

Risk Engineering Report



Prepared for:

N.V. VERZEKERINGSBEDRIJF GROOT AMSTERDAM (VGA)

Site Name: Stadhuis en Nationale Opera & Ballet

Date of Survey: June 23, 2022

Report Date: July 6, 2022

Survey Type: Property All Risk - Initial

TIV (EUR): 274,877,384

Site Address: Amstel 1, AMSTERDAM, 1011 PN, Netherlands

Latitude: 52.367615

Longitude: 4.899288

RFS ID: RFS-116342

SIC Code: 9199-01-General Government, NEC

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Survey Contacts

Susanne Schoemaker

Technisch Object Manager
Facilitair Bureau, Gemeente
Amsterdam

T: (06) 137 965 22

S.Schoemaker@amsterdam.nl

Petri Laarhuis

Locatiemanager
Facilitair Bureau, Gemeente
Amsterdam

Rick Mes

Technisch Service
Coördinator
Facilitair Bureau, Gemeente
Amsterdam

Joost Beentjes

Senior Acceptant Zakelijke
Verzekeringen
VGA Verzekeringen,
Gemeente Amsterdam

T: (06) 225 526 54

jbeentjes@vga.amsterdam.nl

AIG Contacts

Gordon Biezeveld

Account Risk Engineer

T: +31(6)10209512

Gordon.biezeveld@aig.com

Gordon Biezeveld

Field Risk Engineer

T: +31(6)10209512

Gordon.biezeveld@aig.com

Support Services

Client Resources:

We maintain a library of over 300 documents, forms and other resources created specifically for client use:

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

Ask your local risk engineer for access or email requests to

globalproperty.impairment@aig.com.

Impairment Hotline:

To report sprinkler system, fire pump, water supply or other fire protection outages at insured facilities:

Call us at +1 877-705-7287 or +1 817-490-3255 or

Email us at globalproperty.impairment@aig.com

Purpose of Visit

This complex (Stopera) which houses both the City Hall and The Nationale Opera & Ballet was visited to undertake a risk assessment of the fire and associated perils for insurance purposes. The purpose of the assessment was to assist in the identification and mitigation of hazards and exposures that could lead to the loss or damage to assets or business interruption.

Site Overview

offices, public functions and theatre, as well as catering. Hospitality, outsourced. There are deep-frying installations in 2 places equipped with maximal thermostats. Filters are clean and the baking vapor extraction systems are regularly cleaned by an external company. The town hall has its own technical department but no workshop. The music theater (NO&B) has its own workshop and studio where props and costumes are worked on with sewing machines, irons and the like. Soldering takes place in the technical workshop and a welding machine is available, free of combustible materials during the tour. There is spraying with aerosols, there is a spray wall for this, filters are replaced regularly. Collection of garbage in waste bins, storage in plastic containers in the basement.

parts of the complex are equipped with a sprinkler system. In the musical theater, the stages, backstage area and stage tower are equipped with a manually operated deluge system. The loading pit, prop and material rooms and loading and unloading platform (town hall) are equipped with a wet, automatic sprinkler system. The systems are tested every two weeks by an external party and also maintained as certified, but as far as we know they are not. Activation messages are reported. The public part of the town hall is fully guarded, offices on the floors at escape route level as well as technical rooms and the like. The parking garage and basements are also fully guarded. The Music Theater also has almost complete surveillance, the stage tower is equipped with adapted detection. There is a written procedure for temporary decommissioning when using smoke generators. Alerts are reported to the RAC. Local alarm also via a public address system.

NO&B Building:

Nationale Opera & Ballet is a theatre that houses the Nationale Opera and Nationale Ballet. The National Opera creates and performs music-dramatic art, with a focus on quality, diversity and innovation. The Dutch National Ballet develops, produces and presents ballet at the highest international level. The complex consists of:

- - basement -2 with storage rooms, changing rooms, technical rooms and lockers
- cellar -1 with orchestra pit, storage, two workshops and technique
- mezzanine floor with artist foyer and restaurant
- ground floor with stage area, hall, dressing rooms and logistic space
- first floor with foyers, offices, workshops, lighting, dressing rooms and a rehearsal room for the ballet. The first floor is partly adjacent to the Town Hall.
- second floor with foyers, offices, dressing rooms, rehearsal rooms, meeting rooms, physiotherapy rooms, server room and workshops for the production of props.
- third floor with offices, ICT and singing room (atrium)

- fourth floor with offices, production of human-related techniques, clothing, launderette, fabric dyeing department, theatre technique and technical rooms of the municipality.

This building has various workshops such as wood, metal and props. All props are made in the props workshop. The electrical installation is inspected periodically on behalf of the municipality. It was not possible to determine when the last inspection took place. Part of the storage area, the truck dock and the fly tower are all equipped with a sprinkler system. The large number of curtains and other obstructions hanging in the stage tower cast doubt on the correct functioning of this system. The building is equipped with a certified automatic fire alarm system in accordance with NEN 2535 full surveillance, reporting to the RAC. During rehearsals and performances, smoke machines are regularly used, so that the "theatre group" zone is temporarily switched off by the reception desk (always with a minimum of 2 people).

Nationale Opera & Ballet is a theatre that houses the Nationale Opera and the Nationale Ballet. The National Opera creates and performs music-dramatic art, with a focus on quality, diversity and innovation. The Dutch National Ballet develops, produces and presents ballet at the highest international level.

The National Opera & Ballet employs a total of 550 people (503 FTEs), divided between the theatre and the Decorative Studio. The theatre is open almost all year round, with the exception of the summer period, July-August. In addition to performances, many events also take place there. In 2017 there were 181 performances, approximately 50/50 divided between opera and ballet. It attracts more than 300,000 visitors per year and the occupancy rate of the hall is historically very high...post COVID-19 this is d.d. summer 2022 still on the way towards full recovery.

The productions are often designed and produced in-house. For this purpose, they have their own decor atelier, which is located further on in Amsterdam Southeast. A separate report has been drawn up for this purpose. This building has various workshops such as wood, metal and props. All props are made in the props workshop. Wood, metal, fabrics and other light materials are often used for the production of props. The activities outside the sector that increase the risk are formed by the many workshops in which almost all costumes, shoes, hats and props are made under own management. As far as we know, the Dutch National Opera and Ballet is the only company in the Netherlands that produces all the pieces, including the sets, in-house. This makes the National Opera and Ballet a unique organisation in which very large sets can also be built up, much larger than fellow theatres.

Site Loss History

There have reportedly only been small fire incidents related to burning cars and vehicles near the Parking Garage with relatively minor damage to the car park entrance.

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

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you with engineering support both before and during your project. Please contact us before you commence your project to ensure that we can arrange a consultation with one of our engineers.

Risk Engineering Report

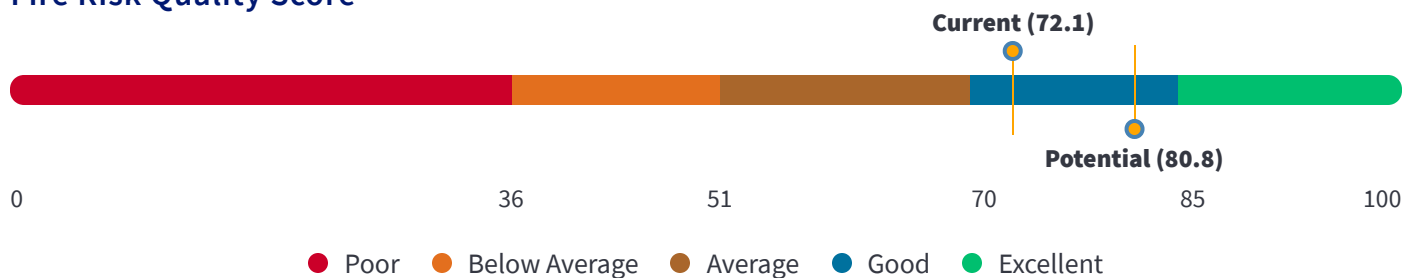


N.V. VERZEKERINGSBEDRIJF GROOT AMSTERDAM (VGA)

Risk Summary

Open RI by Classification	0	Open RI by Age	0	Open RI by Type	0
Critical	0	New	0		
Important	0	Outstanding	0		
Advisory	0	Completed RI	0		

Fire Risk Quality Score



Ratings

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

Occupancy & Process Overview

The Stopera is the Amsterdam building complex where the city hall and opera (the Muziektheater) are located and is located in the city center on the Amstel, the building dates from 1986. The city hall is located in the L-shaped office block and the ronrip building is at the Muziektheater in use. The public functions are accommodated on the ground floor of the town hall, as well as a number of catering companies (Café Amstelhoek, Bagels & Beans), in addition, there is a public parking garage under the building. The music theatre, with 1,600 seats, provides performing arts and includes a large hall with a large stage tower, but also has its own technical workshop and sewing workshop. The complex also houses a photo kiosk, data center and the like.

Occupancy Details

Building	SIC Code	Description	Operating Days/yr	Operating Hrs/Day	Other Tenants
Stadhuis en Nationale Opera & Ballet	919901	General Government, NEC	365	20	Yes

Hazards

Hazard Category	Type	Current Rating	Potential Rating	RI's
Heating, Ventilation, Air Cond & Refrigeration	Common	No Deficiencies	No Deficiencies	0
Electrical	Common	Slight	No Deficiencies	0
Storage	Common	Moderate	No Deficiencies	0
Flammable Liquids - Storage, Transfer, Use	Common	No Deficiencies	No Deficiencies	0

Non-Process HVAC Equipment

Central heating from a central boiler house (basement). Gas-fired boilers are installed here, which are periodically maintained and inspected. There are repairs done and replacements have been made to the heating systems. Various climate control systems and industry-specific installations, for example tension walls in the stage tower. The building is also equipped with a lightning protection system that is inspected annually.

Electrical

The installation shows no defects, as far as visible. According to the reports and statements made the electrical installation is periodically inspected in phases in accordance with NEN3140, including mobile equipment. Thermographic control takes place every two years. Here and there extension cords/multiple plugs are used. Heavy users such as fans and irons are used in this way, especially in the sewing workshop of the musical theater. See earlier recommendations. In addition, 3 diesel-fired emergency power generators have been installed in the basement. The high-voltage transformers are housed in the plinth.

Incidental Storage

Specifically the area's as seen in the NO&B building have higher than normal general storage, see recommendations made in 2022.

Construction

Category	Current Rating		Potential Rating		RI's			
Construction	ISO 5 / Class A - Modified Fire Resistive		ISO 5 / Class A - Modified Fire Resistive		0			

Building	Year Built	# Stories	Height (m.)	Total Area (sq. m.)				
Stadhuis en Nationale Opera & Ballet	1986	9	30	105,000				

Area (1,000 sq. m.)								
Building	ISO1/D	ISO2/C	ISO3/C	ISO3/B	ISO4/C	ISO4/B	ISO5/A	ISO6/AA
Stadhuis en Nationale Opera & Ballet	--	0.5 (0.48%)	--	--	--	--	104.5 (99.52%)	--
Total	0.0 (0.00%)	0.5 (0.48%)	0.0 (0.00%)	0.0 (0.00%)	0.0 (0.00%)	0.0 (0.00%)	104.5 (99.52%)	0.0 (0.00%)

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

Comments

Detached complex with a basement of 2 floors (-1 & -2) a ground floor and the superstructure up to 6 floors on top of the ground floor level. The Music Theater also has a large stage tower, the maximum estimated height is approximately 30 meters.

Built area : approximately 105,000 m2 floor area. Vertical construction : concrete. Facades : mainly masonry and concrete with glass windows. Technical rooms on the roof have facades are made with metal sandwich panels with unknown insulation material possible PIR or PUR. Roofs : concrete with PUR insulation and bituminous roofing ballasted with gravel, recently renewed. all floors : concrete.

There are minor elements above Atria which seem to be constructed utilizing steel frame with wooden roofing materials (plate materials and bitumen roofing). Also some of the technical rooms have minor wooden roofs (plate material on wooden beams). The totality of this type of construction is minor compared to the entire building complex, however

also the NO&B has reportedly some wooden beam constructions. For now this is estimated to be less than 500 m² on a total surface area of 105000 m², being less than 0.5% of the construction surface area.

Water Supply & Fire Pumps

Water Supplies

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

Name	Type	Pump Associated	Adequacy
Primary fire water	Gridded Municipal	None	Adequate

Name	Type	Pump Associated	Adequacy
Secondary fire water	Pond, River or other static source	None	Adequate

Fire Pumps

Name	Suction source	Driver	Shaft	Start Method
Fire Pump #1	Gridded Municipal	Electrical Motor	Split Case	Auto

Driver approval	Approval listing	Controller approval	Pressure Churn (bar)	Pressure Rated (bar)	Flow Rated (Lpm)	Flow Max (Lpm)	Pressure @ max flow (bar)	Rated speed (rpm)	Pressure tank
OTHER	OTHER	OTHER	6.00	6.20	9,000.00	9,000.00	2.00	2,975.00	No

Name	Suction source	Driver	Shaft	Start Method
Fire Pump #2	Gridded Municipal	Electrical Motor	Split Case	Auto

Driver approval	Approval listing	Controller approval	Pressure Churn (bar)	Pressure Rated (bar)	Flow Rated (Lpm)	Flow Max (Lpm)	Pressure @ max flow (bar)	Rated speed (rpm)	Pressure tank
OTHER	OTHER	OTHER	6.00	6.20	9,000.00	9,000.00	2.00	2,975.00	No

Protection

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

Sprinklers

Building	AS (%)	ASA (%)	ASN (%)	Fire Detection (%)
Stadhuis en Nationale Opera & Ballet	10.00	10.00	10.00	99.00
Total	10.00	10.00	10.00	99.00

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

Comments

Het basisontwerp, dat bestaat UPD-102034-300, versie 1.0, d.d. 19-11-2021, is niet ondertekend door de eigenaar/ gebruiker en/of de voorwaarden stellende partij. Conform het inspectieschema basisontwerp versie 9.0 (op basis van afgeleide doelstellingen) is het noodzakelijk dat de eigenaar/ gebruiker en de voorwaarden stellende partij het basisontwerp ondertekent indien sprake is van een maatwerkoplossing. Door de interpretatie sproeidichtheid deluge systeem toneeltoren, zoals aangegeven in artikel 8.8.3

van het UPD-102034-300, versie 1.0, d.d. 19-11-2021, is er sprake van maatwerkoplossing. Indien tijdens de Initiële Inspectie de ondertekening nog niet kan worden aangetoond, zal dit punt leiden tot een negatieve conclusie leiden. Hierdoor zal het verstrekken van een inspectiecertificaat niet mogelijk zijn.

UPD-102034-300, versie 1.0, d.d. 19-11-2021, Sub. 8.8.3, Interpretatie sproeidichtheid deluge systeem toneeltoren. De sproeidichtheid van de toneeltoren moet uitgevoerd worden conform de TB75 §5.3.

Echter is in de FM 3-26 geen uitvoering mogelijk volgens een deluge systeem. Dehalve is voor de sproeidichtheid voor het deluge systeem in de toneeltoren gekozen voor een gevaren klasse HC-3 met een sproeidichtheid van 12 mm/min/m² i.p.v. 24

mm/min/m² meter met de volgende onderbouwing: a) Bij FM 3-26 wordt uitgegaan van een maximum sproeivlak van 110 m² voor een inwendige hoogte van een gebouw boven de 30 meter. In dit geval wordt er rekening gehouden met een sproeivlak van 2 secties gelijktijdig wat ca. 420 m² bedraagt. Dit betekend dat er minimaal 2x zoveel water wordt toegevoerd over een oppervlakte die bijna 3x de beoogde oppervlakte van het sproeivlak betreft; b) De toneeltoren

bestaat uit een aantal bordessen en vloerroosters. Onder elk rooster en/of bordes zijn sprinklers aangebracht die als deluge systeem aangesloten zijn op de toneeltoren. Deze sprinklers zorgen voor een aanvullende sproeidichtheid over de oppervlakte waar zich een obstructie bevindt en waarmee een brand beter beheerst c.q. geblust kan worden; c) De toegepaste sprinklers worden wel 1 op 9 m² geplaatst waardoor de sprinklerdekking optimaal is; d) De toegepaste sprinklers hebben een K factor van 160 of hoger en zullen qua druppelvorming een betere penetratie hebben dan fijnere druppels dan sprinklers met een lagere K-factor; e) de reactie snelheid van de aansturende brandmeldinstallatie en/of de brandwacht tenminste gelijkwaardig wordt geacht aan een conventioneel gesloten nat systeem. Dit betekent dat de brandwacht de sprinklerinstallatie direct moet activeren. Een vertraagde activering is niet toegestaan. Met bovenstaande afwijkingen worden gezien als een maatwerkoplossing en dienen door de eisende partijen akkoord worden bevonden door ondertekening van het UPD.

Fire Extinguishing Equipment

Water Supply & Inspection

Frequency

- Meets NFPA requirements

FEA/Hose Reel Details

- Equipment is properly maintained
- Inspections are properly documented with records maintained and readily available
- Plant personnel properly trained

Recommendations

Advisory

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
- Closest FD participates w/ other local full-time FD's w/in a "mutual aide" concept
- Full time emergency communications center to dispatch FD
- Response time is less than 20 minutes

Fire Department Distances (kilometers)

Station #1

Station #2

1.00

5.00

Supervision

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

Automatic Fire Detection

Signaling Systems Central Station/ARC	Recognized Yes	Monitored Line Yes	Fire Protection Alarm - Water flow - Smoke Detection - Pull Boxes - Pump Trouble - Pump Power
Valve Locked Partially	Fire Detection Coverage (Including Sprinklers) at least 90%	Smoke Detection Monitored Yes	Other Alarms Yes
Maintenance, Testing and Inspection per NFPA 25 Satisfactory			

Security

Security & Watch Service (24/7) atleast two person 24/7	Round Frequency at least every 4 hrs	Security Rounds Recorded	Coverage 100%
Security Alarms - CCTV - Door Contacts - Internal Movement Detection - Infrared Beam	Intrusion Alarm Monitoring Constantly attended location	Site Fencing and Barriers None	Burglar and Theft Exposure Yes
Vandalism / Malicious Mischief Exposure Yes	Sabotage and Terrorism Exposure Yes		

Management Programs

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

Self-Inspection Program

Self-Inspection Program

- Yes

Documentation

- Informal or undocumented checklists

Frequencies

- Minimum weekly or commensurate with the occupancy

Root cause & training

- Program exists but requires some minor additions

Risk Improvements

- Advisory

Fire System Impairment Procedures

Written and documented procedure

Communication

Impairment logging

Risk Engineering Report



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- Yes
- Not actively communicated to personnel or less than above
- No logging, but tags maintained as records

Conforms to AIGs guidelines

- No

Risk Improvements

- Advisory

Contractor Management

Contractor Training Program

- Yes

Management Program Features

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

Records

- Maintained electronically

Risk Improvements

- None

Hot Work Permit

Hot Work Program in Place

- Yes – Does not conform to AIG

Communication

- Communicated to personnel with mgmt. responsibilities assigned

Logging

- No logging, but tags maintained as records

Is there Hot Work Occurring

- Yes – but none of the above conditions

Smoking

Policy

- Uncontrolled smoking allowed onsite

Appropriate Receptacles

- Yes

Inspections

- Weekly

Material Disposal

- Adequate

Risk Improvements

- Important

Housekeeping

Quality

- Commensurate with exposure

Inspections

- Regular inspections w/ management support; well-documented

Risk Improvements

- Advisory

Planned Preventative Maintenance

PM Program in place

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

PM System

- Fully computerized and automated work order generation

Overdue Assignments

- Yes, but none past 60 days

PM of Critical Components/Equipment

- Conforms to manufacturer's minimum requirements

Risk Improvements

- None

Management Interest

Management Interest

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

Field Safety and Risk Management

- Important

Site Level Business Continuity Planning

Business Continuity Plan (BCP)

- BCP addressing common events

Plan Details

- Business Impact Analysis completed & documented by the BC team
- Recovery strategies identified and included in BCP to limit consequences
- Crisis team is addressed in the plan
- Plan is updated and tested annually

Responsibilities

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

Risk Improvements

- Advisory

Exposures

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

Internal Exposure

The NO&B building is a internal exposure to the City Hall and visa versa.

External Exposure

None

Yard Storage

None

Water Intrusion Exposure

Aircraft Exposure

Structural Collapse Exposure

- Liquid damage prevention plan exists
- Appropriate employees have authority to shut valves and know the importance of not turning off fire protection water until fire condition is assessed
- Control valves are identified and mapped including areas they control
- Remediation company is on retainer
- Water intrusion sensor detection system, plans or schematics for piping systems should be readily available in addition to control valve
- No remediation plan exists

No

Yes

BI Exposures

CBI : Attraction Properties Exposure

Unknown

Warehousing of Fin. Products Exposure

Unknown

Key EDP Equipment Exposure

Key EDP Equipment is protected using NOVEC Special Extinguishing Systems

Electricity Interruption Exposure

There are 3 NSA (Generators) in the City Hall to overcome the electricity interruption exposures.

NATCAT Exposure Summary

	Flood	Wind	Earthquake	Hail	Collapse	Other
Zone/Exposure	<=100-year Flood Zone	38 m/s	MR Zone 0: <MMV	MRe Zone 2	Yes	Yes

Flood

Site Property Flood Zone <=100-year Flood Zone	Flood Emergency Response Plan Client has no BCP but has a documented FERP in place	Mitigation Flood Defenses No Flood Defenses	Redundant Power/Utilities Client has limited power and utility redundancy
Site Access Vulnerability None	Below Grade Construction 2 or more story levels below grade construction with moderate to high contents/M&E exposure	Location of Critical Utilities Primary and/or redundant power distribution equipment situated at ground level	

Building	Flood Zone	Flood Source	FFE (m)	100 Yr Flood Elv. (m)	500 Yr Flood Elv. (m)
Stadhuis en Nationale Opera & Ballet	<=100-year Flood Zone	Coastal/Surge	--	--	--

100 Yr Flood Loss Estimates

Total LE (EUR): 13,743,869

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
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Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Stadhuis en Nationale Opera & Ballet	9,620,708 (5.00%)	0 (5.00%)	4,123,161 (5.00%)	0 (5.00%)	0 (5.00%)	13,743,869 (5.00%)
Total	9,620,708 (5.00%)	-- (--%)	4,123,161 (5.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **13,743,869 (5.00%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Stadhuis en Nationale Opera & Ballet	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	0 (--%)	0 (--%)	0 (--%)	--	

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

500 Yr Flood Loss Estimates

Total LE (EUR): 27,487,739

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Stadhuis en Nationale Opera & Ballet	19,241,417 (10.00%)	-- (--%)	8,246,322 (10.00%)	-- (--%)	-- (--%)	27,487,739 (10.00%)
Total	19,241,417 (10.00%)	-- (--%)	8,246,322 (10.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **27,487,739 (10.00%)**

Risk Engineering Report



N.V. VERZEKERINGSBEDRIJF GROOT AMSTERDAM (VGA)

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Stadhuis en Nationale Opera & Ballet	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	0 (--%)	0 (--%)	0 (--%)	--	

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

Wind

Wind Speed (m/s) 38	Redundant Power/Utilities Client has limited power and utility redundancy	Wind Emergency Response Plan Client has no BCP in place	Asset Strengthening Client has no documented asset strengthening - building > 17 years of age
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Building	Distance to Coast
Stadhuis en Nationale Opera & Ballet	10 and greater miles

Comments

The City Hall has some weaker construction elements including a green house construction between the main buildings. Also some shed roofing is made out of a wooden plate with bitumen to provide for glass lights above the atrium. Percentage wise these are small constructions on the entirety of the complex. For wind storm the potential for damage is slightly increased.

Earthquake

EQ Zone MR Zone 0:<MMV	Peak Ground Acceleration (%g) 2.00	EQ Emergency Response Plan Client has no BCP in place
Redundant Power/Utilities Client has limited power and utility redundancy	Seismic Bracing of Equipment No seismic bracing or restraint is provided	Asset Strengthening Client has no documented asset strengthening - building > 17 years of age
Seismic Gas Shutoff Valves (SGSV)		

Risk Engineering Report



N.V. VERZEKERINGSBEDRIJF GROOT AMSTERDAM (VGA)

No SGSV's provided for flammable
gas and liquid equipment

Fire Loss Estimates

All loss estimates developed as a result of our property surveys are for the sole use of AIG underwriters. Engineering loss estimates are based on the professional judgement of our engineer / consultants. There is detailed guidance and methodologies that are reference and used in the calculate of our Loss Estimates. Using our Loss Estimates without an understanding of the underlying guidance and methodologies is not recommended. AIG assumes no responsibility for use or reliance upon the loss estimates presented below.

	PD (M EUR)	PD%	BI (M EUR)	BI%	IBI (M EUR)	TOTAL (M EUR)
MAS	274.88	100.0		0.0		274.88
MFL	137.44	50.0		0.0		137.44
NLE	23.64	8.6		0.0		23.64

Reported Values

Property Damage

Building (EUR)	Contents (EUR)	M&E (EUR)	Stock/Inventory (EUR)	Other PD (EUR)
192,414,169	82,463,215	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	274,877,384
Total BI Value	0
Total Insured Value	274,877,384

Maximum Foreseeable Loss (MFL)

Total LE (EUR): 137,438,693

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Stadhuis en Nationale Opera & Ballet	96,207,085 (50.00%)	0 (50.00%)	41,231,608 (50.00%)	0 (50.00%)	0 (0.00%)	137,438,693 (50.00%)
Total	96,207,085 (50.00%)	-- (--%)	41,231,608 (50.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **137,438,693 (50.00%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Stadhuis en Nationale Opera & Ballet	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

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

Loss Estimate Comments

There are no fire-resistant partitions that can lower the EML Scenario. Under EML conditions sprinkler does not work or is impaired. Maximum Possible Loss scenario is close to 100% despite the complex is partly underground. The Property insurance does not cover operating costs (BI) for both the Opera building (opera/ballet) and the decor studio. A breakdown by location is not known. It is assumed that approximately 75% can be attributed to the Opera building. In the scenario of an MPL damage it will take more than 2 years to rebuild the building, as a result of which the operating costs of the damage will be used to the maximum, however no BI is insured on the Property Insurance.

Normal Loss Expectancy (NLE)

Total LE (EUR): 23,639,456

Risk Engineering Report



N.V. VERZEKERINGSBEDRIJF GROOT AMSTERDAM (VGA)

PD Loss Estimate

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Stadhuis en Nationale Opera & Ballet	15,393,134 (8.00%)	0 (25.00%)	8,246,322 (10.00%)	-- (--%)	0 (25.00%)	23,639,456 (8.60%)
Total	15,393,134 (8.00%)	-- (--%)	8,246,322 (10.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **23,639,456 (8.60%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Stadhuis en Nationale Opera & Ballet	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

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

Loss Estimate Comments

NO&B building NLE Scenario: The complex has a concrete, steel and masonry supporting structure. The facades are made of brickwork with an unknown type of insulation material. Part of the front is covered with tiles. The upper floors are mainly made of concrete and partly of wood. The roof is made of concrete with a flammable insulation material, bituminous roofing and ballasted with gravel. Non-flammable facades with flammable roofs (CMD). The 2018 MPL by Allianz Nederland Corporate was estimated to be in the range of 21 million Euro's. The 2022 NLE Scenario is estimated to start in NO&B building due to the difference in use and increased risk for fire due to higher fire load.

Maximum Amount Subject (MAS)

Total LE (EUR): 274,877,384

PD Loss Estimate

Risk Engineering Report



N.V. VERZEKERINGSBEDRIJF GROOT AMSTERDAM (VGA)

Building	Bldg (EUR)	M&E (EUR)	Content (EUR)	Stock (EUR)	Other (EUR)	Total (EUR)
Stadhuis en Nationale Opera & Ballet	192,414,169 (100.00%)	0 (100.00%)	82,463,215 (100.00%)	0 (100.00%)	0 (100.00%)	274,877,384 (100.00%)
Total	192,414,169 (100.00%)	-- (--%)	82,463,215 (100.00%)	-- (--%)	-- (--%)	

Total Property Damage Loss Estimate (EUR): **274,877,384 (100.00%)**

TE Loss Estimate

Building	BI (EUR)	Payroll (EUR)	Rent (EUR)	Downtime (Months)	Total(EUR)
Stadhuis en Nationale Opera & Ballet	-- (--%)	-- (--%)	-- (--%)	--	--%
Total	-- (--%)	-- (--%)	-- (--%)	--	

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

Images and Site Sketches



National Opera & Ballet in Red (doted line) and in Yellow
Stadhuis Amsterdam complex

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.