

Risk Engineering Report



Prepared for:

STICHTING FONTYS

Site Name: Professor Goossenslaan 1 Tilburg

Date of Survey: November 24, 2022

Report Date: December 20, 2022

Survey Type: Property All Risk - Initial

TIV (EUR): 133,883,000

Site Address: Professor Goossenslaan 1, TILBURG, 5022 DM, Netherlands

Latitude: 51.539025

Longitude: 5.079019

RFS ID: RFS-132470

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

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Purpose of Visit

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

The site visit was the first conducted by AIG. During the visit, the six buildings on the Stappegoor campus were visited to get a general impression of the organization, buildings and so on.

Site Overview

Fontys Hogescholen is a college for Higher Professional Education. It has various locations in Eindhoven, Tilburg, Venlo, Sittard, Den Bosch, and Utrecht. It offers more than 100 studies. This report covers the Stappegoor Campus in Tilburg. At this Campus the buildings P1, P2, P3, P4, P7, and P8 are in place. P1 is the largest building on the Stappegoor Campus with a total floor surface > 25,000 m². The main focus on this location lies in theoretical education, in building P1 and P7 there are also several practical classrooms. In building P1 there are some labs, chemicals in these rooms are limited. In a separate compartment all hazardous chemicals (limited quantity packaging) are stored, outside building P1 the gasses are stored in a free standing building.

Different type of construction can be found from ISO1 (combustible roof and walls up to ISO6, based upon the information the overall construction classification is ISO3. The total floor surface per building is:

- P1: constructed in 1985, 4 floor, total floor surface: 25,634m².
- P2: constructed in 1983, 4 floors, total floor surface: 2,385 m².
- P3: constructed in 1994, 3 floors, total floor surface: 3,640 m².
- P4: constructed in 1982, 3 floors, total floor surface: 6,194 m².
- P7: constructed in 2013, 1 floor, total floor surface: 1,117 m².
- P8: constructed in 2020, 5 floors, total floor surface: 8,989 m².

External exposures are limited, only north there is a secondary school at > 10 meters. All own buildings on site are separated by distances from 13 meter up to 75 meter.

There is no sprinkler protection in place. All the buildings have a limited fire detection system, for personal safety (evacuation) and in areas with an enhanced risk like technical rooms, utility shafts etc.. The kitchen deep fat fryer/hood in building P1 is not protected with a wet agent, a risk improvement (advice) is noted. The buildings are divided in many horizontal and vertical compartments according Dutch legislation. During a large part of the day security is present in the building also responsible for the closing round.

The organizational measures, procedures and so on are up to standard but improvement to a good/ excellent level is possible.

During the site visit the following risk improvement were discussed and noted:

- Clean up technical room building P7.

- Extend automatic fire detection building P8.
- Involvement new PV system.
- Scope 12 inspection existing (and new) PV system.
- Advise: Protection system deep fat fryer.

Site Loss History

No large losses reported during the site visit.

New Projects, Significant Changes and Observations

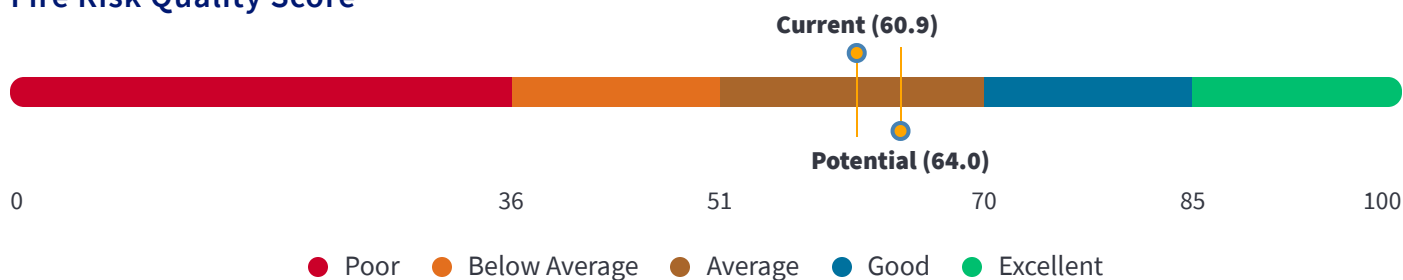
It is important to involve your insurer in new projects, such as refitting, refurbishment, extension work, new builds or relocating to a new site. Failure to do so could result in using non-approved construction materials (even though they meet local Building Codes and Fire Regulations) or inadequately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

No large renovation, new building or other investments are planned for the coming years. Around 2027 a discussion will be made to what will be done with building P4. There is a possibility the building will be demolished, and a new building will be realized. If plans become clear AIG will be informed.

Risk Summary

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

Fire Risk Quality Score



Ratings

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

Risk Improvements

Risk Improvements - Open

Number	Name	Classification	LE Before (EUR)	LE After (EUR)
22-11-03	Extend fire detection bicycle parking	Important	--	--
22-11-04	Remove storage - technical room P7	Important	--	--
22-11-05	Scope 12 inspection P8	Important	--	--
22-11-06	New - PV systems	Important	--	--
22-11-02	Kitchen protection (best practice)	Advisory	500,000	10,000

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)
22-11-03 Physical Protection	Extend fire detection bicycle parking		

Summary

Extend the automatic fire detection system to monitor the bicycle parking underneath P8.

Details

The bicycle parking is currently not adequately monitored. Should a fire or trouble condition occur, response by building or campus emergency response personnel could be delayed. This could result in increased damage to property and impact on business operations.

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-11-04 Management Programs	Remove storage - technical room P7		

Summary

Remove the combustible materials from the technical room in building P7.

Details

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

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-11-05 Management Programs	Scope 12 inspection P8		

Summary

Conduct a scope 12 inspection of the photovoltaic (PV) system of building P8 (if not conducted). 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.

Client Exit Conference Comments

Will be taken into account.

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-11-06 Management Programs	New - PV systems		

Summary

Submit the PV plans to AIG for review prior the development of these plans.

Details

During the survey it was mentioned that there are preliminary plans to realize PV system on maybe one building of Fontys at the Stappegoor Campus. These plans are scheduled to be implemented within two years. The plans can be evaluated by AIG (and Aon) to ensure that the possible risks are taken into account adequately. AIG will review the plans to ensure they are acceptable for AIG insurance purposes and will provide recommendations as needed. Having AIG involved earlier on and throughout the project will help ensure that the appropriate loss prevention features are provided and prevent project delays. Important aspects are the load-bearing capacity of the complex, insulation materials used, technical lifetime of roofing, drainage and inspection after completion.

Client Exit Conference Comments

Will be taken into account.

Open Risk Improvements : **Advisory**

Number/Type	Name	LE Before (EUR)	LE After (EUR)
22-11-02 Physical Protection	Kitchen protection (best practice)	500,000	10,000

Details

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.

Client Exit Conference Comments

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

Fontys Hogescholen (rest of the report noted as Fontys) is located in the South of the Netherlands, with locations in:

- Eindhoven
- Tilburg
- Venlo
- Sittard
- Den Bosch
- Utrecht

Fontys has a total some 46.000 national and international students. The general times buildings are open is Monday till Friday between 7:30 am till 22:00 pm (other times possible depending day and building). During this period the reception is occupied. Throughout the building are classrooms, practical training rooms, and offices for students and staff employees. Restaurants/ cafes are in most cases at ground floor level, which are equipped with a professional kitchens equipment. The largest number of classroom are theoretical. But in Tilburg there are also some chemistry classrooms and a building entirely for (contemporary circus training).

The location described in this report is the Campus Stappegoor in Tilburg. At this campus the following buildings are located:

- P1: Lecture halls, class rooms, practical class rooms (chemistry), a variety of learning spaces, meeting spaces, media library, coffee bar, offices, and restaurant and bar (not in use at the moment).
- P2: Meeting spaces, media library, and offices.
- P3: Class rooms, a variety of learning spaces, meeting spaces, and offices.
- P4: Lecture halls, class rooms, a variety of learning spaces, meeting spaces, and offices.
- P7: Gym hall (Circus building). Practical training of dance, gymnastics (contemporary circus training)
- P8: Lecture halls, class rooms, a variety of learning spaces, meeting spaces, coffee bar, and offices.



Occupancy Details

Building	SIC Code	Description	Operating Days/yr	Operating Hrs/Day	Other Tenants
Professor Goossenslaan 1Tilburg	822102	Colleges and Universities, NEC, Private	260	12	No

Images



Campus



Campus



Building P8

Hazards

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

Non-Process HVAC Equipment

Heating of the buildings 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. Building P8 uses a thermal energy storage system (Dutch: WKO).

The technical rooms are supervised by automatic smoke detection. The compartmentation and housekeeping in the technical rooms visited was good, with exception of a technical room in building P7. All rooms also provided with water detection 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



Heating equipment



Heating equipment



Heating equipment



Example roof equipment

Electrical

Electrical installation is fed by transformers located in the buildings in separate 60' fire compartments. Capacity of the transformers is unknown. They are oil filled and owned by Enexis. Maintenance of transformers and main circuit breakers is outsourced.

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. The electrical installation is subjected to inspection according to the Dutch standard NEN 3140, which comprises visual inspection of all installation parts and checks by measurements. The periodicity is set to according the NEN3140. Inspections are done by third party and include thermographic surveys. Recommendations are followed.

Electrical equipment is also subjected to periodical NEN 3140 checks indicated by stickers on the equipment involved. Once a year a check round is done to ensure safe use of electrical extension cords and all appliances are checked according NEN3140. During site no private owned appliances was visible/ noted. This not means that these appliances are not present, see risk improvement noted about private appliances in the Eindhoven Rachelsmolen report.

Underneath building P8 there is a bicycle parking. The number of electric bike is limited but there is no automatic fire detection present. The parking is open at two opposite sides and no connection or (open) connection to the building above. The number of electric bicycles is growing rapidly in the Netherlands. This is also expected to become visible in

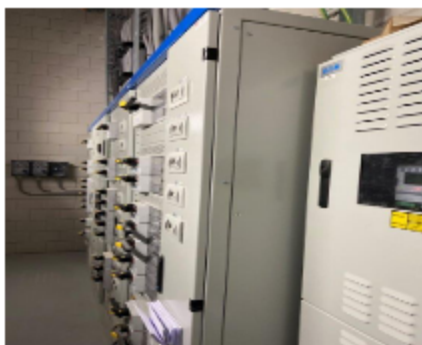
the parking facility. Extending the automatic fire detection in to the garage could have a positive effect. A risk improvement noted.

On the roof of P8 a PV system is installed, unknown status of scope 12 inspection. The parts viewed (< 5%) are considered visual acceptable. A risk improvement for a scope 12 inspection (or report of already conducted inspection) is noted.

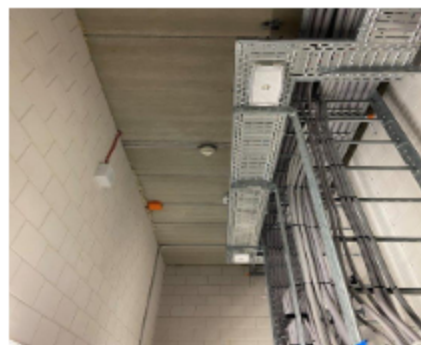
Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Extend fire detection bicycle parking 22-11-03	0	0

Images



Main switch room (P8)



Main switch room (P8)



Underneath PV (solar) panel

Incidental Storage

There are no large central storage areas, but a few small store rooms (< 25 m²) are present throughout the campus 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.

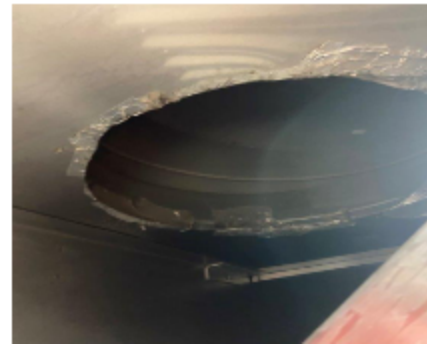
Restaurant & coffeebars

There is one professional kitchen in building P1 on the ground floor. It contains electrical and gas fired kitchen equipment like an oven (electrical) and deep fat fryer (gas). In other buildings there is only small electrical equipment, like ovens. 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 year). The kitchen is not provided with a local extinguishing system (recommended only as best practice).

Images



Example of kitchen equipment (in building P4 taken out of order)



Duct of kitchen

Classrooms

The vast majority of the buildings consist of theory classrooms, project group rooms, meeting space, media library, and offices. Practical classrooms at Fontys Eindhoven are limited, in these classroom technical equipment is present like computers, TV screens and so on and some handheld equipment.

Only in building P1 there are some chemistry labs present. Gas supply from cylinders, located outside building P1 at an entrance to the site. Shut of valves are provided both in the storage cabinet, as in/ near the laboratory where the gasses are used. Practical tests using these gasses are done with a for instance bunsen burners. Other chemicals are stored inside a separate compartment and cabinets in building P1. When students need such hazardous substances, they are to report to a central service desk where the substances are provided. Students work under the guidance and supervision of teachers. Equipment of the laboratories is maintained by specialized third parties.

Limited quantities hazardous

Area: 100 sq. m.

Gas supply from cylinders, located outside well ventilated, fire proofed cabinet outside building P1 at an entrance to the site. Welded piping is used to transport the gasses to the laboratories. Shut of valves are provided both in the storage cabinet, as in/ near the laboratory where the gasses are used. For the practical tests in the laboratories a large variety of hazardous liquids are kept on stock, mainly in low quantities. It includes flammable liquids, oxidizing liquids, acids,

alkaline etcetera. The materials are stored in a separate compartment that is locked. In this compartment several PGS 15 cabinets and steel closed cabinets are present. Proper separation between the different kinds of chemicals is provided by storing them several separate PGS 15 cabinets. But also storage of limited hazardous material in wooden racks, like everyday household products.

When students need such hazardous substances, they are to report to a central service desk where the substances are provided. All stock is kept in Gros registration system, where all necessary information regarding the substances can be found.

Images



Hazardous storage

Construction

Category	Current Rating	Potential Rating	RI's
Construction	ISO 3 with combustible metal deck roofs / Class C	ISO 3 with combustible metal deck roofs / Class C	0

Building	Year Built	# Stories	Height (m.)	Total Area (sq. m.)
Professor Goossenslaan 1 Tilburg	1982	4	12	45,405

Area (1,000 sq. m.)

Building	ISO1/D	ISO2/C	ISO3/C	ISO3/B	ISO4/C	ISO4/B	ISO5/A	ISO6/AA
Professor Goossenslaan 1 Tilburg	2.2 (4.87%)	--	12.6 (27.74%)	2.4 (5.25%)	--	0.0 (0.00%)	19.2 (42.34%)	9.0 (19.80%)
Total	2.2 (4.87%)	0.0 (0.00%)	12.6 (27.74%)	2.4 (5.25%)	0.0 (0.00%)	0.0 (0.00%)	19.2 (42.34%)	9.0 (19.80%)

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

Comments

The buildings on campus have according BAG site the following data:

- P1: constructed in 1985, 4 floor, total floor surface: 25,634m².
- P2: constructed in 1983, 4 floors, total floor surface: 2,385 m².
- P3: constructed in 1994, 3 floors, total floor surface: 3,640 m².
- P4: constructed in 1982, 3 floors, total floor surface: 6,194 m².
- P7: constructed in 2013, 1 floor, total floor surface: 1,117 m².
- P8: constructed in 2020, 5 floors, total floor surface: 8,989 m².

The six buildings on campus have a divers construction. the load bearing structure of the buildings is:

- Buildings P1 and P3 have a combination of a steel and concrete load bearing constructions.
- Building P2 has a combination of a steel and brickwork load bearing construction.

- Building P4 has a combination of a wooden and steel load bearing construction. The east building section is constructed out of porto cabins (about 33%).
- Building P7 a steel load bearing construction.
- Building P8 a concrete load bearing construction

Floors are concrete, concrete roof and inner wall blade of concrete. Roof extensions for technical installations have non-combustible wall constructions, but have steel deck roofs with PU foam insulation. The m² of these extension is limited <5% of total floor surface. The vast majority of the buildings are constructed with a concrete roof (except P3 and P7 - steel), insulation, bitumen roofing and on buildings P1 and P3 partially covered with a gravel layer. The type of insulation is unknown, based upon the technical rooms and the roof feels solid probably a combustible type of insulation. On the roof of building P8 there about 50% is covered with a combination of gravel and sedum and on the rest nothing. Building P1 have on different segments partial glass roof caps.

The facades of the different buildings are:

- P1: glass (<30%), sheets with a plastered finish, and brick work with reportedly mineral wool insulation.
- P2: a reportedly mineral wool insulation with a brick work finish and a limited m² of glass.
- P3: has a combination of concrete panels, sheets with a plastered finish and glass. Reportedly mineral wool insulation in place.
- P4: has a combination, brickwork, high pressure laminate sheets, sheets with a brickwork finish and glass. Reportedly mineral wool insulation in place.
- P7: sandwich panels with probably a PUR insulation core.
- P8: has a combination of glass and metal cladding finish. Insulation present is mineral wool.

Compartmentation.

All buildings are divided into several fire compartments. Generally speaking the buildings are divided into compartment according the Dutch building code by 60' fire separations. Each floor is 60' fire proofed. The staircases are a separated compartment 60 minutes rated. The lift are partly 60 minutes and partly 30 minutes (doors) fire separated. Cable, ducts and other penetrations seem to be kept well closed. Doors in the fire separation are held open with magnets, in the event of a fire the magnets are released, and the doors automatically fall shut.

Beside the physical separations in a building there is a free space between the building on campus:

- P1 - P2 = 20 meter.
- P1 - P3 = 68 meter.
- P1 - P4 = 40 meter.
- P1 - P8 = 13 meter.
- P2 - P3 = 16 meter.
- P2 - P8 = 25 meter.
- P3 - P4 = 33 meter.
- P3 - P7 = 75 meter.
- P4 - P8 = 35 meter.

Remarks:

- *Number of floors is including the roof extension for technical installations.*
- *The building classification is divers, classification based upon site visit (visual visible), BAG data, reports AIG and discussion on site.*
- *the overall classification is based upon AIG guideline, as 25% has a partly combustible roof insulation. Were applicable ISO classification is downgraded according AIG guidelines. This is in those cases were combustible insulation materials are used.*

Water Supply & Fire Pumps

Water Supplies

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

Name	Type	Pump Associated	Adequacy
Hydrant	Gridded Municipal	None	Adequate
Name	Type	Pump Associated	Adequacy
Openwater	Pond, River or other static source	None	Adequate

Comments

Underground hydrant connections present with a minimal capacity of 60 m³/h. At the south side of building P1, P2 and P8 a large pond is available. In case of fire in buildings P4 and P7, the fire department must first organize large water transport before using the pond.

Protection

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

Sprinklers

Building	AS (%)	ASA (%)	ASN (%)	Fire Detection (%)
Professor Goossenslaan 1Tilburg	0.00	0.00	100.00	20.00
Total	0.00	0.00	100.00	20.00

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

Comments

No sprinkler system present in the buildings of the Fontys Campus Stappegoor. Although not present the rating is based upon NLE according AIG guidelines. Realization of a sprinkler system is according Fontys not technical and financial feasible therefore no risk improvement noted.

Special Extinguishing Systems

Comments

No special protection present, it is advised to protected the deep fat fryer with a stand-alone system.

Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Kitchen protection (best practice) 22-11-02	500,000	10,000

Fire Extinguishing Equipment

Water Supply & Inspection

Frequency

FEA/Hose Reel Details

- Equipment is properly maintained

- Meets NFPA requirements
- Inspections are properly documented with records maintained and readily available
- Plant personnel properly trained

Recommendations

None

Comments

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

Public Fire Department

Fire Department Type

- Full Time

Fire Department Features

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

Fire Department Distances (kilometers)

Station #1	Station #2
------------	------------

3.00	9.00
------	------

Comments

The fire department of Tilburg in the city center at 3 kilometers. There is also a garage on the industrial estate at north of Tilburg at 9 kilometer. The fire department of municipality Goirle is at 4 kilometer driving distance situated.

The fire brigade can use dry risers.

Supervision

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

Automatic Fire Detection

Signaling Systems Remote Station	Monitored Line Yes	Fire Protection Alarm - Smoke Detection - Pull Boxes	Valve Locked NA
Fire Detection Coverage (Including Sprinklers) Other	Smoke Detection Monitored Yes	Other Alarms No	Maintenance, Testing and Inspection per NFPA 25 Satisfactory

Comments

The buildings are equipped with automatic fire detection systems. For safely evacuation (hallways, restaurant, dead end etc.) and in increased risk areas such as technical rooms, elevator machine room, shafts and son on. The AFD is realized in accordance with NEN2535, control and maintenance by a specialized contractor. 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. There a several type of detectors in place, like optical smoke detectors, aspiration detection and beams.

Risk Improvements

Name	LE Before (EUR)	LE After (EUR)
Extend fire detection bicycle parking 22-11-03	0	0

Images



Detection missing



Detection in utility shaft



Spot smoke detector



Aspiration detection

Security

Security & Watch Service (24/7)
Other

Round Frequency
at least every 8 hrs

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
No

Vandalism / Malicious Mischief Exposure
No

Sabotage and Terrorism Exposure
No

Comments

The security lodge building R5 in Eindhoven is overlooking all camera positions of Fontys. The lodge is occupied during opening times. Around the campus is fencing, exterior lighting consists of public and private lighting. The buildings are

fully equipped with a burglar alarm system in accordance with the Dutch VRKI, free access during opening times.

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	Adequate	Adequate	0
Contractor Management	Good	Good	0
Hot Work Permit	Good	Good	0
Smoking	Good	Good	0
Housekeeping	Nearly Adequate	Good	1
Planned Preventative Maintenance	Adequate	Adequate	1
Management Interest	Adequate	Adequate	1
Site Level Business Continuity Planning	Adequate	Adequate	0

Management Programs

Emergency Organization & Planning

Written Emergency Action Plan

Commensurate with exposure, but not as precise or focused on life safety

Drills/practices conducted

periodically

Yes

Fully Updated

Yes

Comments

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

Self-Inspection Program

Self-Inspection Program

- Yes

Documentation

- Formal, documented checklist

Frequencies

- Minimum weekly or commensurate with the occupancy

Root cause & training

- Program exists but requires some minor additions

Risk Improvements

- None

Fire System Impairment Procedures

Written and documented procedure

- No

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

Records

- Maintained electronically

Risk Improvements

- None

Comments

Fontys works with fixed contractors. All contractors are informed about site safety, regulations and so on. Upon arrival contractors have first to report to the technical department or other representative of Fontys.

Hot Work Permit

Hot Work Program in Place

- Yes – Conforms to AIG

Communication

- Communicated to personnel with mgmt. responsibilities assigned

Logging

- Paper logging system

Is there Hot Work Occurring

- No Hot Work Occurring

Comments

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

Smoking

Policy

- No smoking allowed within the perimeter of the site

Appropriate Receptacles

- Yes

Inspections

- Weekly

Material Disposal

- N/A

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 building P1, during site visit it was discussed and the week after it was removed. A designated waste storage area (partly fenced) is > 20 meters from P8. During site visit the housekeeping is up to standard in most of the area's, except the technical room of building P7.

Risk Improvements

Name	Classification
Remove storage - technical room P7 22-11-04	Important

Planned Preventative Maintenance

PM Program in place

- Yes – includes critical equipment only

PM System

- Fully computerized and automated work order generation

Overdue Assignments

- None

PM of Critical

Components/Equipment

- Conforms to manufacturer's minimum requirements

Risk Improvements

- None

Comments

All installations are maintained according legislation, standards, and/or manufacturer's requirements. Maintenance contracts with specialized companies. The technical department is limited and only in place for troubleshooting and small-scale maintenance. For PV panels it is important to conduct a scope 12 inspection (see risk improvement).

Risk Improvements

Name	Classification
Scope 12 inspection P8 22-11-05	Important

Management Interest

Management Interest

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

Field Safety and Risk Management

- Important

Risk Improvements

Name	Classification
New - PV systems 22-11-06	Important

Site Level Business Continuity Planning

Business Continuity Plan (BCP)

- BCP addressing common events

Plan Details

- Crisis team is addressed in the plan

Responsibilities

- Plan supported by and responsibility taken at senior mgmt. level

Risk Improvements

- None

Comments

BI is not insured, therefore considered 'Adequate'.

Images



Storage in technical room P7



Storage in technical room P7

Exposures

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

Internal Exposure

On the campus several cafes and a restaurant run by an external company. The equipment is owned and maintained by Fontys.

External Exposure

The Stappegoor Campus is south of the Tilburg city center. Around the campus site public roads. External exposures around the campus are:

- North: a secondary school complex at a distance of at least 12 meter (building P4) up to 24 meter (Building P1).
- East: at 45 meter from building P3 a home garden center.
- South: no exposure beside the highway A58 at 125 meter.
- West: a multi purpose building with a cinema, shops, sporting facilities and restaurant at 40 meters (building P1).

Yard Storage

Yard storage is limited to waste containers. A waste disposable area at the south side of building P8 at > 25 meter. Parking of cars on a large parking site south of building P2 and limited number of parking spaces west of building P1. bicycle ar parked beneath building P8 and west outside of building P4.

Water Intrusion Exposure

No

Aircraft Exposure

No

Structural Collapse Exposure

No

NATCAT Exposure Summary

	Flood	Wind	Earthquake	Hail	Collapse	Other
Zone/Exposure	No Flood Exposure	36 m/s	MR Zone 1:MMVI	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)
Professor Goossenslaan 1Tilburg	No Flood Exposure	River	--	--	--

Comments

No flood risk exposure.



Wind

Wind Speed (m/s)

36

Wind Emergency Response Plan

Client has BCP program,
not well documented

Building

Distance to Coast

Professor Goossenslaan 1 Tilburg

10 and greater miles

Earthquake

EQ Zone

MR Zone 1:MMVI

Peak Ground Acceleration (%g)

14.00

Asset Strengthening

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

Other NATCAT Perils

Other CAT Perils

On building P1 and P8 lightning protection is in place, annually maintained.

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	133.88	100.0		0.0		133.88
MFL	39.56	29.6		0.0		39.56
NLE	18.97	14.2		0.0		18.97

Reported Values

Property Damage

Building (EUR)	Contents (EUR)	M&E (EUR)	Stock/Inventory (EUR)	Other PD (EUR)
104,117,000	29,766,000	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	133,883,000
Total BI Value	0
Total Insured Value	133,883,000

Maximum Amount Subject (MAS)

Total LE (EUR): 133,883,000

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Professor Goossenslaan 1 Tilburg	104,117,000 (100.00%)	0 (100.00%)	29,766,000 (100.00%)	0 (100.00%)	0 (100.00%)	133,883,000 (100.00%)
Total	104,117,000 (100.00%)	-- (--%)	29,766,000 (100.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **133,883,000 (100.00%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total (EUR)
Professor Goossenslaan 1 Tilburg	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

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

Loss Estimate Comments

PD-MAS

The MAS is set to be the entire Stappegoor Campus.

BI-MAS:

Not insured.

Maximum Foreseeable Loss (MFL)

Total LE (EUR): 39,558,750

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Professor Goossenslaan 1 Tilburg	29,886,450 (28.70%)	0 (0.00%)	9,672,300 (32.49%)	0 (0.00%)	0 (0.00%)	39,558,750 (29.55%)
Total	29,886,450 (28.70%)	-- (--%)	9,672,300 (32.49%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **39,558,750 (29.55%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Professor Goossenslaan 1 Tilburg	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

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

Loss Estimate Comments

MFL-PD:

Under MFL conditions a fire will start in the largest building, P1, this is a Hazard Occupancy 3, the building is classified as an ISO4 construction. The Stappegoor campus consist of six free standing buildings. The minimal free distance for MFL based upon a hazard category occupancy 3 and ISO4 building classification must be 10 meter. Based upon AIG guideline the fire will only have a direct effect on building P1. The salvage potential of the type of construction (also because the occupancy) is 55%.

According the latest sheet (B0100103722 Specificatie Vervangende polis 4) provided by the broker the PD is:

Building:

P1: € 54,339,000 * 55% = € 29,886,450

Inventory:

P1: € 17,586,000 * 55% = € 9,672,300

MFL-BI:

Not insured

Remarks:

- the other buildings on the campus have a limited insured values, a fire in building P1 has the largest loss potential.
- with exception of building P8 a fire in one of the other building wil result in a total loss.

Normal Loss Expectancy (NLE)

Total LE (EUR): 18,973,575

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Professor Goossenslaan 1Tilburg	13,584,750 (13.05%)	0 (20.00%)	5,388,825 (18.10%)	0 (20.00%)	0 (20.00%)	18,973,575 (14.17%)
Total	13,584,750 (13.05%)	-- (--%)	5,388,825 (18.10%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **18,973,575 (14.17%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Professor Goossenslaan 1Tilburg	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

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

Loss Estimate Comments

PD-NLE

On the Stappegoor Campus there are six buildings. For buildings P1 and P8 the fire will be limited to a certain percentage of the building. The other buildings have a limited floor surface and in case of P7 this is entirely insulated with combustible materials. At max a total loss could be possible, in this case for these for building this can result in a maximum loss of:

- P2 - Building: € 5,927,000 + Content: € 2,428,000 = Total: € 8,355,000.
- P3 - Building: € 9,400,000 + Content: € 1,100,000 = Total: € 10,500,000.
- P4 - Building: € 9,710,000 + Content: € 2,160,000 = Total: € 11,870,000.
- P7 - Building: € 1,466,000 + Content: € 191,000 = Total: € 1,657,000.

The NLE scenario due to the insured size is a fire in building P1 or P8. A fire will start in one of these two buildings at the Stappegoor campus. The fire will be detected by the automatic fire detection system. Detection is delayed because there is no full coverage fire alarm system in the complex. After verification the fire brigade is alarmed. The fire load in the building is limited and the building are classified as non-combustible. Both buildings are divided in several fire compartments. The fire spread will therefore be slow. The fire brigade will start fighting the fire using the dry risers and having a capacity available up to 60 m³/h from the hydrants.

Building P1:

Building P1 is divided into 5 segments. One central segment and the other around. For the scenario it is considered that in one outer segment the fire starts. This segment (about 20%) is lost, the central segment will have non thermal damage (smoke, soot and water). For calculation purpose we assume that all segments have an equal floor surface. Building P7 has a total floor area of 25,634 m². The non-thermal loss potential for building is estimated according AIG guidelines at max 25%, for the inventory/goods and so on in the building it is classified as moderate with a loss potential of max 55%.

Fire damage:

Building: € 54,339,000 * 20% = € 10,867,800

Content: € 17,586,000 * 20% = € 3,517,200

Non thermal damage (smoke, soot & water):

Building: (€ 54,339,000 * 20%) * 25% = € 2,716,950

Content: (€ 17,586,000 * 20%) * 55% = € 1,934,460

TOTAL P1:

Building: € 10,867,800 + € 2,716,950 = € 13,584,750

Content: € 3,517,200 + € 1,934,460 = € 5,388,825

Building P8:

Building P8 is one building with a central hall and on both side class rooms, meeting rooms and other functions. The building has 4 floor levels and total floor surface of 8,989 m² (BAG data). The building has a concrete load bearing construction and walls. For the NLE scenario the fire will start in a classroom on one side of the building. AIG has no exact figures of compartments. It is therefore considered that at max. 1,000 m² will be lost due to fire. The compartments above, beneath and the central hall will have non thermal damage. For calculation purpose we assume that all compartments have a maximum floor surface of 1,000 m². The total non thermal damages floor surface will be at max 4,000 m². The non-thermal loss potential for building is estimated according AIG guidelines at max 25%, for the inventory/goods and so on in the building it is classified as moderate with a loss potential of max 55%.

Fire damage:

Building: $3,216 \text{ €/m}^2 * 1,000 \text{ m}^2 = \text{€ } 3,216,000$

Content: $509 \text{ €/m}^2 * 1,000 \text{ m}^2 = \text{€ } 509,000$

Non thermal damage (smoke, soot & water):

Building: $3,216 \text{ €/m}^2 * 4,000 \text{ m}^2 = \text{€ } 3,216,000 * 25\% = \text{€ } 3,216,000$

Content: $509 \text{ €/m}^2 * 4,000 \text{ m}^2 * 55\% = \text{€ } 1,119,800$

TOTAL P8:

Building: $\text{€ } 3,216,000 + \text{€ } 3,216,000 = \text{€ } 6,432,000$

Content: $\text{€ } 509,000 + \text{€ } 1,119,800 = \text{€ } 1,628,800$

Based upon calculations above the largest loss potential is a fire starting in building P1

BI-NLE:

Not insured.

Remarks:

1. The insured value for building P1= Building € 54,339,000 - Content € 17,586,000
2. The insured value for building P8= Building € 28,912,000/ 8,989 m² = +/- 3,216 €/m² - Content € 4,547,000/ 8,989 m² = +/- € 509 €/m²
3. Equal spread of insured values.

Images and Site Sketches



Hallway P1



Hallway P1



Atrium P1



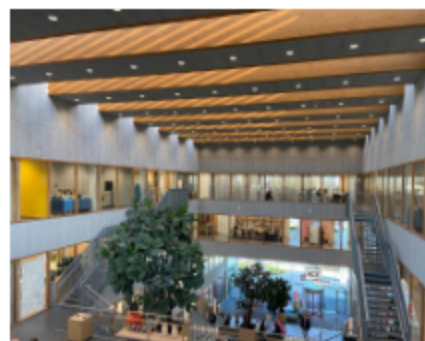
Central segment P1



Building P4



Building P3



Risk Engineering Report

STICHTING FONTYS



Building P4 - porto cabins

Inside building P8

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.