



NL Utrecht Nieuw Gildesteengebouw Risk Summary Report 2021 Aon

Onderwijsinstellingen

Location:	Bolognalaan 50 UTRECHT
	, Netherlands
Location code:	UU 1325
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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 Nieuw Gildensteingebouw location:

The so called "Nieuw Gildensteingebouw" houses research laboratory for the veterinary medicine faculty of the University of Utrecht. The building is built in 1988 and has 6 storey floors. The gross floor area is 35,825 m². At ground floor level there are "stables" for research animals such as dogs, mice and rabbits. Porks are only brought in for cardiology surgeries in one of the six surgery rooms at second floor level. These rooms are not as sophisticated as traditional hospital surgery rooms, but are also equipped with X-ray equipment and other expensive medical instruments.

The higher floors are in general half laboratories and half offices.

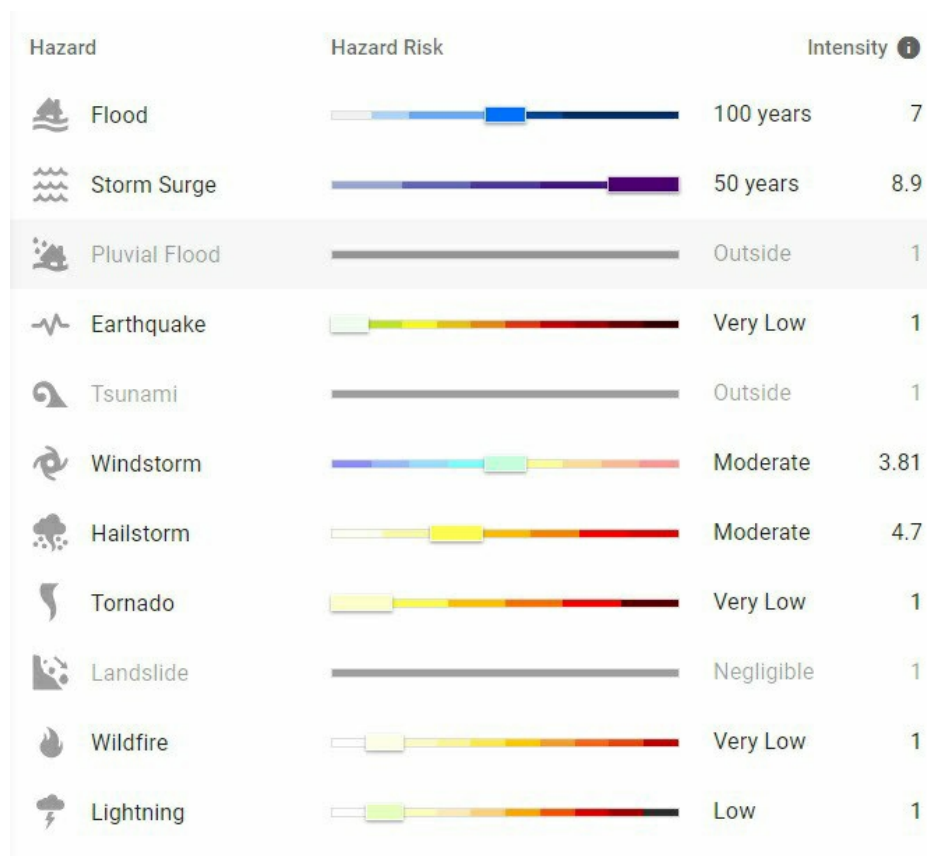
In this building

- Approx. 200 students
- Approx. 150 staff
- Faculty of Veterinary Medicine
- Faculty of Science
- Faculty of Social and Behavioural Sciences
- Departement Institute for Risk Assessment Sciences (IRAS)
- Department Population Health Sciences
- Department Biomedical Health Sciences

Compartmentalization: the fire rating of walls and some doors are upgraded in 2016-2017. Mainly there 20-minute walls/doors and some 60-minute walls/doors (see drawings in chapter 8.1). The fire load can be high in some of the rooms and there are also some high value rooms present without any compartmentalization from each other. E.g. there are six surgery rooms present without any fire- or smoke retardant partitions. Doors are always in open position. Therefore a small fire in one of the rooms will cause smoke and soot damage in all surgery rooms resulting into serious damage to all (electronic) medical equipment.

There is one laboratory room with hazardous materials that may not spread to the environment. Therefore it is agreed with the fire brigade that under fire conditions of this specific room the fire fighting shall be limited to the surroundings but not in this room self. The university and fire brigade prefer to have all the polluted materials burned than spread (with extinguishing) water to the surroundings, causing a much larger problem. However if a fire takes place in this room a fire might become uncontrollable resulting into a loss of the total building.

The human element factors are normally controlled. The housekeeping level is good to excellent. The fire load in some of the rooms is quite high but in general orderly. Smoking is prohibited and no signs of violation of the ban were noted. A hot work procedure is university wide in force and well controlled. There is no yard storage. 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.



* 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

In 2017 the automatic fire detection system was extended, and some firewalls are upgraded. Most of the walls are still 20 min fire resistant. The 60 min fire resistant walls are shown on the drawing in chapter 8.1.

There are plans to left this building between 2025 and 2028 and here after it will be demolished.

2. Construction

2.1 Construction

The building has a heavy concrete load bearing construction with concrete floors and concrete walls. The roof consist of concrete slabs covered with a roof felt and on top a foam plastic insulation and gravel.

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 a good condition. Power strips are not in use.

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.

4. Protection

4.1 Fire Protection

Sprinkler

There is no sprinkler system available.

Fire Detection System

A fire detection system in accordance with the local standards NEN 2535 is installed in the building, which covers estimated approx. (70 %). The security service is notified directly upon a fire alarm and will arrive within 5 minutes at the site. A fire alarm of the automatic detection will be transmitted to the UU emergency response team and an alarm centre. The stable with the animals are not covered because of the sounds of the fire detection system.

Water supply

The public water supply is expected to be adequate.

Fire Rated Compartments

There are limited 60 minutes fire retardant partitions present in the building. Most of the walls are still 20 min fire resistant. The 60 min fire resistant walls are shown on the drawing in chapter 7.1.

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. 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		65,700,000 EUR	Policy	80	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

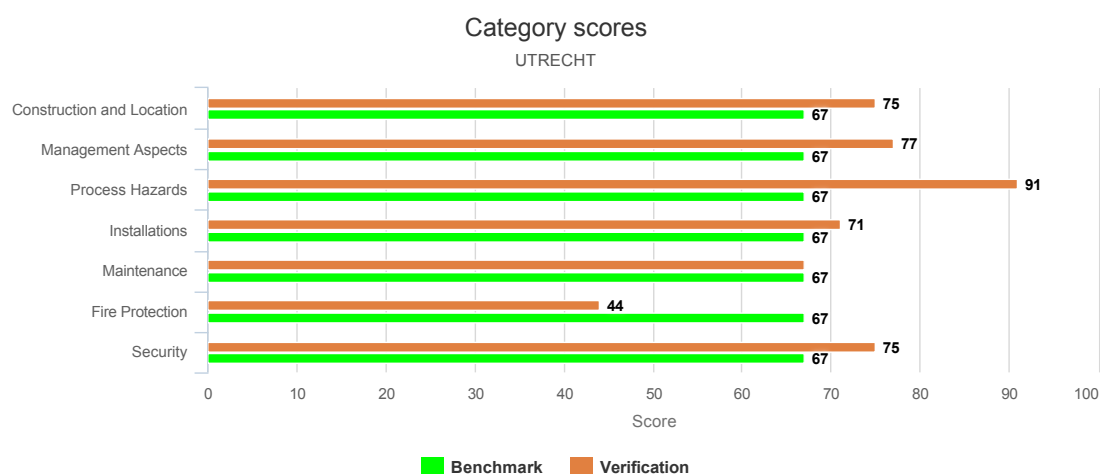
Property Damage / Business interruption	EML (%)	MPL (%)	EML (value)	MPL (value)
Material Damage	80%	100%	52,560,000 EUR	65,700,000 EUR
Business Interruption	0%	0%	0 EUR	0 EUR
Combined	80%	100%	52,560,000 EUR	65,700,000 EUR

5.4 Loss Scenarios

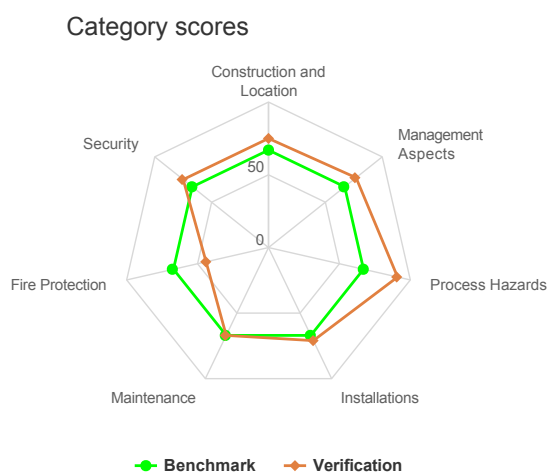
Name	Definition	Scenario
MPL	<i>Maximum Possible Loss scenario(s) according to the CEA 1999 definition. (The Maximum Possible Loss is that which may occur when, the most unfavourable circumstances being more or less exceptionally combined, the fire is only stopped by impassable obstacles or lack of substance).</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 separations inside the buildings, the fire can spread throughout the whole complex in worst-case scenarios. Therefore the MPL is set at 100%. In this scenario, the fire detection impaired. Note: It might be considered to add the value (€ 22.000.000,-) of the Alexander Numan building.
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. 80% of the total insured value for Property Damage. This is based on: A fire will be detected by the automatic fire detection or by somebody who is passing the building (at the opposite side of the street is a dormitory of hundreds of students), and therefore also lots of people passing by. The fire brigade will be alarmed and due to the large dimensions of the building and the heavy concrete construction it might be expected that a part of the building might be saved.

6. Scorecard results

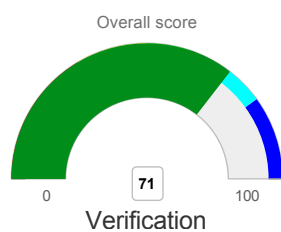
6.1 Category scores (histogram)



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	1	Y
1-03	Wall insulation		1	3	Y
1-04	Combination solar panels vs. roof structure		1	N/A	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	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	3	Y
2-09	Housekeeping technical areas		1	3	N
2-10	Management of Change (MOC)		1	2	N
3	Process Hazards	10			
3-01	Practice rooms: gasses		1	2	N
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	N/A	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	1	Y
4-08	Charging of electric vehicles		1	3	Y
5	Maintenance	10			
5-01	Inspectie elektrische installatie en gereedschappen		1	1	Y
5-02	Inspectie PV installatie		1	N/A	N
5-03	Onderhoudsprogramma		1	3	N

		Category Weight	Subject Weight	Verification score	Comment
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	1	Y
6-06	Fire separations		1	0	Y
6-07	Specific object fire protection		1	N/A	N
6-08	Automatic sprinkler system		1	N/A	N
7	Security	10			
7-01	Access site and buildings		1	2	N
7-02	Burglary system		1	2	N
7-03	Security cameras		1	2	N
7-04	Specific computer equipment		1	N/A	N

6.5 Review comments

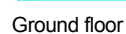
1-01	Building construction The building has a heavy concrete load bearing construction with concrete floors and concrete walls. The roof consist of concrete slabs.	Peter Uri
1-02	Roof insulation The roof consist of concrete slabs covered with a roof felt and on top a foam plastic insulation and gravel.	Peter Uri
1-03	Wall insulation There is no wall insulation available.	Peter Uri
1-05	Adjacent buildings / Exposures The premises are located on the faculty estate East of the city Utrecht. Next to Nieuw Gildestein is the Alexander Numan building constructed (partly next and partly above (8 meters) above the Nieuw Gildestein). There is no internal passing between the two buildings. The Alexander Numan building is non sprinklered and houses many laboratories of tenants. Both buildings represent together one single fire area. Another next door neighbour is limited to the building Nieuw Gildestein across the street at some 30 to 40 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 2026 and 2028). At the rear of the building is the open structure parking garage of the academic hospital present at some 5 meters distance. However, the wall of the insured building is a concrete wall with hardly any openings. The risk is adequate controlled. At the rear is also an office building at some 20 meters distance. Due to the distance is the risk adequate controlled.	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. 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
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.	Peter Uri
4-08	Charging of electric vehicles Charging of electric vehicles is not done at this unit.	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. Sufficient water supply can be expected.	Peter Uri
6-05	Automatic fire detection The automatic fire detection system was extended in 2017—almost all floors (including technical equipment areas) are fully covered. However, reportedly, on the ground floor, detection is available but not at the stables, as the insured wants to prevent noise over there to keep the animals in a quiet environment.	Peter Uri
6-06	Fire separations Openings in fire walls are sealed off with non-combustible material (documented). There are some 20 and limited 60 minutes fire retardant partitions present in the building.	Peter Uri

7. Recommendations

7.1 New construction and renovations plans

<i>ID</i>	2021001	<i>Issued by</i>	
<i>Status</i>	New	<i>Currency</i>	
<i>Category</i>	Human Element	<i>Estimated costs</i>	
<i>Subcategory</i>	Future Plans - Constructions/Specifications	<i>Loss Estimate before</i>	
<i>Priority</i>	Advisory	<i>Loss Estimate after</i>	

Reportedly, there are some long term plans to built a new building for this faculty. The fire behaviour of the building materials that are used largely determines the fire safety of a building. This applies not only to the flammability of the materials but also the structure of materials. It is highly advisable to opt for non-combustible materials, such as roof and facade insulation and construction parts, for new construction and renovations. It is advisable to involve a Risk Consultant from Aon at an early stage in the case of new construction and more extensive renovations.



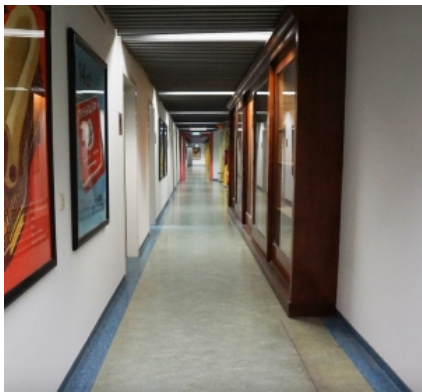




8.2 Aerial view



8.3 Pictures

		
Nieuw Gildenstein building	Nieuw Gildenstein building	Main entrance
		
Reception	Corridor	Evacuation plan
		
Fire detection	Fire detection	Technical area

		
Corridor	Corridor	The roof of the lower part and at the rear the South side of the building
		
All exhaust pipes for hoods of the higher 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.