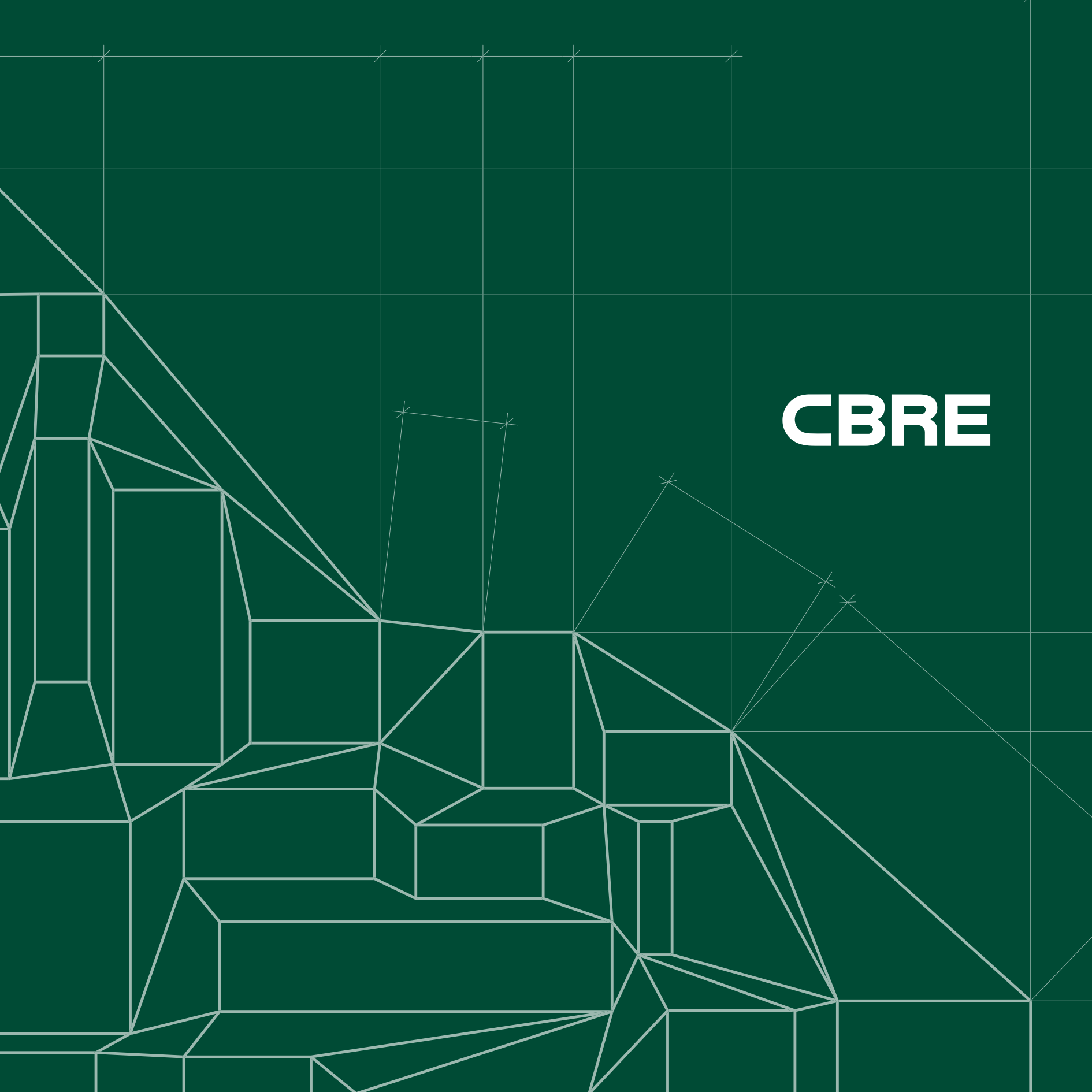


The background is a collage of industrial images, including pipes, structural beams, and machinery, all tinted in shades of green. Overlaid on this are several geometric shapes: a large circle on the left, a large triangle on the right, and several smaller triangles and lines scattered throughout. The text is positioned on the right side, overlaid on the green background.

MODERN INDUSTRIAL STANDARDS POLAND

CBRE





CBRE

CONTENTS

A faint, light green architectural line drawing of a building structure, possibly a modern office or industrial building, is positioned on the right side of the page. It features various geometric shapes, lines, and angles, suggesting a complex design. The drawing is partially obscured by the large 'CONTENTS' text.

FOREWORD

COMPANY PROFILE

A. INDUSTRIAL STANDARDS CLASSIFICATION

A1. Location criteria

A2. Quality criteria

A3. Classification table

B. LOCATION CRITERIA

B1. Proximity to a major national road

B2. Proximity to an express road or higher standard road

B3. Proximity to a source of labour

B4. Located in an established industrial zone

B5. Public transportation network

C. QUALITY CRITERIA

- C1. Internal layout and structural grid
- C2. Minimum clear height
- C3. Ground floor slab load bearing capacity
- C4. Security fence and controlled access
- C5. Supporting office space
- C6. Car park provision
- C7. Lorry park provision
- C8. Utilities
- C9. Fire protection and smoke extraction
- C10. Daylight provision
- C11. Heating, cooling and ventilation
- C12. Lighting and small power
- C13. Sustainability standards for design and construction
- C14. Docks and loading/ off-loading provision
- C15. Roof snow clearance
- C16. Waste storage and removal



FORWARD

The purpose of this Guide is to provide a benchmark standard for logistics and light industrial space in the fast developing Polish market as well as to help end users of the accommodation in understanding the type of specification a building should have.

The Modern Industrial Standards, Poland Guide, 2016 has been created by CBRE with strong cooperation from external partners. Through extensive consultation with developers, investors, occupiers and designers we wanted to ensure wide acceptance and adoption of the standard. All of the companies involved in the discussion are very active in Poland. Thanks to their extensive experience on the market, their advice has significantly contributed to the final parameters of the presented criteria.

The ability to assess the class of any logistics or light industrial building represents a high value for all the market players – tenants, developers, funds, agents and architects. We believe that this Guide provides a clear and comprehensive assessment of best practice in terms of location, design, procurement, safety and efficiency for the benefit of all participants within the industry.

The Publication is focused on standard logistics and light industrial buildings. It is not intended to be used to classify build-to-suit or dedicated manufacturing facilities as they are

subject to different parameters. We have selected two types of criteria: location and quality. The location of a logistics facility is a critical factor for a successful development. An A class location will achieve all, or all but one, of the location criteria listed in the Publication. Class B will fail to achieve 2 of the criteria and a class C location comprises of all other locations. The quality of the building is the second classification measure and determines the class of the building. To achieve a class A rating 13 or more of the quality criteria should be met. Class B meets 12 quality criteria. If 11 or less criteria are met then the building is class C. So if, according to the criteria set, a particular building is classified as being in an excellent location and meeting the top level of quality standards it will be rated as AA (A class location with A class quality standard).

Modern Industrial Standards, Poland Guide, 2016 is the first such a document on the Polish market. The idea is based on a similar publication covering office market standards which was published by CBRE and Rolfe Judd this year. It is intended that future updates will be published as the market changes and to incorporate feedback from use of this document in practice. We hope that MISP will become a useful and popular tool for occupiers, developers, consultants and investors alike and will assist in the understanding of the requirements of a particular standard.

THE PUBLICATION IS FOCUSED ON ASSISTING TENANTS IN OBTAINING THE KNOWLEDGE OF WHAT THE RECOMMENDED STANDARD FOR MODERN LOGISTICS AND LIGHT INDUSTRIAL BUILDINGS SHOULD BE.

COMPANY PROFILE

CBRE

CBRE is the world's largest commercial real estate services firm. The Company has approximately 70,000 employees in over 60 countries and serves real estate owners, investors and occupiers. CBRE offers strategic advice and execution for property sales and leasing, corporate services, property, facilities and project management, appraisal and valuation, development services, investment management, research and consulting.

CBRE Poland employs around 1,000 people in Warsaw, Gdansk, Krakow, Wroclaw and Poznan, offering a full scope of real estate services and building value on each stage of commercial properties' life cycle.

For logistics and industrial investors we have created Integrated Industrial Platform, where tenants can find solutions to all their requests, from location and technical advisory, through transaction process support, up to full project and facilities management. We are an experienced team of the best advisors, negotiators, engineers, project managers, licenced architects, building and quantity surveyors, valuers as well as Breeam and Leeds assessors and auditors to build real advantage for your project. Please visit our website www.industrialgo.pl or www.cbre.pl.

JOANNA MROCZEK

Senior Director
Research & Marketing
joanna.mroczek@cbre.com

JONATHAN STEER

Senior Director
Building Consultancy
jonathan.steer@cbre.com

JÖRG KREINDL

Senior Director
Advisory & Transaction Services
Industrial & Logistics
joerg.kreindl@cbre.com



The background is a photograph of an industrial interior, possibly a warehouse or factory, with a high ceiling, metal beams, and large windows. The image is overlaid with a semi-transparent green filter. On the right side, there are several large, overlapping geometric shapes in different shades of green, including a large triangle and a trapezoid. The text 'INDUSTRIAL' is written in large, white, sans-serif capital letters, stacked vertically on the left side of the image. The letter 'I' in 'INDUSTRIAL' has a small green vertical bar on its left side. The word 'STANDARDS' is written in smaller, white, sans-serif capital letters, stacked vertically to the right of 'INDUSTRIAL'. The word 'CLASSIFICATION' is written in smaller, white, sans-serif capital letters, stacked vertically to the right of 'STANDARDS'.

INDUSTRIAL

STANDARDS
CLASSIFICATION

STANDARDS CLASSIFICATION

A1.LOCATION CRITERIA

The location of a logistics facility is a critical factor for a successful development. An A class location will achieve all, or all but one, of the location criteria listed in the Publication. Class B will fail to achieve 2 of the criteria and a class C location comprises of all other locations.

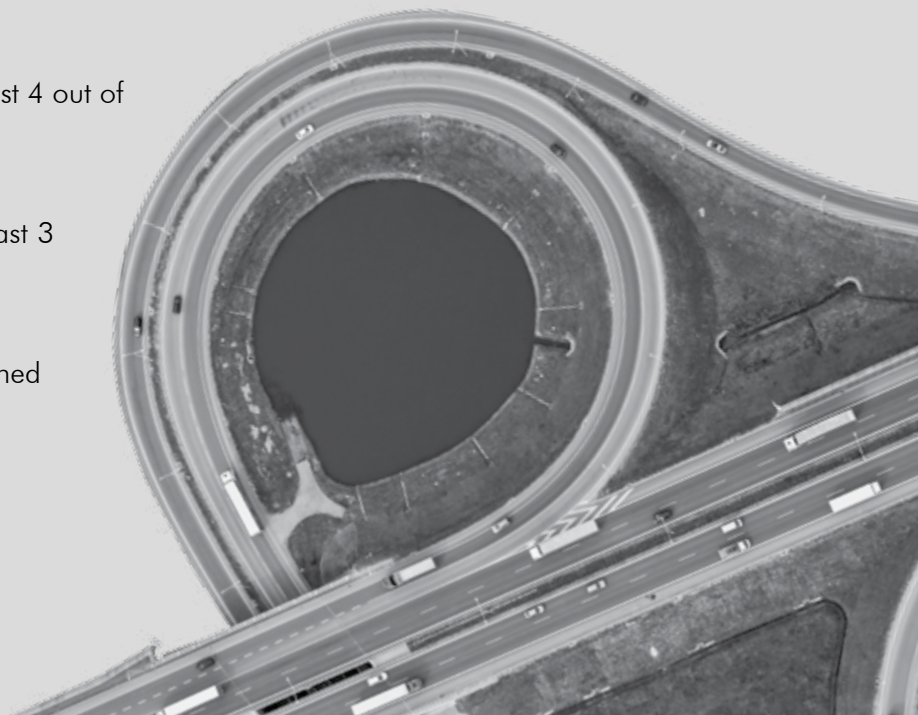
1. Proximity to a major national road
2. Proximity to an express road or higher standard road
3. Proximity to a source of labour
4. Located in an established industrial zone
5. Public transportation network

LOCATION CRITERIA

A – Building should meet at least 4 out of 5 standard requirements

B – Building should meet at least 3 out of 5 standard requirements

C – Any other location not defined as class A or B



STANDARDS CLASSIFICATION

A2.QUALITY CRITERIA

The quality of the building is the second classification measure and determines the class of the building. To achieve a class A rating 13 or more of the quality criteria should be met. Class B meets 12 quality criteria. If 11 or less criteria are met then the building is class C.

1. Internal layout and structural grid
2. Minimum clear height
3. Ground floor slab load bearing capacity
4. Security fence and controlled access
5. Supporting office space
6. Car park provision
7. Lorry park provision
8. Utilities
9. Fire protection and smoke extraction
10. Daylight provision
11. Heating, cooling and ventilation
12. Lighting and small power
13. Sustainability standards for design and construction
14. Docks and loading/ off-loading provision
15. Roof snow clearance
16. Waste storage and removal

QUALITY CRITERIA

A – Building should meet at least 13 out of 16 standard requirements

B – Building should meet at least 12 out of 16 standard requirements

C – Building meets 11 and fewer out of 16 standard requirements

STANDARDS CLASSIFICATION

A3.CLASSIFICATION TABLE

The full range of categories is listed below.

AA	A LOCATION AND A QUALITY
AB	A LOCATION AND B QUALITY
AC	A LOCATION AND C QUALITY
BA	B LOCATION AND A QUALITY
BB	B LOCATION AND B QUALITY
BC	B LOCATION AND C QUALITY
CA	C LOCATION AND A QUALITY
CB	C LOCATION AND B QUALITY
CC	C LOCATION AND C QUALITY



INDUSTRIAL

LOCATION
CRITERIA

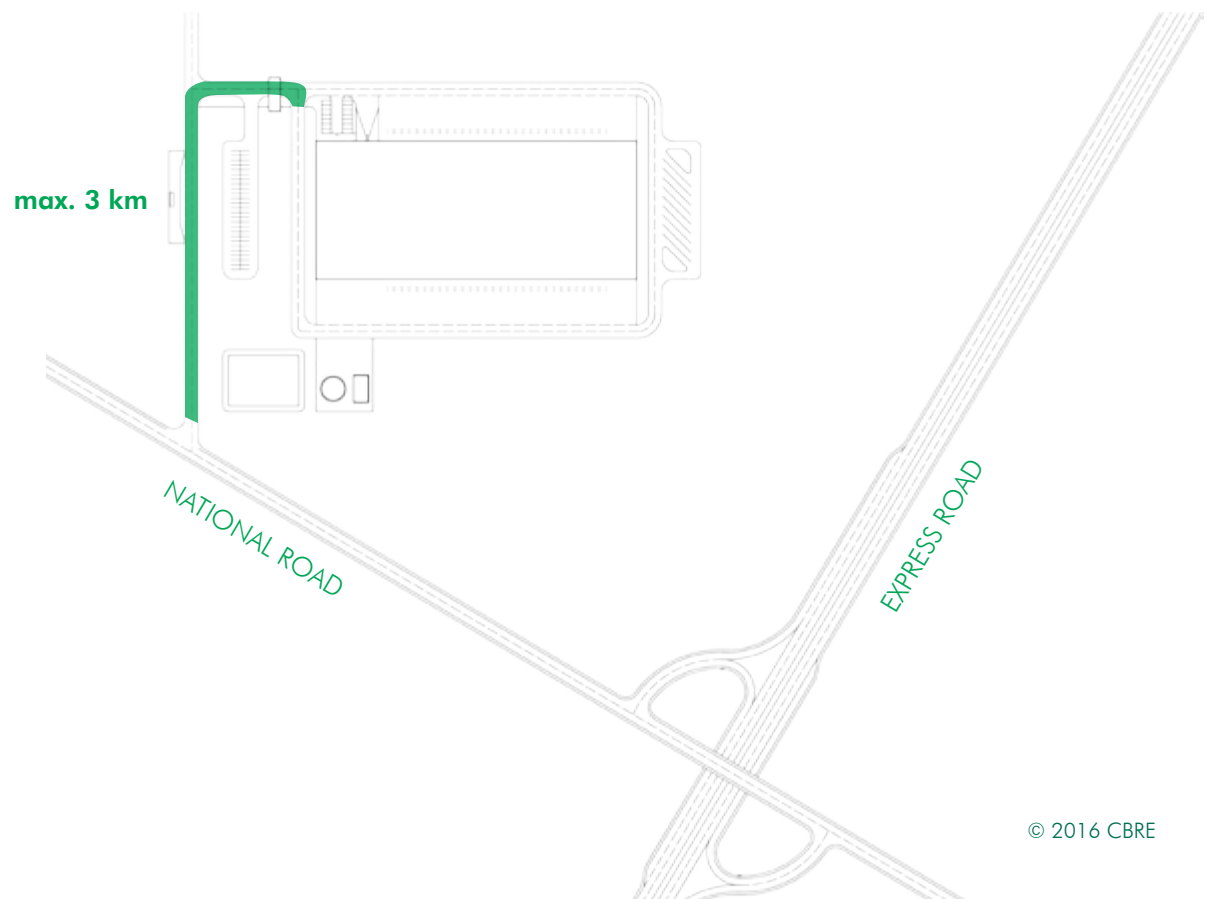
LOCATION CRITERIA

B1. PROXIMITY TO A MAJOR NATIONAL ROAD

The facility is located less than 3 km from a national road as measured from the main road access gate of the facility. The connection to the national road must be free of obstructions, load restrictions and height limitations to allow safe access for the European standard size trucks of 40T.

When the subject facility is located within the maximum mentioned distance but due to restrictions the travel distance is higher, eg. a one way system, the criteria will not be treated as achieved.

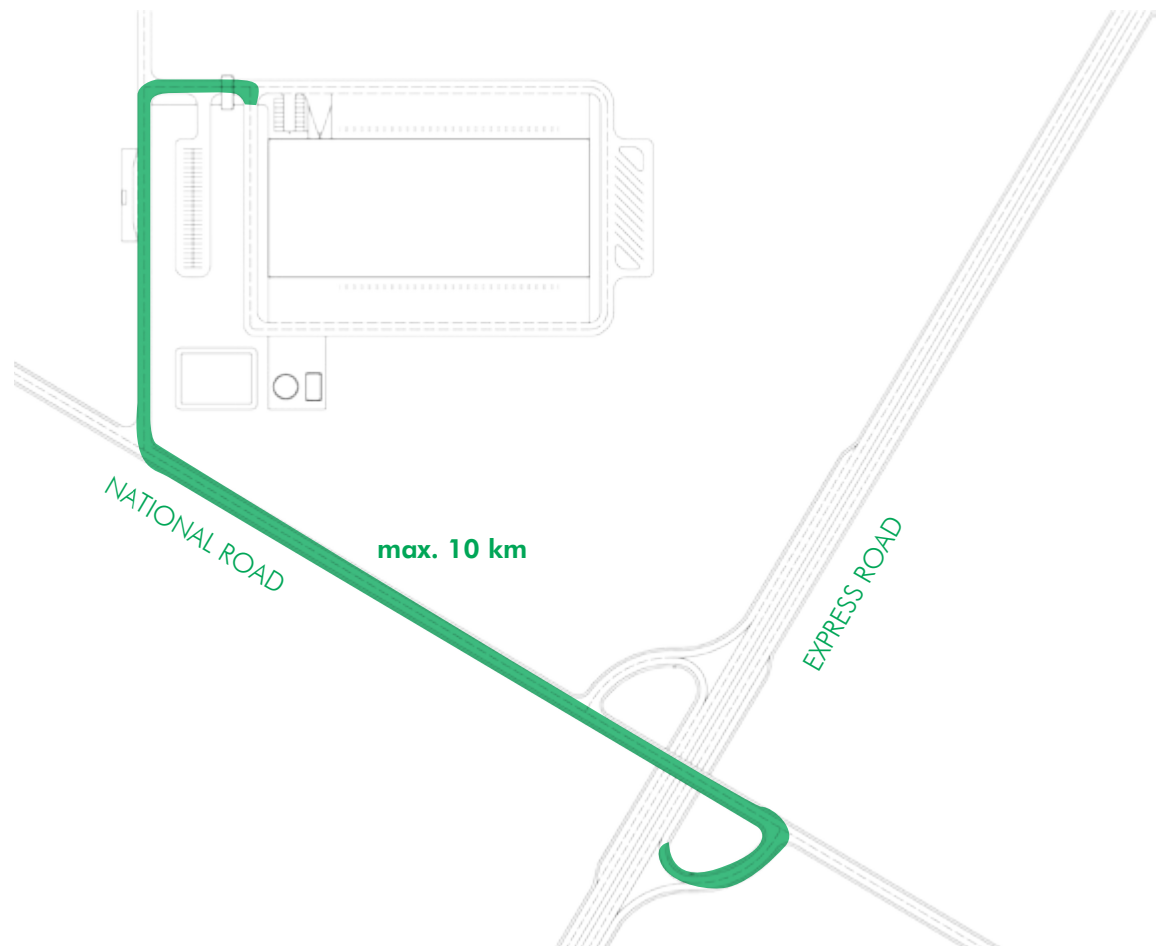
A national road is defined by the General Directorate for National Roads and Motorways (*Generalna Dyrekcja Dróg Krajowych i Autostrad*).



LOCATION CRITERIA

B2.PROXIMITY TO AN EXPRESS ROAD OR HIGHER STANDARD ROAD

The facility is located within 10 km of a motorway or express road as measured from the main road access gate of the facility. The connection to the motorway or express road must be free of obstructions, load restrictions and height limitations to allow safe access for European standard size trucks of 40T.

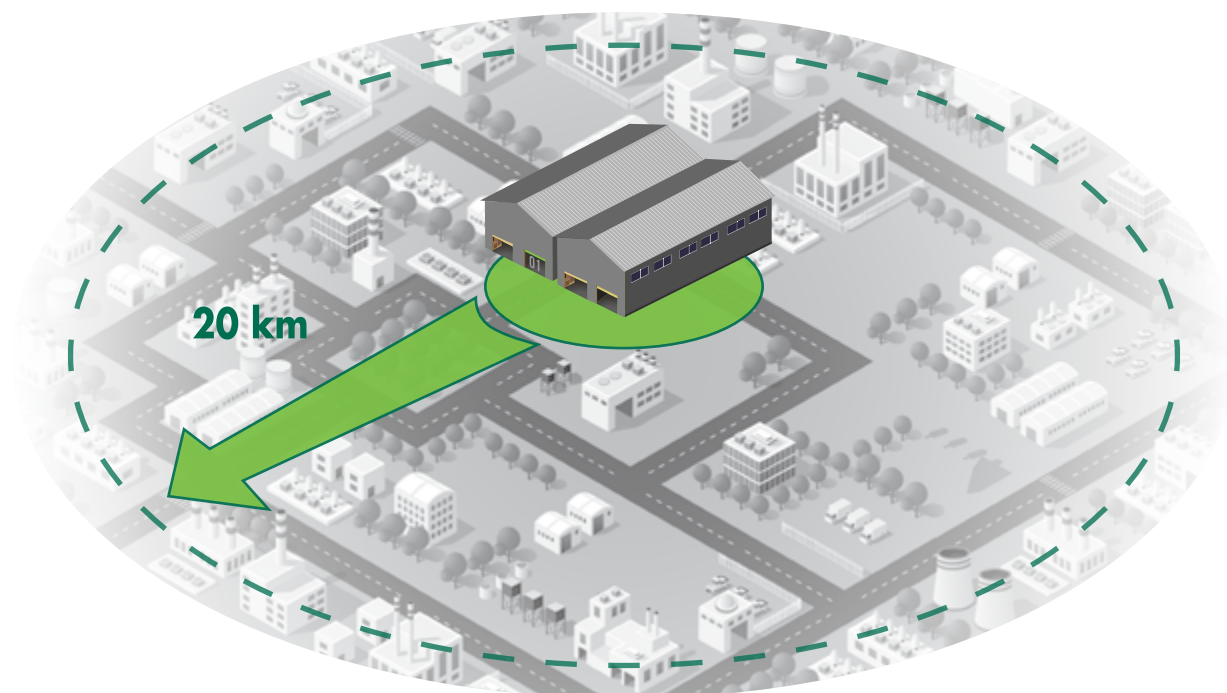




LOCATION CRITERIA

**B3.PROXIMITY TO
A SOURCE OF LABOUR**

To ensure that a sufficient workforce availability is guaranteed in the region where the facility is located, the facility needs to have a population catchment of greater than 100,000 inhabitants within a 20 km radius from the location.



min. 100,000 inhabitants



LOCATION CRITERIA

B4. LOCATED IN AN ESTABLISHED INDUSTRIAL ZONE

Due to the location of transit routes, the position of the area within the country and Europe, but also having regard to the specific industrial and warehouse needs, the facility is placed within an established multi-occupier industrial zone location that caters for the occupation and use of the park for storage and logistic purposes.

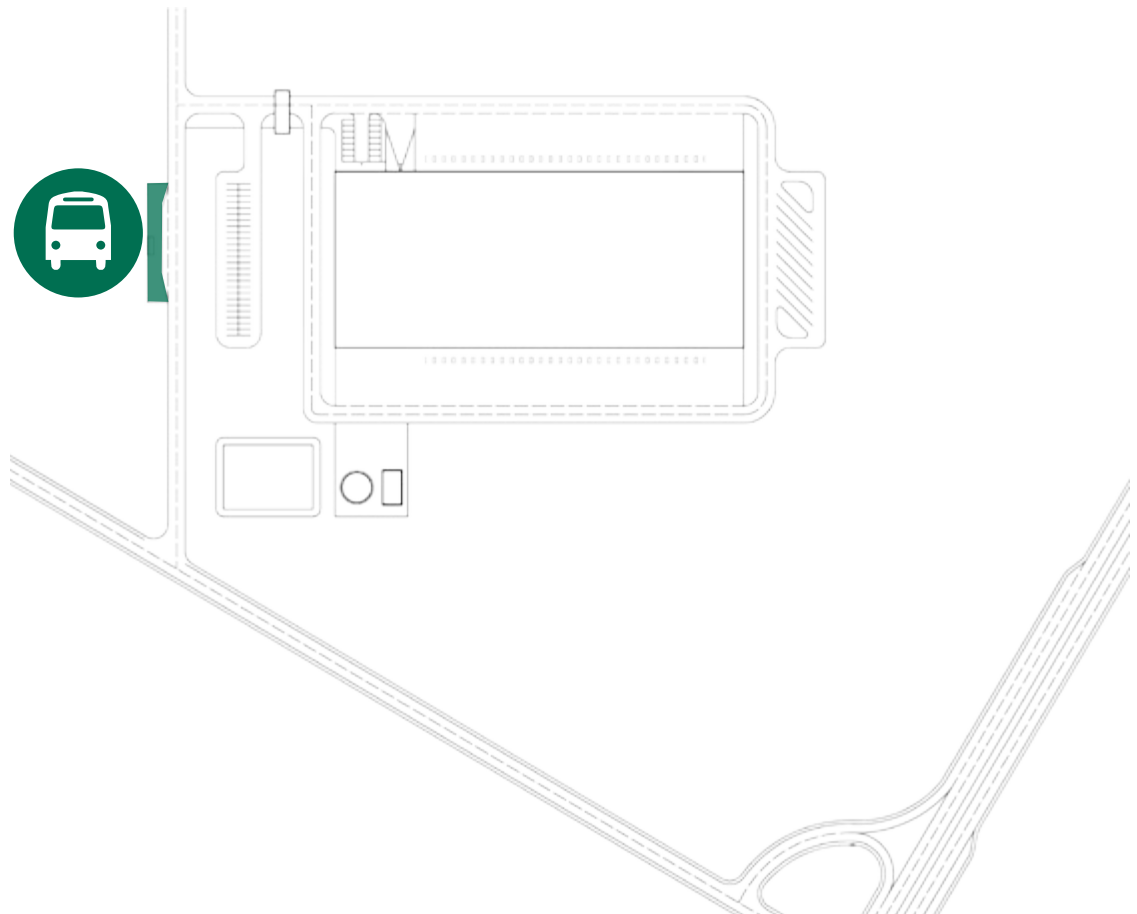


INDUSTRIAL

LOCATION CRITERIA

B5.PUBLIC TRANSPORTATION NETWORK

To ensure that the facility is easily accessible for the workforce, the public transport network access (bus, tram or train) is required within 1,000 m from the pedestrian entrance gate.





INDUSTRIAL

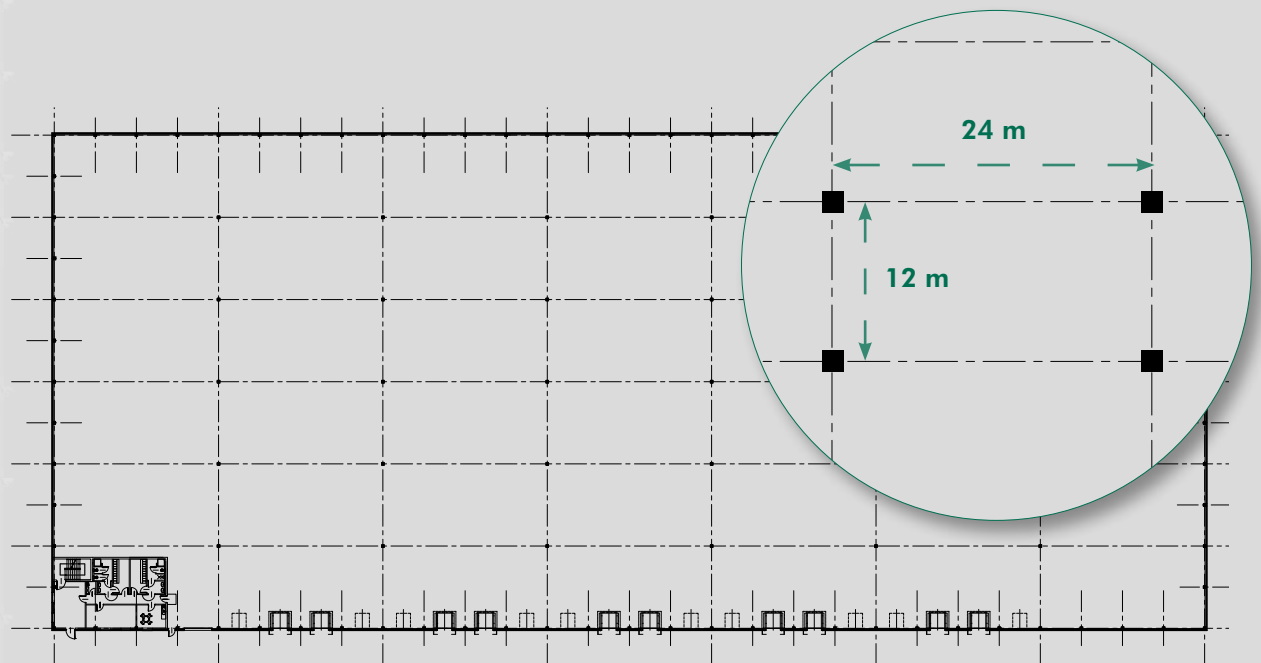
QUALITY
CRITERIA

QUALITY CRITERIA

C1.INTERNAL LAYOUT AND STRUCTURAL GRID

There are many factors affecting the choice of a space planning grid for an industrial building representing a balance between economic construction and providing a flexible and robust space for logistics operations seeking the minimum amount of columns in a space and a grid that supports storage and operations.

A typical solution is a column grid (steel or concrete) of 24 m x 12 m or similar, although this may vary depending on the technology selected and site dimensions. The distance between columns should not be less than 11 m in the short dimension and 20 m in the long dimension. A typical grid is shown below.

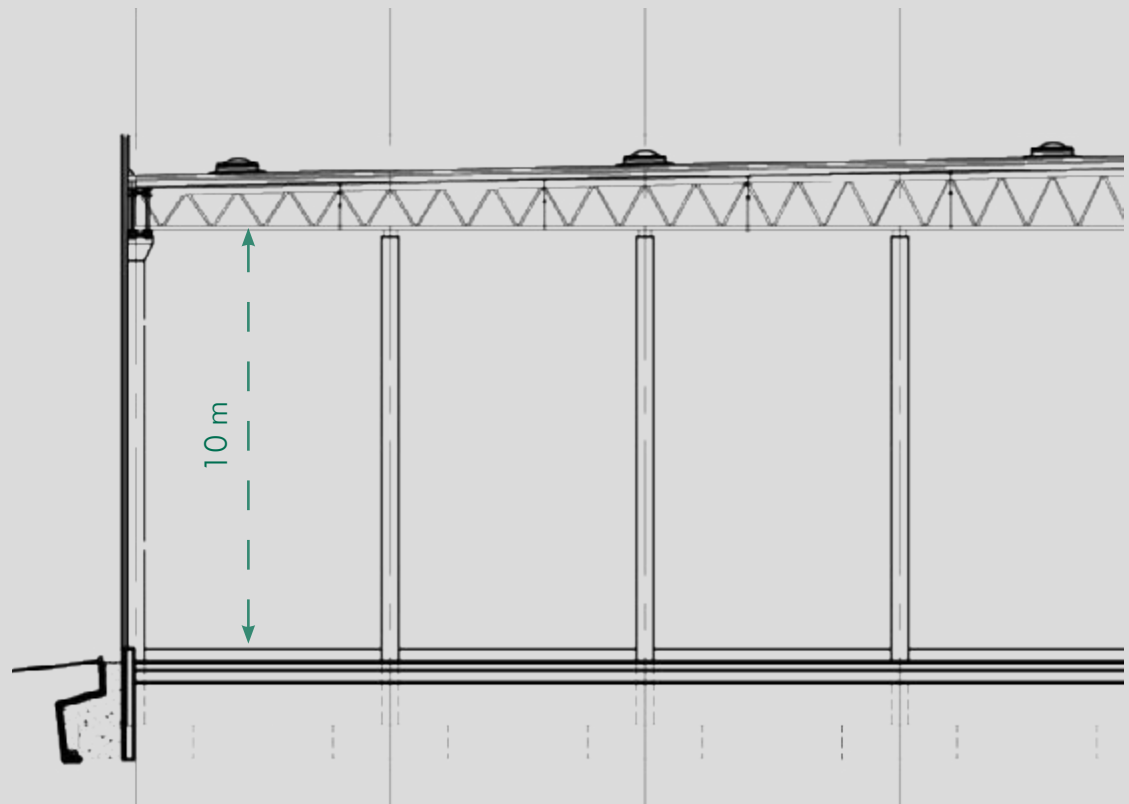




QUALITY CRITERIA

C2.MINIMUM CLEAR HEIGHT

To meet the needs of modern racking systems, the minimum clear height for a class A logistics building from finished floor slab level to the underside of structure and technical installations is to be a minimum of 10 m. Measurement of the distance is from the bottom of the lowest installation.



QUALITY CRITERIA

C3.GROUND FLOOR SLAB LOAD BEARING CAPACITY

Load bearing capacity, the technical condition and levelness of the floor are critical for occupiers and represent one of their key criteria.

The industrial floor should provide for a uniform distributed load of 50 kN/sq m to the warehouse area with a point load of 60 kN or higher.

Level tolerance of the floor should be always related to type of use and allow racking or stacking over 8 m and is to be according to, for example, norm TR34 4th Edition – Concrete industrial ground floors. In speculative construction the classification FM 2 (Special) should be provided as minimum.

The floor should be dust resistant and allow for the use of loaded forklift trucks.



QUALITY CRITERIA

C4.SECURITY FENCE AND
CONTROLLED ACCESS

To ensure the basic principles of security, the facility needs to be protected by a security fence with a minimum height of 1.8 m incorporating an integral access control gate and barriers for trucks, cars and pedestrians.



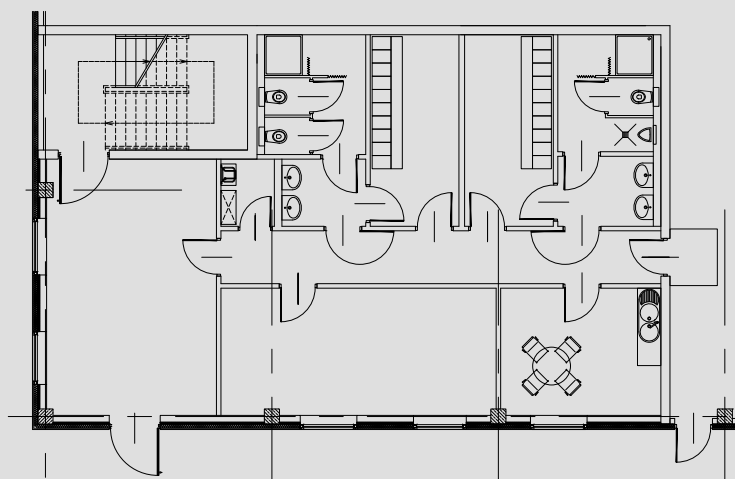


QUALITY CRITERIA

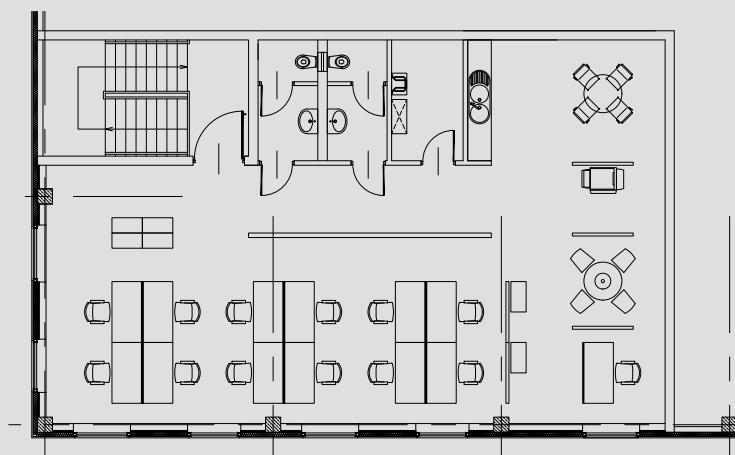
C5.SUPPORTING OFFICE SPACE

The office space, located on the ground level of the facility, should support the operations of the logistics building. A standard ratio is a minimum 300 sq m of office and social area per 10,000 sq m of warehouse space. An example of a building layout is shown below.

GROUND LEVEL



MEZZANINE





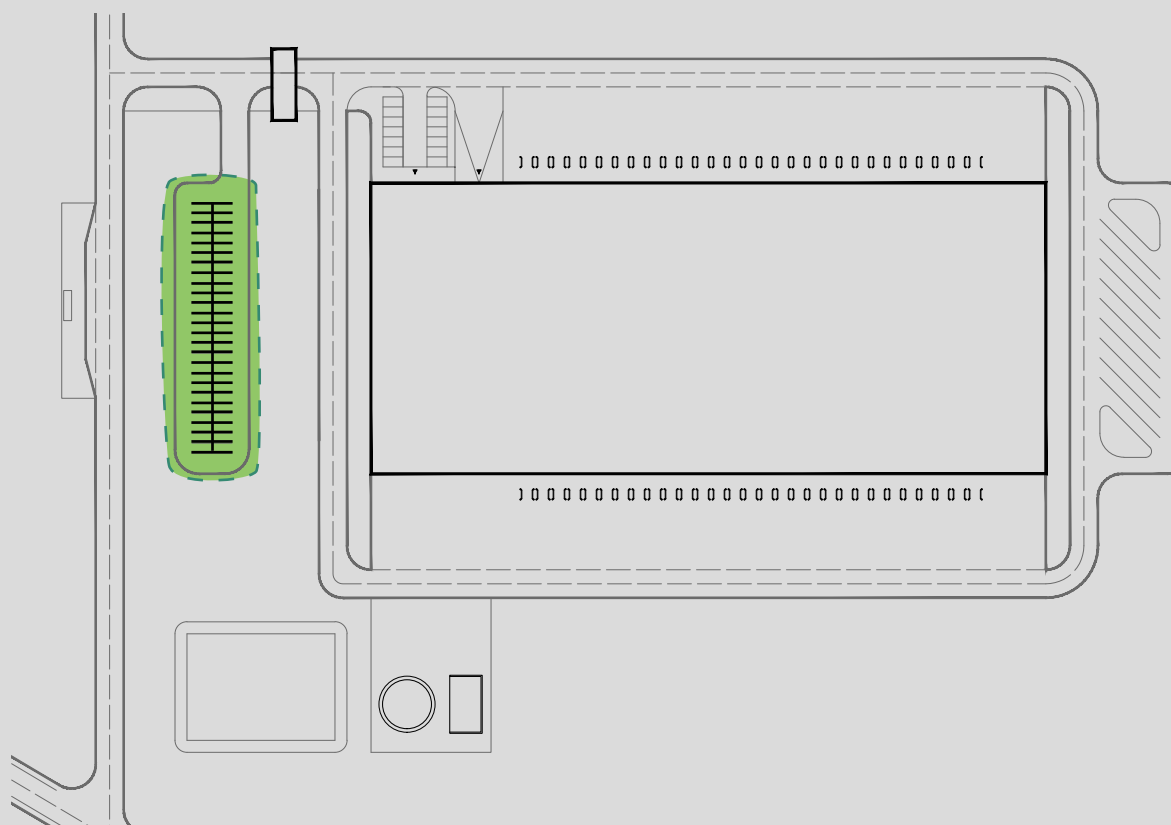
QUALITY CRITERIA

C6.CAR PARK PROVISION

Secure parking is to be provided with a hardened surface to slopes with rain water drainage. Safe and separated pedestrian routes from the parking area to the building are recommended.

The parking area should be provided with lighting to a minimum of 20 lux. In order to minimise operating costs, lamp fixtures and luminaires are recommended to be of an LED type, where possible.

Parking should be provided on a minimum ratio of 1 space per 200 sq m of building area (including office space) unless the local Master Plan requires differently (for example, 1 parking space minimum per 4 people employed).



QUALITY CRITERIA

C7.LORRY PARK PROVISION

Secure parking is to be provided with a hardened surface to slopes facilitating rain water drainage and a load bearing capacity suitable for 40T European standard trucks.

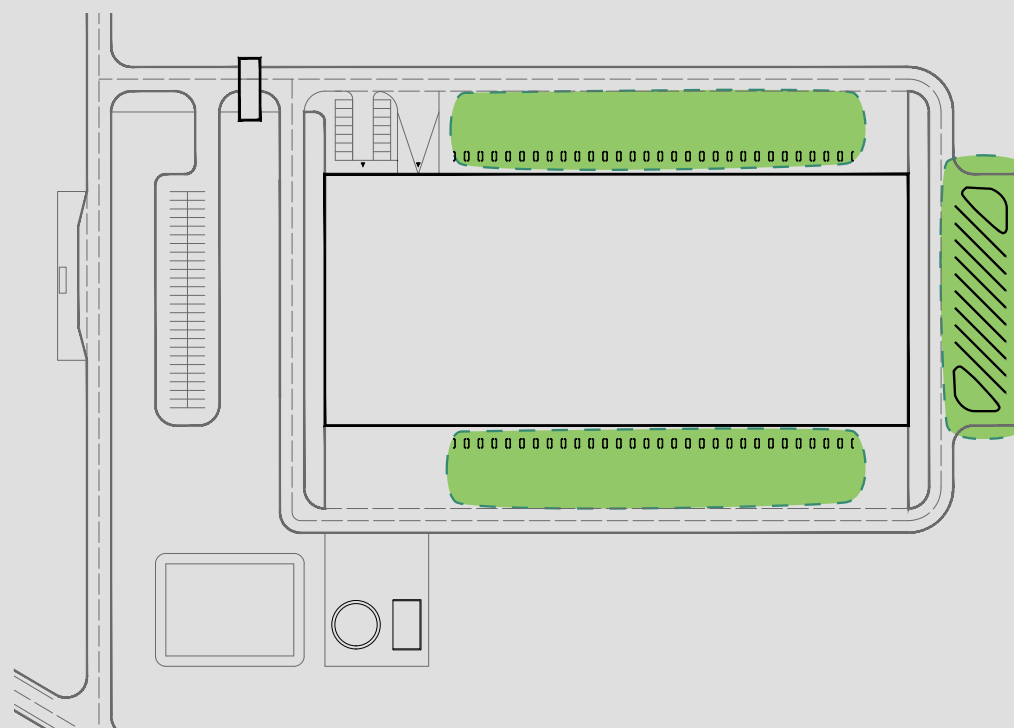
The parking area should be provided with lighting to a minimum of 20 lux. All despatch areas should be provided with lighting to a minimum of 50 lux (Polish norm PN-EN 12464-2). In order to minimise operating costs, lamp fixtures and luminaires are recommended to be of an LED type, where possible.

Turning circles, access roads and truck manoeuvring areas to accommodate 40T European standard trucks, should have a minimum width of 20 m.

Parking should be provided on a minimum ratio of 1 space per 1,000 sq m of building area.

Pedestrian access is required to be conflict free from the lorry routes.

Provision of a weighbridge is recommended.





QUALITY CRITERIA

C8.UTILITIES

The minimum provision of utilities as listed below is required to meet this criteria:

- Electricity supply – Minimum supply for the facility purpose is 35 W/sq m. The electricity supply is a very important criteria when running “strategic” operations. Within the facility it should be doubled with 2 independent connections/ providers and backed up by a fuel power generator to be used for any basic needs in case of an emergency.
- Gas – If gas is used for heating then the available capacity should be 100 m³/h per 10,000 sq m.
- Telecomms – Telephone and data connections are required. The data connection should be fibre optic. Two independent providers are preferred.
- District heating – If the district heating system is used for heating then the available capacity should be 1 MW per 10,000 sq m.
- Water & sewerage – Minimum supply is 12 dm³/s for 300 sq m of office area. Municipal network connections for a water and sewerage system are required. Additional supply is required if there is a lorry wash or other facilities requiring water.
- Fire water supply – To meet the requirements arising from over 4,000 MJ/sq m fire load.
- Storm water tank retention or other storm water management system with a capacity for a 10 year rainfall event.

It is preferred if grey water is utilised for landscape purposes.

QUALITY CRITERIA

C9.FIRE PROTECTION AND SMOKE EXTRACTION

Fire protection, smoke extraction and an internal and external hydrant system in the warehouse zone must be provided according to current Polish regulations at the time of assessment of the building class.

It is recommended that there should be an ESFR roof sprinkler system based on NFPA13 (or another equivalent norm) designed for commodities class I-IV and non expanded cartoned group A plastics.

The fire load should be over 4,000 MJ/sq m with an adequate fire water supply.

QUALITY CRITERIA

C10.DAYLIGHT PROVISION

Daylight provision should allow the employees to work within the warehouse space for a minimum of 4 hours/day in accordance with legal requirements.

The skylight area for AA class buildings should represent at least 1/8 of the total floor area. A lower value is possible where technology or stored goods require limited daylight provision.



QUALITY CRITERIA

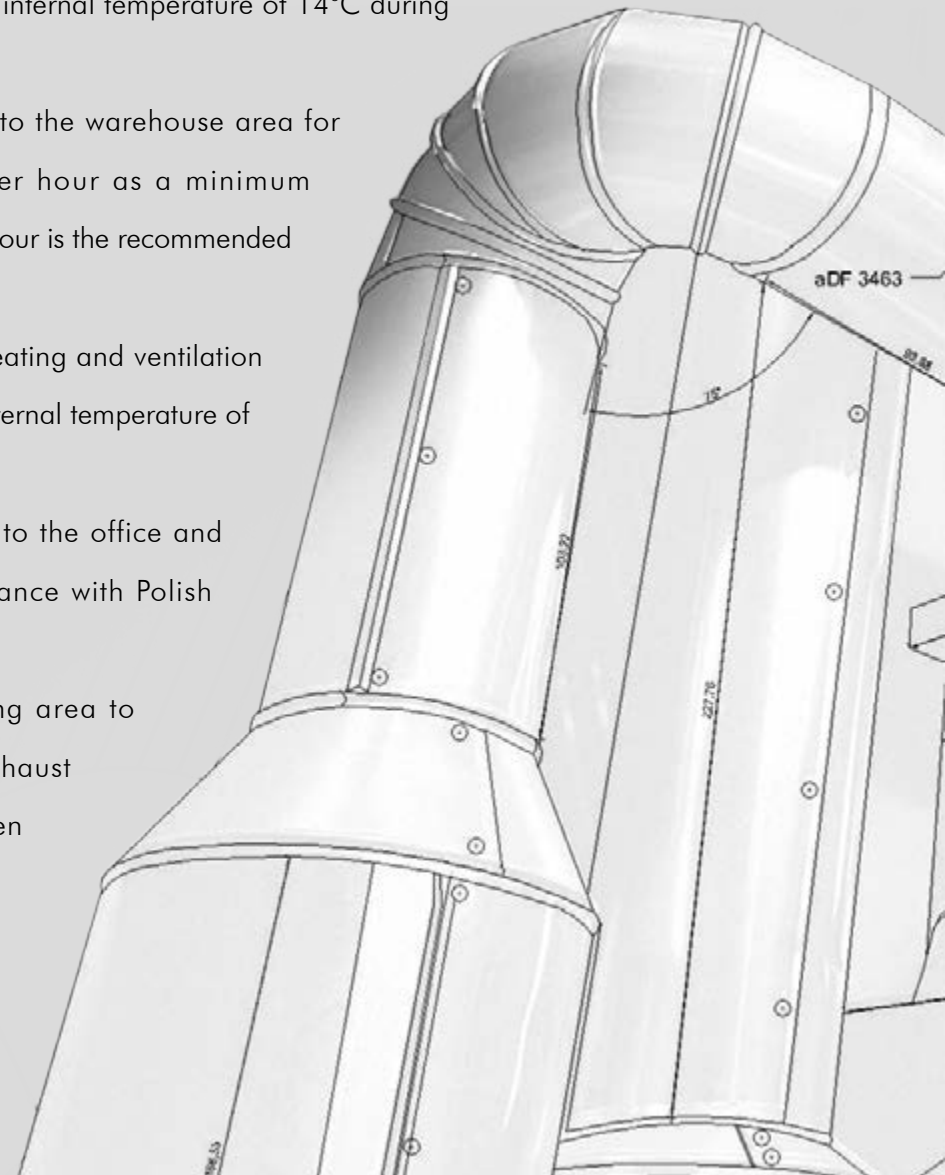
C11.HEATING, COOLING AND VENTILATION

The use of the building for storage, logistics and associated activities should be supported by building services.

In particular the building should provide:

- Warehouse: A minimum internal temperature of 14°C during the winter.
- Mechanical ventilation to the warehouse area for 0.25 air exchanges per hour as a minimum - 0.5 air exchanges per hour is the recommended standard.
- Office & social area: Heating and ventilation to provide a minimum internal temperature of 20°C during the winter.
- Mechanical ventilation to the office and social areas in accordance with Polish norms.
- Forklift battery charging area to be provided with an exhaust ventilation and hydrogen detection system.

Air-conditioning to the office area is recommended.



QUALITY CRITERIA

C12.LIGHTING AND SMALL POWER

To make sure that the facility is properly prepared for end usage, the following criteria must be met.

1. Electricity circuits should be fitted with sockets according to the CEE regulations.

The following sets of sockets should be utilised.

- Office area: 1 per 12 sq m including 2 x RJ45, 2 x 230V data, and 2 x 230V.
- Warehouse/ production area: 1 per 1,000 sq m including 2 x 230V 16A, and 1 x 400V 16A, 1 x 400V 32A.
- Forklift charging area to be equipped with a minimum of 4 power stations (3 x 400V 16A) per 10,000 sq m. Forklift charging to be available only when the ventilation system is in operation. In case when warehouse is designed to accommodate more than one tenant, Forklift Battery charging areas should be divided proportionally.

2. Lighting also forms a part of the safety systems so it is an important element of the whole investment. Properly equipped facilities need one boom light fixture installed at every dock door to enable visibility inside of the truck.

Minimum lighting on the floor inside the warehouse, after the installation of racking equipment, should be at least 200 lux and 300 lux to the despatch area. LED lighting is recommended.

Lighting intensity in the office area should meet the requirement for 500 lux per workstation measured at desk height.

External lighting requirements are defined in C6 and C7.

QUALITY CRITERIA

C13.SUSTAINABILITY STANDARDS FOR DESIGN AND CONSTRUCTION

It is of added value to the facility when sustainability is incorporated into the design and construction of the building.

To meet this criteria the building is required to be certified by BREEAM (Good or above) or LEED (Silver or above) for its design and construction.

QUALITY CRITERIA

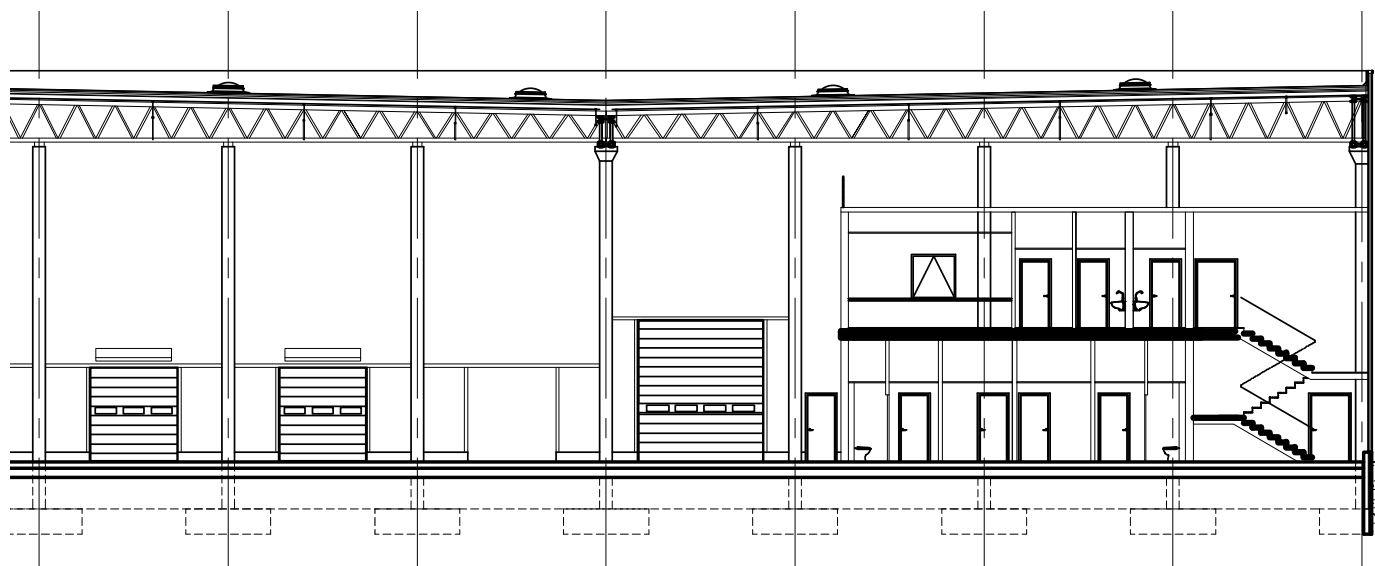
C14.DOCKS AND LOADING/ OFF-LOADING PROVISION

1 dock per 500 - 700 sq m of warehouse space with a threshold height of between 1.2 m and 1.3 m being required.

1 drive-in door per 10,000 sq m is needed.

To make sure the docks' and loading area is efficient and safe for the user, dock shelters and bumpers are obligatory.





QUALITY CRITERIA

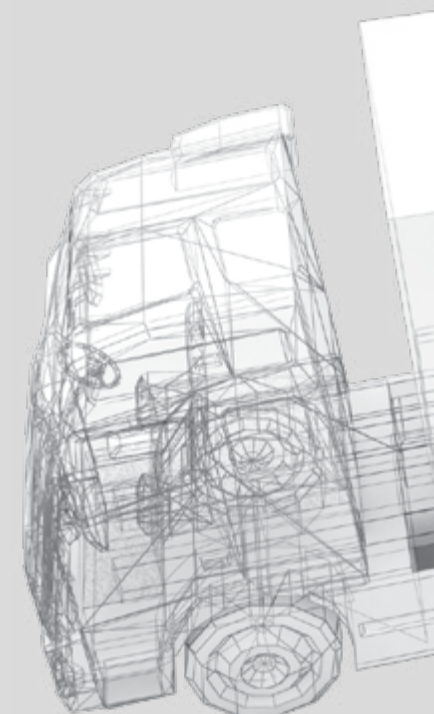
C15.ROOF SNOW CLEARANCE

The roof design must address the need for snow clearance of the roof area, including the provision of safety systems.

QUALITY CRITERIA

C16.WASTE STORAGE AND REMOVAL

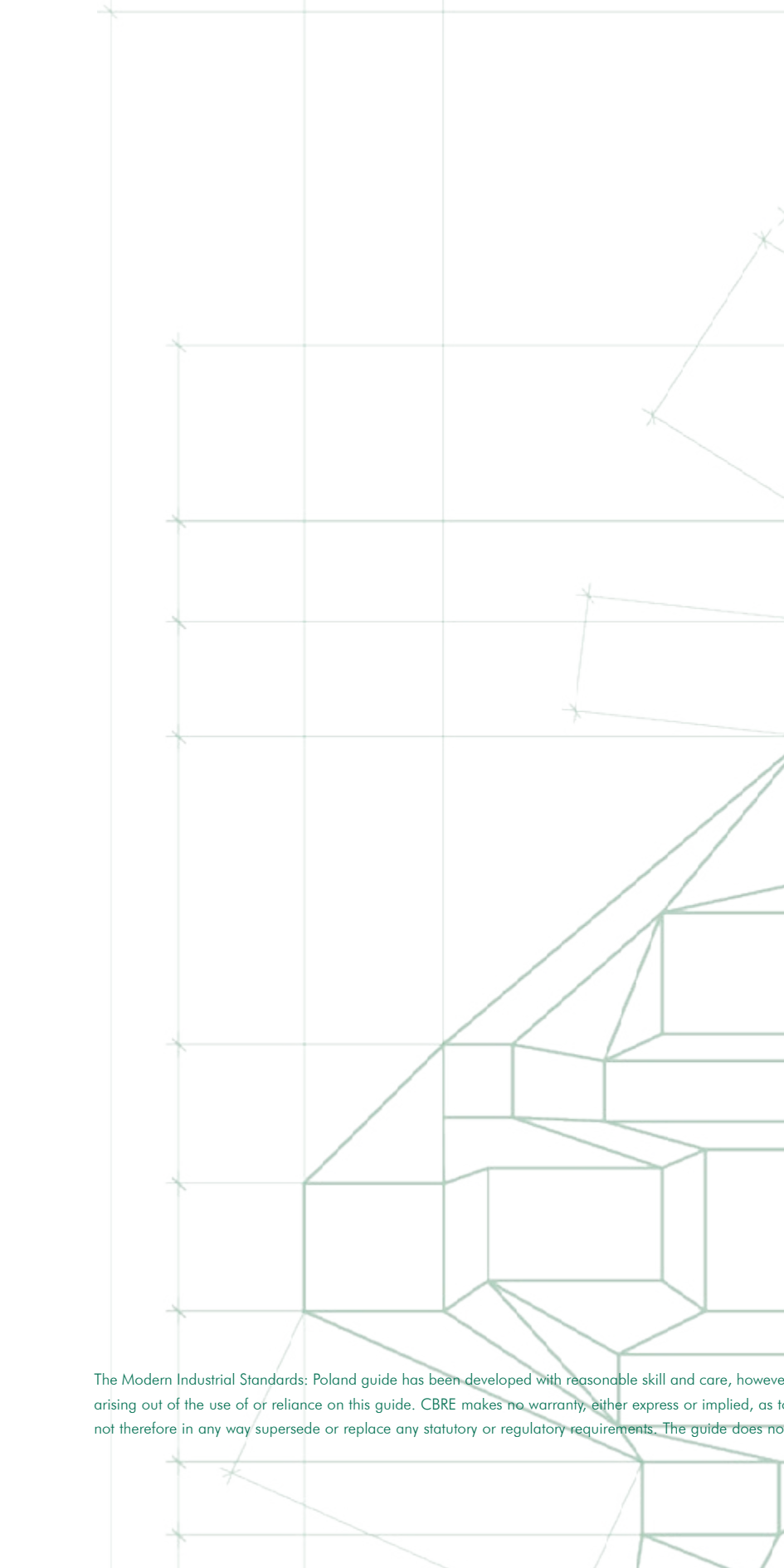
In accordance with the Polish regulations and user convenience, a separate waste storage area needs to be provided with adequate facilities for the removal of waste.





PRINCIPAL PARTNERS





CBRE

CBRE sp. z o. o.

Rondo 1 | Rondo ONZ 1 | 00-124 | Warsaw

T: +48 22 544 8000 | F: +48 22 544 8001

| www.cbre.com | www.cbre.pl

*industrial***GC**.pl

*office***GC**.pl

The Modern Industrial Standards: Poland guide has been developed with reasonable skill and care, however CBRE or their respective subsidiaries are not liable for any costs, losses, expenses or damages whatsoever arising out of the use of or reliance on this guide. CBRE makes no warranty, either express or implied, as to the accuracy of any data used in preparing this guide. The guide has no legal status in Poland and does not therefore in any way supersede or replace any statutory or regulatory requirements. The guide does not constitute design or construction advice and is for general information purposes only. Professional advice should be sought in relation to any particular project.



CBRE