-what-it-is-now/
- https://catalogue.library.cern/literature/mj15x-kbk50
- https://medium.com/@AAA_Publication/what-is-architecture-1b52f5339c2a
- https://v2.wellcertified.com/en/wellv2/overview

"A single best physical or digital workspace architecture will never be found. That's because more interaction is not necessarily better, nor is less. The goal should be to get the right people interacting with the right richness at the right times." *The Truth About Open Offices (Harvard Business Review)*

The effects of the pandemic on the design of office buildings have taught us to pivot with flexible, resilient, and adaptable design typologies as architects are reinventing office design and reimagining workplaces comprehensively while ensuring the physical as well as mental well-being of the employees". *Architects and their impact on office buildings (Rethinking The future)*

SUMMARY

- CERN’s workspace starts from the site entrance and not only from our office door;
- A single best physical or digital workspace architecture does not exist;
- CERN’s population and architecture have specific characteristics that makes it unique;
- A diverse offer of kinds of spaces to work at CERN is needed to be at the same level as the organisation;
- Large projects and small office renovations are already applying a new way of understanding the workspace;
- «Third spaces» for collaboration and exchange are key for a healthy working environment;
- The exterior areas are as important as the interior ones for our daily work;

THANK YOU

Teresa Canseco (SCE-TAM-TG)

Mathieu Fontaine (SCE-SAM-CE)

Fabien Vincent (SCE-SAM-IN)

Denis Potard (SCE-SAM-IN)

SCE
Site and Civil Engineering

REFERENCES: External projects

CCHE Geneva office