Hogeschool Inholland

Haarlem

Haarlem, Netherlands

Risk Control Report

Property and Business Interruption

Location:	Haarlem Bijdorplaan 15 Haarlem 2015 CE Netherlands
Date On Site:	18th May 2016
Consultant:	Sander Verboog

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PARTICIPANTS

Name	Title	Company
R. Bellers	Facilitair Medewerker	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 mostly theoretical studies. Some other studies such as a radiology study and a conservatoire are housed in this complex. Overall this is a light hazard occupancy with a low up to moderate fire load.

In total there are 7 buildings that have been connected with each other by atriums that have been provided with skywalks. An eighth detached building houses the sports hall. The buildings houses class rooms, study rooms, offices, medical equipment for the associated study radiology and a restaurant. The buildings are of fire resistive construction throughout. However, the roofs have been insulated with combustible insulation material.

An additional building is rented to a fitness company named Fitland. It was not possible to visit this building. Some class rooms are rented to an organisation named Nova. These class rooms are used for student dance purposes.

With the exception of some areas, the entire building complex has been provided with an adequate automatic sprinkler system. Furthermore some 60% of the total area has additionally been provided with a fire detection system. Non-sprinkler protected areas have been provided with fire detectors. These non-sprinklered areas have adequately been segregated from sprinklered areas.

Fire separations have been erected throughout the building complex. They are in a good state of repair. Overall, maintenance to the building and technical installations is in a good state of repair.

Human element features are generally adequate. Generally fire inception hazards are adequately managed. Only one risk improvement has been issued (thermographic inspections of the electrical system).

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. However, the processes are rather simple and it is not expected that outsourcing would cause any problems. Outsourcing of the radiology study may cause a problem due to the presence of medical equipment and associated housing.

The RSA QRA (Quantitative Risk Assessment) rating for this facility is 'Superior'.

There is no opportunity for improvement to a higher rating but recommendations are presented that would improve the overall risk.

Based on all factors, including the scope of risk-improvements, this facility is deemed by RSA 'Desirable'.

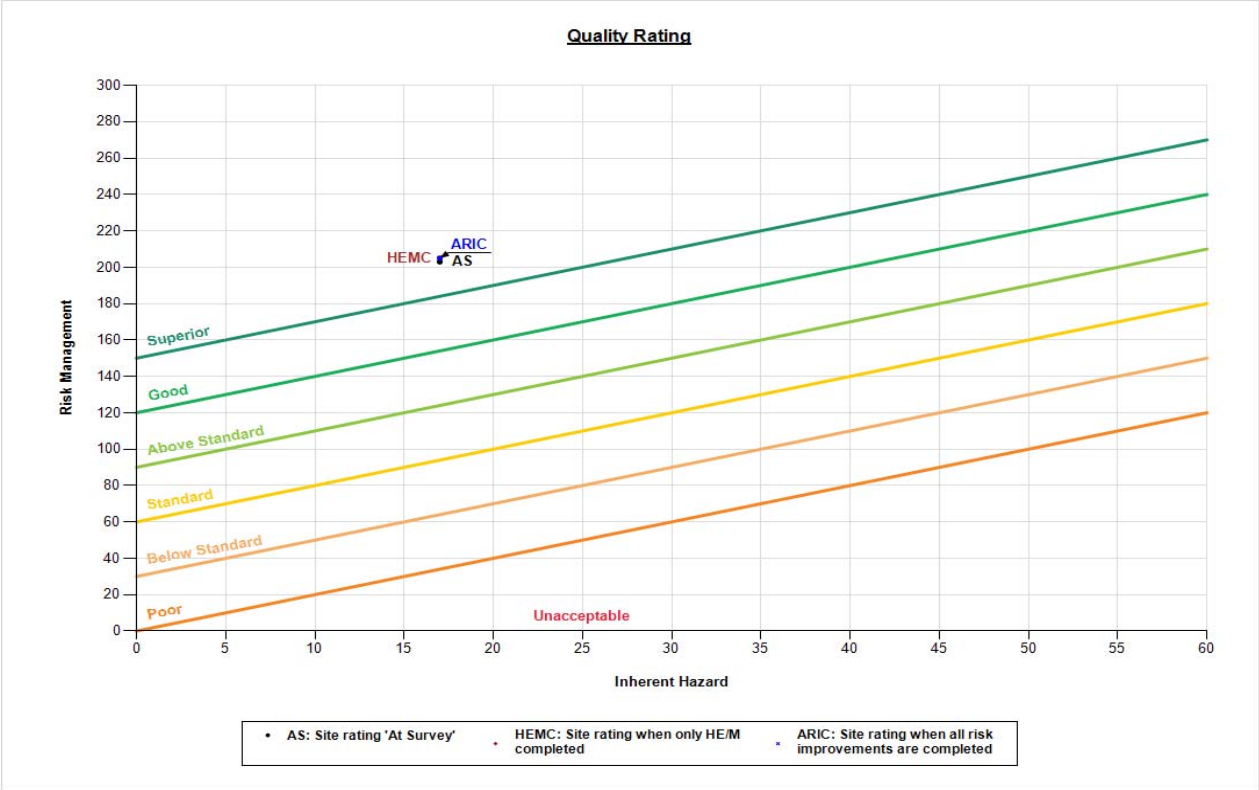
CHANGES SINCE PREVIOUS SURVEY

This is the initial full survey conducted by RSA. There have been no recent changes on site. Furthermore there are no major changes planned.

LOSS HISTORY

No losses have been claimed during the past 5 years.

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 recommendations 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 recommendations 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 recommendations 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
2016-05:01	Keur de elektrische installatie. (Electrical Maintenance)	HE/M	B	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

2016-05:01 : 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. Deze keuring is een aanvulling op de al bestaande keuring conform NEN3140.

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 B	**Loss Estimate:**	N/A
Class:	Property				

Status Comments:
De heer Bellers is het eens met de aanbeveling. Er is echter geen toezegging gedaan voor uitvoering.

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	68,759,000	100	68,759,000	50	34,379,500	8	5,500,720	8	5,500,720
Plant & Equipment	26,458,000	100	26,458,000	70	18,520,600	20	5,291,600	20	5,291,600
Stock		100		50		8		8	
Other	25,000,000	100	25,000,000	75	18,750,000	50	12,500,000	50	12,500,000
Total PD Value	**120,217,000**								
Total PD Loss Estimate			**120,217,000**		**71,650,100**		**23,292,320**		**23,292,320**
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		540		360		360	
Total PD + BI Value	**120,217,000**								
Total PD + BI Loss Estimate			**120,217,000**		**71,650,100**		**23,292,320**		**23,292,320**

LOSS ESTIMATE SCENARIOS

EML Block

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

The exposed tenants named Fitland and Nova as well as the nearby student apartment block are also 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 in the basement of building B would spread unnoticed. The fire would be noticed eventually and the late arriving fire brigade would encounter a smoke filled facility. It is expected that the fire would spread to buildings A and B both internally and by external fire spread. Furthermore building M would severely be damaged. Valuable musical instruments and electronic equipment as well as valuable medical equipment would be lost in this scenario.

It is expected that the conservatoire activities would be outsourced to third party locations. Furthermore it is expected that the radiology study would not be continued during the reconstruction time. Normal class room activities could be outsourced to locations within the group or to third party locations. It is roughly estimated that this scenario represents 75% of the extra costs.

The exposed tenant named Nova as well as the nearby student apartment block are also included in this block.

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 in the basement of building B would be detected by the fire detection system. Due to external fire spread, the fire could spread to streys above. The quick arriving fire brigade would prevent fire spread to building A and M. It is expected that the fire would not spread easily within the basement due to the numerous cut off rooms. It is expected that some 50% of building B would be lost (2,700 m2 of 30,000 m2). The valuable musical instruments as well as the associated electronic equipment would be lost. It is roughly estimated that this content represents some 20% of the total plant & equipment.

A fire originating in a sprinklered area would result in a limited property damage.

It is expected that the conservatoire activities would be outsourced to third party locations. It is roughly estimated that the damage represents some 50% of the extra costs.

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 in the basement of building B would be detected by the fire detection system. Due to external fire spread, the fire could spread to streys above. The quick arriving fire brigade would prevent fire spread to building A and M. It is expected that the fire would not spread easily within the basement due to the numerous cut off rooms. It is expected that some 50% of building B would be lost (2,700 m2 of 30,000 m2). The valuable musical instruments as well as the associated electronic equipment would be lost. It is roughly estimated that this content represents some 20% of the total plant & equipment.

A fire originating in a sprinklered area would result in a limited property damage.

It is expected that the conservatoire activities would be outsourced to third party locations. It is roughly estimated that the damage represents some 50% of the extra costs.

RISK INFORMATION

Site Occupancy

This facility houses a university of applied studies with mostly theoretical studies. The university provides high education to some 5,000 students. Studies that can be followed comprise economics, construction engineering, media/entertainment/management, teaching study, social study, conservatoire, radiology study and a sports study. It is estimated that students are normally in the age ranging from 17 to 25 years.

There are no pratical class rooms associated with the construction engineering study. There is only a class room that is used for manual manufacturing of scale models.

The conservatoire is housed in building B. Expensive instruments and electronic equipment are stored in a number of rehearsal and recording studios and in a limited sized concert room in the basement and ground floor of building B. The radiology study is housed in building A.

Medical equipment used by the radiology students has been installed in associated rooms in building A.

A sports hall that is used by the study sports is housed in the detached building S.

There are computer rooms throughout the complex. In total there nine class rooms dedicated to computer education. Overall, normal computers are used. However, there are three class rooms that have been equipped with expensive Apple computers.

A restaurant, including deep fat frying equipment is housed in building N.

Furthermore class rooms, offices and study rooms are housed on all storey floors in buildings N, J, M, I, H and G.

This facility is open from Monday to Friday from 7:30 until 18:30. There are extended closing times until 22:30 on Mondays and Thursdays. This complex is closed during the weekends.

Occupancy Fire Load

Generally the fire load is low up to moderate. There are some storage rooms. However, these rooms are of limited size and the fire load is considered moderate.

Internal partition walls are of non-combustible construction. The main entrance hall has been provided with a sprinklered dome shaped timber reception desk. Timber gangways have been provided on the skywalks in the atriums.

The fire load on both sides of fire doors in the atriums is low.

Compartmentation

Each building has been segregated from the atriums by 30 minute fire resistive walls and doors. The doors consist of fire resistive glass panels in an aluminium frame. The doors are activated by smoke detectors that have been installed at either side of the doors. There are limited fire partition walls inside the buildings N, J, M, I, H and G. Buildings A and B have been segregated by a fire resistive wall with a 60 minute fire rating. The fire doors are not closed after working hours.

Buildings have been built at a mutual distance of some 15 m.

Vertical shafts have been cut off vertically. These shafts are sprinkler protected. Shafts contain air treatment ducts, sprinkler piping, electrical cables and water evacuation pipes. The air treatment ducts have been provided with fire dampers that are activated by fusible links.

Horizontal separation is created by concrete floors. However, external fire spread could not be excluded.

Penetrations through fire resistive walls are adequately sealed. A maintenance contract to ensure the adequacy of this seals is in place.

The underground parking garage consists of 2 compartments. The fire walls are concrete and have been provided with steel sliding doors that are activated upon a fire alarm.

The non sprinklered basement of building B houses the rehearsal rooms. The entire basement consists of many 30 minute rated rooms.

The non sprinklered basement and partially ground floor of building B has been cut off from the sprinklered buildings.

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 Complex	Office	'60s-2004	Partly Combustible	Fire Resistant	Cellular plastic - non-approved	Partly Combustible	95	5	4	11,000	30,000	100

Construction Definition	% of Total Building Area
Partly Combustible	100

The complex consists of 7 buildings that have all been attached to each other. An eighth detached building housing the sports hall has been built at a distance of 15 m from the main complex.

The buildings consist of a reinforced concrete load bearing structure with masonry/concrete walls and a concrete roof. The roofs have been insulated with combustible insulation material. The type of insulation material is not known. Furthermore the roofs have been provided with a PVC weather proof layer. Buildings N, J, M, I, H and G are of similar dimensions and construction and have been built in 2004. Buildings A and B have been built in the sixties and have a similar construction as the 6 building towers. The outside walls of the atrium buildings L1/L2 and K1/K2 have been cladded with compressed wood panels.

Buildings N, J, M and I have a ground floor and 3 storey floors. A parking garage of reinforced concrete construction has been built underneath these buildings. Buildings H and G have a ground floor and 2 storey floors. Building B has a ground floor and 2 storey floors. This building has partially been provided with a basement housing the sprinkler pump and rehearsal rooms of the conservatoire. Building A has a ground floor and 1 storey floor. Building S has a ground floor only. Storey floors are of concrete construction.

Except for building S, all buildings are connected with each other by atrium areas. These atriums are of a steel load bearing structure with glass panel walls and glass panel and steel deck roofs. The atriums are of non-combustible construction. However, the steel deck roofs have been provided with combustible insulation material. Furthermore timber gangways have been provided in the atriums. I could not positively be identified whether the steel supporting atrium construction is attached to the building walls. It is expected that a collapsing atrium could damage the outside walls of the associated facing buildings.

Process Hazards

Summary Table

Operations comprise normal office and class room activities. Special hazards comprise the deep fat fry installation in the kitchen and the use of small quantities of radioactive materials in the radiology department in building A.

Utilities Infrastructure

Electricity and Lightning

Electrical power is supplied by the public grid. It is stepped down by transformers that have been installed externally. No details are known. The transformers are owned and maintained by the public electricity board.

Battery power with a capacity of 30 minutes operation have been installed to keep the fire doors in open position in the event of a power outage and to support the ICT department.

Heating and Cooling

The entire building has been provided with a gas-fired boiler system feeding low pressure warm water radiators in building A and a floor heating system in the remainder of the complex.

The building complex is cooled using pumped up cold water from underneath the buildings than is distributed throughout the complex using air-to-water heat exchangers on a large number of places.

Each building has been provided with an independent operating air treatment system. The systems, including the air inlet and air outlet have been installed on the roofs.

Gases and Liquids

Natural gas from the towns mains is used for space heating. In the event of an emergency, the gas supply can be isolated manually using a good accessible valve located in the yard.

Arson Exposure

No combustible materials are stored in the yard. Some closed compactors have been installed in the yard.

External Exposures

A student apartment block is situated at a distance of 10 m to the East. Furthermore there are many private dwellings in the vicinity of the building complex. The distance amounts to some 30 m. There is a railway at a distance of some 25 to the North.

A company named Fitland leases one of the buildings North of building G. Furthermore an organisation named Nova leases some class rooms in building B.

Human Element and Maintenance Control Programs

Electrical Maintenance

The electrical installation is inspected annually by a specialised company. Any deficiencies are reported and corrected promptly. The electrical installations seem visually to be in a good state of repair. Thermographic inspections of the electrical installations have not been conducted.

General Maintenance

The building and technical installations seem visually to be in a good state of repair.

Permits to Work including Hot Work Controls

An adequate hot work permit system is in place. Hot work permits are issued by dedicated and senior level personnel of the facility management department.

Contractor Controls

The management always use the same contractors that are familiar with the site and the specific safety rules. Specific safety instructions are not issued prior to any work. However, the current procedure never caused any problems.

Housekeeping and Loss Control Self-inspection

An excellent housekeeping program is in place with good standards maintained across the entire site.

Every day, a control round is conducted by experienced personnel of the facility management department. These are no formal rounds but every area is visited during this round. Any deficiencies are corrected promptly.

Waste is collected in closed compactors that have been installed in the yard.

Control of External Exposures

The yard is regularly visited during normal working hours.

Management of Change

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

Smoking Controls

Smoking is strictly prohibited inside the building. Smoking is confined to dedicated smoking areas outside the building. There was no evidence of illicit smoking and the policy appeared well implemented.

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.

Critical rooms in the basement, including the room where the main electricity switchboard has been installed, has been provided with a water detection system. This system signals to the automatic building management system.

Instrumentation and Controls

The building complex has been provided with a automated building management system. All technical processes are monitored by this system. Technical alarms are transmitted externally.

Safe Shutdown Systems

In the event of a fire alarm, the air treatment system are shut down and the fire doors are automatically closed.

Maintenance and Management

The in-house facility department consists of 5 employees. They perform small scale maintenance. Specialised maintenance is conducted by specialised companies under supervision of the facility management department. All maintenance is based on maintenance contracts. Maintenance is initiated by external contractors. The current procedure never resulted in any lack of maintenance.

Hazardous Goods and Spillage Response

Small quantities of radioactive isotopes are used in the radiology department in building A. This material is used to calibrate and test a gamma-camera. The total quantity amounts to some milligrams and is encapsulated. Furthermore it is kept in a safe. Reportedly, if this material is released during a fire it would not cause any health problems and therefore it is likely that the reinstallation time would not cause any delay.

Operator Training

All employees receive formalised safety instructions several times a year. Furthermore safety related items are communicated with the students by television screens that have been installed in the main entrance hall.

Location and Construction

There are no specific requirements relating to this occupancy.

Extraction Systems

A deep fat fry installation has been installed in the kitchen. The hoods are daily cleaned. The exhaustion pipe is inspected and cleaned on an annual basis.

In the event of a fire alarm, the air treatment systems are automatically shut down.

Electrical Installations

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

Response Factors

Security and Access Control

Access is controlled from the reception desk in the main atrium. However, this is an open organisation where people may access the building uncontrolled. Access to non-public areas is controlled by individually programmed access cards.

Automatic Fire Detection

Some 60% of the building complex is protected by a fire detection system. Generally corridors and additional rooms have been provided with such a system. The atriums have not been protected by smoke detectors. However, the fire partition walls in the atriums towards the buildings have been provided with smoke detectors on either side of these doors. The latter detectors activate the fire doors as well as an external fire alarm. Alarms are transmitted to the fire brigade.

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.

Public Fire Brigade

The public fire brigade is situated at a distance of 400 m with a response time of less than 10 minutes. There are no obstructions on the roads towards the facility. Familiarisation visits to the facility are completed twice a year.

With the exception of buildings A and B, all buildings have been provided with dry risers.

Incident Response and Shutdown of Supplies

The site has an incipient emergency response team as part of Dutch legislative requirements, consisting of 40 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.

The entire facility has been provided with manually operated emergency buttons. This system signals to the fire brigade.

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

In the event of fire detection system or sprinkler system impairments, the entire facility management organisation and the fire brigade is notified.

The fire detection system and the sprinkler system are annually maintained by a specialised contractor. The sprinkler system is the subject of 6 monthly checks whereby a certificate is given.

Fire Protection Systems

Automatic Sprinkler Protection

With the exception of the basement of building B and a part of the ground floor of building B, the entire building complex has been provided with an automatic sprinkler system. Protection is on a 5 mm/min at a remote area of 216 m2 design density. The atriums have a height of some 10 m. The sprinkler design in this area is not adequate but is acceptable due to the fact that the fire load in the areas is low. Furthermore it is not expected that a fire originating on the roof of the dome in the main atrium or on a timber gangway could grow to uncontrollable proportions.

Fire Water Supplies

The sprinkler pump room has been installed in the basement of building B. The sprinkler system is fed by a single electrically driven fire pump. A jockey pump has been installed to maintain pressure on the system. Water is taken from a reservoir with a capacity of 151 m3.

The hydraulic demand of the sprinkler system is unknown. Therefore the end head efficiency could not be calculated. The adequacy of the sprinkler pump is solely based on the pump performance test related to the rated pressure, flow and pump speed. This rated pump duty amounts to 6.9 bar at 1,350 l/min and 2,970 rpm. These data are obtained from the pump nameplate. At this rated flow, the discharge pressure amounts to 7.8 bar, the net flow pressure amounts to 7.7 bar and the adjusted pressure amounts to 7.6 bar.

According to the NFPA25 standard (Inspection, testing, maintenance of water-based fire protection systems), the fire pump assembly is considered acceptable if no more than 5% degradation of the performance characteristics as indicated on the pump nameplate are shown during a test. At the rated flow the variation of the discharge pressure, the net pressure and adjusted pressure is calculated at respectively 13.0%, 11.6% and 10.1% from the rated pump pressure.

The discharge pressure, the net pressure and the adjusted pressure at rated pump flow are adequate. The fire pump assembly is therefore considered adequate.

Fire Suppression System(s)

The main ICT room has been provided with an automatic gaseous extinguishing system. This system has been installed very locally.

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. Outsourcing the radiology study could cause some problems due to the fact that medical equipment is needed to complete this study. It is expected that musical instruments and electronic equipment could be replaced within a short period of time.

The main electricity switchboard has been installed in the basement of building B. Inundation would immediate result in a shut down of this facility.

The rebuilding time is estimated at 18 months.

Contingency Plans

There is no contingency plan.

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).

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 8 km.

Sea
The site elevation is 2 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 not result in a flood.

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 roofs are inspected and cleaned twice a year.

Other Natural Catastrophe

N/A

OTHER CLASSES: COMMENTS

Crime

General Description
There are 9 computer rooms throughout the building. Three of them have been equipped with valuable Apple computers. The computers rooms have been installed in buildings H1, B1 and A0. It is estimated that some 50 Apple computers have been installed.

Valuable musical instruments and associated electronic equipment have been installed in the basement of building B. The musical instruments are kept in a large number of rooms. These rooms have been provided with heavy key locked steel doors.

Valuable medical equipment has been installed on the ground floor of building A. This equipment is generally heavy and cannot be transported without using lifting equipment.

Theft EML
The theft EML is based on a theft of computers and/or musical instruments on removal by articulated lorry. The value of this equipment could not be given by Mr. Bellers and therefore a theft EML could not be calculated.

Physical Security
There is no fence and the facility is easily accessible. The rear of building B (North side) has been provided with reinforced glass windows on the ground floor. The parking garage is closed with a gate during idle hours. The gate is protected by an intruder detection system.

Intruder Alarms
The entire facility has been provided with an intruder detection system. The protection consists of anti mask passive infra red detectors throughout the buildings and vibration detection on the windows on the ground floor. Alarm is transmitted to a permanently manned central alarm station. The alarm station will alert a private security company. The watchman would go to the facility in order to verify the alarm and call out the police.

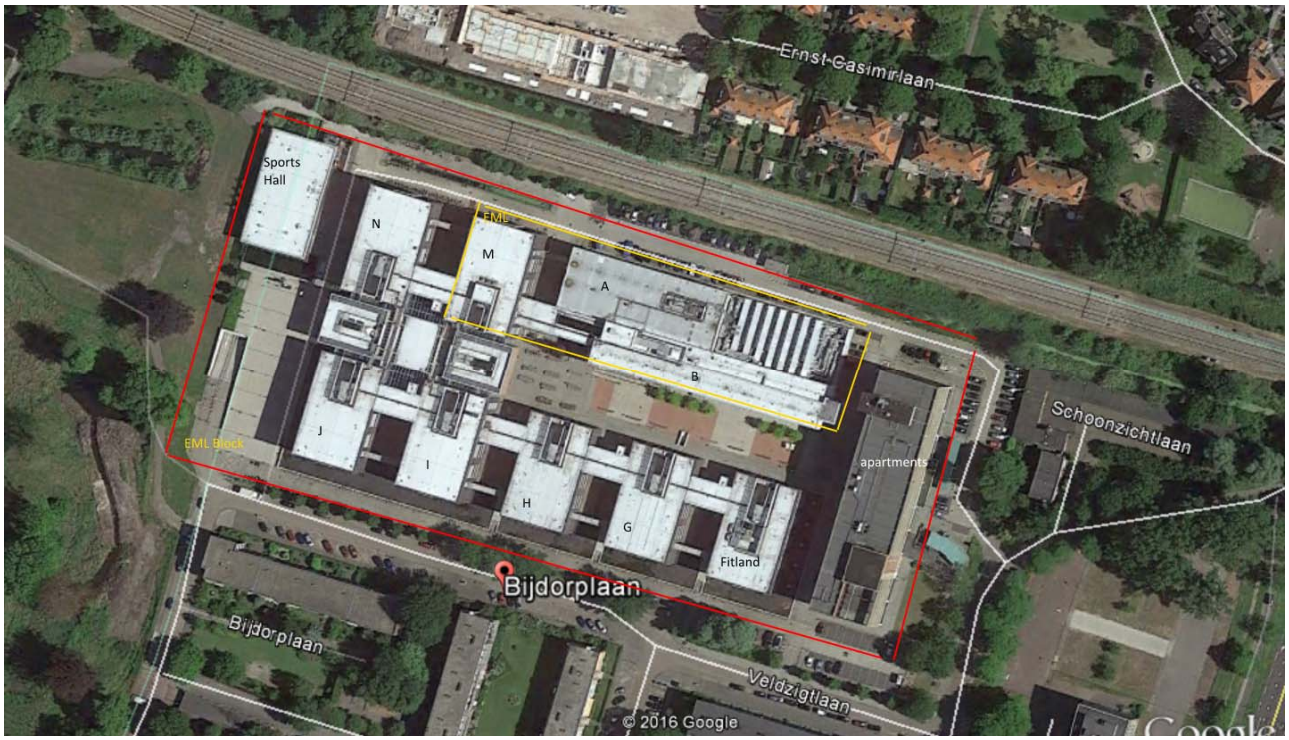
Other Security
CCTV camera's have been installed outside and inside the building. The camera footage is recorded and actively monitored at the reception desk during working hours. The value of the system is limited to police investigation purposes after an incident.

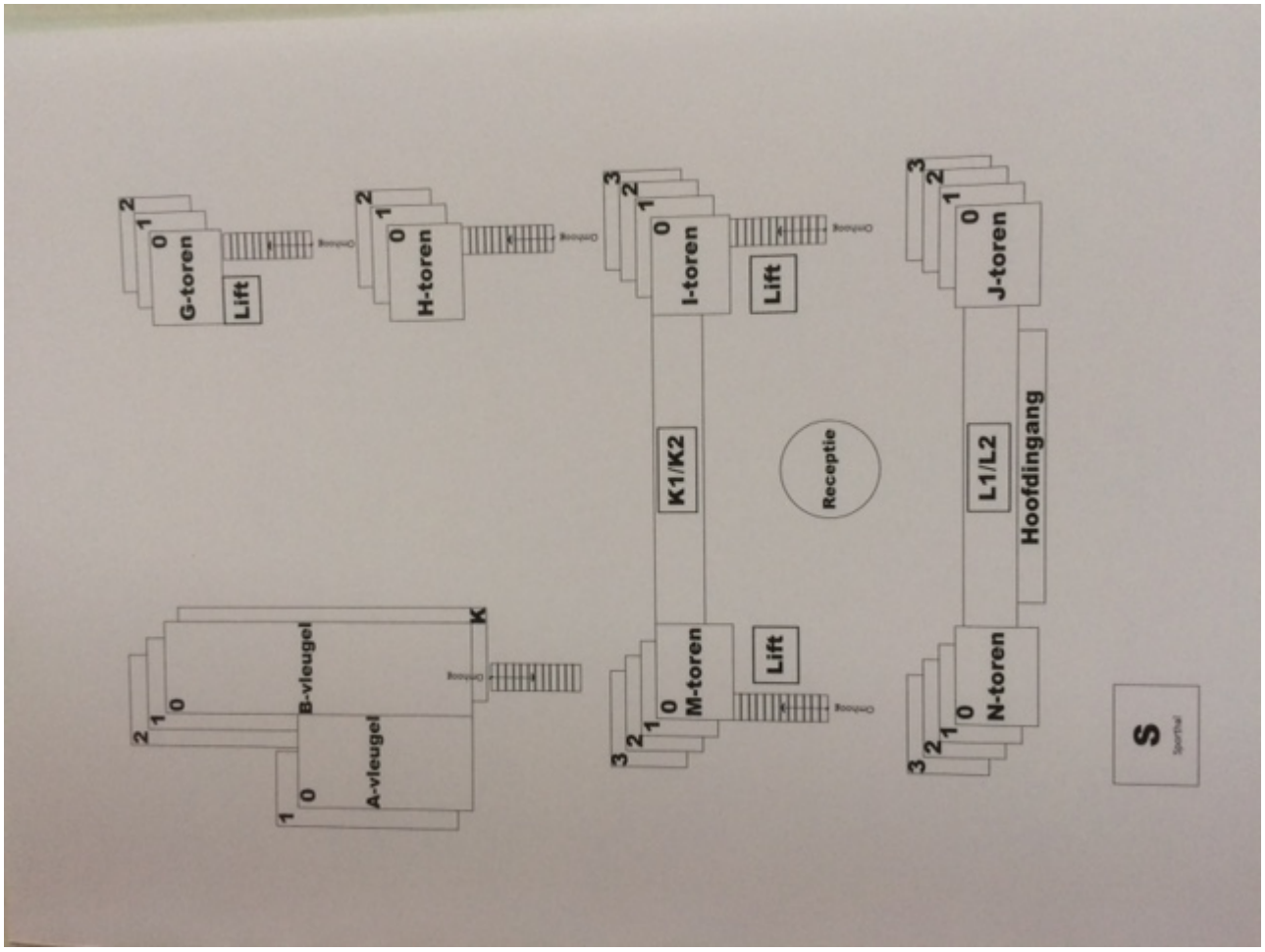
Machinery Breakdown

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

APPENDIX

Site Plans and Photographs




G-toren
Lift
H-toren
I-toren
Lift
J-toren
K1/K2
Receptie
L1/L2
Hoofdingang
B-vleugel
A-vleugel
M-toren
Lift
N-toren
S