

Table of contents

1. Introduction	2
1.1 Introduction	2
1.2 Participants	2
1.3 General	2
1.4 Future plans	2
	2
2. Construction	3
2.1 Construction	3
3. Utilities	4
3.1 Utilities	4
4. Protection	5
4.1 Fire Protection	5
4.2 Security	5
5. Loss Estimates	6
5.1 Values	6
5.2 Breakdown of values	6
5.3 Loss estimates summary table	6
5.4 Loss Scenarios	6
6. Scorecard results	7
6.1 Category scores (histogram)	7
6.2 Category scores (spider web)	7
6.3 Overall scores	7
6.4 Scorecard results	7
6.5 Review comments	10
7. Recommendations	11
7.1 Sprinkler certificate	11
7.2 PV installation - Dutch Scope 12 report	11
8. Lay out, drawings, aerial view and pictures	12
8.1 Lay out & drawings	12
8.2 Aerial view	17
8.3 Pictures	17
	17
9. About Aon	20

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 (22-06-2021) has been accompanied by the following person from the UU organization:
Marco Thien - 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 David de Wiedgebouw location:

The so-called "David de Wiedgebouw" houses research laboratories for the Faculty of Science, Department of Pharmaceutical Sciences, Department of Chemistry of the University of Utrecht. The David de Wied building is the high-end facility where UU research parties come together: the Electron Microscopy Center (EM) as a facility for the faculties of Science, Geosciences, Veterinary Medicine and the UMCU.

The building is built in 2010 and has 7 storey floors. The gross floor area is 21,671 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.

The David de Wied building was completed in 2011 and consists largely of laboratories, as well as office workstations and teaching areas. The building is currently used by various research groups from the Faculty of Science, Department of Pharmaceutical Sciences and Department of Chemistry. For one of the research groups (Cryo-electron Microscopy) additional technically complex facilities/equipment for Electron Microscopy (EM) are required. There is a high-quality EM center on the ground floor. The extension was completed at the beginning of 2021. In addition, laboratory facilities have been realized for three research groups.

1.4 Future plans

There was an extension built for the high-quality Electron Microscopy Center on the ground floor. The is a vibration-free concrete floor installed. This extension was completed at the beginning of 2021.

There are plans to install a sprinkler water tank.

2. Construction

2.1 Construction

A building from the 2011 within general a fire-resistive construction. The load-bearing construction consists of a heavy concrete structure with concrete floors. The roof consists of concrete partly insulated on top by means of PIR FM-approved on top and partly a glass roof (atrium). The building was extended in 2020/2021. The extension was on the ground floor level, where thick concrete vibration-free floors are installed. Cable penetrations are all sealed off properly. Air venting ducts are provided with appropriate fire dampers. The main building construction is made of concrete. The glass roof is partly constructed on steel construction

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 like an air compressor installation 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.

4. Protection

4.1 Fire Protection

Automatic Sprinkler

There is an automatic sprinkler system. The automatic sprinkler is not certified anymore due to the extension project. And because of the Covid pandemic the re-inspection of the sprinkler system is delayed. There are two independent pumps (diesel and electric). There are plans to provide their own water tank. The system was normally certified and audited adequately before the pandemic. The automatic sprinkler minimum design is 5 litres/min/m² over 260 m², Class NIII.

The two automatic sprinkler pumps have a rated capacity of 162 m³/h (equals 2700 litres/min) at a pressure of 4.1 bars getting the water from the municipal water supply. The sprinkler pump is tested every two weeks by a specialized third party.

Alarms are transmitted to a 24/7 alarm centre. The valves have open position monitoring. The installation is inspected twice a year.

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

Some 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 gas detection in the laboratories.

Object extinguisher system

The synthesis laboratory and the server room on the 4th floor are both equipped with an extinguishing gas system.

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 06.00 p.m.

5. Loss Estimates

5.1 Values

Section/Property	Indemnity period	Value	Source	EML (%)	MPL (%)	Third party
Buildings		51,800,000 EUR	Policy	20	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

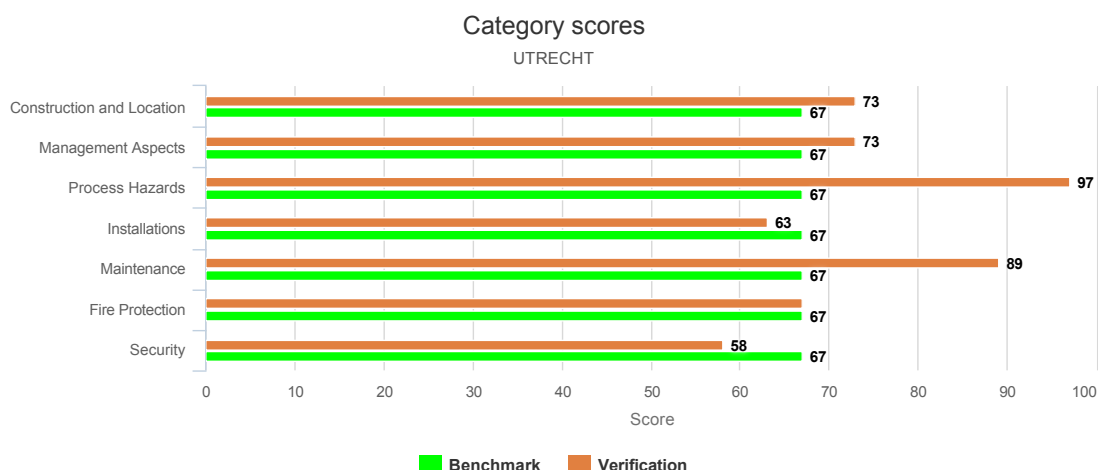
Property Damage / Business interruption	EML (%)	MPL (%)	EML (value)	MPL (value)
Material Damage	20%	100%	10,360,000 EUR	51,800,000 EUR
Business Interruption	0%	0%	0 EUR	0 EUR
Combined	20%	100%	10,360,000 EUR	51,800,000 EUR

5.4 Loss Scenarios

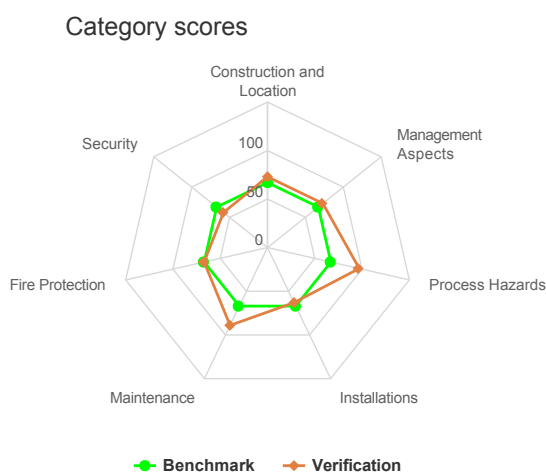
Name	Definition	Scenario
MPL	<i>Maximum Possible Loss scenario(s) according to the CEA 1999 definition. (The Maximum Possible Loss is that which may occur when, the most unfavourable circumstances being more or less exceptionally combined, the fire is only stopped by impassable obstacles or lack of substance).</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 (4-hour) fire separations inside the buildings, the fire can spread throughout the whole complex in worst-case scenarios. This scenario is not likely, due to the presence of the fire department nearby, but cannot be ruled out completely. In this scenario, it is expected the sprinkler system is inactive. Therefore the MPL is set at 100%.
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. 20% of the total insured value for Property Damage. This is based on: • A fire is normally controlled by the automatic sprinklers • Stretched building with an atrium in the middle of the building • If the fire starts in the atrium area it will be controlled by the automatic sprinkler. However, due to the open atrium, there will be smoke and soot damage over a large area. Therefore the EML is set at 20 % and not less.

6. Scorecard results

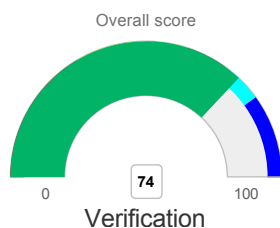
6.1 Category scores (histogram)



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	2	Y
1-03	Wall insulation		1	2	Y
1-04	Combination solar panels vs. roof structure		1	2	N

		Category Weight	Subject Weight	Verification score	Comment
1-05	adjacent buildings		1	3	Y
2	Management Aspects	10			
2-01	Risk Management Policy		1	2	N
2-02	Supervision outside opening hours		1	1	Y
2-03	Self-inspection		1	3	Y
2-04	Smoking policy		1	3	N
2-05	Hot work Procedure		1	3	N
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	3	Y
3-02	Practice rooms: flammable liquids and aerosols		1	3	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	3	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	2	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	1	Y
4-07	Electric bicycles		1	2	Y
4-08	Charging of electric vehicles		1	2	Y
5	Maintenance	10			
5-01	Inspectie elektrische installatie en gereedschappen		1	3	Y
5-02	Inspectie PV installatie		1	2	Y
5-03	Onderhoudsprogramma		1	3	N

		Category Weight	Subject Weight	Verification score	Comment
6	Fire Protection	10			
6-01	Fire department		1	3	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	2	Y
6-06	Fire separations		1	2	Y
6-07	Specific object fire protection		1	N/A	N
6-08	Automatic sprinkler system		1	2	N
7	Security	10			
7-01	Access site and buildings		1	2	N
7-02	Burglary system		1	1	Y
7-03	Security cameras		1	1	N
7-04	Specific computer equipment		1	N/A	N

6.5 Review comments

1-01	Building construction The building has a heavy combined steel concrete load-bearing construction with concrete floors and concrete walls. The roof consists of concrete slabs and in the middle a glass roof above the atrium.	Peter Uri
1-02	Roof insulation The roof insulation consist of PIR, FM-approved.	Peter Uri
1-03	Wall insulation Reportedly, where applicable, PIR FM-approved wall insulation is used	Peter Uri
1-05	Exposures / Adjacent buildings There are no exposures. The first university building is located at approx. 45 meters distance.	Peter Uri
2-02	Supervision outside opening hours Regular opening hours are between 8.00am and 6.00pm. Closing round is done by the security. There is no fence available. 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
2-08	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. Sprinkler heads are not obstructed.	Peter Uri
3-01	Practice rooms: gasses Someof 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 gas detection in the laboratories.	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
4-06	Solar panels The building has a PV installations. Recently a Scope 12 inspection has been conducted. During the survey the report was not available.	Peter Uri
4-07	Electric bicycles There is no strict policy yet. There are no charging stations available.	Peter Uri
4-08	Charging of electric vehicles There are no charging stations for electric vehicles	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
5-02	Inspection solar installation A scope 12 inspection is recently conducted. The report was not yet available during the survey.	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 There are 90-minute, 60-minute and 30-minute fire separations available. Cable penetrations are all sealed off properly. air venting ducts are provided with appropriate fire dampers. In the middle of the building there is an atrium.	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 Sprinkler certificate

<i>ID</i>	2021001	<i>Issued by</i>	
<i>Status</i>	New	<i>Currency</i>	
<i>Category</i>	Physical Protection	<i>Estimated costs</i>	
<i>Subcategory</i>	Automatic Sprinkler	<i>Loss Estimate before</i>	
<i>Priority</i>	High	<i>Loss Estimate after</i>	

The automatic sprinkler system is inspected and maintained according to the standard. Reportedly, during the last inspection, it was not possible to inspect the full installation due to an extension project (Cryo-elektron Microscopie). The project is now ready. Therefore, we recommend that the sprinkler installation be inspected again in the short term in order to obtain a certificate.

If there are deviations, it is highly recommended to resolve these points of attention for the effective functioning of the sprinkler system.

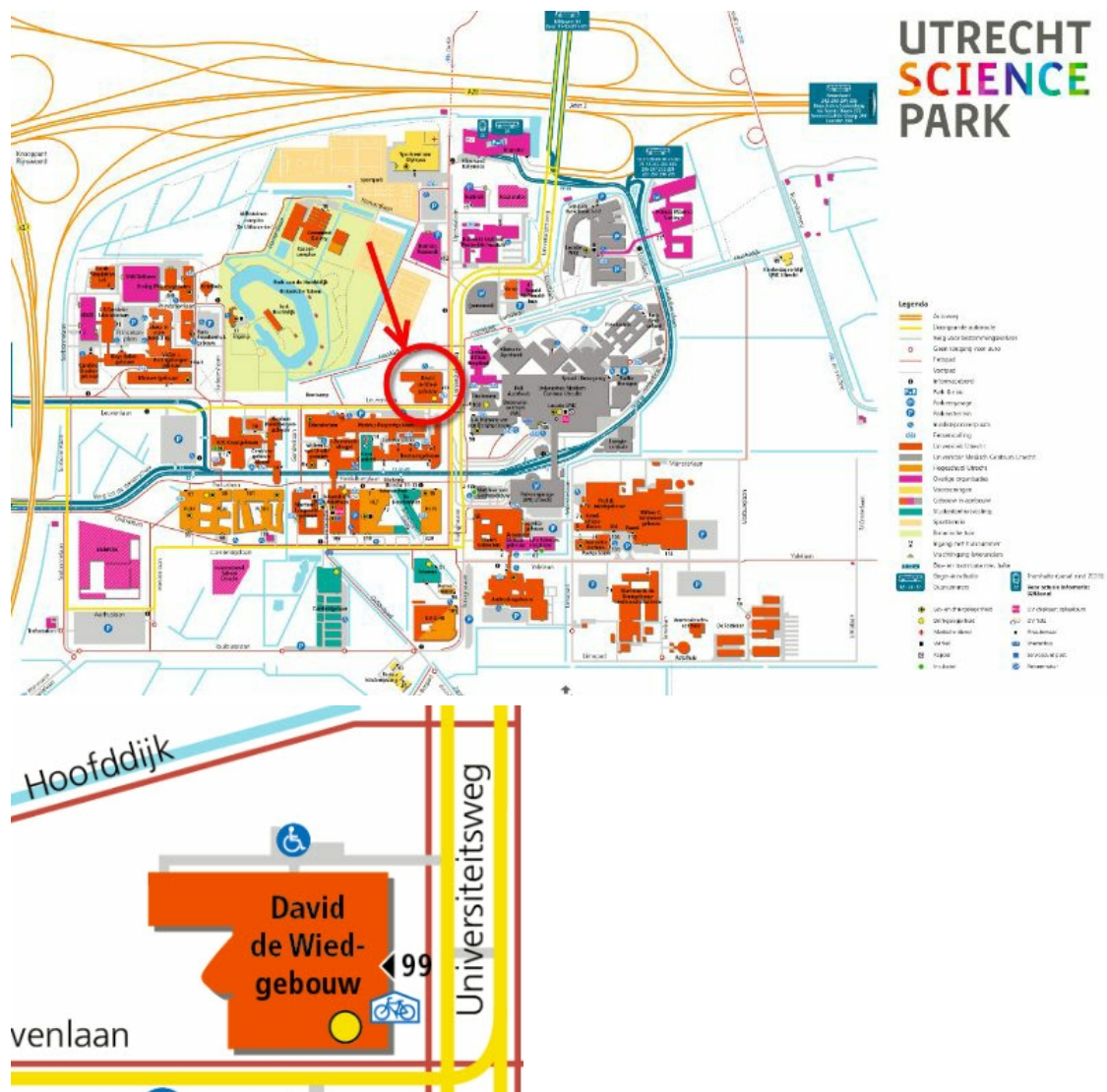
7.2 PV installation - Dutch Scope 12 report

<i>ID</i>	2021002	<i>Issued by</i>	
<i>Status</i>	New	<i>Currency</i>	
<i>Category</i>	Human Element	<i>Estimated costs</i>	
<i>Subcategory</i>	Maintenance and inspection electrical installations	<i>Loss Estimate before</i>	
<i>Priority</i>	High	<i>Loss Estimate after</i>	

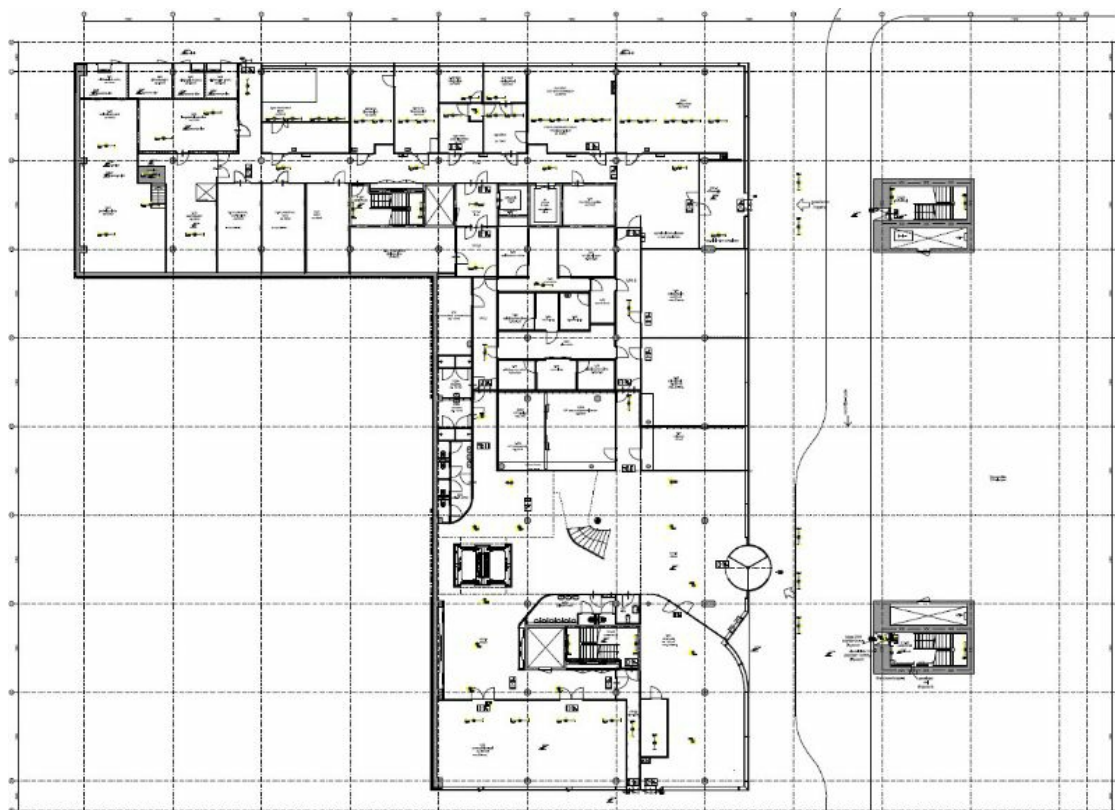
On the roof of the David de Wied building, a PV installation is available. Reportedly this installation has had a recent inspection. The Dutch Scope 12 report was not available during the survey. Also, further specs about this installation are not known. Therefore, it is advised to share the Dutch Scope 12 report. If possible deficiencies emerge from the inspection, we recommend that they be resolved as soon as possible but no later than 4 months after the inspection.

There are more University buildings with PV installations. We also recommend for those buildings to follow up on all deficiencies that emerge from the scope 12 inspections. Resolve the deficiencies as soon as possible but no later than 4 months after the inspection.

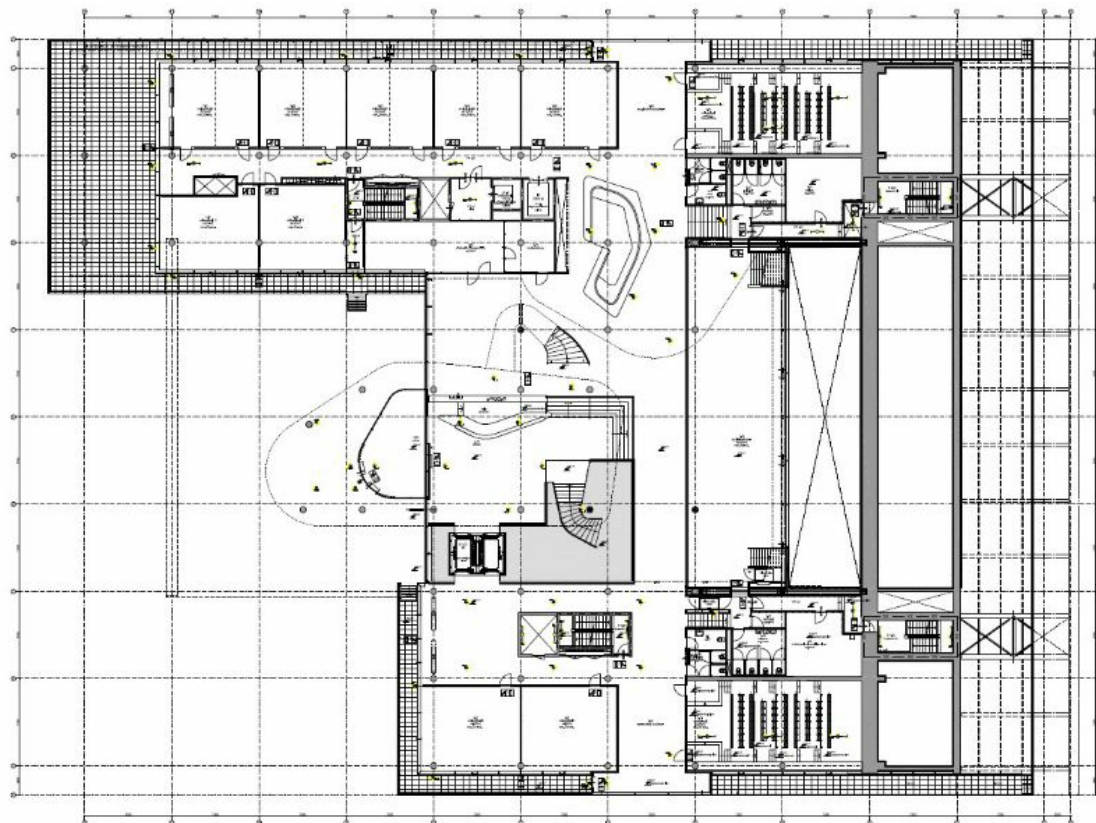
8.1 Lay out & drawings



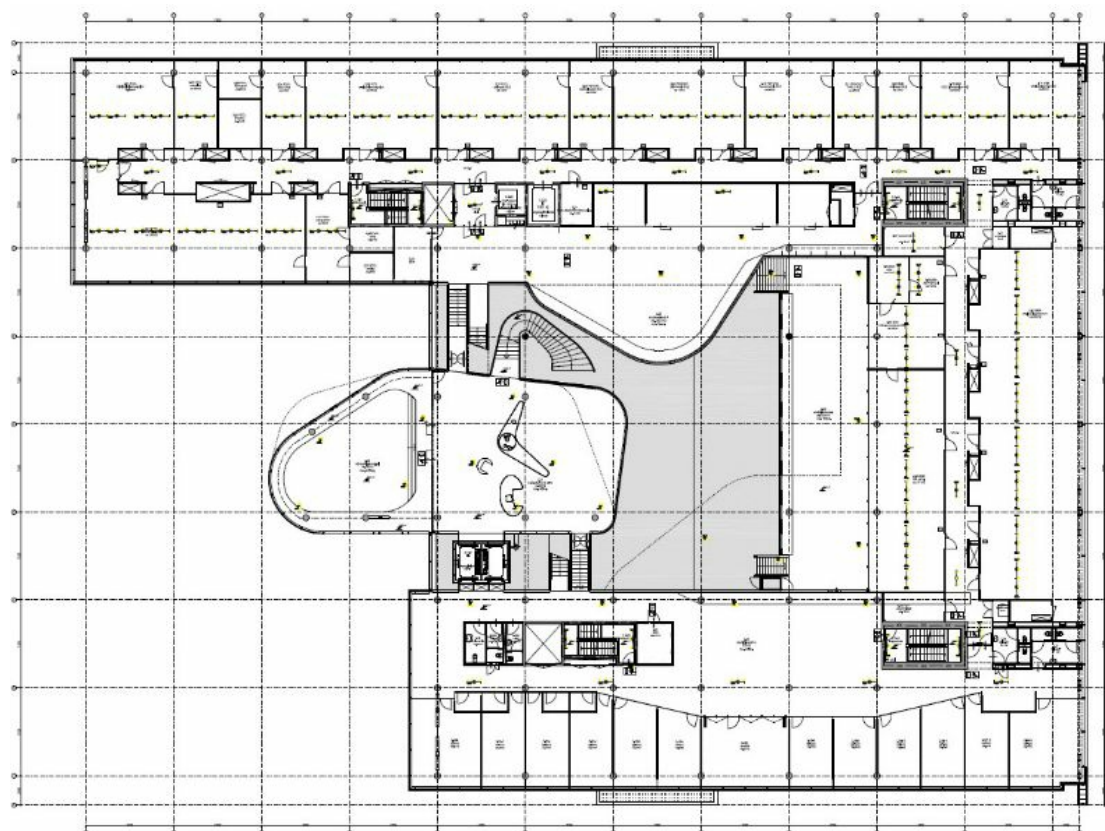
RENVOOI	
MAATVOERING	BOUWKUNDIG
 0,42 collegezaal 1 ca. 50 m ²	 beton in het werk gestort
SYMBOLEN ALGEMEEN	 beton prefab
0,42 collegezaal 1 ca. 50 m ²	 betonkolom volgens opgave PBT diameter kolom
SYMBOLEN BRAND	 betonkolom met stalen klat, volgens opgave PBT diameter kolom
— XXX — WBD90 90 minuten	 staalkolom volgens opgave PBT diameter kolom
— XX — WBD60 60 minuten	 dakisolatie volgens opgave PBT
— X — WBD30 30 minuten	 dakisolatie volgens opgave PBT
 rookwerende 30 minuten	 dakisolatie volgens opgave PBT
 vluchtwegverlichting	 dakisolatie volgens opgave PBT
 vluchtwegverlichting	 dakisolatie volgens opgave PBT
Pb paraflexlaag, volgens NEN-EN 1126	 dakisolatie volgens opgave PBT
S bedlaag, volgens NEN-EN 1126	 dakisolatie volgens opgave PBT
nd nooddeur	 dakisolatie volgens opgave PBT
dbi droge blusleiding	 dakisolatie volgens opgave PBT
 brandlangspijp, afm. 100x100x230mm, 31,3/230, slanglengte 30m, (hol, pocielasser)	 dakisolatie volgens opgave PBT
 brandlangspijp, afm. 80x80x160mm, 31,3/160, slanglengte 30m	 dakisolatie volgens opgave PBT
 pocielasser, afm. 70x30x225mm	 dakisolatie volgens opgave PBT
 brandlangspijp, afm. 870x190mm, 11/190, slanglengte 30m	 dakisolatie volgens opgave PBT
 deur, zelfsluitend, 30min, WBD30	 dakisolatie volgens opgave PBT
 deur, zelfsluitend, 60min, WBD60	 dakisolatie volgens opgave PBT
 alle ruimten spijndieren muur	 dakisolatie volgens opgave PBT



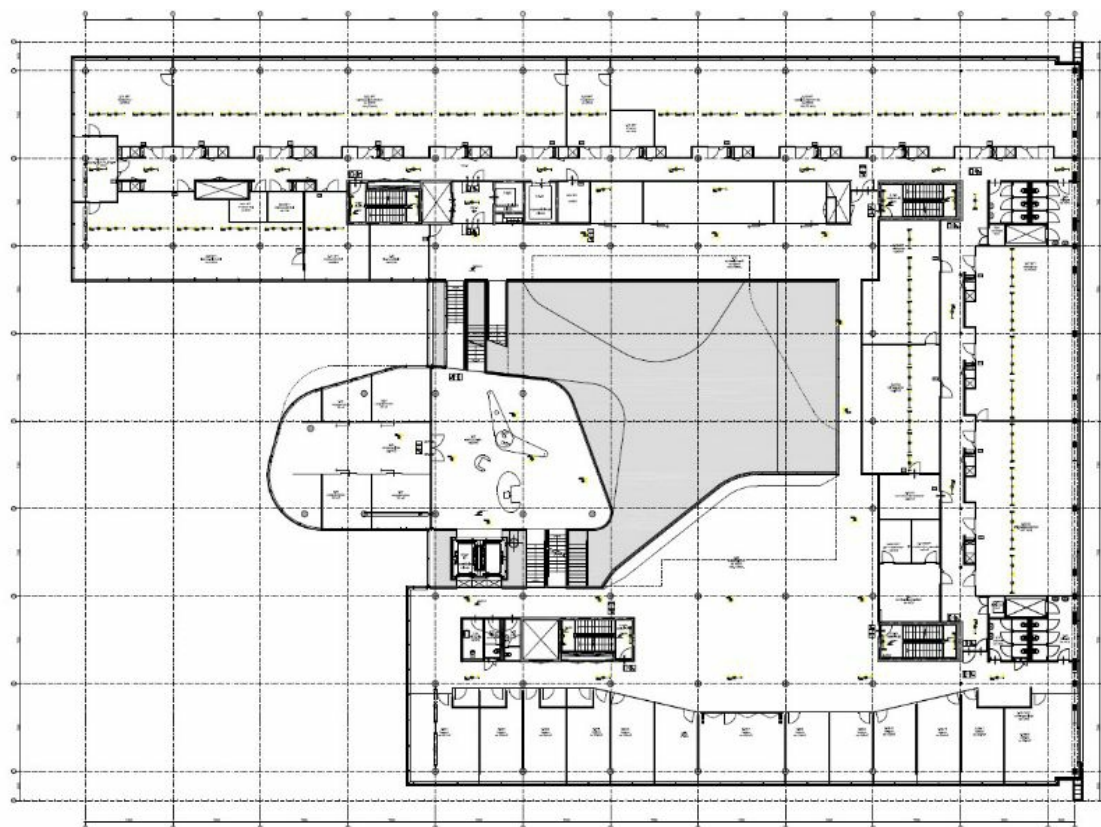
Ground floor



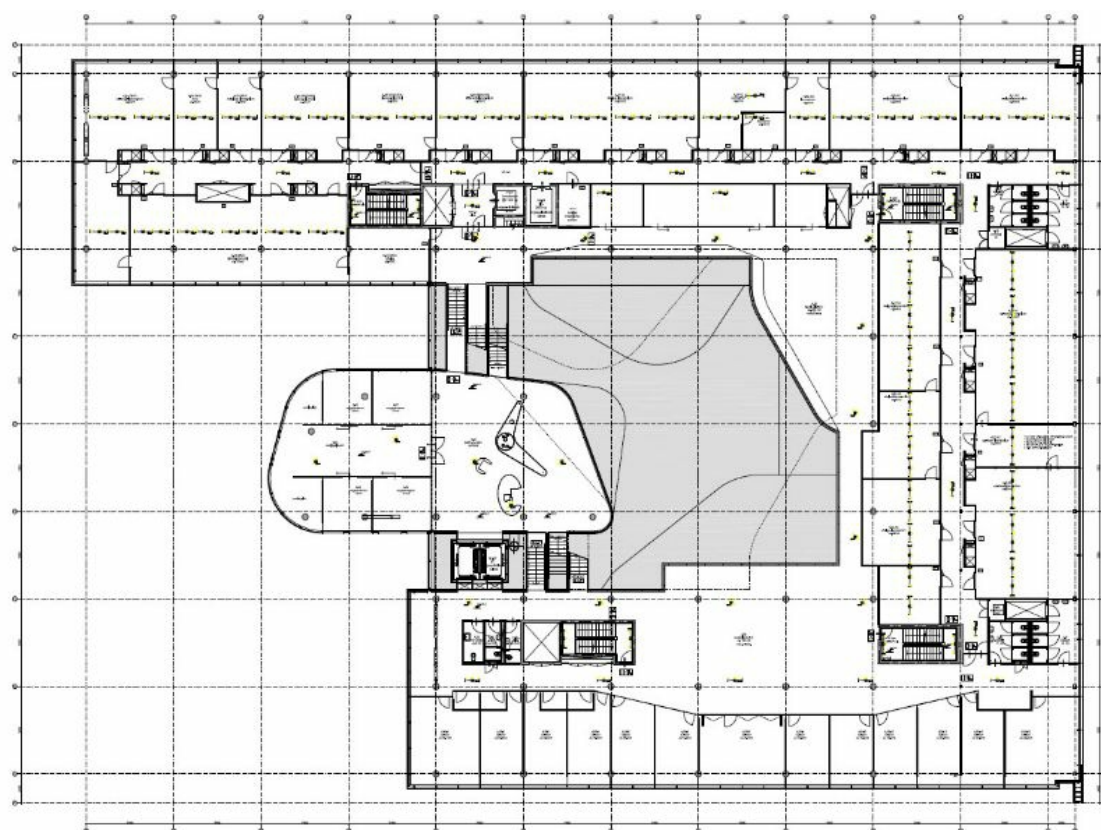
First floor



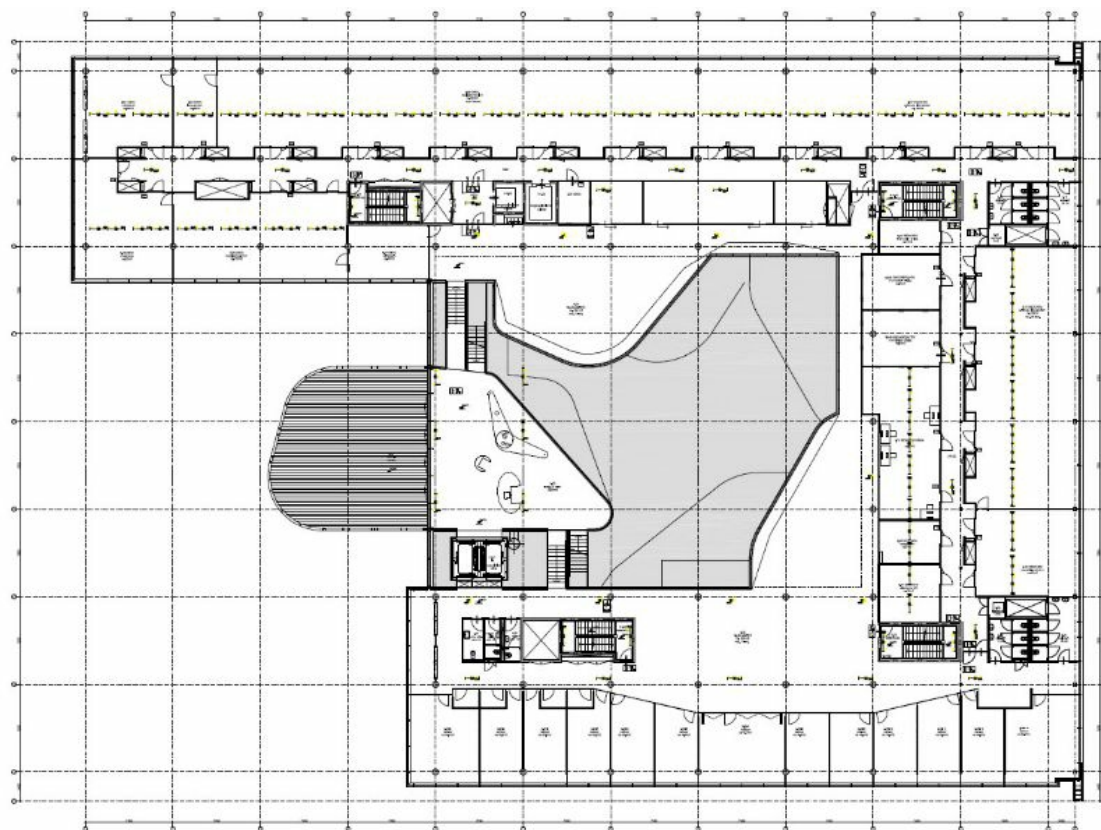
Second floor



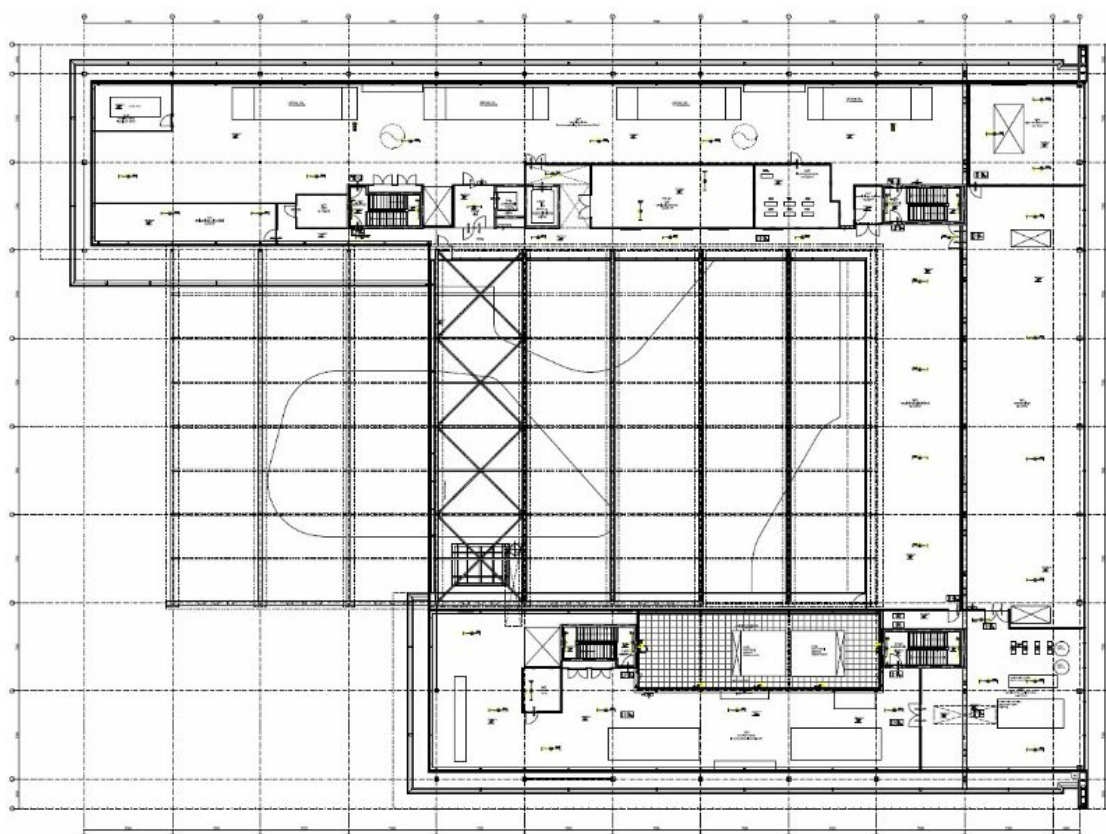
Third floor



Fourth floor

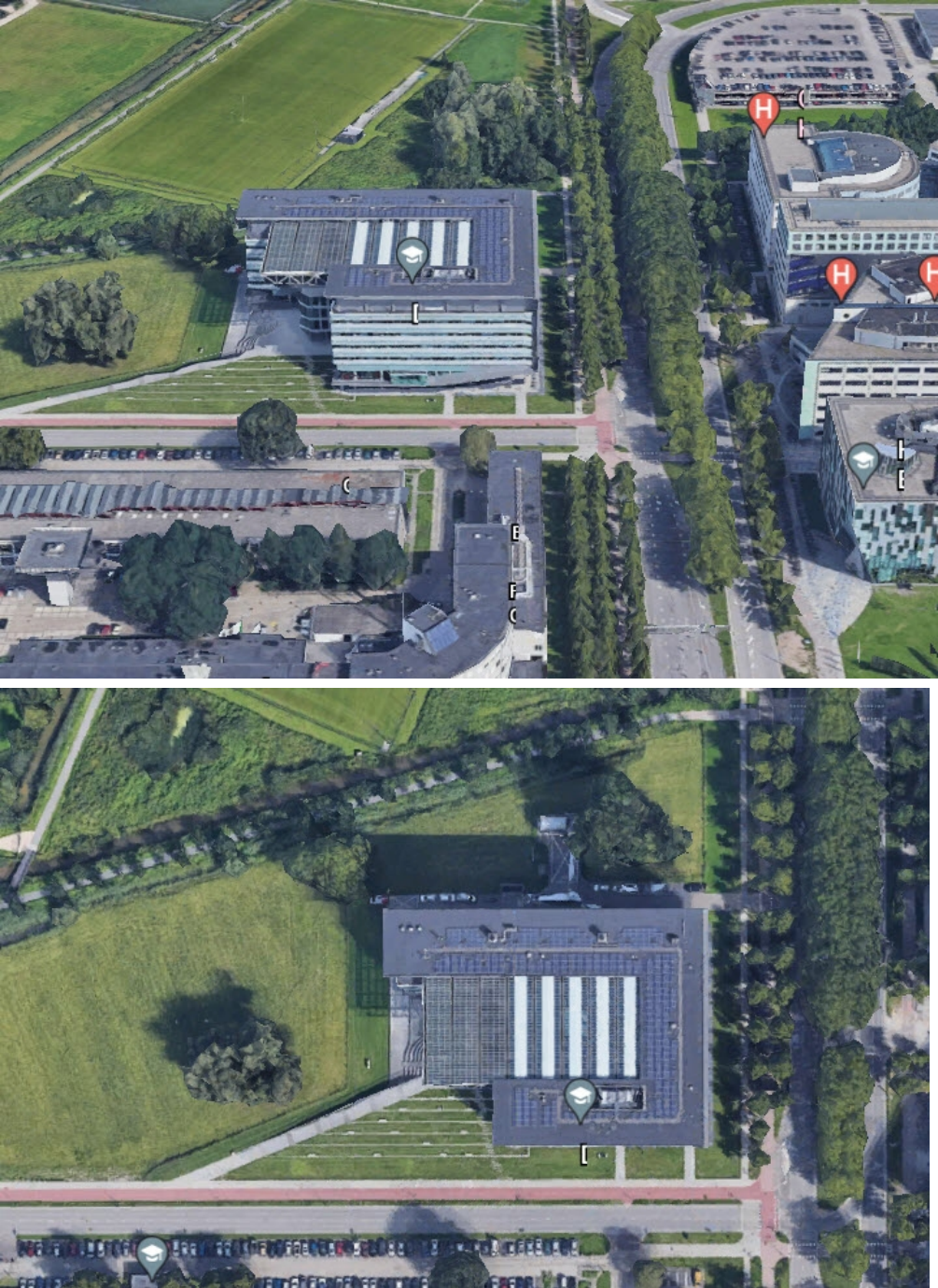


Fifth floor



Sixth floor

8.2 Pictures



8.3 Pictures

		
Rear side (former front side) West side	Atrium	Atrium

		
North side	South side with outdoor bicycle parking and the main entrance	Main entrance indoor
		
Main entrance outdoor	One of the labs	Technical area
		
Server room with aspiration detection and gas extinguishing system	Glass roof	Glass roof and at the right a technical room
		
PV installation	Cabinet for flammable liquids	Sprinkler pumps

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.