Hogeschool Inholland

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Den haag, Netherlands

Risk Control Report

Property / Multi-Discipline

Location:	Hogeschool Inholland Theresiastr 6-8 Den haag 2593 AN Netherlands
Date On Site:	12th June 2017
Consultant:	Sander Verboog

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PARTICIPANTS

Name	Title	Company
Mrs. S. Verhoeven	Facilitair Medewerker	Hogeschool Inholland
H. Tabiat	Gebouwbeheerder	Hogeschool Inholland

SUMMARY AND OPINION OF RISK

The purpose of this audit was to review the loss prevention systems and procedures and the physical layout and arrangement of the facility, and in so doing, identify options for improvement to minimise, at a reasonable cost, the potential physical and business interruption loss exposures.

This site has been graded using the RSA quantitative risk assessment (QRA). This is a method for the assessment of risk quality against commercial/industrial facilities in general. Two elements of risk are examined and compared in order to derive an overall risk quality rating:

- *the inherent fire and business interruption hazards associated with the premises, occupancy and operations*
- *the risk control features in place to mitigate the inherent hazards*

This facility houses a university of applied studies with only theoretical studies. This facility is considered an ordinary hazard occupancy with a moderate fire load throughout. In total there are some 2,500 students. The building is open from early in the morning until late in the evening during 5 days a week.

Construction is rated highly combustible overall. Roofs have been provided with assumed combustible insulation material throughout.

This facility is protected by a partial fire detection system. The alarms are only transmitted to the fire brigade after alarm verification by a security company. This relative long alarm follow up procedure would probably result in a higher loss than would be expected if the fire alarm would directly be transmitted to the fire brigade.

Overall fire compartmentation is rated good throughout. Fire compartments have a 30 minute fire rating.

The possibilities to access the building by the fire brigade are limited. The West and East sides of the building cannot be reached by fire trucks.

In the event of a large catastrophe, outsourcing of the majority of the processes to external own and third party buildings may be possible. No agreements exist to execute this and no information could be gathered during our survey. However, the processes are rather simple and it is not expected that outsourcing would cause major problems.

The risk quality rating for this facility is Standard with the potential to achieve an Above Standard rating upon completion of the submitted risk improvements.

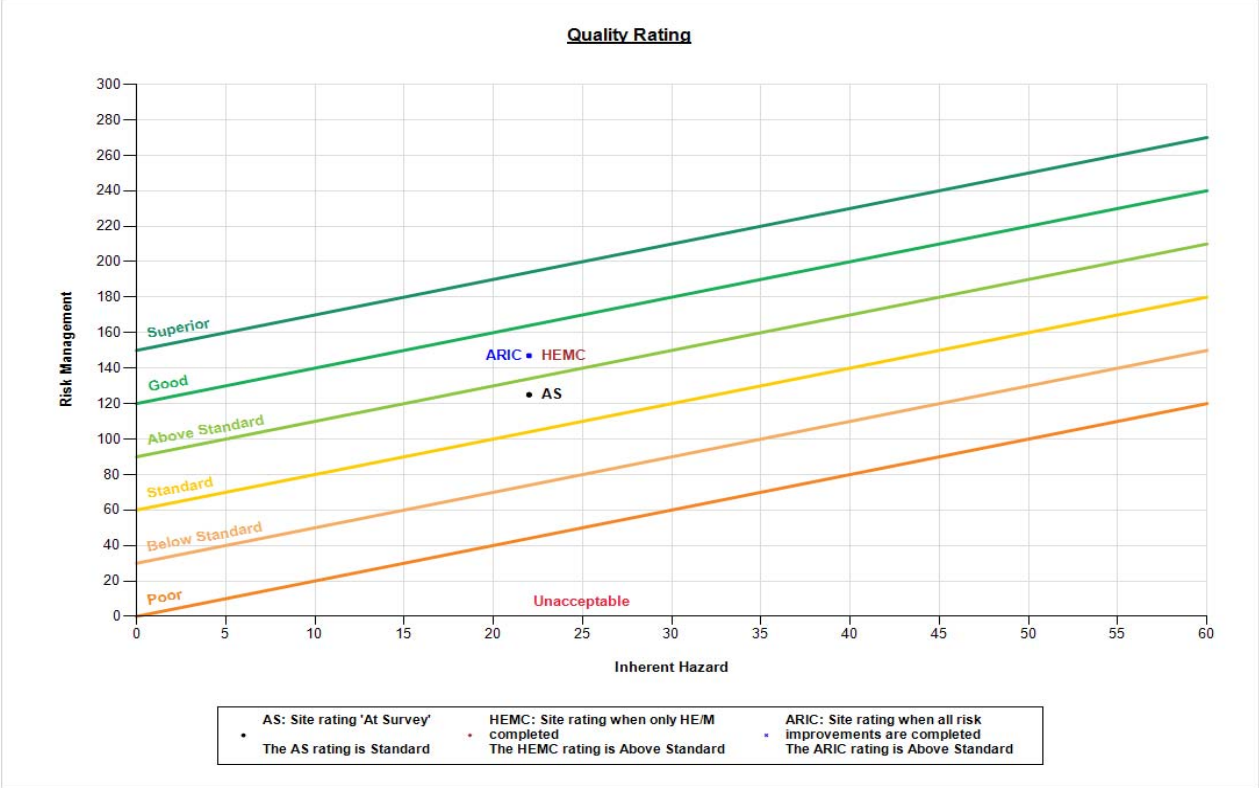
CHANGES SINCE PREVIOUS SURVEY

This is the initial full survey conducted by RSA. There are no significant changes planned on site in the short to midterm and there have been no recent changes on site.

LOSS HISTORY

There have been no losses on site to date.

QUALITY RATING



Rating: 'Overall Rating' is derived from the 'inherent hazards', e.g. the type of process or storage, the type of construction and exposure hazards, evaluated against the loss control measures and risk management practices that will reduce the likelihood and/or severity of loss.

Superior:	Meets all and exceeds many best-practice risk management standards. All inherent hazards are well controlled.
Good:	Meets most best-practice risk management standards. All key inherent hazards are well controlled.
Above Standard:	Meets all or most normal risk management standards. Most key inherent hazards are well controlled.
Standard:	Meets minimum risk management standards. There may be some deficiencies in the control of inherent hazards.
Below Standard:	Gaps in application of minimum risk management standards. Inherent hazards are not thoroughly controlled.
Poor:	Numerous minimum risk management standards are missing. Inherent hazards are not controlled.
Unacceptable:	The risk has major deficiencies in more than one area (e.g. physical, procedural, process or attitude) that leads to a significant likelihood of a major loss.

RISK IMPROVEMENTS

Category:

Category 1: These are capital expenditure risk improvements with a loss expectancy greater than 25% of the combined property damage and business interruption loss potential. Whilst funding for these items will normally require corporate approval, completion will significantly improve the risk profile of the site.

Category 2: These are risk improvements either with a loss expectancy of less than 25% of the combined property damage and business interruption loss potential or that address important reliability issues. In some cases funding may require corporate approval.

Human Element / Maintenance (HE/M): These risk improvements refer to management practice and procedures. Typically they carry no capital cost but address a wide range of local issues including the control of inception risks and training.

Priority:

Priority A	*These Risk Improvements address deficiencies that feature one or both of the following:* *- high-frequency or imminent loss exposures that can typically be resolved by the implementation or improvement of procedures or practices, or by localised physical improvements* *- loss exposures that are disproportionately large relative to the physical extent of the deficiency, or to the cost to complete the Risk Improvement*
Priority B	*These Risk Improvements include procedural items that address loss exposures of moderate frequency, that may be more complex, and/or that are enhancements to existing arrangements.* *Also included are physical improvements which will reduce the likelihood and/or severity of losses, but that do not meet the criteria for Priorities A or C*
Priority C	*These Risk Improvements include items that represent a fundamental change or upgrade in loss control arrangements, probably as part of a longer term risk management strategy. Also included are enhancements to existing systems and practices or longer term projects aimed at achieving "best practice"*

Risk Improvement Summary

RI No	Summary	Category	Priority	Class	Status	Loss Estimate
2017-06:01	Keur de elektrische installatie. (Electrical Maintenance)	HE/M	A	Property	AR	N/A
2017-06:02	Implementeer procedure brandgev. werkzaamheden (Permits to Work including Hot Work Controls)	HE/M	A	Property	AR	N/A
2017-06:03	Verbeter de afvalopslag. (Housekeeping and Loss Control Self-inspection)	HE/M	A	Property	AR	N/A
2017-06:04	Schakel het luchtbehandelingssyst automatisch uit (Safe Shutdown Systems)	HE/M	A	Property	AR	N/A
2017-06:05	Implementeer schoonmaakprocedure afzuigleidingen. (Extraction Systems)	HE/M	A	Property	AR	N/A

Status Definitions

AR: Awaiting Response. This is the default status for all risk improvements pending site feedback
UR: Under Review, including projects awaiting sign-off and funding
IP: In Process, including projects for which funds have been approved and released and work is starting or due to start
NP: Disagree / No Plans. There are no plans to complete the risk improvement
DA: Deferred by RSA Account Manager

2017-06:01 : Keur de elektrische installatie. (Electrical Maintenance)

Risk Improvement:

Controleer de elektrische installatie met behulp van een thermografisch onderzoek met een jaarlijkse inspectiefrequentie. Een keuring dient uitgevoerd te worden door een bevoegd en onafhankelijk bedrijf.

Deficiency:

Een brand in de elektrische installatie kan een aanzienlijke materiele schade alsook rook- en roetschade veroorzaken.

Status:	Awaiting Response	**Est. Cost:**	EUR 1 - 5,000	**Risk Rating Impact:**	Low
Category:	HE/M	**Priority:**	Priority A	**Loss Estimate:**	N/A
Class:	Property				

Status Comments:

2017-06:02 : Implementeer procedure brandgev. werkzaamheden (Permits to Work including Hot Work Controls)

Risk Improvement:

Ontwikkel beleid dat tot doel heeft dat brandgevaarlijk werk veilig uitgevoerd wordt. Dit dient te resulteren in het gebruik van een formulier brandgevaarlijk werk en een checklist die gevolgd moet worden voorafgaand aan uitvoering van dergelijk werk. De procedure dient gecommuniceerd te worden met eigen personeel en aannemers. Alleen geautoriseerde mensen mogen werkvergunningen uitschrijven.

In het bedrijf dienen plaatsen aangewezen te worden waar nooit brandgevaarlijk werk uitgevoerd mag worden en plaatsen waar dit is toegestaan. Beoordeel het beleid periodiek en pas het aan waar nodig. Het is noodzakelijk dat het management het beleid ondersteunt. Een strikte controle van brandgevaarlijk werk zal het risico op brand verminderen. Brandgevaarlijk werk kan gedefinieerd worden als elk werk dat open vuur met zich meebrengt, werk dat warmte veroorzaakt, werk dat vonken veroorzaakt zoals slijpen, solderen, lassen.

De volgende maatregelen dienen genomen te worden:
- Maak ruim voor aanvang van de werkzaamheden de uitvoerder bekend met de huisregels.
- Maak voor aanvang van de werkzaamheden de huisregels bekend en laat mensen een vuurvergunning brandgevaarlijke werkzaamheden ondertekenen. De vuurvergunning dient een geldigheid van niet langer dan een dag te hebben. Het bewust omgaan met brandgevaarlijk werk binnen uw bedrijf zal hierdoor vergroot worden.
- Dek voor aanvang van de werkzaamheden brandbare goederen af of verwijder deze. Een medewerker van uw bedrijf dient erop toe te zien dat dit gebeurt.
- Zorg voor voldoende kleine blusmiddelen in de directe omgeving van de werkzaamheden. Een medewerker van uw bedrijf dient erop toe te zien dat dit gebeurt. Zorg voor een brandwacht.
- Zorg ervoor dat de mensen een mobiele telefoon bij zich hebben om in geval van calamiteit zo snel mogelijk alarm te kunnen slaan.
- Controleer samen met de mensen 1 uur na afloop van de werkzaamheden de werkplek op de aanwezigheid van smeulende goederen.
- Voer geen brandgevaarlijke werkzaamheden uit aan het eind van een werkdag.

Door deze procedure zullen mensen zich meer bewust worden van de verantwoordelijkheid die zij op zich nemen. Deze procedure dient voor zowel eigen personeel als voor derden geimplementeerd te worden.

Deficiency:

Ongecontroleerd brandgevaarlijk werk kan resulteren in brand.

Status:	Awaiting Response	**Est. Cost:**	Revenue Only	**Risk Rating Impact:**	Moderate
Category:	HE/M	**Priority:**	Priority A	**Loss Estimate:**	N/A
Class:	Property				

Status Comments:

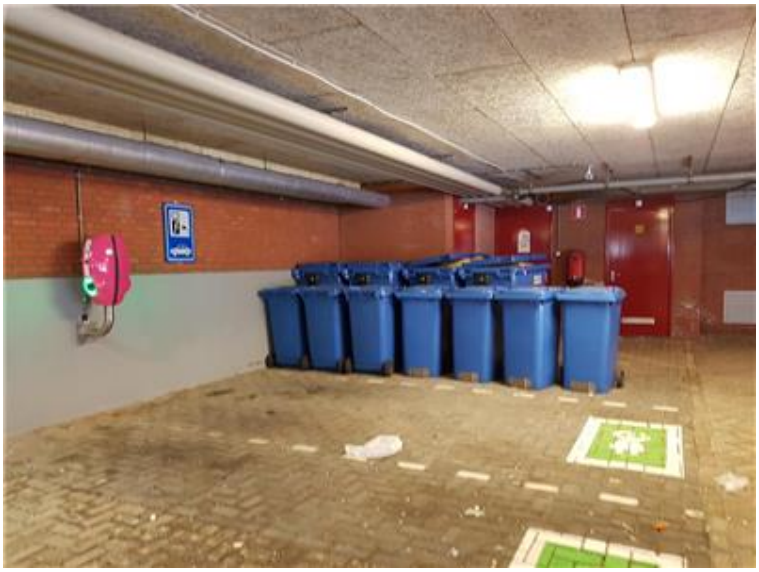
2017-06:03 : Verbeter de afvalopslag. (Housekeeping and Loss Control Self-inspection)

Risk Improvement:

Plaats alle mobiele plastic containers die op dit moment in de parkeergarage staan buiten het pand op ten minste 10 m van de buitengevel. Tijdens ons bezoek hebben wij gesproken over het plaatsen van de containers op de plaats van de fietsen of het plaatsen van extra ondergrondse containers.

Deficiency:

Een brand in de containeropslagplaats wordt niet gedetecteerd en kan zich daardoor voortplanten naar het bovenliggende gebouw.



Status:	Awaiting Response	**Est. Cost:**	Revenue Only	**Risk Rating Impact:**	Low
Category:	HE/M	**Priority:**	Priority A	**Loss Estimate:**	N/A
Class:	Property				

Status Comments:

2017-06:04 : Schakel het luchtbehandelingssyst automatisch uit (Safe Shutdown Systems)

Risk Improvement:

Schakel het luchtbehandelingssysteem automatisch uit bij activering van het branddetectiesysteem.

Deficiency:

De aanzuigkanalen en uitblaaskanalen van uw luchtbehandelingssysteem zijn relatief dicht bij elkaar geplaatst. Bij brand kan de rook die het gebouw verlaat via het uitblaaskanaal weer aangezogen worden via het luchtinlaatkanaal. Een relatief kleine brand kan daardoor resulteren in een rook- en roetaanslag in uw gehele bedrijf. Een aanzienlijke schade kan het gevolg zijn.

Status:	Awaiting Response	**Est. Cost:**	EUR 1 - 5,000	**Risk Rating Impact:**	Moderate
Category:	HE/M	**Priority:**	Priority A	**Loss Estimate:**	N/A
Class:	Property				

Status Comments:

2017-06:05 : Implementeer schoonmaakprocedure afzuigleidingen. (Extraction Systems)

Risk Improvement:

Controleer en reinig de dampafzuigleiding van het afzuigsysteem in de keuken.
Het is waarschijnlijk dat er brandbare afzetting gevormd wordt in de dampafzuigleidingen. Er dient daarom gecontroleerd te worden of er zich brandbare afzetting in de dampafzuigleidingen gevormd heeft. Indien dit het geval is dient dit gereinigd te worden. Tevens dient een procedure opgezet te worden die ervoor zorgt dat deze leidingen jaarlijks gecontroleerd worden.

Deficiency:

Een brand in de dampafzuigleidingen is nagenoeg niet te bestrijden en kan een dakbrand veroorzaken.

Status:	Awaiting Response	**Est. Cost:**	Revenue Only	**Risk Rating Impact:**	Moderate
Category:	HE/M	**Priority:**	Priority A	**Loss Estimate:**	N/A
Class:	Property				

Status Comments:

LOSS ESTIMATES SUMMARY

The sums insured below are based on information provided to RSA.

We define Loss Estimate (LE) as the anticipated monetary loss for any particular scenario including both physical damage and business interruption costs.

Value and Loss Estimate Summary Table

PROPERTY DAMAGE	Total Sum Insured	EML Block		EML		CNLE		TNLE	
	EUR	% of TSI	EUR	% within the EML Block	EUR	% within the EML Block	EUR	% within the EML Block	EUR
Buildings	23,350,000	100	23,350,000	50	11,675,000	25	5,837,500	25	5,837,500
Plant & Equipment	7,227,000	100	7,227,000	70	5,058,900	30	2,168,100	30	2,168,100
Stock		100		70		30		30	
Other	25,000,000	100	25,000,000	100	25,000,000	25	6,250,000	25	6,250,000
Total PD Value	**55,577,000**								
Total PD Loss Estimate			**55,577,000**		**41,733,900**		**14,255,600**		**14,255,600**
BUSINESS INTERRUPTION	**EUR**	**% of TSI**	**EUR**	**Days within the EML Block**	**EUR**	**Days within the EML Block**	**EUR**	**Days within the EML Block**	**EUR**
Indemnity Period	24 months								
Total BI Value									
Total BI Loss Estimate		100		720		180		180	
Total PD + BI Value	**55,577,000**								
Total PD + BI Loss Estimate			**55,577,000**		**41,733,900**		**14,255,600**		**14,255,600**

LOSS ESTIMATE SCENARIOS

EML Block

The largest block of value without adequate fire separation covers the entire building. The EML Block represents 100% of the total sum insured.

The exposures named Ministry of Economic Affairs and several private dwellings are included in this block.

Estimated Maximum Loss (EML)

An estimation of the maximum LE that could be sustained from a single incident, which is considered within the realms of probability but excluding losses that may be possible but remain unlikely. The primary fire protection, detection, or manual response system is ignored (e.g. sprinklers are ignored but credit is given for detection; if no sprinklers exist, detection is ignored), but a normal level of emergency response can be assumed (if applicable).

Excluded loss examples include fire following aircraft impact; fire following earthquake; or other natural catastrophe; and multiple seat arson.

With the automatic fire detection system impaired, a fire originating on the ground floor of building 3 would not be noticed immediately. Due the fact that the building is located in a busy city area it is expected that the fire would be noticed eventually. The late arriving fire brigade would encounter a large fire and would have difficulties to reach all building areas. The fire would breach two fire resistive walls and therefore spread to the entire complex. External fire spread would be possible. It is expected that 50% of the building value and 70% of the machinery and stock value of the entire building would be lost.

In the event of a large catastrophe, it is likely that the majority of the processes could be outsourced to a temporary location elsewhere. Processes are rather simple and it is not expected that outsourcing would cause major problems.

The exposed neighbours are not included in this scenario.

Current Normal Loss Expectancy (CNLE)

The largest LE determined at the time of survey when considering all aggravating and mitigating factors. This can only be equal to or less than the EML.

A fire originating on the ground floor of building 1/2 would be detected by the partial fire detection system. Due to the long alarm verification procedure the fire brigade would be noticed after a relative long period of time. It is expected that the fire would spread throughout the entire building compartment 1/2, both horizontally and vertically. The fire brigade could be credited to stop the fire at a fire resistive wall. The loss of the combustible top floor would be 100% while the loss of the storey floors below could be reduced to 50% due to the presence of a fire resistive load bearing structure which is exposed to a moderate fire load.

Target Normal Loss Expectancy (TNLE)

The largest LE after all loss prevention risk improvements have been completed. Depending on the risk improvements made at the time of survey this will typically be less than the EML, but could potentially still equal the CNLE and/or EML

A fire originating on the ground floor of building 1/2 would be detected by the partial fire detection system. Due to the long alarm verification procedure the fire brigade would be noticed after a relative long period of time. It is expected that the fire would spread throughout the entire building compartment 1/2, both horizontally and vertically. The fire brigade could be credited to stop the fire at a fire resistive wall. The loss of the combustible top floor would be 100% while the loss of the storey floors below could be reduced to 50% due to the presence of a fire resistive load bearing structure which is exposed to a moderate fire load.

RISK INFORMATION

Site Occupancy

This facility houses a university of applied studies with only theoretical studies. The university provides education to some 2,500 students. This is a normal university occupancy with class rooms and offices spread over the entire complex. There are no work shops. Six class rooms have been equipped with computers. Expensive Apple computers have been placed in two adjacent class rooms on the third storey floor.

Besides class rooms and offices, there is a kitchen and associated restaurant on the ground floor of building block 6. Cars are parked in the basement underneath building blocks 1, 2 and 6. Up to 60 cars could be parked in this garage. Some technical rooms (transformer, low voltage switch room, hot water distribution) are located in the basement as well.

Occupancy Fire Load

There are no large storage areas. The fire load is moderate throughout.

Compartmentation

Building blocks 1-6 are segregated from each other by concrete and gypsum panel fire resistive walls. Furthermore the non combustible corridor that attach the former dwelling to the main building has been provided with a fire resistive partition. Openings are protected by fire doors consist of fire resistive glazing in a timber frame. The doors are kept open by magnetic contacts. They are closed automatically upon activation of the fire detection system. The fire resistive walls have a 30 minute fire rating. The doors are checked monthly during a control round.

Overall cable penetrations are sealed adequately. Currently all penetrations through fire resistive walls are reviewed and improved if necessary. This project will be completed soon.

Construction

Building Name	Main Occupancy	Year Built	Construction Information			Overall Classification Summary	% Sprinklers Adequate	% Sprinklers Deficient	Storeys	Ground Floor Area (m^2)	Total Building Area (m^2)	Estimated Property Value Split (%)
			Roof	Walls	Insulation							
Entire Building	Office	2001/2010	Combustible	Combustible	Cellular plastic - non-approved	Combustible	0	0	4	2,300	9,000	100

Construction Definition	% of Total Building Area
Combustible	100

The building consists of 6 attached building blocks (1-6). Blocks 1-5 have been built in 2001 and building block 6 has been built in 2010. Furthermore there is a former dwelling that is currently not used by Inholland. It has been connected to the main building by a non combustible glass and steel corridor that has a length of some 20 m. One of the exposures is a student apartment block and is situated at a distance of 15 m from the main building. The ground floor of this apartment block is used by Inholland and houses some office rooms. The construction of this ground floor is fire resistive throughout.

The building consists of a concrete open type parking garage underneath building blocks 1, 2 and 6. This is a concrete construction with wood wool cement panels attached to the ceiling. Furthermore the building consists of a ground floor and partly 3, partly 4 storey floors. The building entrance is an atrium area from the ground floor up to the roof of the fourth storey floor. Storey floors are concrete throughout. Two elevators have been installed. Class rooms and offices have been provided with large glass panel walls towards the corridors.

The entire building has a concrete fire resistive load bearing structure with masonry walls and glass panel windows. The roof consists of concrete. The type of insulation material could not be confirmed by Mr. Tabiat. He will provide this information to us. Currently the roof structure is assumed combustible. The atrium area has a glass panel structure throughout.

Special Hazards

Summary Table

Special Hazard	Arrangement, management and protection #ADEQUATE	Arrangement, management and protection #INADEQUATE
Entire Building		
Commercial Kitchen	0	1

Process hazards are confined to small scale storage areas, a waste storage area in the parking garage and a kitchen and associated restaurant. The kitchen has been provided with a deep fry system.

Utilities Infrastructure

Electricity and Lightning
Electrical power is supplied by the public grid. It is stepped down on site by a single transformer that has been installed in a concrete vault in the parking garage. The transformer is owned and maintained by the public electricity board. No further details are known.

Heating and Cooling
Building block 6 has been provided with a municipal hot water system. Warm water is supplied to the building by a fixed underground water main. This presents a negligible exposure to the plant. Building blocks 1-5 have been provided with a warm and cold water heat exchange system using the earth underneath the facility as storage capacity of water and heat. The warm and cold water is transported into the buildings using an electrically driven heat pump.

Cooling is provided by cooling systems that have been installed on the roof.

Gases and Liquids
Natural gas is not used at this facility.

Other
Building blocks 1/2/3, 4/5 and 6 each have been provided with dedicated ventilation systems. The systems have been installed on the roof. Air inlet and air outlet ducts have been installed on the roof. It is not known whether the systems have been interlocked with the fire detection system. In the event of a fire, contamination by smoke and soot throughout the entire building cannot be excluded. The ducts have been provided with fire dampers. It is not known if the dampers are activated by the fire detection system. Information regarding the interlock and the activation of the fire dampers will be provided by Mr. Tabiat.

Arson Exposure

There are no combustibles stored on side. There are four underground waste containers adjacent to the West side of the building. Furthermore a number of mobile plastic waste containers are placed in the parking garage. The parking garage is situated behind a fence. However, the parking garage itself is not locked during idle hours. A fire in the waste container area could spread unnoticed and could result in a severe damage. The containers will be removed or relocated soon.

External Exposures

This facility is located in a busy residential area at the outskirts of the centre of The Hague. The ministry of Economic Affairs is located at a distance of 15 m from the main building. Furthermore a number of private dwellings are located at only a few metres from the main building.

Human Element and Maintenance Control Programs

Electrical Maintenance

The electrical installations are regularly checked according to the Dutch standard NEN3140 by a specialised company. It is not known whether thermographic inspections have been conducted.

General Maintenance

There are two technical employees and an in-house facility department. All maintenance work is conducted by specialised companies, either by the main contractor Breijer or by a number of sub-contractors. All maintenance work is discussed with the facility department using a preventive maintenance program. This program is initialised by the main contractor.

Permits to Work including Hot Work Controls

The facility does not operate a formal permit to work system for the activities on site.

Contractor Controls

Contractors are received by a technical employee using the reception desk. The management always tends to use the same contractors that are familiar with the site and the specific safety rules. Most of the employees working for the main contractor and sub-contractors are known. Safety instructions are discussed if necessary.

Housekeeping and Loss Control Self-inspection

An adequate program is in place with good standards maintained across the entire site. The waste containers in the parking garage represent an increased risk.

Control of External Exposures

There are no formal control rounds on a daily basis but external areas are frequently visited during working hours. There are formalised monthly safety rounds whereby all fire doors are activated.

Management of Change

All major projects are controlled by the facility department. There is referral to local authorities but not necessarily to insurers.

Smoking Controls

Smoking is prohibited in the entire building including the parking garage. Some illicit smoking was noticed in the parking garage near the storage of the waste containers. This is not acceptable and a risk improvement was submitted to relocate these containers.

Process Hazard Controls

Plant and Equipment Installations

All equipment is installed to a good standard in line with local code and best practice at the time of installation. Kitchen equipment is electric. Natural gas is not used in the building.

Instrumentation and Controls

All technical installations are controlled by the building management system. Technical alarms are not signalled externally. If they would occur during idle hours, they would be noticed the next working day and resolved immediately.

Safe Shutdown Systems

The ventilation system has not been interlocked with the fire detection system.

Maintenance and Management

There are no specific requirements relating to this occupancy.

Hazardous Goods and Spillage Response

There are no specific requirements relating to this occupancy.

Operator Training

All personnel including teachers are responsible for a safe evacuation of the students. However, they have not received a training.

Location and Construction

Technical rooms are cut off from the remainder. Penetrations are sealed adequately. There are no large cable shafts. Cables through concrete floors are adequately sealed.

Extraction Systems

Only electrical kitchen equipment has been installed in the kitchen. The hoods are regularly cleaned by the kitchen personnel. It is not known whether the exhaustion ducts are cleaned regularly. This information will be provided by Mr. Tabiat.

Electrical Installations

All electrical equipment has been installed in line with the Dutch standard NEN1010. All cables run in suitable loaded conduit or cable trays. There is no redundant cabling. The transformer is well arranged. The equipment is visually in a good condition.

Response Factors

Security and Access Control

The inner garden and the parking garage has been provided with a fence. This fence is closed after working hours. The front of the building is easily accessible. Visitors are required to identify themselves at the reception desk. However, this university building is easily accessible. Personnel access within the facility is controlled by individually programmed access cards.

Automatic Fire Detection

The entire building has been provided with a partial fire detection system. Building blocks 3, 4 and 5 have entirely been provided with fire detectors. Only the corridors and additional rooms in building blocks 1, 2 and 6 have been provided with fire detectors. All technical rooms have been provided with fire detectors. The open type parking garage has not been provided with a fire detection system.

The alarm is transmitted to a constantly manned private alarm station. After alarm verification by a private security company the fire brigade is summoned. Due to governmental regulations regarding alarm transmission it is not possible to transmit the fire alarm directly to the fire brigade. This is an unnecessary long alarm follow up. As a result the late arriving fire brigade would encounter a larger fire than would be expected in case the entire building would be protected and that the alarm would directly be transmitted to the fire brigade.

The system is maintained annually by a specialised contractor.

System impairments are discussed with the facility department.

Water Supplies for Manual Fire Fighting

Extinguishing water can be obtained from the underground public hydrants which are situated along the public roads. The hydrants are connected to the public water main. It is not known whether the public water main is maintained. The pressure and flow characteristics of the hydrants are unknown. Dry risers have been installed in the staircase between buildings 1 and 6.

Public Fire Brigade

The public fire brigade is situated at a distance of 5 km with a response time of less than 10 minutes. No familiarisation visits to the facility are completed by the fire brigade. Due to the specific layout and location of this building the fire brigade only could attempt an attack using the front and rear access. There are no possibilities to reach the West and East side with a fire truck.

Incident Response and Shutdown of Supplies

Evacuation drills are held on an annual basis. The site has an incipient emergency response team as part of Dutch legislative requirements, consisting of 20 employees. The team is trained to deal with fires using portable fire extinguishers and hose reels. The team receives annual and well organized training. The primary purpose of this team is evacuation and life safety.

Fire Extinguishing Appliances

Suitable portable fire extinguishers and hose reels are provided throughout the site, which are serviced annually by a specialised contractor.

Fire Systems Maintenance and Impairment Management

No sprinkler system has been provided.

Fire Protection Systems

Automatic Sprinkler Protection

Sprinkler protection has not been provided.

Fire Water Supplies

Sprinkler protection has not been provided.

Fire Suppression System(s)

Fire suppression systems have not been provided.

Business Interruption Information

In the event of a large catastrophe, the activities could be outsourced to other Inholland universities in the Netherlands or to a number of third party buildings. The majority of the activities are rather simple and no special building requirements are needed to outsource the processes. The rebuilding time is estimated at 24 months.

Contingency Plans

There are no business interruption plans.

Natural Catastrophe Exposures

Earthquake/Volcano

This site is located in a hazard zone 0 (Munich Re rating system where 0 represents a low hazard and 4 a high hazard).

Hurricane/Cyclone/Tornado

This site is located in a tornado hazard zone 3 (Munich Re rating system where 0 represents a low hazard and 4 a high hazard). According to the Munich Re rating there is no Tropical Cyclone & Hurricane hazard.

Winter Storm

This site is located in a hazard zone 3 (Munich Re rating system where 0 represents a low hazard and 4 a high hazard).

The site is located in a moderate hazard zone. There is a moderate susceptibility towards damage. Combined, the windstorm hazard is rated high.

Flood (River, Coastal, Surface Water)

General
Approximately one third of the Netherlands is built below the mean sea level. These areas are subdivided into 53 main dike rings and approximately 40 small dikes rings. The latter dike rings are situated along the river Maas in the south of the Netherlands. Dike rings are exposed to the sea, to rivers or both to the sea and rivers. All dikes rings are surrounded by either dunes and dikes or levees along the rivers. Government experts have calculated the probability of a dike failure and flooding of the specific dike ring.

Dike ring #14
This site is exposed to the sea and rivers. The premises are exposed to the North sea, Nieuwe Maas and Nieuwe waterweg. This site is located in dike ring #14 named 'Zuid-Holland'. The government data shows the probability of a flood of this site as one in 2500 every year. The total surface area of this dike ring amounts to 2,226 km2. The total length of the dike ring amounts to 236 km. The governmental rating of this dike ring is qualified as good and partly not determined. This dike ring has been subdivided in smaller areas by non classified dikes. The distance to the nearest classified dike ring is 17 km.

Sea
The site elevation is 1 m above sea level. The site elevation is above the expected sea flood level. The site would probably not be flooded in case of a breakthrough of a sea dune or a sea dike.

River
According to Dutch government data a river dike breakthrough would result in an inundation depth of 2.5 m. This is a rough estimate. As mentioned above the probability of a flood is one in 2,500 every year. This is considered a low risk.

Non classified bodies of water
Besides the risk of inundation from the sea and major rivers, the premises could always be flooded from non-classified ditches, rivers, canals etc. There are no inundation data for these bodies of water. The nearest non classified body of water is located at 400 m from the premises.

The site is located in a low hazard return period. There is a low susceptibility towards damage. Combined, the flood hazard is rated negligible.

Lightning/Hail

This site is located in a lightning and hail hazard zone 2 (Munich Re rating system where 0 represents a low hazard and 6 a high hazard).

Snow/Collapse

No excessive snow fall is expected in this part of the Netherlands. The roof is inspected annually by a specialised company.

Other Natural Catastrophe

N/A

OTHER CLASSES: COMMENTS

Crime

General Description
The computer equipment is considered to be of high theft demand. Related to the portability of the goods the probability of theft is considered high. Normal, rather inexpensive computer equipment is present throughout the building but grouped in several class areas. Expensive Apple computers have been installed in two detached class rooms on the third storey floor. These class rooms are not easily accessible and have been provided with intrusion detectors.

Physical Security
Only the parking garage and inner garden have been provided with a fence. The front of the building is easily accessible.

Intruder Alarms
The entire building has been provided with an intrusion detection system. Additionally vibration detection has been installed on the entire ground floor.

Other Security
A security guard and a technical employee are present from 1600 until closing time. They constantly make control rounds.

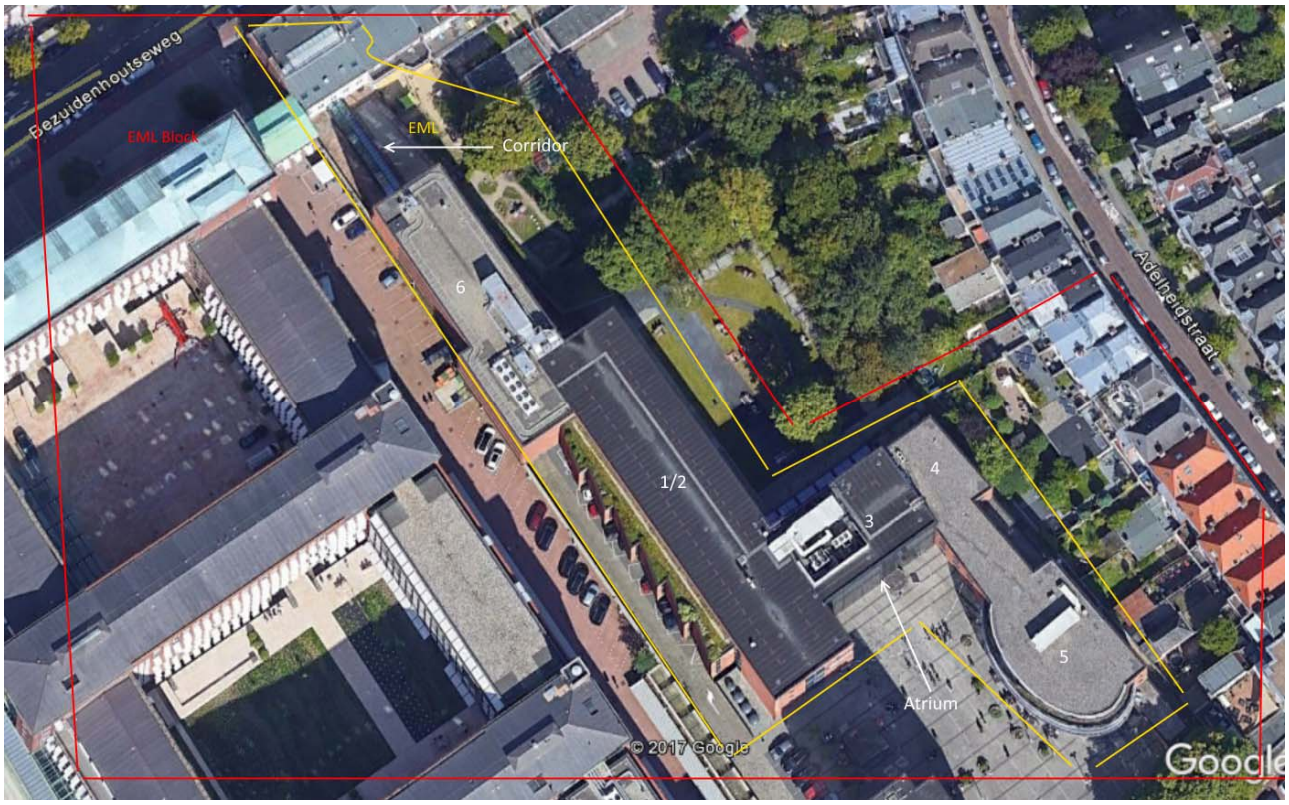
The site has several internal and external CCTV cameras. The camera footage is monitored at the reception desk.

M&E

A machinery breakdown assessment was not undertaken, as this is only a university occupancy. As such, no major machinery is present.

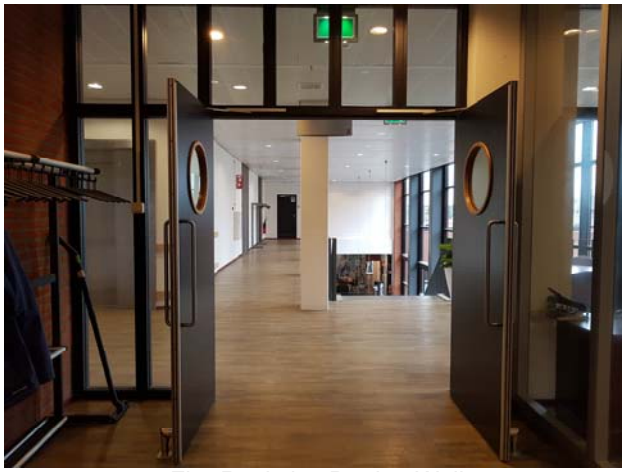
APPENDIX

Site Plans and Photographs



View on Building 5

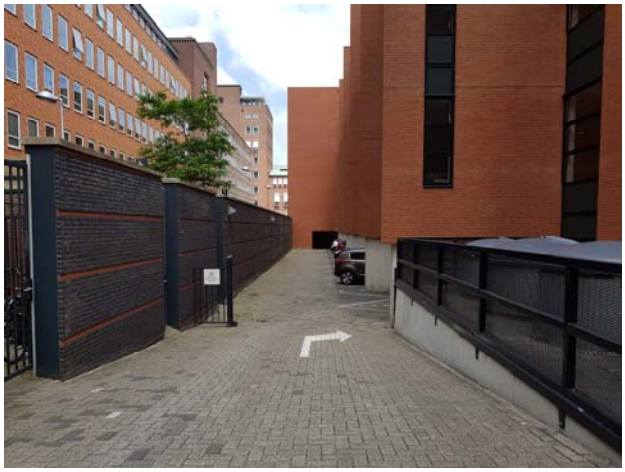
View on Building 1,2



Fire Resistive Partion Wall

Class Room

Cut off Corridor



Parking Garage Entrance Building 1,2