RCOMP - Redes de Computadores

(Computer Networks)

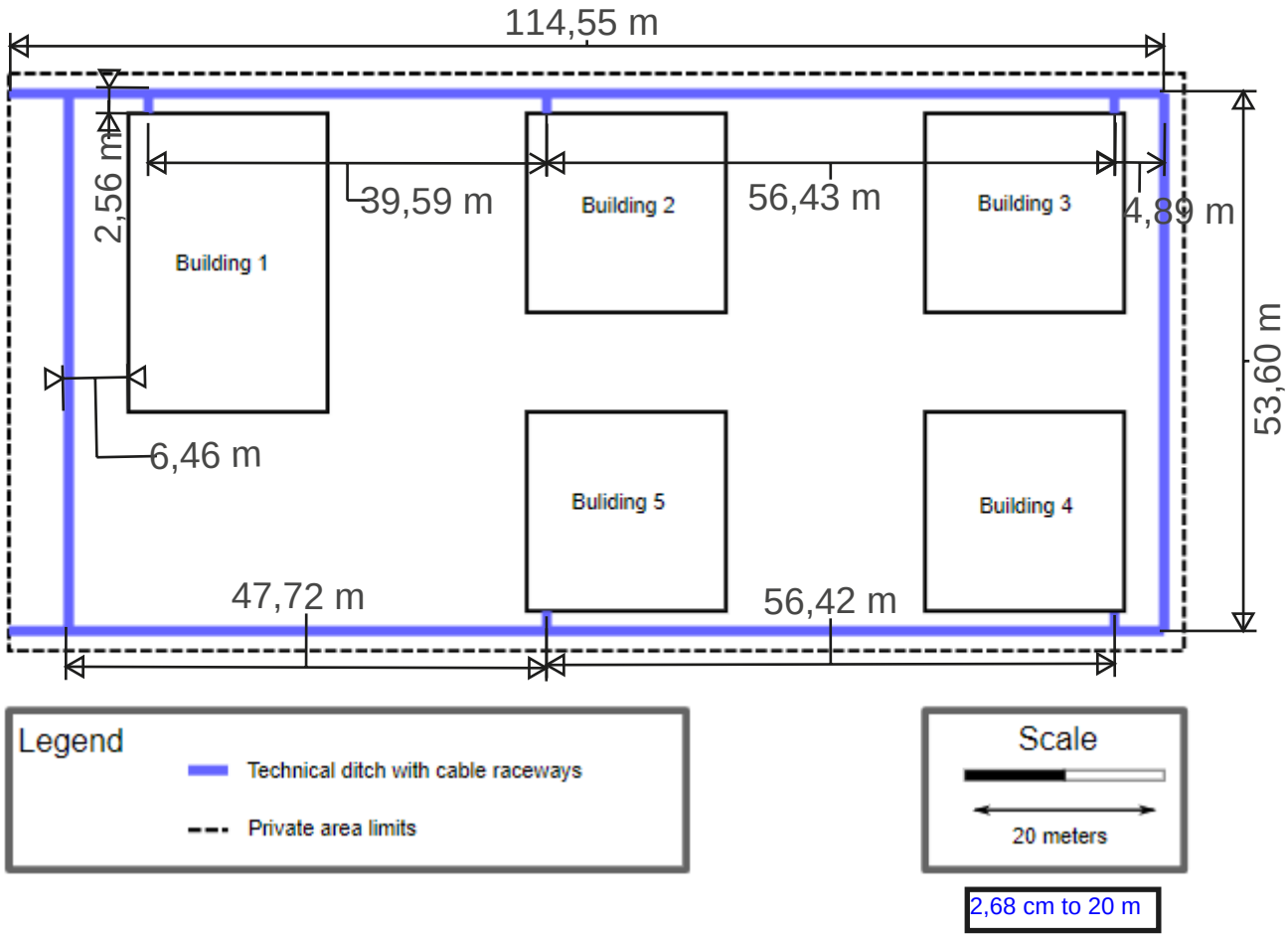
2021/2022

Project description - sprint 1

The team is enrolled in a structured cabling project, the outcome for this sprint is a structured cabling deployment plan for the given physical environment. The project owner role is assumed by the laboratory classes' teacher.

1. Physical environment description

The structured cabling project is to embrace a private closed area with five buildings, each of these buildings has two floors. These buildings are numbered as 1, 2, 3, 4, and 5. The following image represents the site plan.



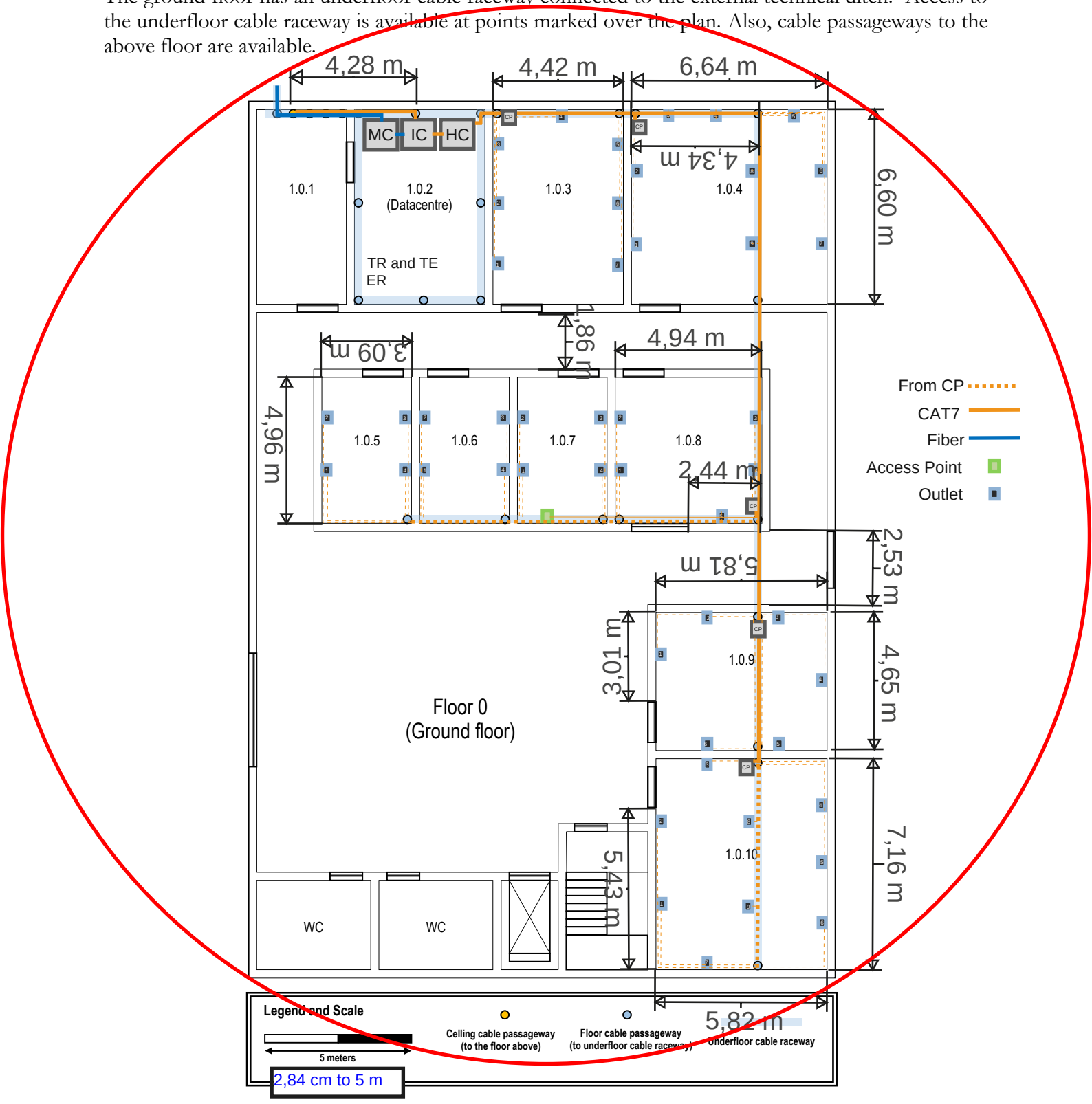
An underground technical ditch with cable raceways (represented in blue) exists and includes cable passageways for every building, it's ready for telecommunications cabling and others. The building 1 horizontal dimensions are approximately 30 x 20 meters, the other buildings' horizontal dimensions are approximately 20 x 20 meters.

1.1. Building 1

This building holds the datacentre (room 1.0.2), it will also house the main cross-connect for the structured cabling system. Both floors must have wireless LAN coverage (Wi-Fi).

1.1.1. Building 1 - Floor 0 (Ground floor)

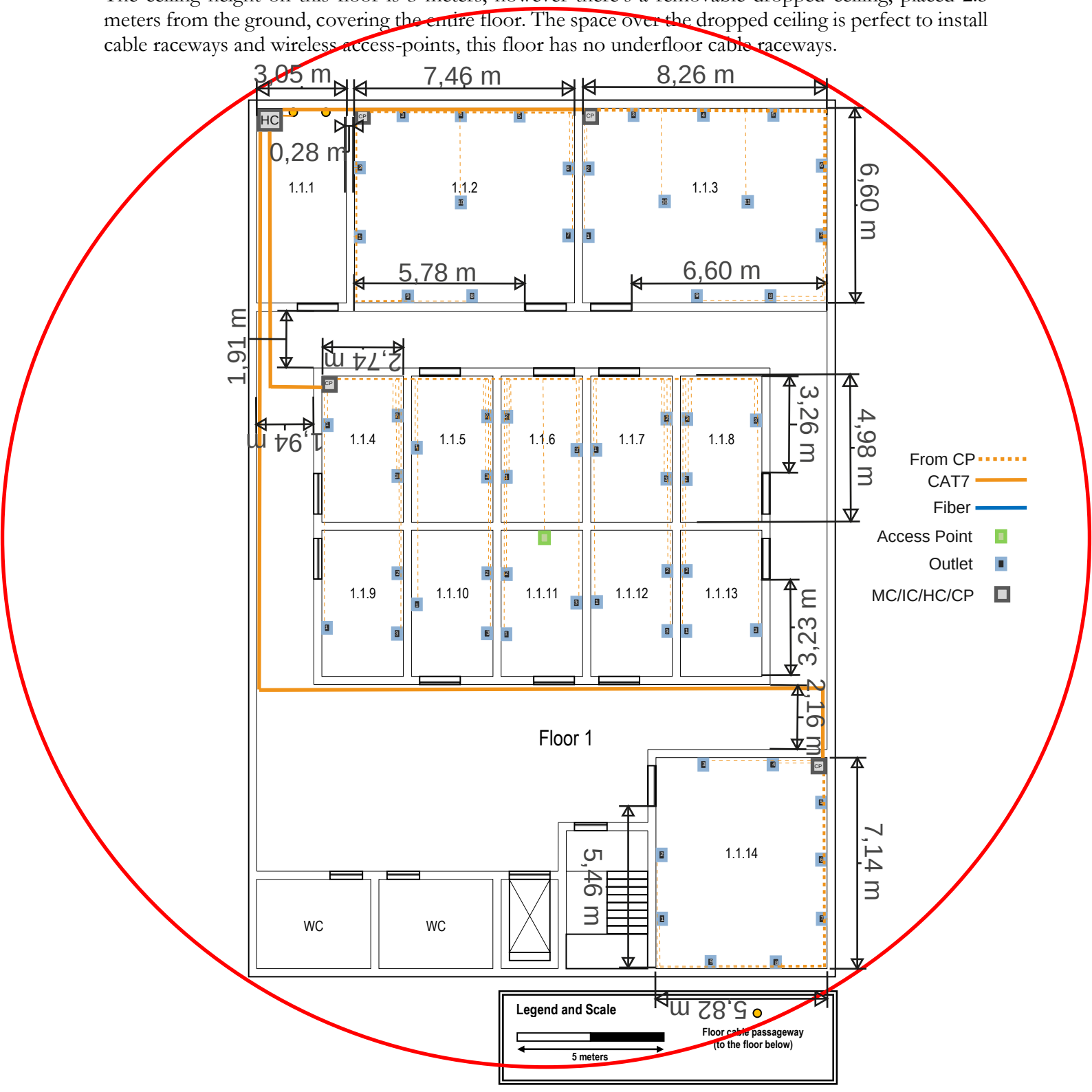
The ground floor has an underfloor cable raceway connected to the external technical ditch. Access to the underfloor cable raceway is available at points marked over the plan. Also, cable passageways to the above floor are available.



The ceiling height on this floor is 4 meters. Common areas, like the entrance hall, restrooms, and stairs, require no network outlets.

1.1.2. Building 1 - Floor 1

The ceiling height on this floor is 3 meters, however there's a removable dropped ceiling, placed 2.5 meters from the ground, covering the entire floor. The space over the dropped ceiling is perfect to install cable raceways and wireless access-points, this floor has no underfloor cable raceways.



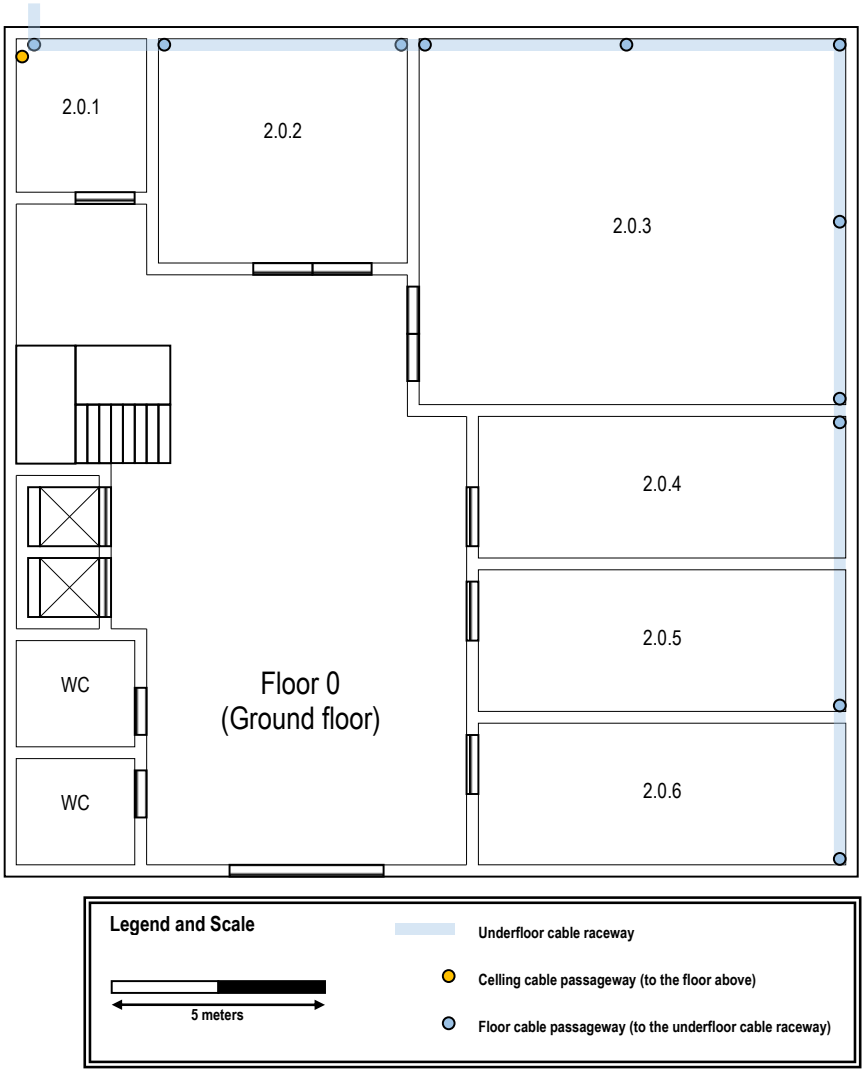
Room 1.1.1 is a storage area and may be used to house a cross-connect, no network outlets are required there, and the same applies to restrooms and common areas like corridors and halls. Elsewhere, in every identified room, the standard number of network outlets per area rate should be honoured.

1.2. Building 2

Both floors of this building require full wireless LAN coverage (Wi-Fi).

1.2.1. Building 2 - Floor 0 (Ground floor)

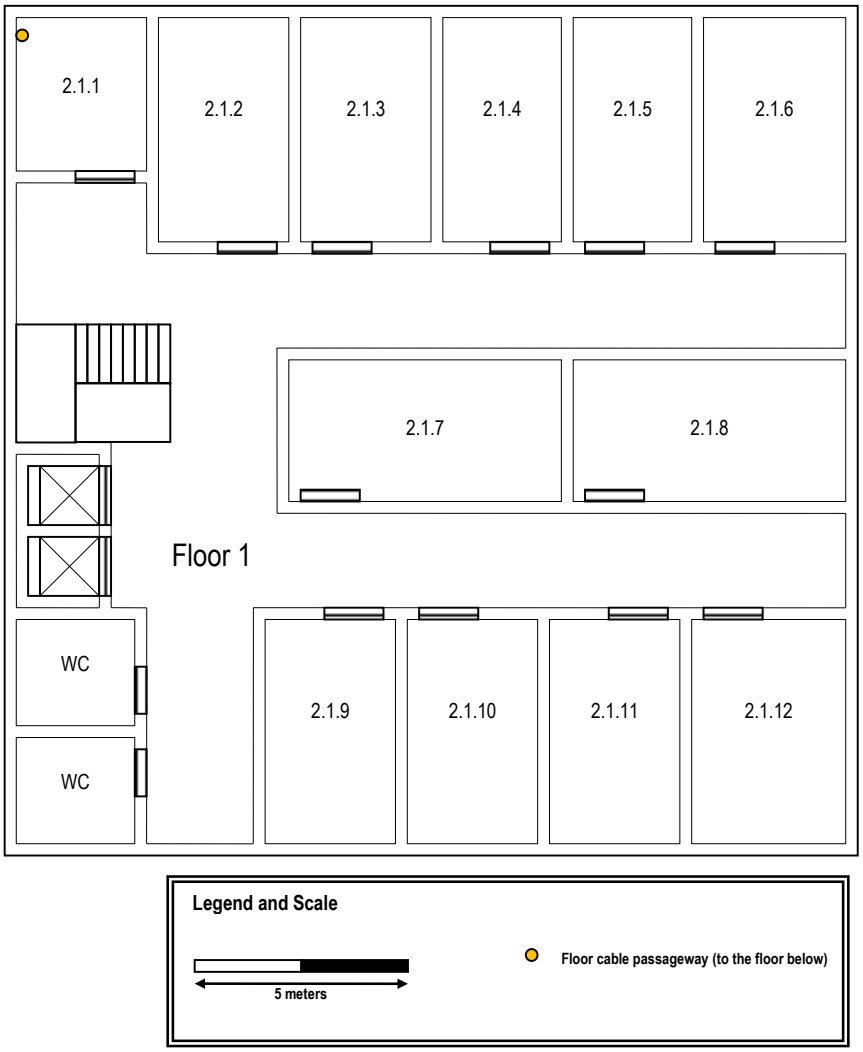
The ground floor has an underfloor cable raceway connected to the external technical ditch. Access to the underfloor cable raceway is available at points marked over the plan. The ceiling height on this floor is 4 meters.



Room 2.0.1 is a storage area and may be used to house a cross-connect, no network outlets are required there, and the same applies to the restrooms, the entrance hall, and other common areas.

1.2.2. Building 2 - Floor 1

This floor has no underfloor cable raceway. The ceiling height on this floor is 3 meters, however there's a removable dropped ceiling, placed 2.5 meters from the ground, covering the entire floor. The space over the dropped ceiling is perfect to install cable raceways.



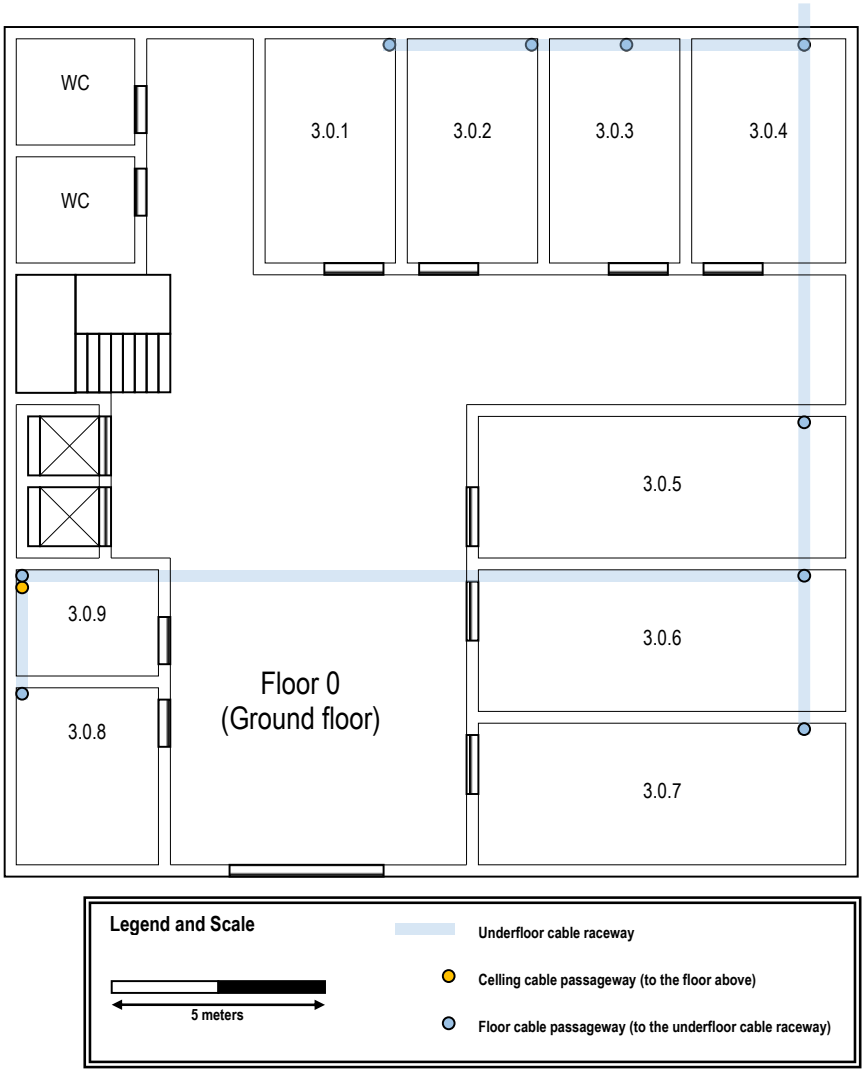
Room 2.1.1 is a storage area and may be used to house a cross-connect, no network outlets are required there, and the same applies to restrooms and corridors.

1.3. Building 3

A full wireless LAN (Wi-Fi) coverage is required for this building on both floors.

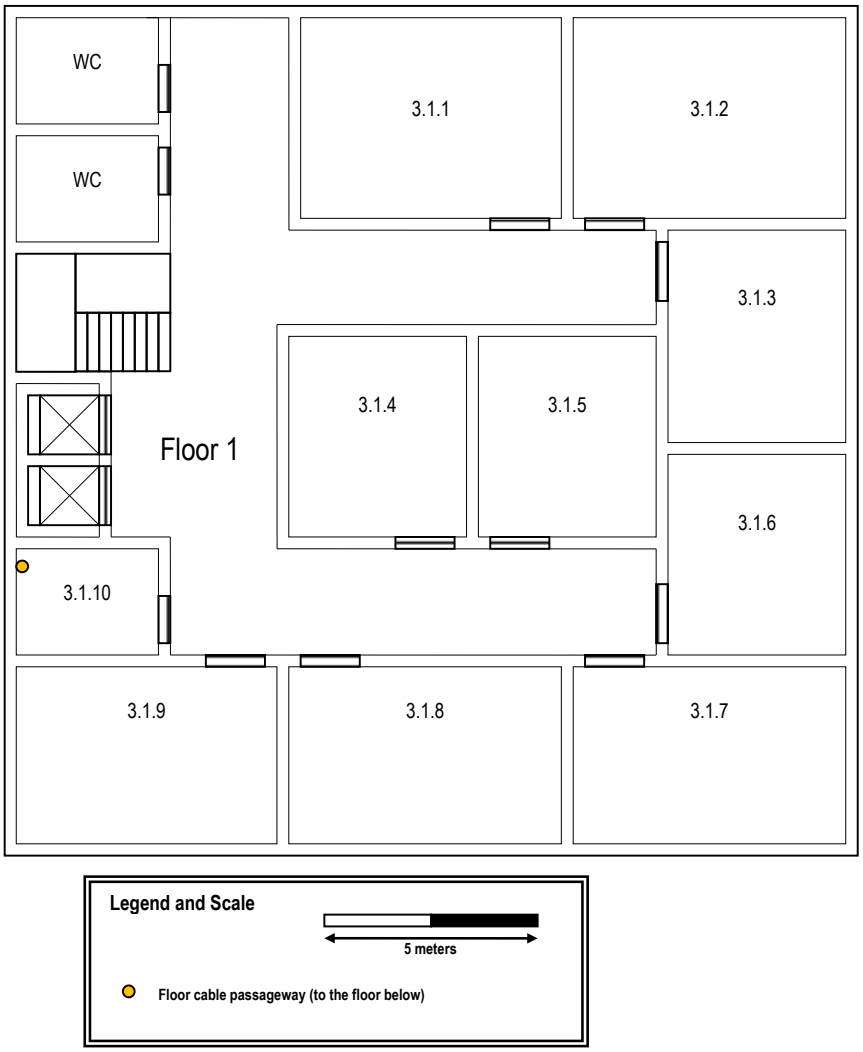
1.3.1. Building 3 - Ground floor

The ground floor has an underfloor cable raceway connected to the external technical ditch. Access to the underfloor cable raceway is available at points marked over the plan. The ceiling height on this floor is 4 meters.



Room 3.0.9 is a storage area that may be used to house a cross-connect, no network outlets are required there, and the same applies to restrooms and the entrance hall.

1.3.2. Building 3 - Floor one



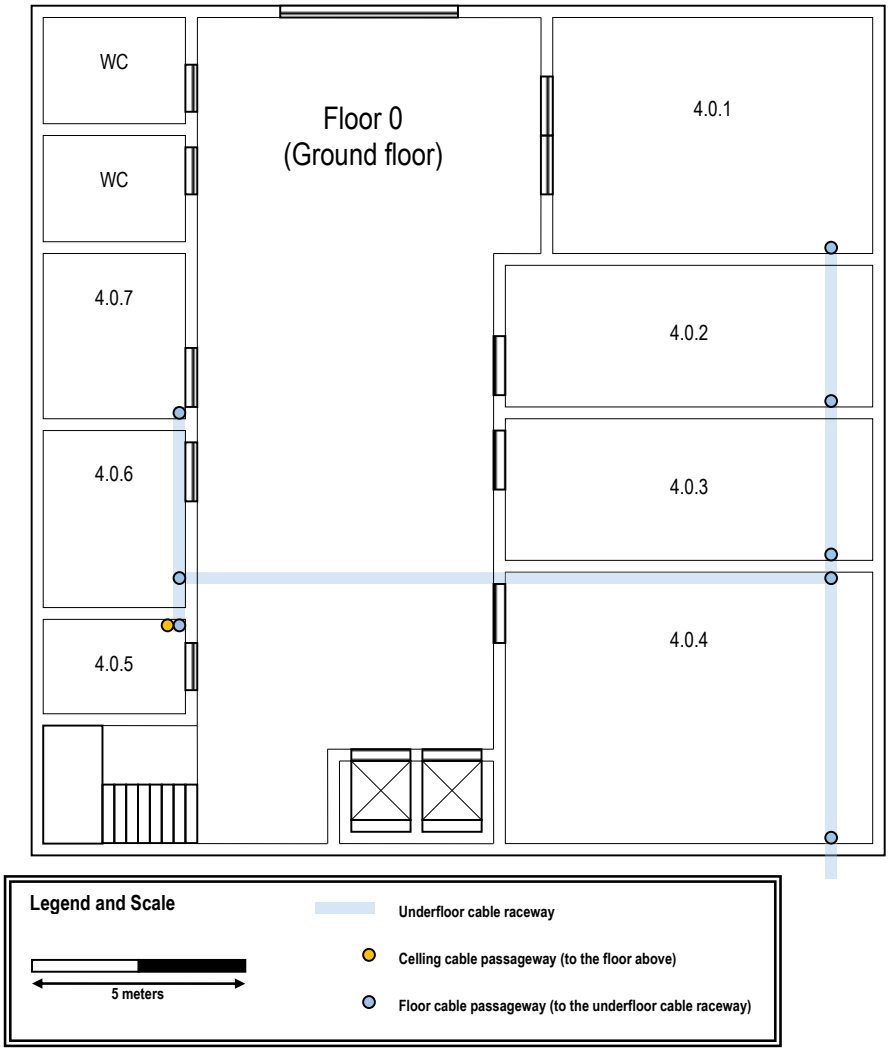
The ceiling height on this floor is 3 meters, but there's a removable dropped ceiling, placed 2.5 meters from the ground, covering this entire floor. The space over the dropped ceiling is perfect to install cable raceways and wireless access-points.

Common areas and restrooms are not required to have network outlets, rooms should be provided with the standard number of network outlets. Room 3.1.10 is a storage area, no network outlets are required there as well, and it may be used to house a cross-connect and other network infrastructure hardware.

1.4. Building 4

A full wireless LAN (Wi-Fi) coverage is required for both floors of this building.

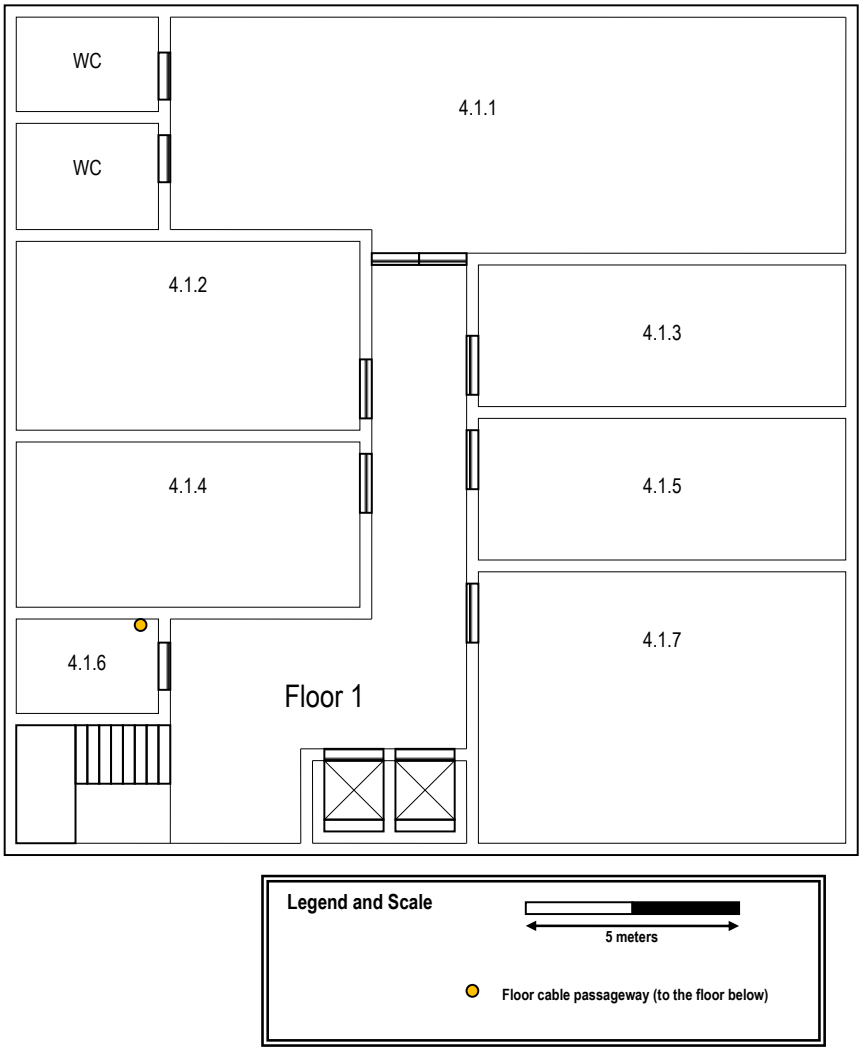
1.4.1. Building 4 - Ground floor



The ground floor has an underfloor cable raceway connected to the external technical ditch. Access to the underfloor cable raceway is available at points marked over the plan. The ceiling height on this floor is 4 meters.

Room 4.0.5 is a storage area that may be used to house a cross-connect, no network outlets are required there, and the same applies to restrooms and common areas like the entrance hall.

1.4.2. Building 4 - Floor one



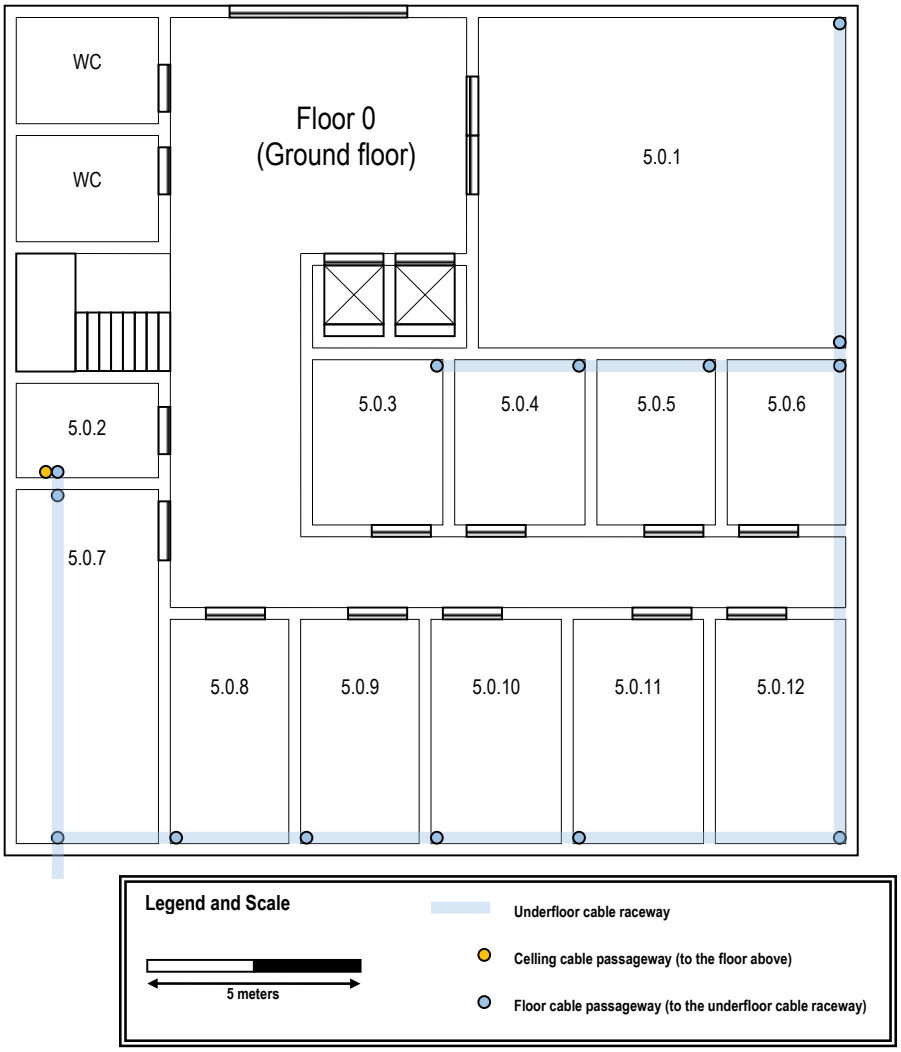
The ceiling height on this floor is 3 meters, but there's a removable dropped ceiling, placed 2.5 meters from the ground, and covering this entire floor. The space over the dropped ceiling is perfect to install cable raceways and wireless access-points.

Common areas are not required to have network outlets, room 4.1.6 is a storage area, no network outlets are required there as well, and it may be used to house a cross-connect and other network infrastructure hardware. Other identified rooms must be provided with the standard number of network outlets.

1.5. Building 5

A full wireless LAN (Wi-Fi) coverage is required for both floors of this building.

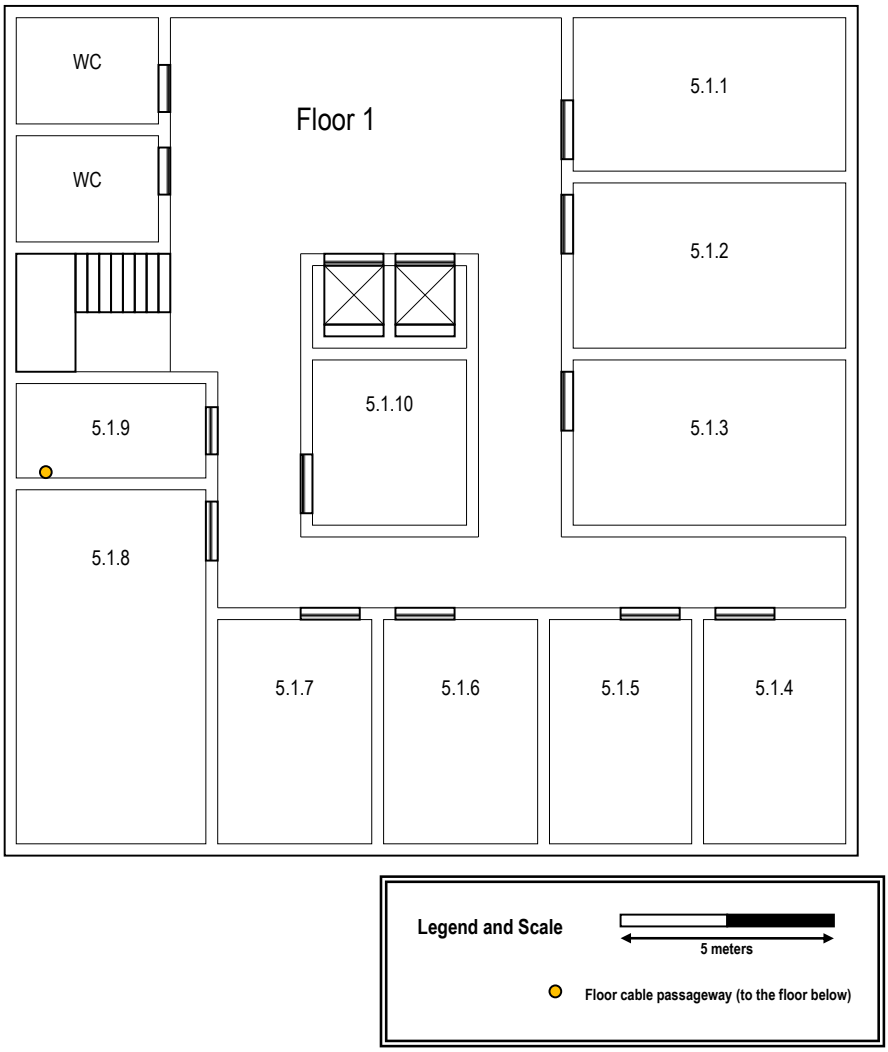
1.5.1. Building 5 - Ground floor



The ground floor has an underfloor cable raceway connected to the external technical ditch. Access to the underfloor cable raceway is available at points marked over the plan. The ceiling height on this floor is 4 meters.

Room 5.0.2 is a storage area that may be used to house a cross-connect and network infrastructure hardware, no network outlets are required in this room, and the same applies to restrooms and common areas like the entrance hall and corridors.

1.5.2. Building 5 - Floor one



The ceiling height on this floor is 3 meters, but there's a removable dropped ceiling, placed 2.5 meters from the ground, and covering this entire floor. The space over the dropped ceiling is perfect to install cable raceways and wireless access-points.

Common areas are not required to have network outlets, room 5.1.9 is a storage area, no network outlets are required there as well, and it may be used to house a cross-connect and other network infrastructure hardware. Other identified rooms must be provided with the standard number of network outlets.

2. Sprint 1 backlog

Task	Task description
T.1.1	Development of a structured cabling project for building 1, encompassing the campus backbone.
T.1.2	Development of a structured cabling project for building 2.
T.1.3	Development of a structured cabling project for building 3.
T.1.4	Development of a structured cabling project for building 4.
T.1.5	Development of a structured cabling project for building 5.

Task T.1.5 is to be ignored by teams with only four members.

3. Sprint 1 outputs/products

For each task on this sprint, the output is a structured cabling project.
Each team member is free to provide this output in any desired format, it may be a single report or a set of items.

Whatever the format is, the following items are mandatory and will be subject of assessment:

- **Demonstration of calculations regarding the number of network outlets for each room.**
- **Network outlets deployment schematic plan (including outlets for wireless access points) and justification comments.**
- **Cross-connects deployment schematic plan and justification comments.**
- **Cable pathways deployment schematic plan and justification comments.**
- **Hardware inventories, including total cable lengths by cable type, appropriate type patch panels, network outlets, telecommunication enclosures of suitable size.**

Keywords: explain, justify, and demonstrate.

The teacher's assessment is going to be focused on what is said to explain the solution.

4. Sprint 1 planning

- In the first laboratory class, the teacher will assign a number to each group, after that the team should create a BITBUCKET repository, check the first laboratory class for details.
- One team member takes the **sprint master** role for sprint 1.

  On each sprint, a different team member takes this role. If no other criterion is consensual, it's suggested that the sprint master role for sprint 1 should be taken by the member with the lowest student's number.
- Global technical decisions and team coordination.

  Even though the tasks established in the sprint backlog are somewhat independent, once they all belong to the same project, a coordination effort in this phase is key. This will most often encompass technical decisions regarding the implementation with a special focus on features that are shared between tasks.

  All taken technical decisions must be registered, by the sprint master, in file **/doc/sprint1/planning.md**.

  For this specific sprint, some features to be settled now are:

  - Copper cable wiring standard to be adopted (either 568A or 568B).
  - Backbone cable types, cable passageways to be used, redundant links and others.
- Tasks assignment to team members.

  Every member (sprint master included) is assigned exactly one task from the backlog. The provided backlog has five tasks, for teams with less than five members, the last task in the backlog is to be ignored, the first ones are mandatory.

  The sprint master registers in file **/doc/sprint1/planning.md** the task assigned to each team member.

  Notice that the tasks assignment in this first sprint is going to persist along the first three sprints, meaning tasks in the following sprints are the continuation of previous sprint's tasks and are to be carried out by the same team member.