

Risk Engineering Report



Prepared for:

Stichting BVE Zuid-Limburg

Site Name: Sibemaweg 20

Date of Survey: April 11, 2024

Report Date: May 1, 2024

Survey Type: Property All Risk - Initial

TIV (EUR): 73,881,000

Site Address: Sibemaweg 20, MAASTRICHT, 6224 DC, Netherlands

Latitude: 50.846477

Longitude: 5.717482

RFS ID: RFS-198498

SIC Code: 8211-02-Elementary and Secondary Schools, Private

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- A Fire Protection Impairment Program that includes insights into Managing Fire Protection System Impairments, a notification form, and downloadable or pre-printed tags. Available in multiple languages.
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- Tips sheets that offer guidance and checklists to use before, during and after extreme weather events

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Questions or special requests: Email: globalproperty.impairment@aig.com

Fire Protection Impairment Hotline for reporting fire protection system outages:

- 1-877-705-7287 (US & Canada) or 1-817-490-3255 (Global)
- Email: globalproperty.impairment@aig.com or reach out to your dedicated account risk engineer

Purpose of Visit

This facility was visited to undertake a risk assessment of the fire and associated perils for insurance purposes. The purpose of the assessment was to assist in the identification and mitigation of hazards and exposures that could lead to the loss or damage to assets or business interruption.

Site Overview

VISTA college is a regional training center for intermediate vocational education in the South Limburg region. The site described in this report at the Sibemaweg 20 Maastricht the second largest location of Vista. A wide range of practical and theoretical training is provided at this location. The highest risk are studies being the technical courses with welding and other heat related activities. About 400 people work here (teaching and non-teaching) and about 3,500 students at this, not all present. The building is open on weekdays from 7:30 to about 17:30.

The site is in the urban area at the east side of Maastricht, on the premises there are three interconnected buildings by a non-combustible bridge:

- Center building: a steel and concrete load bearing structure. Brickwork and for the largest part aluminum with glass windows walls. The floors are made of concrete and the roof is a steel deck. The insulation used on the roof is mineral wool, with bitumen roof finish.
- North building: a concrete and brickwork load bearing structure, with brickwork walls. In the walls, where present mineral wool was used as insulation. The floors and roof are made of concrete. The insulation used on the roof was unknown during site visit and therefore combustible is considered.
- West building: concrete and steel load bearing structure, with brickwork walls. In the walls, where present mineral wool was used as insulation. The floors and roof are made of concrete and steel, with a large steel/ glass atrium in the middle. Unknown insulation, therefore combustible is considered.

Between the sprinklered Center building and other buildings there are 60-minute fire-resistant separation and some 30-minute fire rated wall according Dutch building code for safe evacuations, no MFL separations. The center building is protected by a sprinkler system the other two buildings only benefit from a partial automatic fire detection system. Beside fire detection CO2 and gas detection is in place. The site is not fenced, provided by a burglary protection system and during daytime a security guard is present.

Organizational and procedures are for the most up to date, improvement could be gained.

Risk improvements discussed and noted are:

- Extend automatic fire detection to all technical rooms in building N and W.
- Implement hot work permit
- Housekeeping, remove combustible materials from technical rooms.
- Limit the use of extension cords and private equipment.
- Intensify self-inspection (in relation to other recommendation noted).
- Implement a water exposure plan.

Site Loss History

No large losses reported during site visit, although that several water (small) damages due to heavy rainfall.

New Projects, Significant Changes and Observations

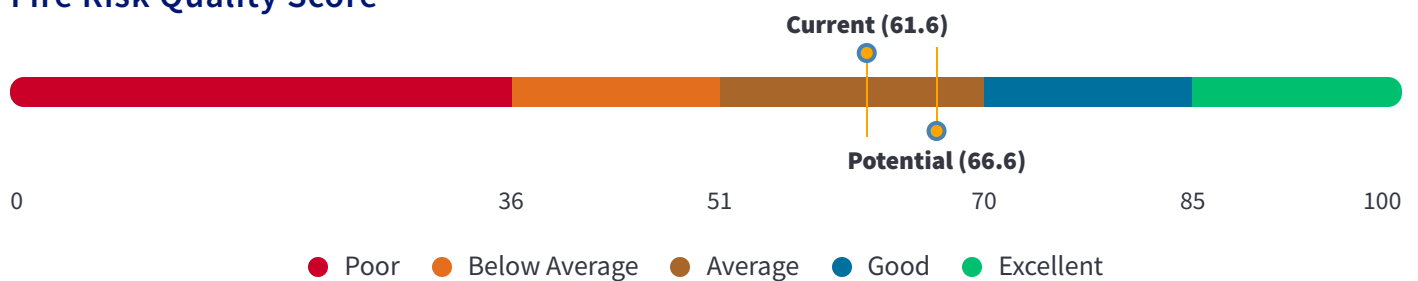
It is important to involve your insurer in new projects, such as refitting, refurbishment, extension work, new builds or relocating to a new site. Failure to do so could result in using non-approved construction materials (even though they meet local Building Codes and Fire Regulations) or inadequately protected facilities which could lead to expensive retrospective additions or rework. The Loss Prevention Engineering team at AIG can assist you with this by providing you with engineering support both before and during your project. Please contact us before you commence your project to ensure that we can arrange a consultation with one of our engineers.

No changes planned for this site in the coming years.

Risk Summary

Open RI by Classification	7	Open RI by Age	7	Open RI by Type	6
Critical	0	New	7	Management Programs	3
Important	7	Outstanding	0	Physical Protection	3
Advisory	0	Completed RI	0		

Fire Risk Quality Score



Ratings

	Current rating	Potential rating
Hazards	Slight	Slight
Water Supply	Adequate	Adequate
Protection	Nearly Adequate	Nearly Adequate
Management Programs	Adequate	Adequate
Supervision	Adequate	Good
Exposures	Slight	Slight

Risk Improvements

Risk Improvements - Open

Number	Name	Classification	LE Before (EUR)	LE After (EUR)
24-04-01	Extend AFD building North & West	Important	--	--
24-04-02	Hot Work Program- Improve	Important	--	--
24-04-03	Housekeeping- Remove combustibles from technical rooms	Important	--	--
24-04-04	Self Inspection Plan- Improve	Important	--	--
24-04-05	Flood (rain) emergency response plan - develop	Important	--	--
24-04-06	Provide required information	Important	--	--
24-04-07	Electric: Private owned and extension cords must be removed	Important	--	--

Note: Risk Improvements associated with management programs will not have an associated Loss Estimate before or after implementation

Open Risk Improvements : Important

Number/Type	Name	LE Before (EUR)	LE After (EUR)
24-04-01 Physical Protection	Extend AFD building North & West		

Summary

Extend the existing fire detection system by installing smoke detectors in the technical areas of building North and West. The detectors should be listed and installed in accordance with the applicable 'Programma van Eisen' (not in possession of AIG) and the NEN2535.

Details

Detectors are currently installed in the largest part of the facility. Extending the system into all areas will provide prompt notification of a fire in the area. This would increase the likelihood of quick response by emergency personnel and help to reduce property damage and the impact on business operations.

Number/Type	Name	LE Before (EUR)	LE After (EUR)
24-04-02 Management Programs	Hot Work Program- Improve		

Summary

Improve the existing hot work permit by:

- By ensuring that the permit is completed and signed off accordingly after the completion of work.
- Extending the fire watch and monitoring period to a 1 hour continuous fire watch after hot work has been completed and a 3 hour intermittent fire watch thereafter.
- Extending the clearance area around the hot work area to 10m
- Including a check to ensure detection is reinstated after hot work operations.
- Including an audit system to assess precautions and the permit for active hot work operations during large maintenance periods.

Details

Improper cutting and welding is a leading cause of fire. Loss history shows that some hot work fires can start some distance away from where the work is taking place, sometimes well after the work has been completed. A hot work permit system ensures that proper precautions are in place prior, during and after this work is completed. All hot work

operations taking place outside designated workshop areas should be performed under this program, including work by contractors.

Number/Type	Name	LE Before (EUR)	LE After (EUR)
24-04-03 Management Programs	Housekeeping- Remove combustibles from technical rooms		

Summary

Remove the combustible materials from the technical rooms.

Details

A fire involving the combustible materials may contribute to the smoke contamination of the equipment within the room.

Images



Storage in TR



Storage in TR

Number/Type	Name	LE Before (EUR)	LE After (EUR)
24-04-04 Management Programs	Self Inspection Plan- Improve		

Summary

Improve the existing self inspection plan to include the following:

- Technical rooms are free of storage.
- Use of extension cords

- The use of private (home) appliances

These point are noted based upon the deviations and recommendation noted in this report.

Details

Fire safety inspections can identify potential hazardous situations and ensure they are corrected on a continuous basis. Those assigned plan responsibilities should be trained in its implementation.

Number/Type	Name	LE Before (EUR)	LE After (EUR)
24-04-05 NATCAT	Flood (rain) emergency response plan - develop		

Details

Create a site specific Flood Emergency Response Plan that addresses the following:

- An overview of flood hazard.
- How flood conditions will be monitored.
- Detailed description of flood response actions including a timetable that indicates when each action should be implemented.
- Responsibilities during flood event with specific people identified.
- Contractors list/phone numbers including agreements.
- Schedule for updating plan and practicing flood emergency response

Obtain temporary flood barriers to be installed prior to anticipated flood events. A number of vendors make temporary flood barriers that can be assembled relatively easily, moved into place, anchored, and erected. Training and annual drills should also be conducted so personnel know how to deploy the barriers. Proper storage, including cleaning after deployment, is necessary to protect the materials over long periods.

Client Exit Conference Comments

A well prepared and practiced FERP is a proven method for reducing flood exposure.

Temporary barriers can stop floodwaters before the impact a facility and are typically most effective for flood depths on 3 feet or less. The location and timing of installation should be pre determined and there must be adequate warning time for installation to occur.

For additional information: <https://www.aig.com/content/dam/aig/america-canada/us/documents/business/property/flood-tip-sheet.pdf>

Number/Type	Name	LE Before (EUR)	LE After (EUR)
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Risk Engineering Report

Stichting BVE Zuid-Limburg

AIG

Number/Type	Name	LE Before (EUR)	LE After (EUR)
24-04-06 Physical Protection	Provide required information		

Summary

Provide the following information (as noted in the e-mail April 12th 2024):

- latest sprinkler inspection report
- specification of insulation in roof of building North and West.
- drawings (site overview and compartmentation).

Number/Type	Name	LE Before (EUR)	LE After (EUR)
24-04-07 Physical Protection	Electric: Private owned and extension cords must be removed		

Summary

Remove all private owned electrical equipment. An alternative is yearly checking the equipment according NEN3140. Also use extension cords only as a temporary solutions (1 day). For equipment fixed connections must be realized. Looping of extension cords should also be avoided.

Details

Electrical equipment brought from home is often outdated, damaged and poses an increased risk of a technical effect that could result in a fire. A large proportion of fires are caused by electrical installations and equipment. Correct use and periodic inspection minimize the risk.

Occupancy & Process Overview

VISTA college is a regional training center for intermediate vocational education in the South Limburg and Venlo region of the Dutch province of Limburg. VISTA was formed on August 19, 2019 from a merger between ROC Leeuwenborgh and Arcus College

This Maastricht at the Sibemaweg 20 is the second largest location of Vista. A wide range of practical and theoretical training is provided at this location such of personal care, such as barbers and beauticians up to technical studies like plumbing and mechanical engineering. The highest risk are studies being the technical courses with welding, grinding and other hot work type of activities. Students from the Security and Surveillance program also help provide security for this building.

About 400 people work here (teaching and non-teaching) and about 3,500 students at this location. The occupancy rate is < 60% on average.

The building is open on weekdays from 7:30 to about 17:30.

Occupancy Details

Building	SIC Code	Description	Operating Days/yr	Operating Hrs/Day	Other Tenants
Sibemaweg 20	821102	Elementary and Secondary Schools, Private	260	12	No

Hazards

Hazard Category	Type	Current Rating	Potential Rating	RI's
Heating, Ventilation, Air Cond & Refrigeration	Common	No Deficiencies	No Deficiencies	0
Electrical	Common	Slight	No Deficiencies	1
Storage	Common	No Deficiencies	No Deficiencies	0
Flammable Liquids - Storage, Transfer, Use	Common	No Deficiencies	No Deficiencies	0
Flammable Gases - Storage, Transfer, Use	Process	Low	Low	0
Commercial Cooking	Process	Slight	Slight	0

Non-Process HVAC Equipment

Natural gas is used for building heating. It is supplied from the public grid, via an outside pressure reducing station. Gas lines are subject to periodic inspections. Building heating is mostly done by gas fired boilers in separate boiler rooms, in the technical rooms. Boiler rooms are fire proofed and ventilated. Annual maintenance is done by a specialized party. In addition, periodic safety checks are performed by an accredited SCIOS company, as required per Dutch law. HVAC in separated compartment, equipment maintained by specialized contractor.

In several practical classroom students are trained in installing and maintaining gas fire equipment. Classrooms are fitted with gas and CO₂ detection.

Images



Gas fired boilers



Compartment gas fire heating

Electrical

Electrical installation is fed by transformers located in the building in separate 60' fire compartments. Capacity of the transformers is unknown. They are oil filled and owned by utility company. Maintenance of transformers is the responsibility of the utility company.

The electrical installation is subjected to inspection according to the Dutch standard, like SCOPE 8, which comprises visual inspection of all installation parts and checks by measurements.

During the site visit several private owned equipment was present and extension cords. Private owned equipment should be removed, and extension cords should only be use as a temporary connection. For this a risk improvement is noted.

Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Electric: Private owned and extension cords must be removed 24-04-07	0	0

Incidental Storage

Small storage rooms, rooms are below 100m². The overall fire load in the building is limited.

Incidental Flammable / Combustible Liquids & Gases

Storage of flammable liquids in steel enclosed fireproof cabinets. In a room, accessible from the outside, a dedicated storage cabinet cylinders with different gasses are stored. Cylinders are secured to the wall.

Images



Gascilinders

Restaurant/ Canteen

A commercial kitchen is present with standard equipment, including ovens and deep fat fryer. The deep fat fryer is not fitted with an automatic extinguishing system. Standard safety measures in place. Maintenance and cleaning conducted by a specialized contractor.

Images



Kitchen

Practical classrooms

Different technical class room are present, like: woodworking, metalworking, plumbing, electrical engineering, and so on. The classrooms contain standard machines such as milling machines, lathes, sawing machines (wood and steel), and so on. Only the extraction system for (wood)dust is fitted with a stand alone suppression system. Not present at extraction systems for the other equipment. Standard extraction systems with probably combustible filters.

For the personal care, such as barbers and beauticians courses limited quantities of flammable in consumer packaging are used.

Specialized contractors maintain machines, equipment and handheld appliances.

Images



Dust extraction system - stand alone extinguishing



Practical classroom - welding

Construction

Category	Current Rating	Potential Rating	RI's
Construction	ISO 4 with combustible metal deck roofs / Class C	ISO 4 with combustible metal deck roofs / Class C	0

Building	Year Built	# Stories	Height (m.)	Total Area (sq. m.)
Sibemaweg 20	1960	4	12	12,150

Area (1,000 sq. m.)

Building	ISO1/D	ISO2/C	ISO3/C	ISO3/B	ISO4/C	ISO4/B	ISO5/A	ISO6/AA
Sibemaweg 20	--	--	--	--	6.7 (54.73%)	5.5 (45.27%)	--	--
Total	0.0 (0.00%)	0.0 (0.00%)	0.0 (0.00%)	0.0 (0.00%)	6.7 (54.73%)	5.5 (45.27%)	0.0 (0.00%)	0.0 (0.00%)

Definitions: ISO1=wood frame walls roof, ISO2=masonry walls wood roof, ISO3=light non-combustible walls roof, ISO3 (CMD)=ISO3 with combustible metal deck, ISO4=non-combustible metal deck and masonry walls, ISO4 (CMD)=ISO4 with combustible metal deck, ISO5=modified fire resistive walls roof, ISO6=fire resistive walls roof.

Comments

Construction:

The site consist of three interconnected buildings:

- Center building constructed in 2004: A round building with a steel and concrete load bearing structure. Brickwork and for the largest part aluminum with glass windows walls. The floors are made of concrete and the roof is a steel deck. The insulation used on the roof is mineral wool, with bitumen roof finish. The building has a basement and three above ground levels. Building height is approximately 20 meter.
- North building constructed in 1960: concrete and brickwork load bearing structure, with brickwork walls. In the walls, where present mineral wool was used as insulation. The floors and roof are made of concrete. The insulation used on the roof was unknown during site visit and therefore combustible is considered. The building has a basement and two above ground levels. Building height is approximately 7 meter.
- West building constructed in 1975: concrete and steel load bearing structure, with brickwork walls. In the walls, where present mineral wool was used as insulation. The floors and roof are made of concrete and steel, with a large steel/ glass atrium in the middle. The insulation used on the roof was unknown during site visit. The roof felt different during the visit from soft, suggesting mineral wool to hard which may mean polystyrene. Therefore

combustible is considered. The building has a basement and three above ground levels. The building has four above ground levels. Building height is approximately 17 meter.

- The three building are connected by a steel/ concrete bridge at first level (C<->N and C<->W. The bridges are rated non-combustible.

Fire-resistant separations:

Between the sprinklered Center building and other buildings there are 60-minute fire-resistant separation. There are also lightweight fire-resistant separations 30- and 60-minutes in all buildings according Dutch building code for safe evacuations, no MFL separations.

Note: exact fire separations unknown, additional information requested. Site must comply with Dutch building code, several rated walls were up to standard, not all were checked. Based upon requested information the compartment size, numbers and if higher fire rating (then 60-minutes) could be checked. for now the Dutch building code regulation apply.

Images



Center building - atrium



West building - facade



West building - roof



Center building



Bridge North - Center building



Site overview

Water Supply & Fire Pumps

Category	Current Rating	Potential Rating	RI's
Water Supply	Adequate	Adequate	0

Comments

A electric driven sprinkler pump connected to a concrete water basement (about 200m²) that feeds de sprinkler system. Additional information requested (capacity and preformance).

In the public road around the site underground fire mains connected to the public water supply.

At the south of the central building a sort of pond, quality water stored unknown.

Protection

Category	Current Rating	Potential Rating	RI's
Sprinklers	Nearly Adequate	Nearly Adequate	1
Special Extinguishing Systems	Adequate	Adequate	0
Fire Extinguishing Equipment	Good	Good	0
Public Fire Department	Good	Excellent	0

Sprinklers

Building	AS (%)	ASA (%)	ASN (%)	Fire Detection (%)
Sibemaweg 20	45.00	45.00	--	--
Total	45.00	45.00	0.00	0.00

Definitions: AS (%) =sprinklers provided, ASA (%) =adequate sprinklers provided, ASN (%) =sprinklers improvements needed, Detection=Smoke or other Fire Detection excluding sprinkler waterflow

Area protected	System	Existing Design	Required Design	Adjusted BOR (bar)	Existing Flow (Lpm)	Hose (Lpm)	Adequacy
Center building	Wet	5 dm ³ /min @ 216 m ²	5 dm ³ /min @ 216 m ²				Adequate

Definitions: Adequate = 100% of required sprinkler design hose. Nearly Adequate = 90% of required sprinkler design and no hose. Inadequate = less than 90% of required sprinkler design and no hose. Duration requirements must be met or rating is inadequate. For ESFR nearly adequate is defined as full sprinkler design with NO HOSE.

Comments

The Central building benefits from a sprinkler system. Based upon data constructed the system is realized according the Dutch VAS code considered equal to the new NEN-EN12845. Sprinkler system is maintained and checked by a specialized contractor. Additional information was requested, as not provided drafting this report a risk improvement is noted. During the site visit no deviations were noted.

Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
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Name	LE Before (EUR)	LE After (EUR)
Provide required information 24-04-06	0	0

Images



Sprinkler pump - type



Sprinkler pump - cabinet



Alarmvalve

Special Extinguishing Systems

Comments

The extraction system for (wood)dust is fitted with a stand alone suppression system.

Fire Extinguishing Equipment

Water Supply & Inspection

Frequency

- Meets NFPA requirements

FEA/Hose Reel Details

- Equipment is properly maintained
- Inspections are properly documented with records maintained and readily available
- Plant personnel properly trained

Recommendations

None

Comments

Adequate number and appropriate types of portable fire extinguishers and fire hose reels available on each floor. Their number, visibility and accessibility are rated as being adequate throughout. Inspection and maintenance are subcontracted and conducted annually.

Public Fire Department

Fire Department Type

- Full Time

Fire Department Features

- Fully trained and funded (adequate for the risk if special hazards exist)
- Fully equipped with required modern pumping appliances, ladders, aerial equipment, BA equipment
- Equipment regularly tested and maintained
- Full time emergency communications center to dispatch FD
- Closest FD participates w/ other local full-time FD's w/in a "mutual aide" concept
- Response time is less than 20 minutes

Fire Department Distances (kilometers)

Station #1

2.40

Station #2

4.80

Supervision

Category	Current Rating	Potential Rating	RI's
Automatic Fire Detection	Adequate	Excellent	1
Security	Good	Good	0

Automatic Fire Detection

Signaling Systems Central Station/ARC	Recognized Yes	Monitored Line Yes	Fire Protection Alarm - Water flow - Smoke Detection - Pull Boxes - Valve Tamperers
Valve Locked Yes	Fire Detection Coverage (Including Sprinklers) at least 90%	Smoke Detection Monitored Yes	Other Alarms Yes

Maintenance, Testing and Inspection per NFPA 25
Satisfactory

Comments

The sprinkler and automatic fire detection system is in place has the objective of safe evacuation of the complex. Beside AFD also gas-, and CO² detection is in place for the courses with gas fired heating equipment . The systems are covering about 90% of the facility, in some technical spaces of building North and West AFD was missing, for this a recommendation is discussed and noted. Forwarding of the fire alarm to the private alarm center.

Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Extend AFD building North & West 24-04-01	0	0

Security

Security & Watch Service (24/7) Other	Round Frequency at least every 8 hrs	Security Rounds Recorded	Coverage 100%
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Security Alarms

- CCTV
- Door Contacts
- Internal Movement Detection

Intrusion Alarm

Monitoring

Recognized central station

Site Fencing and Barriers

- None

Burglar and Theft

Exposure

Yes

Vandalism / Malicious

Mischief Exposure

Yes

Sabotage and Terrorism

Exposure

No

Comments

The plot is not fenced, entrances are locked after opening hours. The buildings are equipped with a burglar alarm system consisting of movement detection and door contacts, providing good coverage. Alarm follow up is done by security. Cameras are installed at strategic locations and recorded for two weeks. From opening hours until 20:00 security personnel is on site present.

Management Programs

Category	Current Rating	Potential Rating	RI's
Emergency Organization & Planning	Good	Good	0
Self-Inspection Program	Adequate	Good	1
Fire System Impairment Procedures	Adequate	Adequate	0
Contractor Management	Good	Good	0
Hot Work Permit	Nearly Adequate	Good	1
Smoking	Good	Good	0
Housekeeping	Adequate	Good	1
Planned Preventative Maintenance	Good	Good	0
Management Interest	Adequate	Adequate	0
Site Level Business Continuity Planning	Adequate	Adequate	0

Management Programs

Emergency Organization & Planning

Comments

A trained emergency response team in first aid and the use of extinguishers is in place.

Self-Inspection Program

Comments

Self inspection rounds are implemented. However, improvement could be made based upon risk noted during site visit.

Risk Improvements

Name	Classification
Self Inspection Plan- Improve 24-04-04	Important

Fire System Impairment Procedures

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Comments

Broker is informed.

Contractor Management

Comments

Vista has a few long-term maintenance contracts. Parties must sign in upon arrival and sign out upon departure. There are monthly and annual meetings with the maintenance parties.

Hot Work Permit

Comments

Procedures are partly in place; a permit system is not implemented. AIG hot work (Dutch) link and insight provided after the site visit.

Risk Improvements

Name	Classification
Hot Work Program- Improve 24-04-02	Important

Smoking

Comments

No smoking allowed on the premisses.

Housekeeping

Comments

The overall housekeeping is overall at an acceptable level. Several technical rooms and other spaces of the main building were clean of storage. Only in building west and north in some technical rooms were also used for storage of a wide variety of materials. Technical rooms must be always kept free of storage.

Risk Improvements

Name	Classification
Housekeeping- Remove combustibles from technical rooms 24-04-03	Important

Planned Preventative Maintenance

Comments

First-line maintenance by technical department. General maintenance is done by external parties. The digital maintenance program Topdesk is implemented.

Site Level Business Continuity Planning

Comments

Not insured therefore not applicable and rated adequate. In case BI will be insured this needs to be checked.

Exposures

Category	Current Rating	Potential Rating	RI's
Exposure	Slight	Slight	0

Internal Exposure

None

External Exposure

The site is in the urban area at the east side of Maastricht, external exposures are:

- North: across the street dwellings at 25 meter.
- East: dwelling across the street at > 65 meter.
- South: former building South at 5 meter of the center building. The building is converted to housing.
- West: no exposure within 100 meter.

Yard Storage

Storage of waste containers on a fenced area at 10 meter of building West.

Water Intrusion Exposure

No

Aircraft Exposure

No

Structural Collapse Exposure

No

NATCAT Exposure Summary

	Flood	Wind	Earthquake	Hail	Collapse	Other
Zone/Exposure	>500-year Flood Zone	34 m/s	Zone 2	Zone 4	No	Yes

Flood

Site Property Flood Zone

>500-year Flood Zone

Redundant Power/Utilities

Client has no power nor
utility redundancy

Building	Flood Zone	Flood Source	FFE (m)	100 Yr Flood Elev. (m)	500 Yr Flood Elev. (m)
Sibemaweg 20	>500-year Flood Zone	Other	--	--	--

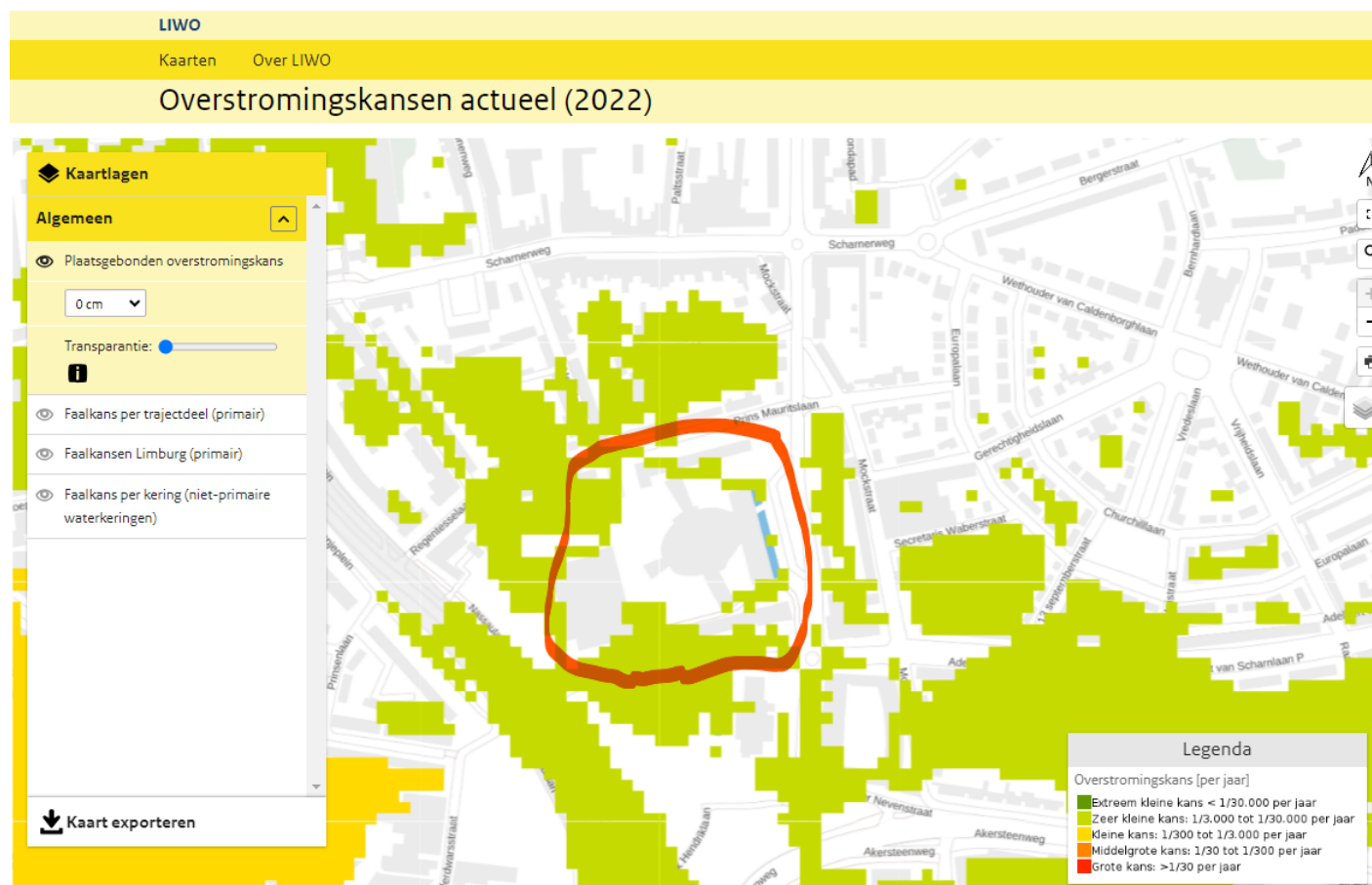
Comments

No flood exposure, see data from Dutch government site Rijkswaterstaat. But in case of heavy raining this site is exposed to water intrusion, this is considered a sort of flooding. During the site visit some damage to the building was visible. A risk improvement was discussed and note in the report.



Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat

Contact
Toegankelijkheid
Cookies



Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Flood (rain) emergency response plan - develop 24-04-05	0	0

Wind

Wind Speed (m/s)

Redundant Power/Utilities

Risk Engineering Report

Stichting BVE Zuid-Limburg



Client has no power nor
utility redundancy

Building

Distance to Coast

Sibemaweg 20

10 and greater miles

Earthquake

EQ Zone

Zone 2

EQ Emergency Response Plan

Client has no BCP in place

Redundant Power/Utilities

Client has no power nor utility
redundancy

Seismic Bracing of Equipment

No seismic bracing or restraint is
provided

Asset Strengthening

Client has documented asset
strengthening - building > 17 years of
age

Seismic Gas Shutoff Valves (SGSV)

No SGSV's provided for flammable
gas and liquid equipment

Severe Convective Storm

Hailstorm Exposure

Zone 4

Fire Loss Estimates

All loss estimates developed as a result of our property surveys are for the sole use of AIG underwriters. Engineering loss estimates are based on the professional judgement of our engineer / consultants. There is detailed guidance and methodologies that are reference and used in the calculate of our Loss Estimates. Using our Loss Estimates without an understanding of the underlying guidance and methodologies is not recommended. AIG assumes no responsibility for use or reliance upon the loss estimates presented below.

	PD (M EUR)	PD%	BI (M EUR)	BI%	IBI (M EUR)	TOTAL (M EUR)
MAS	73.88	100.0		0.0		73.88
MFL	51.72	70.0		0.0		51.72
NLE	18.42	24.9		0.0		18.42

Reported Values

Property Damage

Building (EUR)	Contents (EUR)	M&E (EUR)	Stock/Inventory (EUR)	Other PD (EUR)
62,354,000	11,527,000	0	0	0

Business Interruption

Indemnity Period	BI/Gross Revenues (EUR)	Rental Income (EUR)	Payroll (EUR)
12 Months	0	0	0

Totals	EUR
Total Property Damage Value	73,881,000
Total BI Value	0
Total Insured Value	73,881,000

Maximum Amount Subject (MAS)

Total LE (EUR): 73,881,000

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Sibemaweg 20	62,354,000 (100.00%)	0 (100.00%)	11,527,000 (100.00%)	0 (100.00%)	0 (100.00%)	73,881,000 (100.00%)
Total	62,354,000 (100.00%)	-- (--%)	11,527,000 (100.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **73,881,000 (100.00%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Sibemaweg 20	-- (100.00%)	-- (--%)	-- (--%)	24	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

Total TE Loss Estimate (EUR): -- (**0.00%**)

Loss Estimate Comments

MAS-PD:

Single site according AIG guidelines a total loss.

MAS-BI

Not insured, reconstruction will take up to 24 months.

Maximum Foreseeable Loss (MFL)

Total LE (EUR): 51,716,700

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Sibemaweg 20	43,647,800 (70.00%)	0 (70.00%)	8,068,900 (70.00%)	0 (70.00%)	0 (0.00%)	51,716,700 (70.00%)
Total	43,647,800 (70.00%)	-- (--%)	8,068,900 (70.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **51,716,700 (70.00%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Sibemaweg 20	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

Total TE Loss Estimate (EUR): **-- (0.00%)**

Loss Estimate Comments

MFL-PD:

Under MFL conditions, the fire area can be restricted by clear space separations or a heavy, MFL quality fire wall. Although the buildings are connected by a bridge that is constructed out of non-combustible materials the distance is not according AIG guideline to limit the exposure. Also no MFL rated fire walls are available. However under MFL conditions recovery potential is anticipated according to table 5 of the AIG MFL loss expectancy guideline. Considering it is a HG 6 occupancy:

- ISO4: 70% building and 70% content
- ISO3/ C: 100% building and content.

The total loss expectancy will be:

- Building: $70\% \text{ of } 5,500 \text{ m}^2 + 100\% \text{ of } 6,650 \text{ m}^2 = 17,393 \text{ m}^2 \text{ out of } 32,272 \text{ m}^2 = 54\%$.
- Content: $70\% \text{ of } 5,500 + 100\% \text{ of } 6,650 \text{ m}^2 = 19,270 \text{ m}^2 \text{ out of } 32,272 \text{ m}^2 = 60\%$

MFL-BI:

BI is not insured. Reconstruction would take up to 21 months.

Normal Loss Expectancy (NLE)

Total LE (EUR): 18,423,060

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Sibemaweg 20	14,964,960 (24.00%)	0 (30.00%)	3,458,100 (30.00%)	0 (30.00%)	0 (30.00%)	18,423,060 (24.94%)
Total	14,964,960 (24.00%)	-- (--%)	3,458,100 (30.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **18,423,060 (24.94%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Sibemaweg 20	-- (30.00%)	-- (--%)	-- (--%)	12	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

Total TE Loss Estimate (EUR): -- **(0.00%)**

Loss Estimate Comments

NLE-PD:

Under NLE conditions, we consider all fire protection systems to be in service and the fire department to take a conservative approach, but to try to limit loss to their capabilities. The Central building is sprinkler protected, in that area a fire would result in a limited loss as the fire will be controlled.

A fire will the highest loss potential is one starting in building North as this building has the largest floor area. The fire will start due to a technical defect. After the fire is detected by the AFD (delayed as no 100% coverage, the fire department is alerted after. The fire department arrives delayed and arrives at a developed fire. Because the complex is located in a residential area, the fire department's focus is on protecting the residences. As there is no fire protection measures like sprinkler or full coverage fire detection system in place we consider two fire compartments (1,000 m² per compartment according Dutch building code) will be lost and secondary damage to the rest of the building due to smoke, soot and water. The susceptibility to non-thermal damage for the building is moderate (25%) and high for the content (50%).

The loss percentage for the building is:

- Fire damage = $2 \times 1,000 \text{ m}^2 = 2,000 \text{ m}^2$
- Non thermal damage building: $(5,500 - 2,000 \text{ m}^2 \text{ (fire damage)}) \times 25\% = 875 \text{ m}^2$
- Total: $2,000 \text{ m}^2 + 875 \text{ m}^2 = 2,875 \text{ m}^2$ out of the $12,150 \text{ m}^2 \rightarrow 23,66 \rightarrow 24\%$

The loss percentage for the content is:

- Fire damage = $2 \times 1,000 \text{ m}^2 = 2,000 \text{ m}^2$
- Non thermal damage building: $(5,500 - 2,000 \text{ m}^2 \text{ (fire damage)}) \times 50\% = 1,750 \text{ m}^2$
- Total: $2,000 \text{ m}^2 + 1,750 \text{ m}^2 = 3,750 \text{ m}^2$ out of the $12,150 \text{ m}^2 \rightarrow 30\%$

NLE-BI:

Not insured, reconstruction will take up to 12 months.

Images and Site Sketches



Classroom



Classroom



Classroom



Classroom



Classroom

Risk Improvement Classification

Critical

Critical recommendations represent conditions or work practices that create an imminent or severe loss-producing situation. This means that there must be a readily available ignition source or the potential for a severe loss event.

Important

Important recommendations represent conditions or work practices that could result in a loss-producing situation, but for which immediate action is not necessary. These are recommendations to correct uncontrolled exposures or to achieve and maintain a reasonable level of property protection. These recommendations require commitment on the part of the insured to change or modify conditions or work practices in order to reduce the potential for serious loss, resulting from either frequency or severity events.

Advisory

Advisory recommendations represent conditions or work practices that do not directly pose a risk for severe loss or injury, but could contribute to a loss situation. These are recommendations that are considered best practices to enhance the level of property protection. Compliance with these recommendations improves the risk and reduces the likelihood of a loss occurring from the recognized hazard or situation.

Risk Improvement Types

Physical Protection:

A Physical Protection Risk Improvement is associated with provision of physical plant and equipment; typically there could be a capital expenditure associated with these improvements.

Management Programs

A Management Programs Risk Improvement typically relates to procedures and management programs and will not normally involve, or will have limited, capital expenditure.

NATCAT:

NATCAT Risk Improvement is either a physical improvement or the addition/enhancement of management procedures to reduce the risk associated with natural catastrophe events.

B&M Management Programs

A B&M Management Programs Risk Improvement relates to procedures and management programs, such as inspection, testing and maintenance, which will not normally involve, or have limited capital expenditure. Such a risk improvement is directed at reducing the probability of the identified risk exposure.

Loss Estimate Definitions

Maximum Amount Subject (MAS)

The **Maximum Amount Subject (MAS)** is defined as the area of the largest insured value (PD and BI) that is subject to a single fire or explosion. The amount Subject area will only be limited by clear space separation that is sufficient to restrict the spread of fire, as defined in the Space Separation Table which is found in the AIG Commercial Property Field Engineering Manual, MFL section. MAS considers complete failure of all active protection including automatic sprinkler systems, all water supplies, automatic extinguishing systems, alarm supervision, public and private water supplies, no firefighting effort and offers no credit for MFL or fire walls, fire proofing or other passive barriers. In circumstances where the location consists of only one building, the Amount Subject will normally be equal to the full TSI for that building. Calculate of MAS will include PD, BI, BI interdependencies, contingent BI and any other time element values such as Extra Expense, Extended Period of indemnity, Rents, etc.

Maximum Foreseeable Loss (MFL)

MFL is defined as the largest amount of loss that can be anticipated (including PD, BI, BI interdependencies, contingent BI and any other time element values such as extra expense, extended period of indemnity, rents, etc. due to a fire and/or explosion event with all fire protection systems and equipment out of service and with no fire-fighting effort, either public or private. The loss would be that which occurs if the fire were allowed to “burn freely” until it burns itself out. The MFL area is the maximum plant area that could be affected by a single fire or explosion, occurring in the more vulnerable area of the facility (i.e. that with the largest total PD and BI potential). The only acceptable ways to reduce the MFL estimate are:

- Adequate clear space separation between buildings
- Lack of continuity of combustibles
- Effective horizontal cut-offs with MFL walls
- Effective vertical cut-offs
- Expectable salvage values
- Reliable make-up capacity

Airports, High Rise Buildings, Hospitals and Universities are treated as unique and may have a MFL calculation that differs from the above providing certain favorable factors exist.

Normal Loss Estimate (NLE)

The Normal Loss Estimate (NLE) is defined as the largest loss anticipated for a location under existing conditions. The NLE for a protected (sprinklered) facility assumes that the existing automatic and manual protection functions as designed and for intended and in its existing condition, whether it is adequate for the occupancy or not. This can include both public and private protection, including fixed automatic protection (such as sprinkler systems with reliable water supplies), other fixed automatic protection (such as special extinguishing systems or fire alarms with off-site signaling), and proximity of the public fire department and availability of public and private water supplies for firefighting purposes. In addition, construction characteristics are considered that include firewalls, draft curtains, roof

parapets, fire doors, etc., as these factors relate to the hazard and combustibility of the occupancy. Fire department response is anticipated.

Factors that could influence the NLE include:

- Construction classification and characteristics including fire walls, fire doors, etc.
- Occupancy and contents susceptibility to damage (smoke or water damage)
- Continuity of combustibles and combustible loading (light, moderate, heavy)
- Sprinkler protection/water supply adequacy
- Special hazard conditions, protection and controls
- Public Fire Department
- Fire alarms and Central Station monitoring

Deficiencies, minor in nature that are not expected to contribute significantly to a loss but do represent or could contribute to unsafe conditions or unsafe acts. These are recommendations that are considered best practices to enhance the level of property protection. Although compliance with these recommendations improves the risk and reduces the likelihood of a loss occurring from the recognized hazard or situation, they are considered desirable and not mandatory in nature.