

Risk Engineering Report



Prepared for:

STICHTING HZ UNIVERSITY OF APPLIED SCIENCES

Site Name: 2_Stichting HZ University

Date of Survey: September 16, 2022

Report Date: October 19, 2022

Survey Type: Property All Risk - Initial

TIV (EUR): 73,454,000

Site Address: Edisonweg 4, VLISSINGEN, 4382 NW, Netherlands

Latitude: 51.449833

Longitude: 3.589641

RFS ID: RFS-106532

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

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- Impairment tags
- “Insights”, a collection of risk related topics
- Tip Sheets, lists to use in preparing for extreme weather events

Ask your local risk engineer for access or email requests to
globalproperty.impairment@aig.com.

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To report sprinkler system, fire pump, water supply or other fire protection outages at insured facilities:
Call us at +1 877-705-7287 or +1 817-490-3255 or
Email us at globalproperty.impairment@aig.com

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.

The site visit on September 16th 2022 was the first conducted by AIG. Prior to the site visit information was provided by HZ University. During site visit and after additional information was requested. Because information was not provided a recommendation is noted for the photovoltaic system (PV system).

Site Overview

HZ University of Applied Sciences is in the South-West of the Netherlands, with locations in several cities. This location in Vlissingen at the Edisonweg study programs like HZ Business, Vitality & Hospitality and different research/ engineering are offered. The HZ University has a total some 4,800 national and international students, the largest part studies in Vlissingen. Throughout the building are classrooms, practical training rooms, offices and supporting rooms/area's like a restaurant, media library, shop, server room and so on. The largest risks are the technical installations/ equipment like the fat fryer for the kitchen, fume cupboard in the practical training rooms and so on. These risks are managed based upon sufficient maintenance, limiting quantities of hazardous materials and supervision by teachers.

HZ University Vlissingen site is realized in several stages, in 1965 and parts in the 90's. The site consists of several interconnected building with at max 4 above ground building levels and in parts of the complex a basement. On the north west part of the premises a L shaped outbuilding that households some storage, technical department and other not essential spaces. The distance between the main building and this building is between the 9 and 20 meter. A limited part of the site (like the roof structures with installations and atrium) is constructed out of a corrugated steel deck roof with EPS insulation on top on an exposed steel load bearing construction (ISO 3/C construction). The largest part of the building features reinforced concrete, steel and masonry materials in floors, roofs and exterior walls (ISO 5/AA) . The cavity exterior walls have been insulated by means of mineral wool. The building is divided in several horizontal and vertical compartments. Revision of the compartments started in 2022 and is almost completed. The largest compartment has a size of 2.960m², most of the compartments are < 1,000m².

In all buildings an automatic fire detection system and burglary detection system is in place. Alarms, including water intrusion detection, are transmitted to a private alarm station. 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. Open water is available at about 150 meter and therefore additional large water transport is needed. Exposures around the premises are limited and at a distance > 20 meter from the main building. The risk of Natcat events is considered a normal risk for the Netherlands.

Risk improvements discussed and noted are:

- scope 12 inspection PV system.
- repair/solve deviations electrical system (as noted in NEN3140 report).

- implement hot work permit.
- involve AIG in the plan forming of the hydrogen research lab.
- install a kitchen protection system (advise).
- best practice: install a sprinkler system (advise).

Site Loss History

No large losses reported during the site visit.

New Projects, Significant Changes and Observations

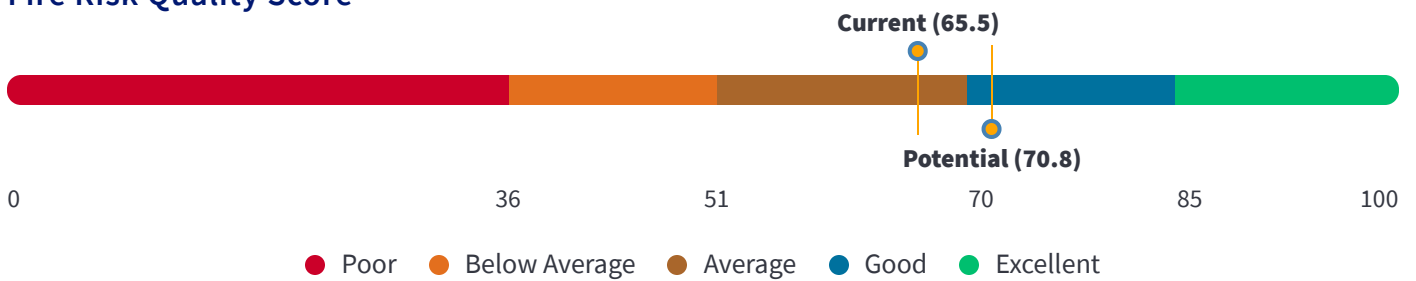
It is important to involve your insurer in new projects, such as refitting, refurbishment, extension work, new builds or relocating to a new site. Failure to do so could result in using non-approved construction materials (even though they meet local Building Codes and Fire Regulations) or inadequately 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.

After completion of the Joint Research Center Zeeland located in Middelburg (joint venture with among others Scalda and University College Roosevelt) various study programs will move to this location, like chemistry, civil engineering and so on. The focus in Vlissingen will be mainly theoretical study. Although equipment like: lathes, welding machines, fume hoods and so on will be relocated to Middelburg the plan is to start a research study program and lab on hydrogen in Vlissingen. This study is not possible in the new Middelburg location. For this activity a risk improvement is discussed and noted in this report.

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	5	Outstanding	0	Physical Protection	3
Advisory	2	Completed RI	0		

Fire Risk Quality Score



Ratings

	Current rating	Potential rating
Hazards	Slight	No Deficiencies
Water Supply	Adequate	Adequate
Protection	Nearly Adequate	Nearly Adequate
Management Programs	Adequate	Adequate
Supervision	Adequate	Adequate
Exposures	Slight	Slight

Risk Improvements

Risk Improvements - Open

Number	Name	Classification	LE Before (EUR)	LE After (EUR)
22-09-06	Roof penetrations	Important	4,701,056	0
22-09-03	Scope 12 inspection	Important	--	--
22-09-04	Repair deviations NEN3140 report	Important	--	--
22-09-05	Safety measures hydrogen research	Important	--	--
22-09-07	Hot Work Program- Improve	Important	--	--
22-09-01	Best Practice: Sprinkler Protection	Advisory	4,701,056	400,000
22-09-02	Kitchen extinguishing system	Advisory	500,000	25,000

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)
22-09-03 Management Programs	Scope 12 inspection		

Summary

Conduct a scope 12 inspection of the photovoltaic (PV) system. And if applicable solve/ repair deviation noted in the scope 12 report.

Details

A scope 12 inspection of a PV system ensures that the PV system is realized according applicable standards. And if the maintenance is at a sufficient level. This will limit the risk of an issue or starting fire at the PV system or an other risk that can result in a loss.

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-09-04 Management Programs	Repair deviations NEN3140 report		

Summary

Repair the (minor) deviations noted in the NEN3140 (incl. thermografic scans) report.

Details

Thorough visual inspections and testing can detect deteriorating conditions before a failure occurs allowing for corrective action to be taken to prevent equipment and site downtime or worse a large fire.

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-09-05 B&M Management Programs	Safety measures hydrogen research		

Summary

Contact us before you commence your 'Hydrogen study' project to ensure that we can support in minimizing the risks.

Information that could help us are Explosion Safety Document (Dutch: Explosie Veiligheidsdocument - EVD), drawings, fire safety plan and so on.

Details

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.

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-09-06 Physical Protection	Roof penetrations	4,701,056	0

Summary

Finish the exposed combustible insulation material at (roof) penetrations in the roof structure of the technical rooms on top of the building with a noncombustible material (like mineral wool).

Details

EPS insulation material is exposed around roof penetrations, in case of a fire in the technical room it can quickly spread into the insulation material. Roof fires generally expand rapidly and are difficult for firefighters to control or extinguish.

Client Exit Conference Comments

Will be discussed with the contractor of the compartmentation project (fire separations).

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-09-07 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 35 ft (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.

Client Exit Conference Comments

Will be implemented.

Open Risk Improvements : **Advisory**

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-09-01 Physical Protection	Best Practice: Sprinkler Protection	4,701,056	400,000

Summary

Provide automatic sprinkler protection for the entire site. Design the system according to the NFPA13:2022.

Details

Should a fire occur, the sprinkler system will control the fire until emergency response personnel are able to extinguish it. This will limit property damage and the effect on business operations.

Client Exit Conference Comments

Discussed during site visit as a best practice. It is considered not to be feasible. AIG explained that it is a best practice (advise) and will limit the loss potential more than an automatic fire detection system. In case of large changes (new constructions) this is considered a better option than realizing compartments.

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-09-02 Physical Protection	Kitchen extinguishing system	500,000	25,000

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/>

Occupancy & Process Overview

HZ University of Applied Sciences (rest of the report noted as HZ University) is located in the South-West of the Netherlands, with locations in:

- Vlissingen
- Middelburg
- Roosendaal

The site described in this report is in Vlissingen at the Edisonweg, at this location some of the offered study programs are:

- HZ Business.
- Vitality & Hospitality.
- HZ Health.
- Education & Wellbeing.
- Logistics Engineering.
- Maritime Officer.

The HZ University has a total some 4,800 national and international students. The location is open from Monday till Friday between 7:30 am till 10 pm and on Thursday and Friday till 6 pm. During this period the reception is occupied. Throughout the building are classrooms, practical training rooms, and offices for students and staff employees. There is a restaurant at ground floor level, which is equipped with a professional kitchen with deep fat frying equipment. A 'media library', a copy shop, and Gifts & Gadgets shop with a small range of digital printing machines and copiers and small gift items and gadgets at ground floor level. The largest number of classroom are theoretical. Practical class rooms are there for chemistry (with for instance fume cupboards), engineering (for instance welding) and boat simulators.

Occupancy Details

Building	SIC Code	Description	Operating Days/yr	Operating Hrs/Day	Other Tenants
2_Stichting HZ University	822102	Colleges and Universities, NEC, Private	260	10	No

Hazards

Hazard Category	Type	Current Rating	Potential Rating	RI's
Heating, Ventilation, Air Cond & Refrigeration	Common	Slight	No Deficiencies	0
Electrical	Common	Low	No Deficiencies	2
Storage	Common	No Deficiencies	No Deficiencies	0
Flammable Liquids - Storage, Transfer, Use	Common	Slight	No Deficiencies	1
Flammable Gases - Storage, Transfer, Use	Process	No Deficiencies	No Deficiencies	0
Commercial Cooking	Process	Low	No Deficiencies	1

Non-Process HVAC Equipment

Heating of the building is by means of natural gas fired boilers and air handling units, which are located the technical rooms at top floor level. Cooling compressors (chillers with a Freon replacement medium) are located on top of the roof. Air ventilation ducts are reportedly equipped with fire dampers.

The technical rooms are supervised by automatic smoke detection. The compartmentation and housekeeping in the technical rooms visited was good, with exception of roof penetration (risk improvement noted). All rooms also provided with waterdetection on the floors.

Status of installations are managed and monitored via the building management systems. Equipment appears visually in a good state of repair. Periodic maintenance is contracted out to specialized contractors.

Images



Boilers

Electrical

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). The reports of 2022 were provided by insured, with several recommendations. Solving these recommendations is an ongoing process but not completed yet and the exact status unknown. The importance is discussed, and a risk improvement is noted.

On top of building part V PV panels are installed. The inverter (with arc protection) is in the technical room. It is unknown if a scope 12 inspection is conducted. Based upon a limited view underneath the panels it is probably not done. It looks like not all connectors were free from the roof. The scope 12 report is requested during and after site visit. No reaction and therefore as discussed a risk improvement is noted in this report. For this a risk improvement is noted and to repair all deviations. There are also plans to install additional PV panels on other roof parts. Probably this will be on roof A or PE. It is discussed that AIG should be involved in plan decision-making, Aon will provide the PV panel brochure. If constructively possible, gravel should be left on the roof when PV panels are installed.

Outside at the northern side an emergency power generator. The system is only for safety provisions and server room.

Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Scope 12 inspection 22-09-03	0	0
Repair deviations NEN3140 report 22-09-04	0	0

Images



Inverter



Cable connectors



Solar panels



Emergency power generator

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 shelf racks to a height of 2.5 meters.

Incidental Flammable / Combustible Liquids & Gases

In the chemistry (labs with fume cupboards) and in the mechanical engineering class room small quantities of flammable / combustible liquids & gases can be present. And the end of the day/ class materials are removed or placed in steel closed chemical cabinets. Outside there are in a dedicated cabinet against the outer wall for storage of gasses, according Dutch PGS legislation and in the free standing (L) building the liquids are stored with spill containment and explosion proof lighting.

The chemistry and engineering classroom will be relocated around Q4-2022/Q1-2023, with result in almost no presence of hazardous materials. But instead HZ University is investigating the possibility of starting hydrogen research study (limited quantities) in building part LW. During site visit it is discussed that in case this will be conducted an Explosion Safety Document (Dutch: Explosieveilighheidsdocument - EVD) must be drafted, action from that plan must be

implemented to limit the risk and effects of an explosion. And in the planning process, AIG will be involved before realization of a practical classroom for this study begins.

Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Safety measures hydrogen research 22-09-05	0	0

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 ground floor. It contains electrical and gas fired kitchen equipment like an oven (electrical) and deep fat fryers (gas). 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 extinguishing system 22-09-02	500,000	25,000

Images



Kitchen



Hood

Practical classrooms

Practical classrooms at HZ University are: chemistry, engineering, boat simulator and maintenance. In these classroom technical equipment is present like welding machines, fume cupboard, computers, TV screens and so on. Students work under the guidance and supervision of teachers. 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. In Q4-2022/Q1-2023 most of the practical classrooms will be relocated to the new Middelburg locations.

Construction

Category	Current Rating	Potential Rating	RI's
Construction	ISO 5 / Class A - Modified Fire Resistive	ISO 5 / Class A - Modified Fire Resistive	1

Building	Year Built	# Stories	Height (m.)	Total Area (sq. m.)
2_Stichting HZ University	1965	5	15	35,353

Building	Area (1,000 sq. m.)							
	ISO1/D	ISO2/C	ISO3/C	ISO3/B	ISO4/C	ISO4/B	ISO5/A	ISO6/AA
2_Stichting HZ University	--	--	3.8 (10.73%)	--	--	--	31.6 (89.27%)	--
Total	0.0 (0.00%)	0.0 (0.00%)	3.8 (10.73%)	0.0 (0.00%)	0.0 (0.00%)	0.0 (0.00%)	31.6 (89.27%)	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.

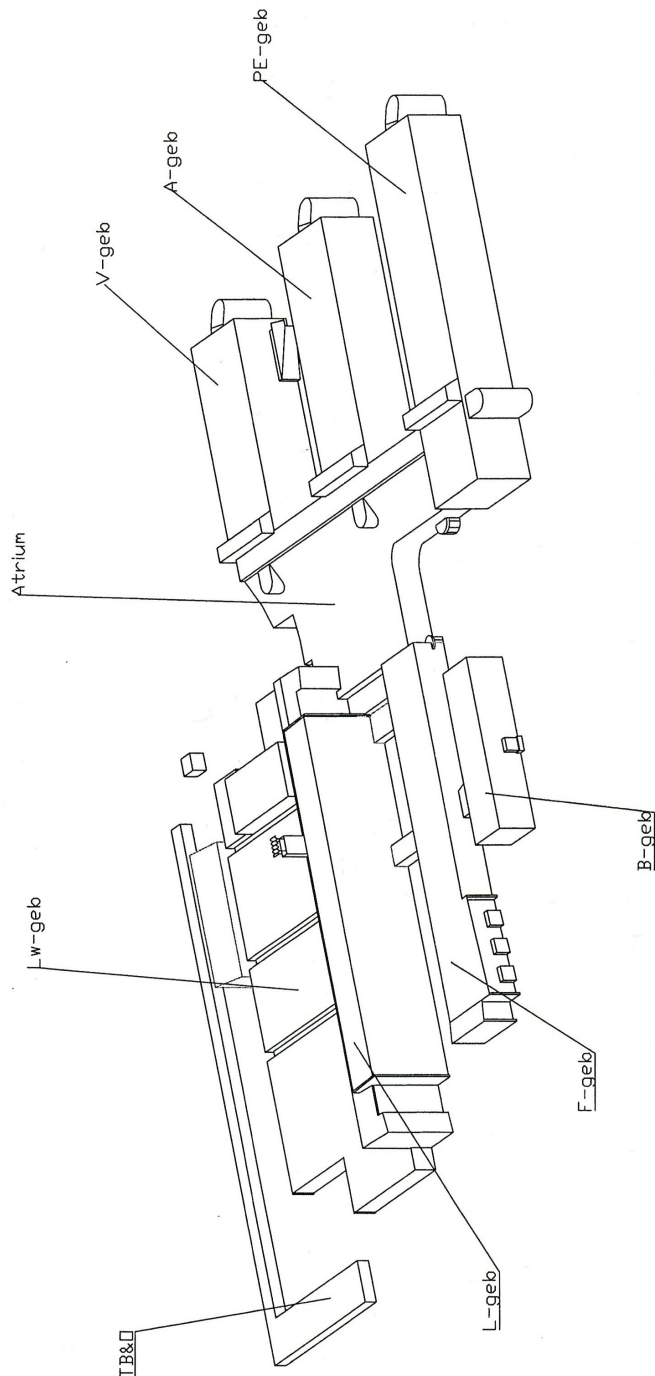
Comments

HZ University Vlissingen site is realized in several stages, the oldest part is constructed around 1965 (building parts B, F, L, Lw and PE), the other parts are constructed in the 90's (building parts Atrium, A and V). The site consists of several interconnected building with part only one level and at max 4 above ground building levels. In a limited part of the building there are (small) basements. All buildings are connected to each other by way of the building part atrium. The atrium, A, V, and technical rooms on the roofs feature a corrugated steel deck roof with EPS insulation on top on an exposed steel load bearing construction (3,795 m² of ISO 3/C construction). The remainder of the building features reinforced concrete, steel and masonry materials in floors, roofs and exterior walls (31,558 m² of ISO 5/AA). The cavity exterior walls have been insulated by means of mineral wool.

In the technical room (a roof structure on top of the building), several roof penetrations are inadequately finished. For this a risk improvement is discussed and noted.

The building is divided in several horizontal and vertical compartments. Revision of the compartments started in 2022 and is almost completed. Revision consisting of replacement of doors and wired glass for 60 minutes rated glass and doors. The largest compartment has a size of 2.960m² (building Lw ground floor). The largest number of compartments are < 1,000m².

On the north west part of the premises a L shaped outbuilding that households some storage, technical department and other not essential spaces. The distance between the main building and this building between the 9 and 20 meter.



Remarks:

- Building information out of public databases: <https://bagviewer.kadaster.nl/>, <https://www.ahn.nl/>, report Chubb and information provided by HZ University
- Based upon the provided information (tender document) only in the roof of the newest part of the site, EPS insulation is present. In all walls and in other roofs mineral wool is used.

Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Roof penetrations 22-09-06	4,701,056	0

Images



fire rated door



roof penetration (RI)



Atrium



Concrete/ steel construction



Outerwall

Water Supply & Fire Pumps

Water Supplies

Category	Current Rating	Potential Rating	RI's
Water Supply	Adequate	Adequate	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 streets around the site. These are connected to the underground public main in the public roads. 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 is at a distance of 150 meter, and can be used after large water transport equipment of the fire brigade arrives.

Protection

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

Sprinklers

Building	AS (%)	ASA (%)	ASN (%)	Fire Detection (%)
2_Stichting HZ University	0.00	0.00	100.00	100.00
Total	0.00	0.00	100.00	100.00

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

Comments

The site is not sprinkler protected, during site visit discussed as best practice and noted as an advise.

Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Best Practice: Sprinkler Protection 22-09-01	4,701,056	400,000

Special Extinguishing Systems

Comments

The server room is protected by means of an automatic gaseous extinguishing system with IG55 gas (50% Nitrogen, 50% Argon). The system is activated by the automatic fire detection system (aspiration detection and spot smoke detectors) according the NEN2535. the gaseous system is annually maintained by a specialized contractor.

In th kitchen the deep fryer (and hood) is not provided with an automatic extinguishing system based on wet chemical extinguishing agent (or suitable foam). Best practice risk improvement discussed and noted.

Images



Gaseous 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

- Volunteer

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

2.70

Comments

The public fire brigade has two locations in Vlissingen. In the road from the city center firestation to the HZ University there is a bridge that could be an obstacle. A second route is available in case the bridge is open. For the other fire station there are no obstacle in the route.

Supervision

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

Automatic Fire Detection

Signaling Systems Remote Station	Monitored Line Yes	Fire Protection Alarm <ul style="list-style-type: none"> Smoke Detection Special Extinguishing System 	Valve Locked NA
Fire Detection Coverage (Including Sprinklers) 100%	Smoke Detection Monitored Yes	Other Alarms No	Maintenance, Testing and Inspection per NFPA 25 Satisfactory

Comments

A smoke (fire) detection and evacuation alarm, including manual call points according NEN2535/ NEN2575 protection for the entire site (total coverage). The fire detection in the server room is for activating the gaseous system. The alarms are transmitted to a private alarm station. The alarm station contact the technical department or a security firm to verify the alarm. In case of several alarms/ zone reportedly the fire brigade is directly called. After a fire alarm all fire doors close (magnet). For fire detection point type smoke detectors and aspiration smoke detection are in place.

Images



Aspiration detector



Fire alarm panel



Spot smoke detector

Security

Security & Watch Service (24/7)
Other

Round Frequency
Other

Security Rounds
Recorded

Coverage
100%

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 building has been equipped with an 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 the insured. Most doors to important rooms are electronically locked and can only be opened by staff. Surveillance by a security firm is conducted after closing hours and on weekends.

There are CCTV cameras of which the footage can be viewed and archived for a limited period.

Management Programs

Category	Current Rating	Potential Rating	RI's
Emergency Organization & Planning	Adequate	Adequate	0
Self-Inspection Program	Adequate	Adequate	0
Fire System Impairment Procedures	Good	Good	0
Contractor Management	Adequate	Adequate	0
Hot Work Permit	Nearly Adequate	Good	1
Smoking	Good	Good	0
Housekeeping	Good	Good	0
Planned Preventative Maintenance	Good	Good	2
Management Interest	Adequate	Adequate	0
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 of 30 employees.

Self-Inspection Program

Self-Inspection Program

- Yes

Fire System Impairment Procedures

Written and documented procedure	Communication	Impairment logging
<ul style="list-style-type: none"> • Yes 	<ul style="list-style-type: none"> • Communicated to relevant personnel with mgmt. 	<ul style="list-style-type: none"> • Paper logging system is utilized and fully up to date

responsibilities assigned and ensures restoration of protection as soon as practical.

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

- 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. After arrival contractors first have to report to technical department.

Hot Work Permit

Hot Work Program in Place

- Yes – Does not conform to AIG

Communication

- Communicated to personnel with mgmt. responsibilities assigned

Logging

- No logging, but tags maintained as records

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. Only the hot work permit document is not in place, so important steps could be forgotten. The work permit is discussed, provided after the site visit and a risk improvement is noted.

Risk Improvements

Name	Classification
Hot Work Program- Improve 22-09-07	Important

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. The smoking ban is largely observed, only at the edge of the premises and near the parking lot not in all cases. This is considered not to be a risk.

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, with exception of the gaseous storage cylinders according Dutch PGS legislation). A designated waste storage area (partly fenced) is > 10 meters from the complex. During site visit with exception of one room the housekeeping is up to standard. During site visit the technical room in the basement is discussed and action will be taken. Because the overall housekeeping and action that will be carried out no risk improvement is noted.

Planned Preventative Maintenance

PM Program in place

PM System

Overdue Assignments

- None

- Yes – includes all equipment including work performed by outside contractors
- Documented, non-computerized

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. For the electrical system (NEN3140) and PV system (scope 12) risk improvements are noted because it is unknown if all maintenance is completed.

Risk Improvements

Name	Classification
Scope 12 inspection 22-09-03	Important
Repair deviations NEN3140 report 22-09-04	Important

Management Interest

Management Interest

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

Field Safety and Risk Management

- Important

Site Level Business Continuity Planning

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, Scalda a Secondary vocational education (Dutch: MBO) at a distance of 10 meter from the outbuilding and 30 meter from the main building.
- East, across the public road an office and production location for people with distanced from the labor market. This building is located at 70 meters
- South, two other buildings in use by HZ university at a distance of > 20 meter and a public road.
- West, across the public road various companies at > 40 meter.

Yard Storage

Yard storage in the north east corner of waste containers at a distance of > 10 meters from the building facade. The only storage against the facade is the different gas cylinders in closed cabinets, according Dutch PGS legislation.

Parking of cars is at the north, west and east of the building. Bicycle and scooter parking at the south side.

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

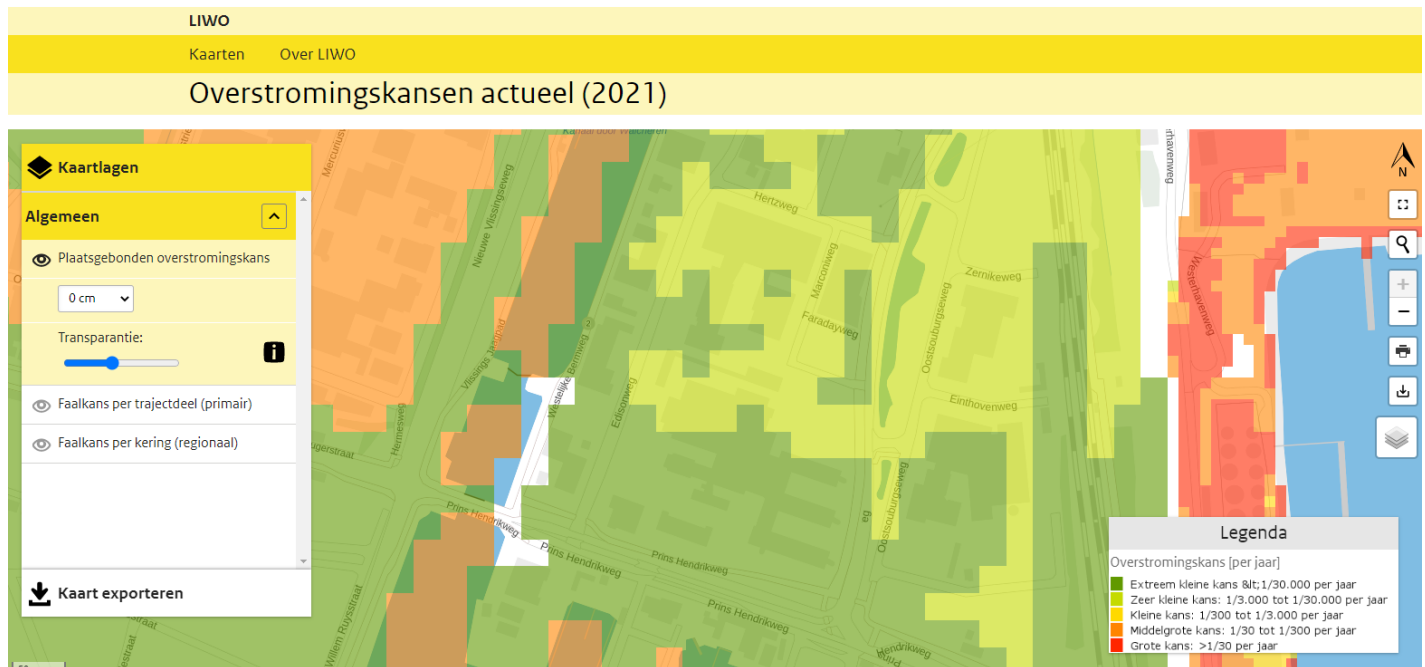
Building	Flood Zone	Flood Source	FFE (m)	100 Yr Flood Elv. (m)	500 Yr Flood Elv. (m)
2_Stichting HZ University	No Flood Exposure	--	--	--	--

Comments

According to the <https://basisinformatie-overstromingen.nlis/> site of the Dutch Government the site is in an area with a limited flood risk (see image from the 'Rijkswaterstaat' internet site).



Contact
Toegankelijkheid
Cookies



Wind

Wind Speed (m/s)

40

Building

Distance to Coast

2_Stichting HZ University

Earthquake

EQ Zone

MR Zone 0:<MMV

Peak Ground Acceleration (%g)

2.00

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	73.45	100.0		0.0		73.45
MFL	44.81	61.0		0.0		44.81
NLE	4.70	6.4		0.0		4.70

Reported Values

Property Damage

Building (EUR)	Contents (EUR)	M&E (EUR)	Stock/Inventory (EUR)	Other PD (EUR)
49,719,000	23,735,000	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	73,454,000
Total BI Value	0
Total Insured Value	73,454,000

Maximum Amount Subject (MAS)

Total LE (EUR): 73,454,000

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
2_Stichting HZ University	49,719,000 (100.00%)	0 (100.00%)	23,735,000 (100.00%)	0 (100.00%)	0 (0.00%)	73,454,000 (100.00%)
Total	49,719,000 (100.00%)	-- (--%)	23,735,000 (100.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **73,454,000 (100.00%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total (EUR)
2_Stichting HZ University	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

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

Loss Estimate Comments

PD:

Under MAS criteria a total loss for this location, HZ University at the Edisonweg nr. 4 is one complex only with limited distance the outbuilding. The distance is not sufficient under MAS conditions.

Maximum Foreseeable Loss (MFL)

Total LE (EUR): 44,806,940

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)
2_Stichting HZ University	30,328,590 (61.00%)	0 (61.00%)	14,478,350 (61.00%)	0 (61.00%)	0 (0.00%)	44,806,940 (61.00%)
Total	30,328,590 (61.00%)	-- (--%)	14,478,350 (61.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **44,806,940 (61.00%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
2_Stichting HZ University	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

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

Loss Estimate Comments

PD

According MFL criteria the entire building will be involved in a fire due to lack of MFL qualified fire barriers and/or space separation. Based upon construction factors and occupancy there is a salvation potential of the PD perils. For the ISO3C (11%) classified part a total loss is expected. For the ISO5 classified part of the building and a HG3 occupancy the loss potential according AIG guidance is 50%. The total loss for the building part is 50% (ISO5) + 11% (ISO3) = 61%.

Normal Loss Expectancy (NLE)

Total LE (EUR): 4,701,056

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
2_Stichting HZ University	3,182,016 (6.40%)	0 (6.40%)	1,519,040 (6.40%)	0 (8.50%)	0 (6.00%)	4,701,056 (6.40%)

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Total	3,182,016 (6.40%)	-- (--%)	1,519,040 (6.40%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **4,701,056 (6.40%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
2_Stichting HZ University	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

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

Loss Estimate Comments

PD:

The NLE calculation scenario is based upon a fire starting in one of the largest compartments. For HZ University the fire will start in the Atrium part of the building. This building section has partly concrete and mainly steel load-bearing structure. The atrium is constructed in the 90's with an EPS roof insulation that will contribute in the fire spread. The fire will be detected in an early stage and after verification the fire brigade will be alarmed. The fire load in the entire building is limited, also in the atrium. Based upon the building construction (combustible roof insulation) this part of the building is considered lost. The compartment has a size of 1,941m², this is 5,5% of the entire site (35,353m²). In adjacent compartments non thermal damage is expected. The spread of smoke/water is limited due to the large number of rooms and limited area size of the adjacent area's and all separations close automatic in case of a fire. Therefore it is estimated that at max 2,000m² will be damaged (adjacent spaces). Based upon the type of occupancy (hazard grade 3, low exposure) and building construction the damage percentage according AIG guideline will be at max 15% for the building/ equipment & content. For the stock/goods according table 15 the damage will be moderate with a max of 50%.

2,000m² is about 6% of the building surface, for the perils the following is applicable:

- Building/equipment - 6% * 15% = 0,9%
- Content - 6% * 50% = 3%

The total expected damage under NLE conditions is:

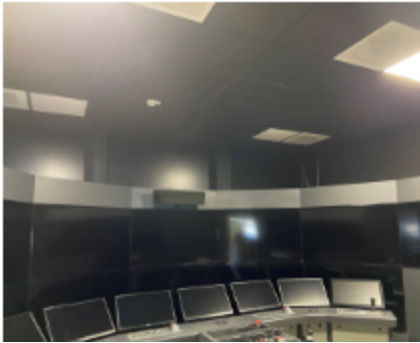
- Building/equipment/content -> 5,5% + 0,9% = 6,4%

- Stock/goods -> $5,5\% + 3\% = 8,5\%$.

Remarks:

- *No official evaluation reports in possession of AIG. Therefore the insured interest is divided proportionally over the m^2 .*
- *The scenario is based upon a percentage of the site, in case the insured value changes, the percentage will stay applicable making the loss potential in the future up to date. Should evaluations report be available with a clear deviation in area/ insured value the scenario must be checked.*
- *In the largest compartment only non combustible construction materials are used, not contributing in case of a fire. Therefore the largest compartment with combustible roof insulation will have the most impact and is considered to be the NLE scenario.*
- *The site is accessible from all sides.*
- *Sufficient water supply for fire brigade.*
- *The building is divided in a large number of compartment.*
- *The fire load inside the building is limited.*
- *BI is not insured.*

Images and Site Sketches



boot simulator classroom



Chemistry classroom



Entrance



Engineering 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.