



NL Utrecht Androclusbuilding Risk Summary Report 2021 Aon

Onderwijsinstellingen

Location: Yalelaan 1
UTRECHT
.
Netherlands
Location code: UU 1322
Created by: Peter Uri

Survey date: 2021-06-15
Report date: 2021-07-20

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1. Introduction

1.1 Introduction

Scope of the report

The information in this report is based on a site visit and information provided by University Utrecht (hereafter: UU). A good impression could be gained from the housekeeping, risk awareness, fire protection installations, and fire compartmentation based on the visit. During the visit, the emphasis was on a random review of technical areas, fire-resistant separations, catering and areas for practicums. The survey has been supplemented with information insofar as it is provided by UU. The EML and MPL scenarios at the end of this report are based on these gathered impressions. The survey was held during the COVID epidemic. As a result, the occupancy of the buildings was less than normal.

1.2 Participants

The survey (15-06-2021) has been accompanied by the following person from the UU organization:
Jeffrey van Leeuwen - Facility.

1.3 General

The UU has a broad variety of Education Programs, in all kinds of fields from practical studies to theoretical studies. There are 50 bachelor's programs and 154 master's programs that represent a cross-section of the entire scientific spectrum. The programs are part of organized units. There are several partnerships with international training institutions and collaborations with national and international companies. Research is done by students within several units. These activities are done under the strict supervision of the teaching staff. Every location has its own facility managers.

Utrecht University boasts seven faculties.

Faculties

Each faculty consists of a number of departments. Each department coordinates the research and teaching programmes of a specific field of science. Scientific staff are appointed at department level.

- Faculty of Geosciences
- Faculty of Humanities
- Faculty of Law, Economics and Governance
- Faculty of Medicine
- Faculty of Science
- Faculty of Social and Behavioural
- Sciences Faculty of Veterinary Medicine

There are 30,000+ students. In total the staff is 8035 persons of whom 4,316 persons are teaching staff.

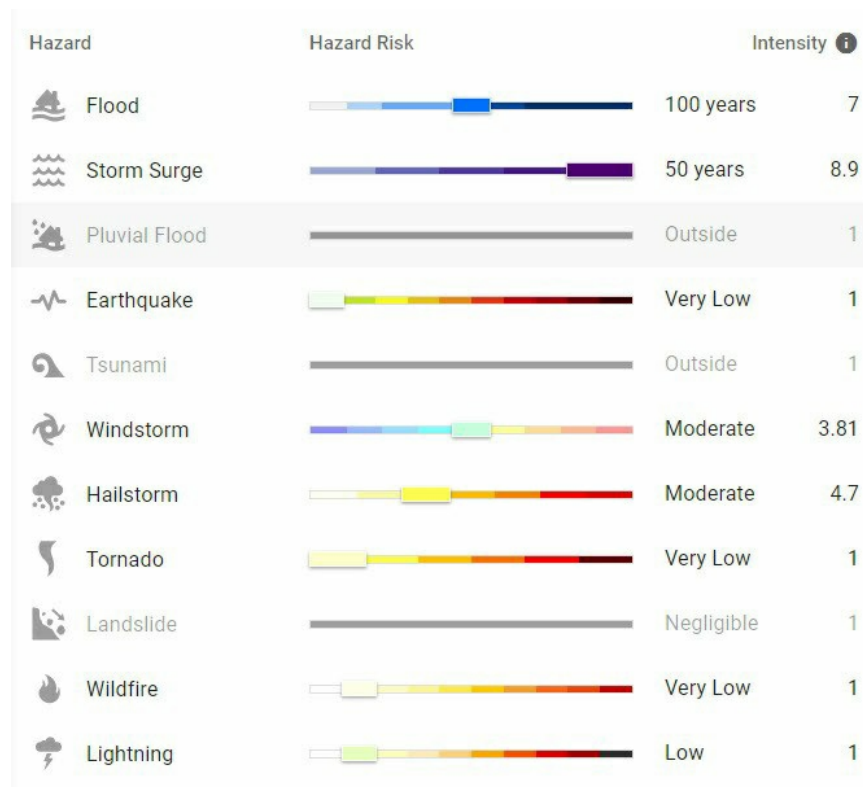
General information about Androclusgebouw location:

The so-called "Androclusgebouw" houses research laboratories for the veterinary medicine faculty of the University of Utrecht. The building is built in 1980 and has 9 storey floors. The gross floor area is 28,896 m². This building is especially constructed for the purpose of partly laboratories and partly offices. There are also some lecture rooms available. In the basement and at the top floor are technical facility systems present such as air treatment systems, cooling, emergency power generator, water purification system and exhaust fans for different hoods. Most of the laboratories contain a very limited quantity of flammables (most of the jars and bottles contain non-hazardous liquids). However, there is a single laboratory room that contains hazardous materials. The instructions are given not to fight any fire in that room to prevent any spread of the materials. A fire that will destroy the material would be overall classed as the best solution for the environment but could also result into a total loss of the building.

In general, a light fire-resistive construction. The load-bearing construction consists of a heavy concrete structure with concrete floors, mostly with concrete walls as well. The roof consists of concrete partly insulated on top by means of a foam plastic on top of the roof felt covered with a layer of gravel. Inside the building are partly wooden ceilings installed. The building also contains a lot of asbestos. The building was refurbished approx. 8 years ago especially in regards to fire-retardant partitions. These were upgraded to one hour rated fire-resistant walls with sub-compartmentalization of 30 minutes. Cable penetrations are all sealed off properly. Air venting ducts are provided with appropriate fire dampers. A negative feature is the presence of asbestos in the building. The building is provided with total coverage fire detection that generates an alarm to the central station of the fire brigade. The fire load in some of the rooms is quite high; however, as far as seen, the usage (and storage) of flammables is adequately controlled.

In this building

- Faculty of Veterinary Medicines
- Department Clinical Sciences
- Department Biomolecular Health Sciences
- Faculty Office: Education and Student Affairs
- Faculty Office: IT, Housing and Safety
- Faculty of Science



* Source: CatNed SwissRe

Based on information from the Dutch Directorate-General for Public Works and Water Management, this location is located in an area that has no flood risk.

1.4 Major changes and future plans

The kitchen is removed.

There are plans to left/move out of this building between 2025 and 2028 (to new construction), and hereafter it will be demolished.

2. Construction

2.1 Construction

A building from the 1980s within general a fire-resistive construction. The load-bearing construction consists of a heavy concrete structure with concrete floors, mostly with concrete walls as well. The roof consist of concrete partly insulated on top by means of a foam plastic on top of the roof felt covered with a layer of gravel. Inside the building are partly wooden ceilings installed. The building also contains a lot of asbestos. The building was refurbished approx. 8 years years ago especially in regards to fire retardant partitions. These were upgraded to one hour rated fire-resistant walls with sub-compartmentalization of 30 minutes. Cable penetrations are all sealed off properly. Air venting ducts are provided with appropriate fire dampers. Asbestos is available in the building. But this has been mapped and indicated with stickers.

3. Utilities

3.1 Utilities

The electrical installation is fed by a transformer that is owned and maintained by Stedin. Detailed information about the transformers was not available. The main distribution box is located in a closed area with a fire resistance of at least 60 minutes. The other distribution boxes in the buildings are located on every floor in the building. The installation is maintained by the installer. A (Dutch) NEN3140 inspection is done every 5 years, thermographic inspections included. Deviations that emerge from the inspection will be remedied as soon as possible. Visually, the installation is in good condition. Power strips were not found during the survey. Separate electrical appliances are inspected annually, including private equipment that is allowed by UU.

The building is heated with district heating with a heat pump. The heat is transported through the building by air ducts. This installation is also able to cool.

Other installations are an air compressor installation and refrigerating compressors. These are well set up and are periodically maintained. The power supply is reliable. Emergency power supplies from UPS batteries and a diesel generator. Applicable for critical processes and the safety and security systems, etc.

Inherent to the risk is some -80 degrees C freezers available to store samples and research materials. These materials are quite important for this faculty. It is indicated that important materials are always stored in temperature-controlled freezers with an alarm notification to the building management system. The important freezers are supplied by the preferred power supply of the emergency power generator in the basement.

4. Protection

4.1 Fire Protection

Sprinkler

There is no sprinkler system available.

Fire Detection System

The building is equipped with a total fire detection system in accordance to the Dutch NEN 2535. The system is certified by a notified body. The regular maintenance is done by another company. The fire detection controls the magnetic door holders and releases the doors in case of an alarm. Alarms are transmitted to a 24/7 alarm centre.

Water supply

The public water supply is expected to be adequate.

Gas detection

Most of the laboratory rooms have natural gas supply for research purposes. The gas supply distribution room is provided with gas detection in combination with an automatic closing mechanism of the gas supply. There is no gas detection in the laboratories; however, this is controlled by means of good procedures and instructions.

4.2 Security

The whole building is protected by an alarm system with motion detection and door magnets. The alarms are transmitted to a 24/7 alarm centre. In case of an alarm, a private security service is notified and will respond. The security service is located at the faculty terrain. They can arrive within 5 minutes after an alarm notification but probably within a shorter period. In addition, also cameras with recording around the building are installed. The building is closed by the private security service at 09.00 p.m.

5. Loss Estimates

5.1 Values

Section/Property	Indemnity period	Value	Source	EML (%)	MPL (%)	Third party
Buildings		68,700,000 EUR	Policy	50	100	Aon

5.2 Breakdown of values

*The values provided in this report represent the best available at the time of the report. The primary use of these values is for estimating loss scenarios. They should not be used as definitive insurance values without further cross checking, and must never be used to try to demonstrate underinsurance.

5.3 Loss estimates summary table

Property Damage / Business interruption	EML (%)	MPL (%)	EML (value)	MPL (value)
Material Damage	50%	100%	34,350,000 EUR	68,700,000 EUR
Business Interruption	0%	0%	0 EUR	0 EUR
Combined	50%	100%	34,350,000 EUR	68,700,000 EUR

5.4 Loss Scenarios

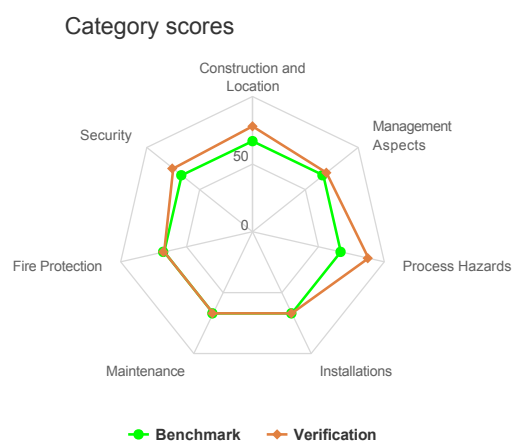
Name	Definition	Scenario
MPL	<i>Maximum Possible Loss scenario(s) according to the CEA 1999 definition. (The Maximum Possible Loss is that which may occur when, the most unfavourable circumstances being more or less exceptionally combined, the fire is only stopped by impassable obstacles or lack of substance).</i>	The MPL for this unit of the UU is estimated at 100% of the total insured value for Property Damage. This is based on: The building represents a single fire area. There are no 'perfect' fire walls available (4-hour resistant). It is expected that the fire will not spread to the building Nieuw Gildestein as both buildings have heavy concrete constructions and the distance between the buildings is approx. 50 meters. The combustible corridor in between is fire retardant separated at both sides. In this scenario the fire detection system is impaired. The fire will develop for quite a long time before it will be discovered. It might be decided by the fire brigade to fight the fire from the outside because of the partly higher fire load, the presence of laboratories and the fact that one room contains very hazardous materials for health and environment.
EML	<i>Estimated Maximum Loss scenario(s) according to the CEA 1999 definition. (The Estimated Maximum Loss is that which could reasonably be sustained from the contingencies under consideration, as a result of a single incident considered to be within the realms of probability taking into account all factors likely to increase or lessen the extent of the loss, but excluding such coincidences and catastrophes which may be possible but remain unlikely).</i>	The EML for this unit of the UU is estimated at approx. 50% of the total insured value for Property Damage. This is based on: Under worst case conditions the fire will start in the room with very hazardous materials that is not allowed to be extinguished. The staff is too late to take action and at the time of the arrival of the public professional fire brigade is the fire too large to be extinguished. The fire brigade might decide to evacuate the building and try to stop the fire somewhere in the middle. If they are not successful the total building might be lost. In conservative theoretical scenario the EML could be at 100 %. However, more likely is that the fire starts somewhere else and the fire brigade could prevent a fire spread to the most hazardous room the EML might be limited to 50 %.

6. Scorecard results

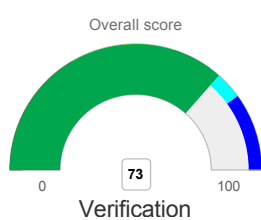
6.1 Category scores (histogram)



6.2 Category scores (spider web)



6.3 Overall scores



6.4 Scorecard results

		Category Weight	Subject Weight	Verification score	Comment
1	Construction and Location	10			
1-01	Building construction		1	2	Y
1-02	Roof insulation		1	-	Y
1-03	Wall insulation		1	3	Y
1-04	Combination solar panels vs. roof structure		1	N/A	N
1-05	adjacent buildings		1	2	Y
2	Management Aspects	10			
2-01	Risk Management Policy		1	2	N

		Category Weight	Subject Weight	Verification score	Comment
2-02	Supervision outside opening hours		1	1	Y
2-03	Self-inspection		1	2	Y
2-04	Smoking policy		1	3	N
2-05	Hot work Procedure		1	3	Y
2-06	Waste handling inside		1	2	N
2-07	Waste handling outside		1	2	N
2-08	Housekeeping		1	2	Y
2-09	Housekeeping technical areas		1	2	N
2-10	Management of Change (MOC)		1	2	N
3	Process Hazards	10			
3-01	Practice rooms: gasses		1	1	Y
3-02	Practice rooms: flammable liquids and aerosols		1	N/A	N
3-03	Practice rooms: wood working		1	N/A	N
3-04	Practice rooms: metal working		1	N/A	N
3-05	Practice rooms: plastic machining		1	N/A	N
3-06	Practice rooms: paint spraying		1	N/A	N
3-07	Practice rooms: experiments and research		1	3	N
3-08	Practice rooms: unmanned processes		1	N/A	N
3-09	Practice rooms: textile processing		1	N/A	N
3-10	Catering / restaurant		1	N/A	N
3-11	Battery charging (tools, etc.)		1	1	N
3-12	Theaters		1	N/A	N
4	Installations	10			
4-01	Electrical installation		1	2	N
4-02	Local heating		1	2	Y
4-03	Installations for cooling		1	2	N
4-04	Lightning and overvoltage protection		1	2	N
4-05	Air compressors		1	2	N
4-06	Solar panels		1	N/A	N
4-07	Electric bicycles		1	0	Y
4-08	Charging of electric vehicles		1	3	Y
5	Maintenance	10			
5-01	Inspectie elektrische installatie en gereedschappen		1	2	Y
5-02	Inspectie PV installatie		1	N/A	N
5-03	Onderhoudsprogramma		1	2	N
6	Fire Protection	10			
6-01	Fire department		1	2	N
6-02	extinguishing water		1	1	Y
6-03	hand extinguishers		1	2	N
6-04	Fire hoses		1	2	N
6-05	Automatic fire detection		1	3	Y

		<i>Category Weight</i>	<i>Subject Weight</i>	<i>Verification score</i>	<i>Comment</i>
6-06	Fire separations		1	2	Y
6-07	Specific object fire protection		1	N/A	N
6-08	Automatic sprinkler system		1	N/A	Y
7	Security	10			
7-01	Access site and buildings		1	2	N
7-02	Burglary system		1	2	Y
7-03	Security cameras		1	2	N
7-04	Specific computer equipment		1	N/A	N

6.5 Review comments

1-01	Building construction In general a light fire resistive construction built in 1980's. The load bearing construction consist of heavy concrete structure with concrete floors, mostly with concrete walls as well. The roof consist of concrete.	Peter Uri
1-02	Roof insulation The roof consist of concrete. Partly insulated on top by means of a foam plastic on top of the roof felt covered with a layer of gravel.	Peter Uri
1-03	Wall insulation There is no wall insulation available.	Peter Uri
1-05	Exposures / Adjacent buildings The premises are located on the faculty estate East of the city Utrecht. Next door neighbour is limited to the building Nieuw Gildestein across the street at some 50 meters distance. Both buildings have a concrete construction, but are interconnected with each other by an overhead corridor of combustible sandwich panels. However due to the distance between the two buildings and the fact that the corridor is fire retardant separated at both sides makes this two different fire areas. The situation is acceptable controlled. (Both buildings will be left and demolished between 2025 and 2028).	Peter Uri
2-02	Supervision outside opening hours Regular opening hours are between 8.00am and 9.00pm. Closing round is done by the security. The is no fence present. Therefore, the score is score 1	Peter Uri
2-03	Self-inspection Self-inspections are being done on a regular basis. The housekeeping is perfect and the site is well managed. Documented fire safety self-inspection program in use covering hazards and essential fire safety elements.	Peter Uri
2-05	Hot work Procedure There is a formal strict hot work procedure including a fire watch.	Peter Uri
2-08	Housekeeping In general, housekeeping is at a excellent level. The corridors are free of any storage. There is no yard storage. Aisles & passageways kept clear of obstructions. All work and storage areas well controlled and in good state. Combustible materials cleared from hazardous areas. Fire protection equipment easily accessible. No excess storage in process areas.	Peter Uri
3-01	Practice rooms: gasses Most of the laboratory rooms have natural gas supply for research purposes. The gas supply distribution room is provided with gas detection in combination with an automatic closing mechanism of the gas supply. There is no gas detection in the laboratories, however this is controlled by means of good procedures and instructions.	Peter Uri
4-02	Local heating The building is heated with district heating with a heat pump. The heat is transported through the building by air ducts.	Peter Uri
4-07	Electric bicycles There is no strict policy yet. There are no charging stations available. A general recommendation has been issued (not in this report).	Peter Uri
4-08	Charging of electric vehicles Charging of electric vehicles is not applicable.	Peter Uri
5-01	Electrical equipment of installation Inspection of electrical equipment including thermographic scanning is done every 5 years according the Dutch NEN3140. Deviations found during the inspections are corrected Tools are inspected yearly.	Peter Uri
6-02	Extinguishing water The public water supply consist of underground hydrants fed by the municipal water supply. There are also some ditches nearby that could also be used for firefighting. Sufficient water supply can be expected. In the stairs are dry raisers installed.	Peter Uri
6-05	Automatic fire detection The site is equipped with a total fire detection system in accordance with NEN 2535. The system is certified by a notified. body. The fire detection controls the magnetic door holders and releases the doors in case of an alarm.	Peter Uri
6-06	Fire separations The building was refurbished approx. 8 years years ago especially in regards with fire retardant partitions. These were upgraded to one hour rated fire resistant walls with sub-compartmentalization of 30 minutes. Cable penetrations are all sealed off properly. air venting ducts are provided with appropriate fire dampers.	Peter Uri
6-08	Automatic sprinkler system Automatic sprinklers are not available and not required as the prevention is adequate controlled by means of fire detection in combination with compartmentalization and fast alarm follow up by the public fire brigade.	Peter Uri
7-02	Burglary system A burglary alarm system is installed and any alarm will be transmitted to the central station of the university who is located nearby. A own security service is doing the alarm follow up and can arrive in a few minutes.	Peter Uri

7. Recommendations

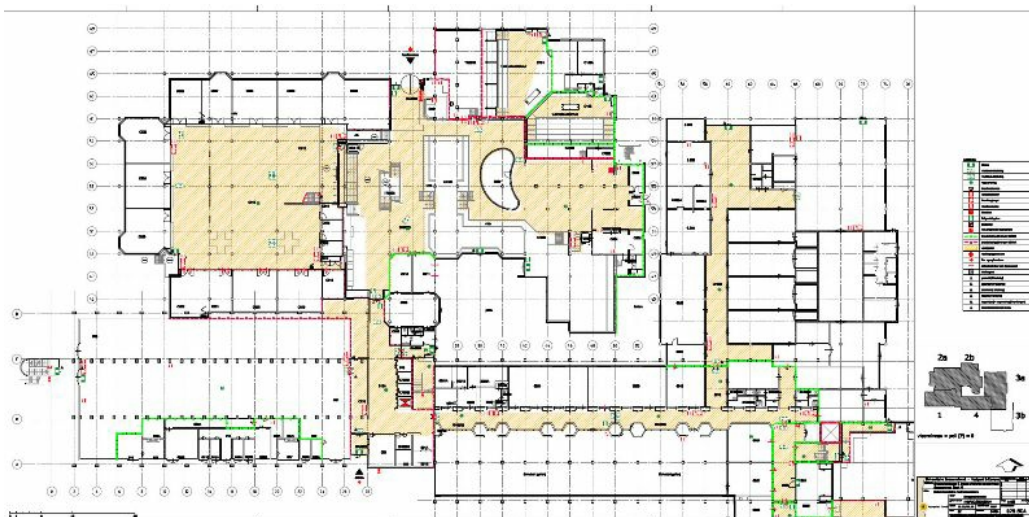
7.1 No recommendations available

No recommendations available



Basement

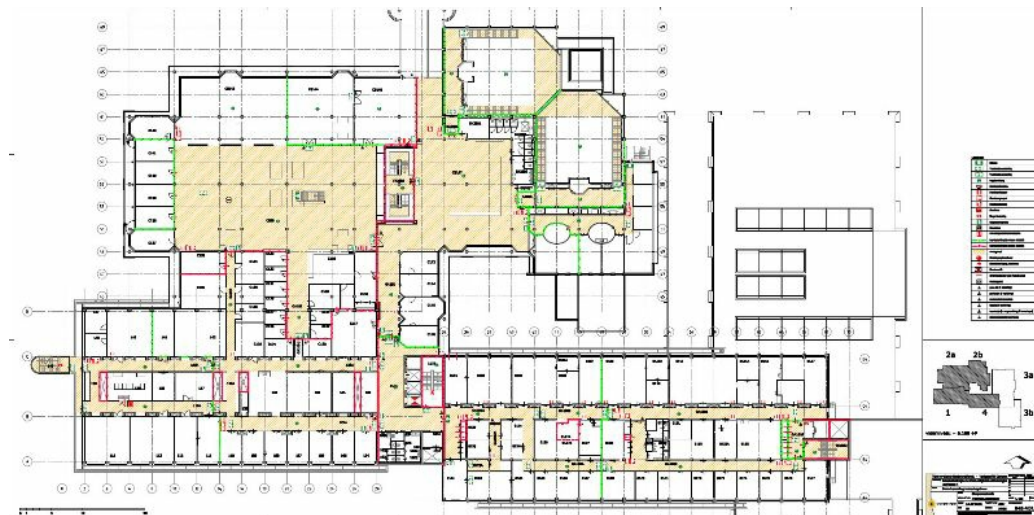
Red lines are 60-minute fire resistant walls/doors



Ground floor A



Ground floor B



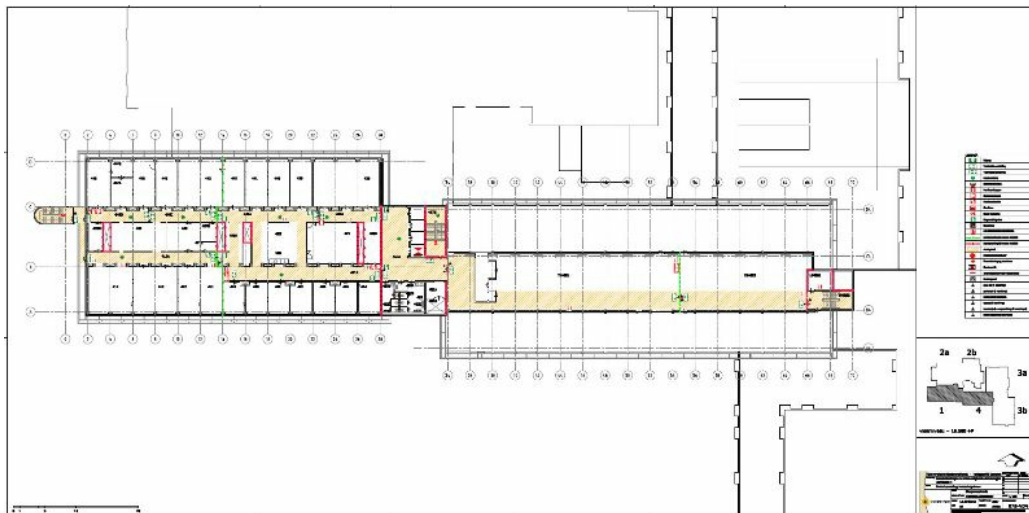
First floor



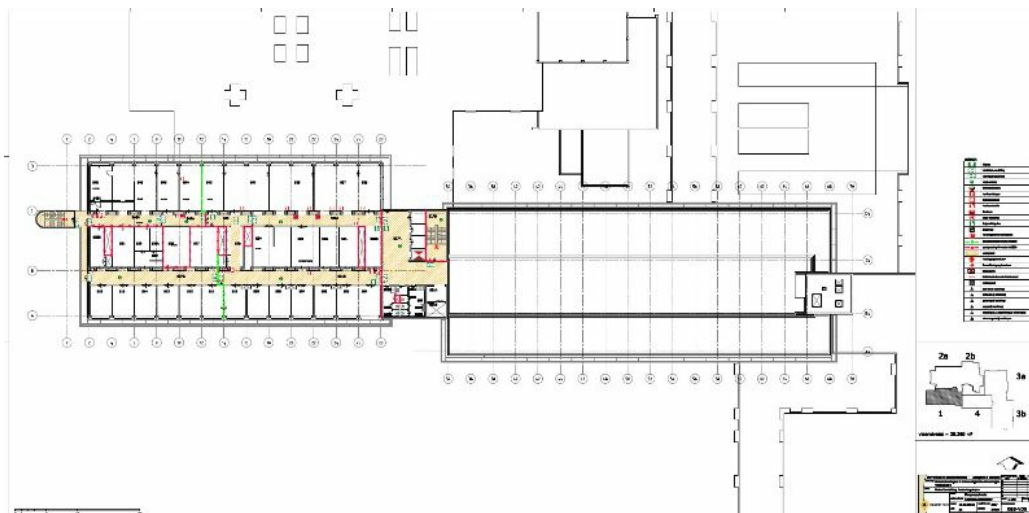
Second floor



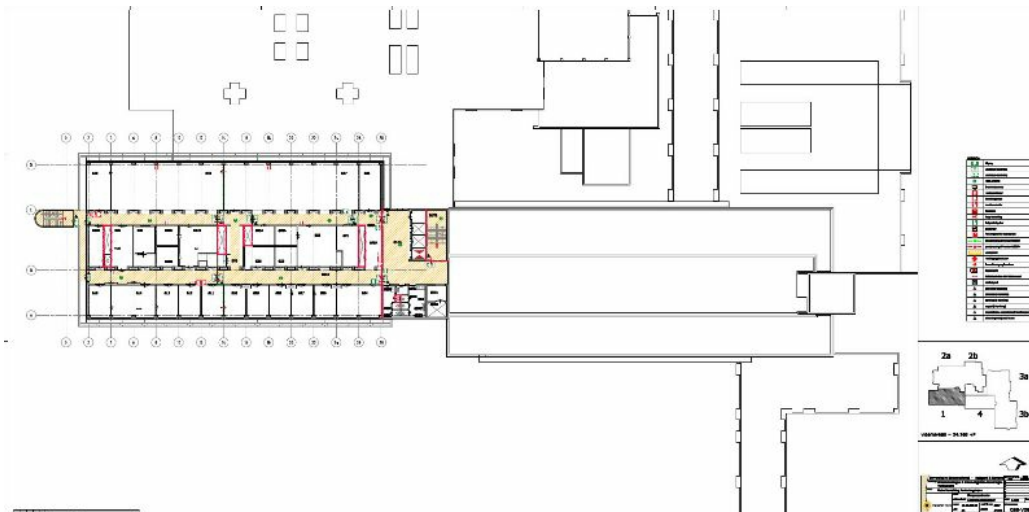
Third floor



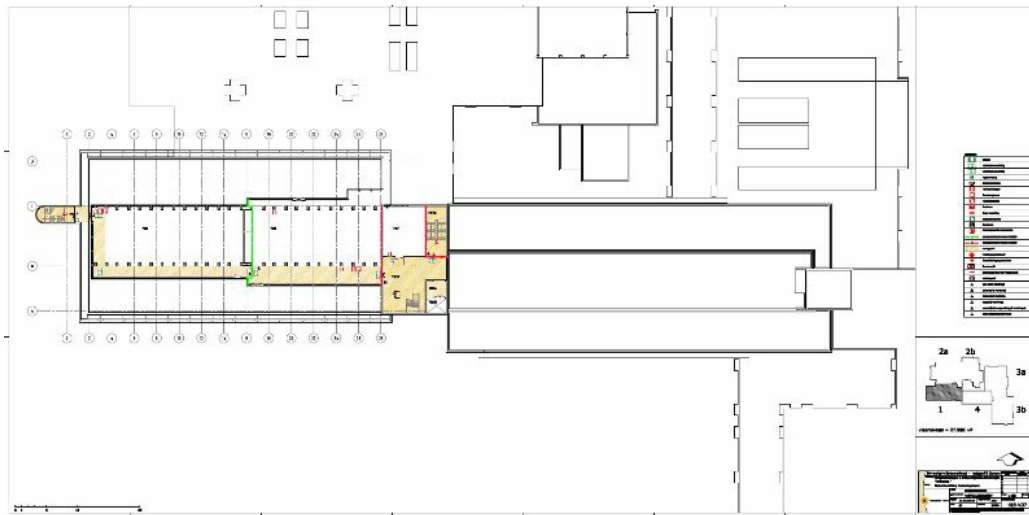
Fourth floor



Fifth floor

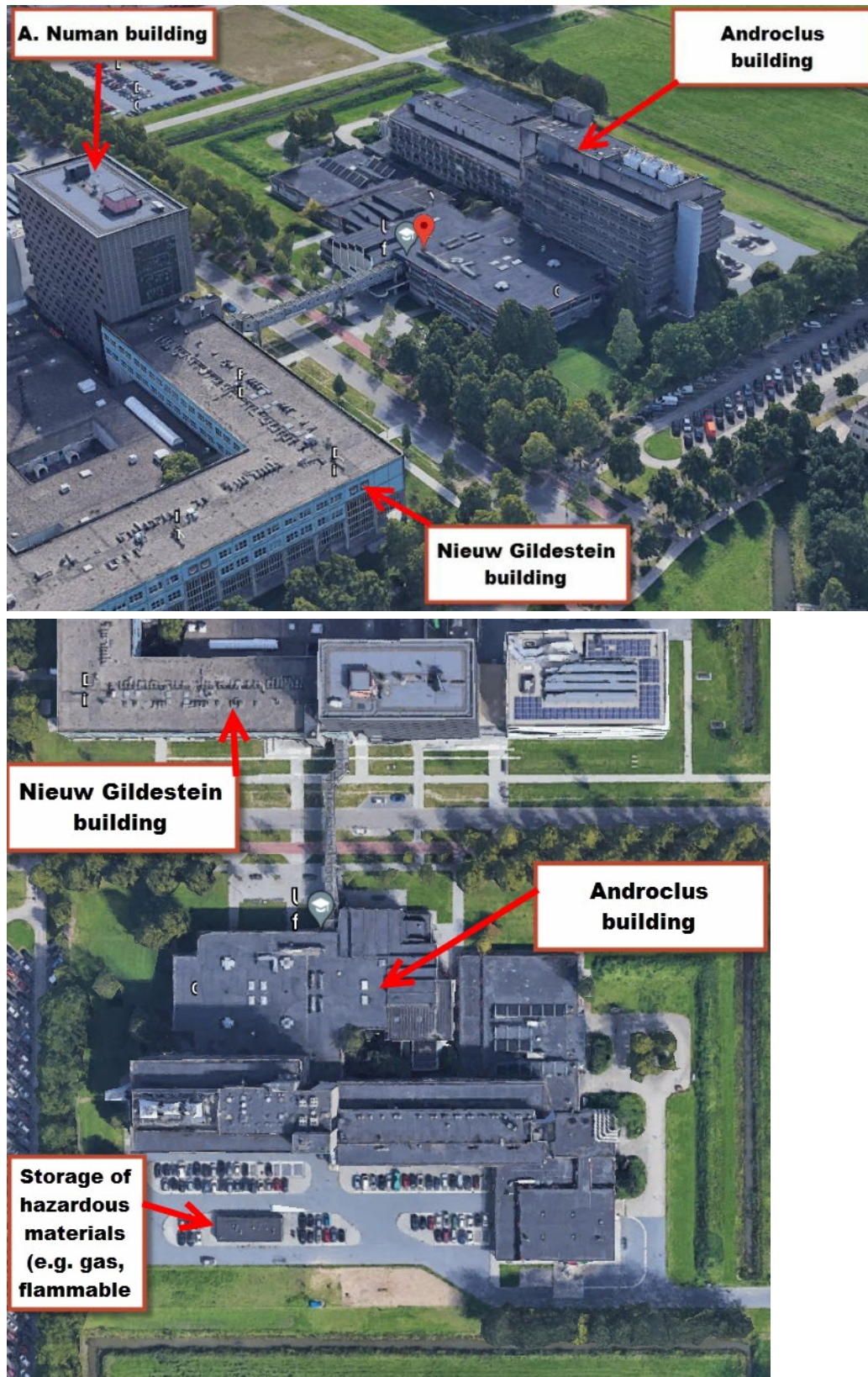


Sixth floor

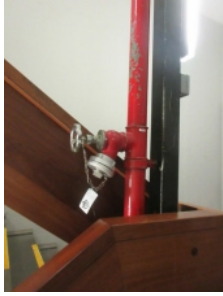


Seventh floor

8.2 Aerial view



8.3 Pictures

		
The Androclus building. In front the overhead corridor to the building Nieuw Gildestein	The rear of the high rise part	Separate storage hazardous materials (Distance approx 25 meter)
		
One of the rooms in the separate storage building	Lecture hall	Class room
		
Small exhibition hall with learning spaces	Fire alarm panel	An example of a laboratory
		
Dry riser	Main entrance	Main entrance
		

The technical room in the basement	Gas supply	Gas detection at the gas supply closing the supply if necessary
		
Emergency Diesel Generator	Water treatment in the top floor	Cooling towers on top of the roof

9. About Aon

Aon plc (NYSE:AON) is a leading global professional services firm providing a broad range of risk, retirement and health solutions. Our 50,000 colleagues in 120 countries empower results for clients by using proprietary data and analytics to deliver insights that reduce volatility and improve performance.

All inspections, reports and recommendations are purely advisory and for the purpose of assisting clients and insureds in risk control and safety procedures. Observations and recommendations are the result of practices and conditions observed and information made available to us at the time of our visit and do not purport to refer to or to guarantee compliance with local, state or federal regulations which may be applicable to such practice and conditions. This report should not be considered a definitive listing of all existing hazards nor an absolute solution to all indicated hazards. No responsibility for the implementation, management and operation of risk control and safety procedures is assumed by Aon Risk Solutions.