

Risk Engineering Report



Prepared for:

STICHTING HZ UNIVERSITY OF APPLIED SCIENCES

Site Name: Middelburg Het Groene Woud 1

Date of Survey: November 2, 2023

Report Date: November 22, 2023

Survey Type: Property All Risk - Initial

TIV (EUR): 59,882,000

Site Address: Het Groene Woud 1, MIDDELBURG, 4331 NB, Netherlands

Latitude: 51.495147

Longitude: 3.609606

RFS ID: RFS-179822

SIC Code: 8221-02-Colleges and Universities, NEC, Private

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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

HZ University of Applied Sciences (rest of the report noted as HZ University) is located in the South-West of the Netherlands. This report is about the 'Het Groene Woud' site in Middelburg. This site consists of two connected structures. The HZ Universities building (west part) where theoretical courses are given. And the Joint Research Center Zeeland (JRCZ, east part)), a new developed complex where HZ University works together with two other educational institutions. At JRCZ research projects on behalf of the government and or industry are conducted by students in project teams in an engineering lab, a chemistry lab, or ecology lab, or biobased building lab and etc. The location is open from Monday till Friday between 8:00 am till 18:00. During this period the reception is occupied.

The Middelburg 'Het Groene Woud' site consist of two buildings connected on ground level and on the second level with a bridge. On other levels there are no physical connection between the buildings. Building construction:

- HZ University, realized in 1974 with a large refurbishment in 2018. A steel and concrete load bearing structure. Concrete floors and roof, reportedly mineral wool insulation and bitumen roof covering. Concrete walls with mineral wool insulation and glass windows. The complex is post-insulated with non-combustible insulation and finished with plaster and partially with wood trim (<10%). Under part of the complex is a former nuclear bunker. Total floor surface: 6,320 m².
- JRCZ, realized in 2023 has a steel and concrete load bearing structure. Concrete floors and a corrugate steel roof, PIR insulation with bitumen roof covering, concrete tiles and gravel. Concrete walls with mineral wool insulation and glass windows. Total floor surface: 4,394 m².

In both buildings an automatic fire detection system (limited coverage) and burglary detection system is in place. Alarms are transmitted to a private alarm station. Follow up by a security company and the technical department. Technical alarms of installations like heating, ventilation are transmitted to the technical department. There are two fire brigade stations within 3 kilometer driving distance. In case of a fire the hydrants in the public road are the primary source and open water is available at about 50 meter. Exposures around the premises are limited and at a distance > 50 meter from the main building. The risk of Natcat events is considered a normal risk for the Netherlands. Management programs are implemented and at an adequate level.

Risk improvements noted are:

- install water detection in technical rooms JRCZ part.
- Procedure technical alarm follow up.
- submit plans in case of 'large' projects.
- install a kitchen protection system (advise).

- extend automatic fire detection to total coverage (advise).

Site Loss History

No large losses reported.

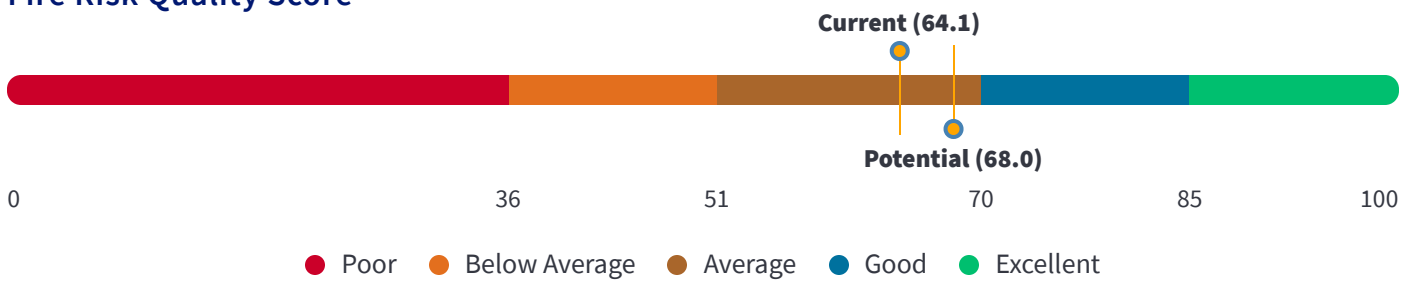
New Projects, Significant Changes and Observations

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.

Risk Summary

| Open RI by Classification | 5 | Open RI by Age | 5 | Open RI by Type | 5 |
|---------------------------|---|----------------|---|---------------------|---|
| Critical | 0 | New | 5 | Management Programs | 1 |
| Important | 3 | Outstanding | 0 | Physical Protection | 4 |
| Advisory | 2 | Completed RI | 0 | | |

Fire Risk Quality Score



Ratings

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

Risk Improvements

Risk Improvements - Open

| Number | Name | Classification | LE Before (EUR) | LE After (EUR) |
|----------|--|----------------|-----------------|----------------|
| 23-11-01 | Water/ leak detection | Important | -- | -- |
| 23-11-02 | Plan Review- Submit plans | Important | -- | -- |
| 23-11-04 | Improve/extend alarm follow up procedure | Important | -- | -- |
| 23-11-05 | Fire Detection- Extend detection | Advisory | 10,471,920 | 2,000,000 |
| 23-11-03 | Kitchen protection | Advisory | -- | -- |

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) |
|---------------------------------|-----------------------|-----------------|----------------|
| 23-11-01 Physical Protection | Water/ leak detection | | |

Summary

Install water detection in the technical rooms of the JRCZ part and connected it to the building management system.

Details

Early detection of a leak allows corrective actions to be deployed which can minimize damage and disruptions to processes.

Client Exit Conference Comments

Will be discussed internally.

| Number/Type | Name | LE Before (EUR) | LE After (EUR) |
|---------------------------------|---------------------------|-----------------|----------------|
| 23-11-02 Management Programs | Plan Review- Submit plans | | |

Summary

Submit, when applicable, new plans for AIG review and acceptance.

Details

AIG will review the plans to ensure they are acceptable for AIG insurance purposes and will provide recommendations as needed. Having AIG involved earlier on and throughout the project will help ensure that the appropriate loss prevention features are provided and prevent project delays.

| Number/Type | Name | LE Before (EUR) | LE After (EUR) |
|---------------------------------|--|-----------------|----------------|
| 23-11-04 Physical Protection | Improve/extend alarm follow up procedure | | |

Summary

Establish a written procedure for follow-ups to alarms, malfunctions and supervision notifications and review this document periodically. Investigate the possibilities of follow up by third parties in case of no reaction and/or availability of the technical department.

Details

HZ University is completely dependent on the technical department for follow-ups to alarms, malfunctions and supervision notifications. The technical department has minimal manpower where until recently it consisted of one employee. Despite the department now consists of two employees this is not ideal with vacations, illness or when an employee leaves. Quick response can limit the impact of an event on site.

Client Exit Conference Comments

Will be discussed.

Open Risk Improvements : **Advisory**

| Number/Type | Name | LE Before (EUR) | LE After (EUR) |
|---------------------------------|--------------------|-----------------|----------------|
| 23-11-03 Physical Protection | Kitchen protection | | |

Summary

Protect the commercial cooking equipment (i.e. deep fat frying equipment) in the kitchen area with an ANSI/UL 300 compliant wet chemical extinguishing system interlocked to shut off the fuel supply to the equipment upon system actuation in accordance with NFPA 96. Also for new tenants at street level in the public area this should be part of the negotiations/ standard for new renting contracts.

Details

A fire involving oils used in the cooking equipment represents a significant fire hazard that can release large amounts of smoke. Conventional sprinklers and older dry chemical systems are not as effective as wet chemical extinguishing systems. The suppressant in these systems is specifically designed to extinguish cooking oil fires through the process of saponification that produces a soap foam layer when mixed with the oil that cools and seals off the surface, preventing re-ignition. Examples of the systems could be found at:

- <https://flamecontrol.nl/keuken-blussystemen/>
- https://www.johnsoncontrols.com/nl_nl/brandbestrijding/grootkeuken-blussystemen
- <https://www.saval.nl/producten/kitchenflex/69/174/>
- <https://acm-air.com/keukenbrand-blussysteem/>

Client Exit Conference Comments

Will discuss

| Number/Type | Name | LE Before (EUR) | LE After (EUR) |
|---------------------------------|----------------------------------|-----------------|----------------|
| 23-11-05 Physical Protection | Fire Detection- Extend detection | 10,471,920 | 2,000,000 |

Summary

Extend the existing fire detection system to total coverage (all area/ rooms).

Details

Detectors are currently installed in a part of the building. Extending the system into all areas and rooms 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.

Client Exit Conference Comments

Advise, not discussed during site visit.

Occupancy & Process Overview

HZ University of Applied Sciences is situated in the South-West of the Netherlands, with locations in:

- Vlissingen
- Middelburg
- Roosendaal

The site described in this report is in Middelburg at 'Het Groene Woud'. This site consists of two connected structures. The HZ Universities building (west part) where theoretical courses include Construction Engineering, ICT, Global Project and Change Management, Technical Business Administration (full-time), Water Management, Civil Engineering and the master's degree in River Delta Development are given. Throughout this part are theoretical classrooms and offices for students and staff employees. There is a restaurant at first level, which is equipped with a professional kitchen with deep fat frying equipment.

The second part (east) is the Joint Research Center Zeeland (JRCZ), a new developed complex where HZ University works together with Scalda (mbo) and University College Roosevelt (wo). Here, research projects on behalf of the government and or industry are conducted by students in project teams. In addition to a single theory room, there is an engineering lab, a chemistry lab, an ecology lab, a biobased building lab and a data science lab. The buildings are connected on ground level and with a bridge on the second floor.

The HZ University has a total some 4,800 national and international students, divided over all sites. The location is open from Monday till Friday between 8:00 am till 18:00. During this period the reception is occupied. The JRCZ part is only accessible with a badge with credentials.

Occupancy Details

| Building | SIC Code | Description | Operating Days/yr | Operating Hrs/Day | Other Tenants |
|------------------------------|-----------------|---|--------------------------|--------------------------|----------------------|
| Middelburg Het Groene Woud 1 | 822102 | Colleges and Universities, NEC, Private | 365 | | No |

Hazards

| Hazard Category | Type | Current Rating | Potential Rating | RI's |
|--|---------|----------------|------------------|------|
| Heating, Ventilation, Air Cond & Refrigeration | Common | Low | Slight | 1 |
| Electrical | Common | Slight | Slight | 0 |
| Storage | Common | Slight | Slight | 0 |
| Flammable Liquids - Storage, Transfer, Use | Common | Slight | Slight | 0 |
| Flammable Gases - Storage, Transfer, Use | Process | Slight | Slight | 0 |
| Commercial Cooking | Process | Low | Slight | 1 |

Non-Process HVAC Equipment

Heating of the buildings is by means of natural gas fired boilers (for HZ), heat pumps (JRCZ) and air handling units, which are located the technical rooms at top floor level. Cooling compressors (chillers with R410A medium) are located on top of the roof. Air ventilation ducts are equipped with fire dampers. The technical rooms are supervised by automatic smoke detection. The compartmentation and housekeeping in the technical rooms visited is adequate. Equipment appears visually in a good state of repair. Periodic maintenance is contracted out to specialized contractors. Status of installations are managed and monitored via the building management systems, alarms are transmitted to the technical department. It was unclear if all rooms are fitted with water detection, a risk improvement is discussed and noted.

Risk Improvements

| Name | LE Before (EUR) | LE After (EUR) |
|--------------------------------|-----------------|----------------|
| Water/ leak detection 23-11-01 | 0 | 0 |

Images



Cooling

Electrical

Each building has its own transformer (rental), type and capacity unknown. Transformers are checked and maintained by the utility company.

The electrical installations appear visually in a good state of repair. Penetrations for electrical cables were found to be adequately fire stopped, including inside vertical utility shafts. An external company inspects and maintains the electrical installations in accordance with the local NEN 3140 standard (incl. thermographic checks).

Incidental Storage

There are no large central storage areas, but a few small store rooms (< 25 m²) are present throughout the site with storage of classroom materials, office supplies, electronic components and parts, food storage, etc.. Storage takes place both on floor and on shelve racks to a height of 2.5 meters.

Incidental Flammable / Combustible Liquids & Gases

On the ground floor there two dedicated rooms for the for storage of gasses and other hazardous chemicals. Fitted with mechanical ventilation and detection. At the lab level there are dedicated cabinets with the different type of gas cylinders. All storage is monitored and in case of an alarm valves (type: normally closed) of the lines going into the labs are closed.

Images



Chemical storage



Chemical storage



Practical classroom cabinets

Commercial cooking

Hoods/Duct Cleaning

Frequency

Weekly

Ceiling Sprinklers present

?

No

Cooking/Frying Area

Special Protection

None

Fuel Shutoff Interlock

Yes

Fryers separated from open flames of adj. equipment

Yes

Portable Extinguishers

Acceptable

Yes

There is one professional kitchen on the first floor. It contains kitchen equipment like an oven and deep fat fryer. The professional equipment in the kitchen is well maintained and is always operated under supervision of professionals. High temperature limit switches are reportedly available. Fire blankets and adequate portable fire extinguishers have been provided. Periodic inspection and cleaning of the exhaust ducts is subcontracted to a professional company (reportedly once every two year). The kitchen is not provided with a local extinguishing system (recommended only as best practice).

Risk Improvements

| Name | LE Before (EUR) | LE After (EUR) |
|-----------------------------|-----------------|----------------|
| Kitchen protection 23-11-03 | 0 | 0 |

Practical classrooms

In the JRCZ part there are practical classrooms for chemistry, engineering, etc. In these classroom technical equipment is present like fume cupboard, computers, a sawing machine, 3D printers and so on. Students of the three organizations (and in some cases third parties) work under the guidance and supervision of employees of the JRCZ. The quantities of hazardous materials are limited and only provided by the supervisor. At the end of a class or day hazardous materials are moved into safe storage. Machines and equipment are maintained by specialized contractors. The labs only work with cylinders stored in dedicated cabinets with shut of in case of an alarm, there is no gasconnection to the public grid.

Images



Practical classroom



Practical classroom



Practical classroom



Practical classroom

Construction

| Category | Current Rating | Potential Rating | RI's |
|--------------|--|--|------|
| Construction | ISO 3 / Class B Non-combustible (Light noncombustible with noncombustible metal deck roof) | ISO 3 / Class B Non-combustible (Light noncombustible with noncombustible metal deck roof) | 0 |

| Building | Year Built | # Stories | Height (m.) | Total Area (sq. m.) |
|------------------------------|------------|-----------|-------------|---------------------|
| Middelburg Het Groene Woud 1 | 2023 | 6 | 20 | 10,714 |

| Building | Area (1,000 sq. m.) | | | | | | | |
|---------------------------------------|-----------------------|-----------------------|-----------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | ISO1/D | ISO2/C | ISO3/C | ISO3/B | ISO4/C | ISO4/B | ISO5/A | ISO6/AA |
| Middelburg Het Groene Woud 1 | -- | -- | -- | 10.7 (100.00%) | -- | -- | -- | -- |
| Total | 0.0 (0.00%) | 0.0 (0.00%) | 0.0 (0.00%) | 10.7 (100.00%) | 0.0 (0.00%) | 0.0 (0.00%) | 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

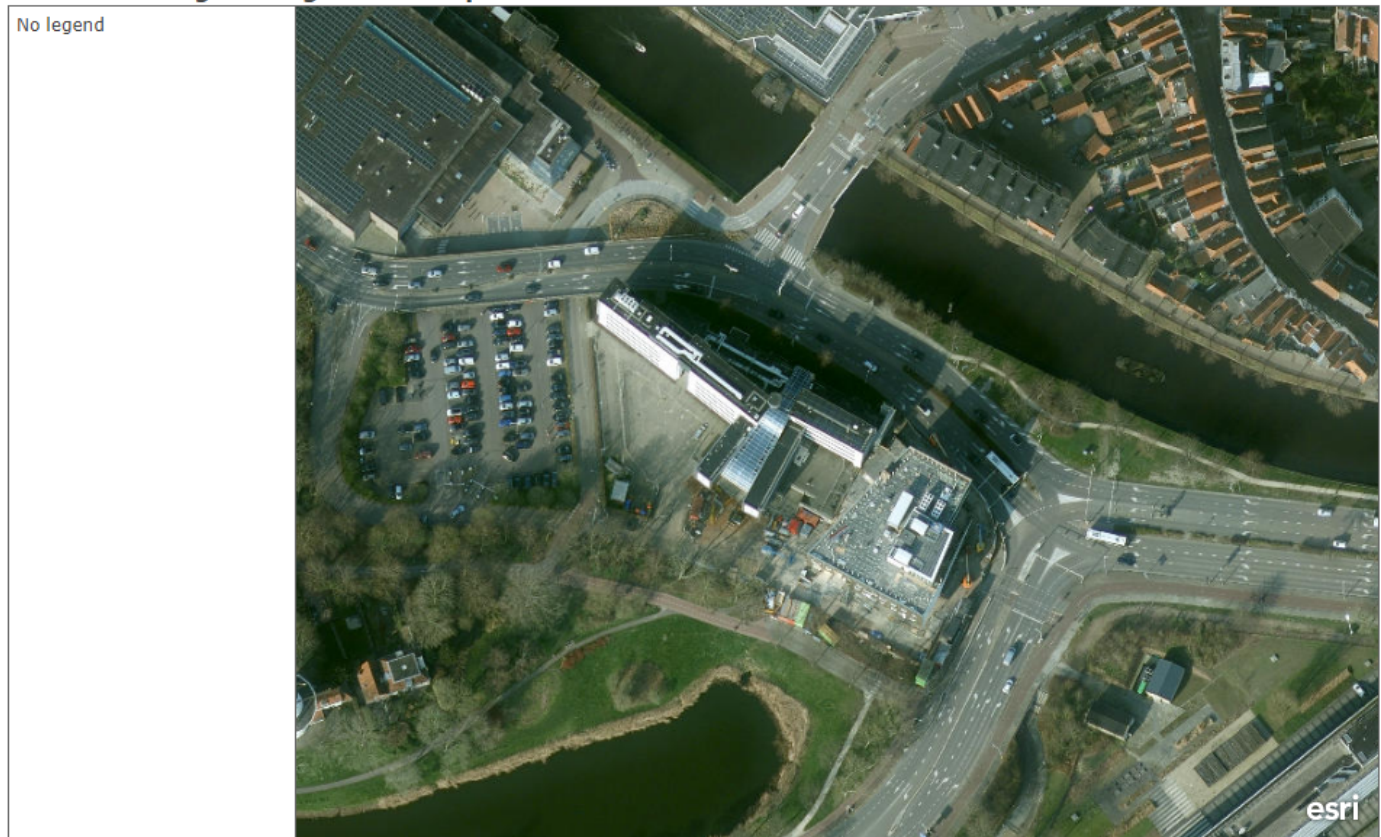
The Middelburg Groene Woud site consist of two buildings:

- HZ University, realized in 1974 with a large refurbishment in 2018. A steel and concrete load bearing structure. Concrete floors and roof, reportedly mineral wool insulation and bitumen roof covering. Concrete walls with mineral wool insulation and glass windows. The complex is post-insulated with non-combustible materials and finished with plaster and partially with wood trim (<10%). Under part of the complex is a former nuclear bunker, above up to fourth floor level. Total floor surface: 6,320 m².
- JRCZ, realized in 2023 has a steel and concrete load bearing structure. Concrete floors and a corrugate steel roof, PIR insulation, (reportedly class B according EN13501) with bitumen roof covering, concrete tiles and gravel. Concrete walls with mineral wool insulation and glass windows. This part has no basement, it is ground level up to fourth floor with a total floor surface: 4,394 m².

The buildings are connected on ground level and on the second level with a bridge. On other levels there are no physical connection between the buildings.

Note: building period and floor area is from the public Kadaster internet site. Overall classification based upon predominant construction class as percentage of the different construction classes is unknown and the use of combustible materials is <25% of floor/wall surface.

2. AIG Risk Engineering Hazard Map



2 . AIG Risk Engineering Hazard Map- Visualization Map

20m

GI Cat Risk Analytics Team | AIG GI Cat Team | USGS, LBNL, and AWEA | Data processed by the National Hurricane Center (NHC) Storm Surge Unit. SLOSH grid data (SLOSH MOMs) are provided by the National Weather Service (NWS) Meteorological Development Lab (MDL). The primary elevation data used to compute inundation is provided by NOAA Office for Coastal Management (OCM) (formerly Coastal Services Center), USGS National Elevation Dataset (NED) used outside the extent of OCM data. | Beeldmateriaal.nl, Maxar, Microsoft

Fig: site layout

Water Supply & Fire Pumps

Water Supplies

| Category | Current Rating | Potential Rating | RI's |
|--------------|----------------|------------------|------|
| Water Supply | Good | Good | 0 |

| Name | Type | Pump Associated | Adequacy |
|------------------------|------------------------------------|-----------------|----------|
| Primary-hydrants | Gridded Municipal | None | Adequate |
| Name | Type | Pump Associated | Adequacy |
| Secondary - Open water | Pond, River or other static source | None | Adequate |

Comments

Underground hydrants are available in public area around the site, connected to the public water main. Average pressure available on the water supply is around 2 bar in the region and design and installation requirements in The Netherlands take into account sufficient to supply the fire brigade requirements per the Dutch standards. Open water on the north and south side at < 50 meter.

Protection

| Category | Current Rating | Potential Rating | RI's |
|------------------------------|-----------------|------------------|------|
| Sprinklers | Nearly Adequate | Nearly Adequate | 0 |
| Fire Extinguishing Equipment | Good | Good | 0 |
| Public Fire Department | Adequate | Adequate | 0 |

Sprinklers

| Building | AS (%) | ASA (%) | ASN (%) | Fire Detection (%) |
|------------------------------|-------------|-------------|---------------|--------------------|
| Middelburg Het Groene Woud 1 | 0.00 | 0.00 | 100.00 | 40.00 |
| Total | 0.00 | 0.00 | 100.00 | 40.00 |

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

Comments

The complex is not sprinkler protected. Protection is based on the combination of fire separation, combined with automatic fire detection. It therefore relies heavily on adequate response of the fire department supporting the fire rated walls and fighting the fire, and allows large fire areas.

Note: rating is not based on sprinklers but based upon NLE, as this is <25% of TIV.

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. Inspection and maintenance are subcontracted and conducted annually.

Public Fire Department

Fire Department Type

- Combination

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 | Station #2 |
|------------|------------|
| 2.50 | 3.00 |

Comments

The public fire brigade has locations in Middelburg and Vlissingen.

Supervision

| Category | Current Rating | Potential Rating | RI's |
|--------------------------|-----------------|------------------|------|
| Automatic Fire Detection | Nearly Adequate | Good | 2 |
| Security | Good | Good | 0 |

Automatic Fire Detection

| | | | |
|--|---|---|--|
| Signaling Systems Remote Station | Monitored Line Yes | Fire Protection Alarm <ul style="list-style-type: none"> Smoke Detection Pull Boxes | Valve Locked NA |
| Fire Detection Coverage (Including Sprinklers) Other | Smoke Detection Monitored Yes | Other Alarms Yes | Maintenance, Testing and Inspection per NFPA 25 Satisfactory |

Comments

The buildings are equipped with limited fire detection, designed for safe evacuation. Detection is mostly in escape routes, near self-closing fire doors and in areas that are considered to have an increased risk, such as boiler rooms, some practical class rooms, and electrical switch rooms. Each building part has its own system. The system based upon different detection principles like standard smoke detector, multi criteria, aspiration smoke detection and pull boxes. Beside automatic fire detection also gas detection. Upon detection valves are shut (normally closed), dampers are closed and ventilation is rammed up. Some building parts seem to have a denser protection. As rough estimation based upon provided information and the site visit is approximately 40% of the total floor surface. The installation mainly focuses on life safety and not on continuity. Therefore a delayed detection must be expected. Alarms are transmitted to a remote station that contact site representatives and/or send a security company for verification.

Beside AFD technical alarms of building systems are transferred to the technical department. The technical department will consist of two employees by the end of 2023. Improvement could be gained to have a back up procedure in cases of limited availability of the technical department. In the past all alarms were only processed by one employee.

Risk Improvements

| Name | LE Before (EUR) | LE After (EUR) |
|---|-----------------|----------------|
| Improve/extend alarm follow up procedure 23-11-04 | 0 | 0 |
| Fire Detection- Extend detection 23-11-05 | 10,471,920 | 2,000,000 |

Security

| | | | |
|---|---|---|--|
| Security & Watch Service (24/7) Other | Round Frequency at least every 8 hrs | Security Rounds Recorded | Coverage 100% |
| Security Alarms <ul style="list-style-type: none">• CCTV• Door Contacts• Internal Movement Detection | Intrusion Alarm Monitoring Recognized central station | Site Fencing and Barriers <ul style="list-style-type: none">• None | Burglar and Theft Exposure Yes |
| Vandalism / Malicious Mischief Exposure Yes | Sabotage and Terrorism Exposure No | | |

Comments

The building has been equipped with a intrusion detection system comprising motion detection at internal building envelope at potential entry points. The systems is annually inspected and maintained by an external contractor. The motion detectors are of the anti-masking type. Alarms are transmitted to a continually manned private alarm station, who call the insured and send a follow up surveillance team. During opening hours, the reception at the main entrance is staffed. Daily closing rounds are conducted by security company. Most doors to important rooms are electronically locked and can only opened by staff. The JRCZ is only accessible with a card and the authorization. Surveillance by a security firm is conducted after closing hour and in the weekend.

There are CCTV camera's of which the footage can be viewed live by technical department and archived for a limited period.

Management Programs

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

Management Programs

Emergency Organization & Planning

| | | |
|--|-----------------------------------|----------------------|
| Written Emergency Action Plan | Drills/practices conducted | Fully Updated |
| Commensurate with exposure, but not as precise or focused on life safety | periodically Yes | Yes |

Comments

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

Self-Inspection Program

| | | | |
|---|---|---|--|
| Self-Inspection Program | Documentation | Frequencies | Root cause & training |
| <ul style="list-style-type: none"> Yes | <ul style="list-style-type: none"> Informal or undocumented checklists | <ul style="list-style-type: none"> Minimum weekly or commensurate with the occupancy | <ul style="list-style-type: none"> Program includes items such as inspector training, root cause analysis, management of change, auditing, etc. |

Risk Improvements

- None

Fire System Impairment Procedures

Written and documented procedure

- Yes

Communication

- Communicated to relevant personnel with mgmt. responsibilities assigned and ensures restoration of protection as soon as practical.

Impairment logging

- Paper logging system is utilized and fully up to date

Conforms to AIGs guidelines

- Yes

Risk Improvements

- None

Comments

Impairment procedure for the automatic fire detection system is in place.

Contractor Management

Contractor Training Program

- Yes

Management Program Features

- Covers ALL aspects of plant safety & operations
- Required for all contractors and sub-contractors
- Strongly supported by management with zero tolerance for misconduct
- Contractors follow all plant policies including but not limited to hot work, impairment, housekeeping, and smoking

Records

- Maintained on paper logs

Risk Improvements

- None

Comments

HZ University works with fixed contractors. All contractors are informed about site safety, regulations and so on. Upon arrival contractor must first report at reception/ technical department.

Hot Work Permit

Hot Work Program in Place

- Yes – Conforms to AIG

Communication

- Communicated to personnel with mgmt. responsibilities assigned

Logging

- Paper logging system

Is there Hot Work Occurring

- No Hot Work Occurring

Comments

The procedures to limit the risks are in place, for example hazardous work is first coordinated with the necessary measures, including the other hot work permit requirements is in place.

Smoking

Policy

- No smoking allowed within the perimeter of the site

Appropriate Receptacles

- Yes

Inspections

- Weekly

Material Disposal

- Adequate

Risk Improvements

- None

Comments

Smoking is highly regulated. On the premises of the school smoking is prohibited by Dutch Law.

Housekeeping

Quality

- Commensurate with exposure

Inspections

- Regular inspections w/ management support; well-documented

Risk Improvements

- None

Comments

Around the building no storage against building facade of combustible materials present. Also technical rooms are kept free of storage.

Planned Preventative Maintenance

PM Program in place

- Yes – includes all equipment including work performed by outside contractors

PM System

- Documented, non-computerized

Overdue Assignments

- Yes, but none past 60 days

PM of Critical Components/Equipment

- Conforms to manufacturer's

minimum requirements

Risk Improvements

- None

Comments

All installations are maintained according legislation, standards, and/or manufacturer's requirements. Maintenance contracts with specialized companies. The technical department is limited and only in place for troubleshooting and small-scale maintenance.

Management Interest

Management Interest

- Supportive
- Involved in Communications
- Respond Positively to Comments/Recommendations

Field Safety and Risk Management

- Important

Risk Improvements

| Name | Classification |
|------------------------------------|----------------|
| Plan Review- Submit plans 23-11-02 | Important |

Site Level Business Continuity Planning

Business Continuity Plan (BCP)

- No BCP or DCP in place

Comments

BI is not insured, therefore considered 'Adequate'.

Exposures

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

Internal Exposure

No third parties active onsite.

External Exposure

External exposures are:

- North, public road with across at > 70 meter several houses.
- East, public road with across at > 100 meter an office building.
- South, no direct exposures only open water and a public road.
- West, across the public road a shopping center with a large variety of shops at > 55 meter.

The roads on the north, east and west site are elevated, at > 1 meter above ground level.

Yard Storage

Parking of cars, scooters, bicycle etc. is outside on the west side of the site. Waste containers is on the south part of the perimeter at 20 meter distance stored in a fenced area.

Water Intrusion Exposure

No

Aircraft Exposure

No

Structural Collapse Exposure

No

BI Exposures

General BI

BI is not insured.

NATCAT Exposure Summary

| | Flood | Wind | Earthquake | Hail | Collapse | Other |
|---------------|-------------------|--------|--------------------|------------|----------|-------|
| Zone/Exposure | No Flood Exposure | 40 m/s | MR Zone 0: <MMV | MRe Zone 2 | No | No |

Flood

Site Property Flood Zone

No Flood Exposure

| Building | Flood Zone | Flood Source | FFE (m) | 100 Yr Flood Elv. (m) | 500 Yr Flood Elv. (m) |
|------------------------------|-------------------|---------------|---------|-----------------------|-----------------------|
| Middelburg Het Groene Woud 1 | No Flood Exposure | Coastal/Surge | -- | -- | -- |

EQ Zone

MR Zone 0:<MMV

Peak Ground Acceleration (%g)

2.00

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 0 - 5 years of age

Seismic Gas Shutoff Valves (SGSV)

No SGSV's provided for flammable gas and liquid equipment

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 | 59.88 | 100.0 | | 0.0 | | 59.88 |
| MFL | 35.93 | 60.0 | | 0.0 | | 35.93 |
| NLE | 10.47 | 17.5 | | 0.0 | | 10.47 |

Reported Values

Property Damage

| Building (EUR) | Contents (EUR) | M&E (EUR) | Stock/Inventory (EUR) | Other PD (EUR) |
|-----------------------|-----------------------|----------------------|------------------------------|-----------------------|
| 50,980,000 | 0 | 0 | 8,902,000 | 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 | 59,882,000 |
| Total BI Value | 0 |
| Total Insured Value | 59,882,000 |

Maximum Amount Subject (MAS)

Total LE (EUR): 59,882,000

PD Loss Estimate

| Building | Bldg (EUR) | M&E (EUR) | Content (EUR) | Stock (EUR) | Other (EUR) | Total (EUR) |
|------------------------------------|---------------------------------------|-----------------|-----------------|--------------------------------------|-----------------|-------------------------|
| Middelburg Het Groene Woud 1 | 50,980,000 (100.00%) | 0 (100.00%) | 0 (100.00%) | 8,902,000 (100.00%) | 0 (100.00%) | 59,882,000 (100.00%) |
| Total | 50,980,000 (100.00%) | -- (--%) | -- (--%) | 8,902,000 (100.00%) | -- (--%) | |

Total Property Damage Loss Estimate (EUR): **59,882,000 (100.00%)**

TE Loss Estimate

| Building | BI (EUR) | Payroll (EUR) | Rent (EUR) | Downtime (Months) | Total(EUR) |
|---------------------------------|-----------------|-----------------|-----------------|-------------------|------------|
| Middelburg Het Groene Woud 1 | -- (100.00%) | -- (--%) | -- (--%) | 23 | --% |
| Total | -- (--%) | -- (--%) | -- (--%) | -- | |

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

Loss Estimate Comments

MAS-PD:

Single site, therefore under MAS conditions a total loss.

MAS-BI:

BI is not insured, reconstruction will take up to 24 months.

Maximum Foreseeable Loss (MFL)

Total LE (EUR): 35,929,200

PD Loss Estimate

| Building | Bldg (EUR) | M&E (EUR) | Content (EUR) | Stock (EUR) | Other (EUR) | Total (EUR) |
|------------------------------------|--------------------------------------|-----------------|-----------------|-------------------------------------|-----------------|------------------------|
| Middelburg Het Groene Woud 1 | 30,588,000 (60.00%) | 0 (60.00%) | 0 (60.00%) | 5,341,200 (60.00%) | 0 (0.00%) | 35,929,200 (60.00%) |
| Total | 30,588,000 (60.00%) | -- (--%) | -- (--%) | 5,341,200 (60.00%) | -- (--%) | |

Total Property Damage Loss Estimate (EUR): **35,929,200 (60.00%)**

TE Loss Estimate

| Building | BI (EUR) | Payroll (EUR) | Rent (EUR) | Downtime (Months) | Total(EUR) |
|---------------------------------|-----------------|-----------------|-----------------|-------------------|------------|
| Middelburg Het Groene Woud 1 | -- (100.00%) | -- (--%) | -- (--%) | 12 | --% |
| Total | -- (--%) | -- (--%) | -- (--%) | -- | |

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

Loss Estimate Comments

MFL-PD:

Single site consisting of two interconnected buildings. Under MFL conditions for a AIG hazard grade 3 occupancy and a ISO3 building construction the loss is according AIG guidelines table 5 60%.

MAS-BI:

BI is not insured, reconstruction of 60% of the site will take AIG guidelines table 6 up to 12 months.

Normal Loss Expectancy (NLE)

Total LE (EUR): 10,471,920

PD Loss Estimate

| Building | Bldg (EUR) | M&E (EUR) | Content (EUR) | Stock (EUR) | Other (EUR) | Total (EUR) |
|----------|------------|-----------|---------------|-------------|-------------|-------------|
|----------|------------|-----------|---------------|-------------|-------------|-------------|

| Building | Bldg (EUR) | M&E (EUR) | Content (EUR) | Stock (EUR) | Other (EUR) | Total (EUR) |
|------------------------------------|-------------------------------------|-----------------|-----------------|-------------------------------------|-----------------|------------------------|
| Middelburg Het Groene Woud 1 | 8,149,120 (15.98%) | 0 (26.09%) | 0 (26.09%) | 2,322,800 (26.09%) | 0 (26.09%) | 10,471,920 (17.49%) |
| Total | 8,149,120 (15.98%) | -- (--%) | -- (--%) | 2,322,800 (26.09%) | -- (--%) | |

Total Property Damage Loss Estimate (EUR): **10,471,920 (17.49%)**

TE Loss Estimate

| Building | BI (EUR) | Payroll (EUR) | Rent (EUR) | Downtime (Months) | Total(EUR) |
|---------------------------------|-----------------|-----------------|-----------------|-------------------|------------|
| Middelburg Het Groene Woud 1 | -- (50.00%) | -- (--%) | -- (--%) | 12 | --% |
| Total | -- (--%) | -- (--%) | -- (--%) | -- | |

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

Loss Estimate Comments

NLE-PD:

The NLE calculation scenario is based upon a fire starting on one of the floors of the JRCZ. The buildings has 5 floors and a total floor surface of 4,394 m². The fire will be detected delayed as there is not total coverage of the fire detection system. After detection, alarm and verification the fire brigade will be alarmed and arrive on site. The fire load in the entire building is limited. The fire will affect one floor level (20% of floor surface). Non-thermal damage in the area below by (extinguishing) water and above by smoke and soot. Therefore the entire JRCZ building will be affected. Based upon the type of occupancy (hazard grade 3, low exposure) and building construction the non-thermal damage percentage according AIG guideline will be at max 15% for the building and for the M&E, Content and Goods will be moderate with a max of 50%.

Fire Damage:

- Building: 20% * 25,466,000 Euro = 5,093,200 Euro.
- M&E, Content and goods: 20 % * 5,807,000 Euro = 1,161,400 Euro.

Non thermal damage (smoke, soot & water):

- Building: (80% * 15%) * 25,466,00 = 3,055,920 Euro
- M&E, Content and goods: (80% * 50%) * 5,807,000 Euro = 2,322,800 Euro.

Total:

- Building: 5,093,200 Euro + 3,055,920 Euro = 8,149,120 Euro
- M&E, Content and goods: 1,161,400 Euro = 2,322,800 Euro.

NLE-BI:

BI is not insured, reconstruction under NLE conditions will take up to 12 months.

Notes:

- *The site is accessible from all sides.*
- *Sufficient water supply for fire brigade.*
- *The fire load inside the building is limited.*
- *BI is not insured.*
- *Insured value building HZ University 25,514,000 Euro.*
- *Insured value M&E, Content and Goods HZ University: 2,911,000 Euro.*
- *Insured value building JRCZ 25,466,000 Euro.*
- *Insured value M&E, Content and Goods JRCZ: 5,807,000 Euro.*

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.