



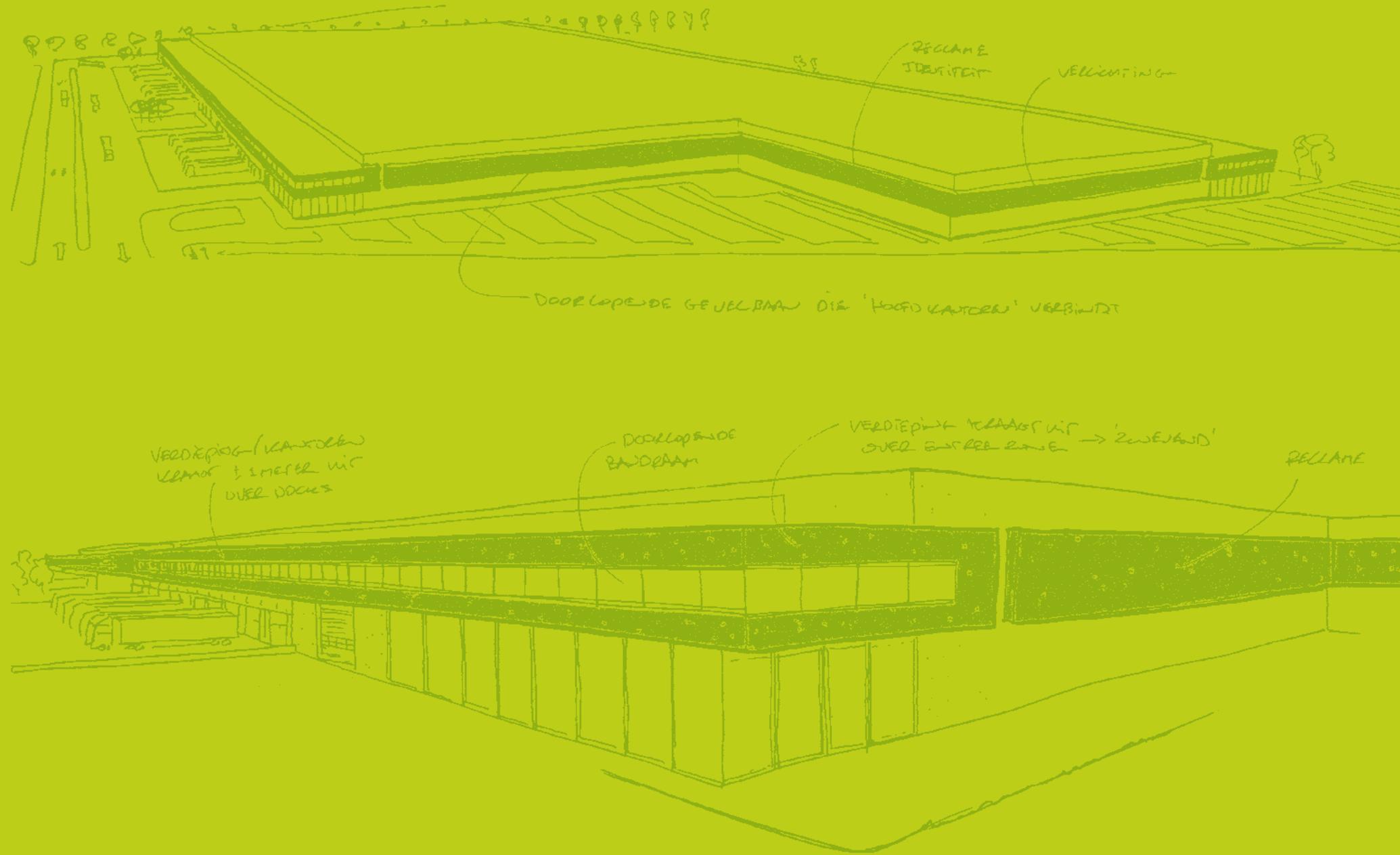
# HOW TO BUILD A GREEN DC

*Very*



**BUILDING AN EUROPEAN  
DISTRIBUTION CENTRE  
ECHT/SUSTEREN • LIMBURG  
THE NETHERLANDS**

**DOKVAST**



# WHAT *the ingredients* YOU NEED

- passion
- 
- knowledge
- 
- innovation
- 
- focus
- 
- collaboration
- 
- persistance
- and most of all...*
- hard workers**

**DOKVAST.**



# Inspiring Perfection

The right place to build,  
dedicated to design  
& sustainability

## Content

- 5 Introduction
- 6 The central European position of The Netherlands
- 7 The Netherlands
- 8 The Netherlands - Additional information
- 9 International companies in The Netherlands
- 10 Location Echt-Susteren - transport & roadmap
- 14 Echt-Susteren - pleasant working & living
- 16 Location DC Echt-Susteren
- 17 Echt-Susteren Tristate - acces & infrastructure
- 18 Location Echt-Susteren - Bird's eye view
- 19 Location Echt-Susteren - Office & Docks
- 20 Location Echt-Susteren - Total view
- 18 Terrain Lay Out
- 19 Logistics Lay Out Racking
- 20 Façades
- 21 Technical descriptions - Terrain & Docking Area
- 22 Technical descriptions - Warehouse
- 23 Technical descriptions - Office Area
- 24 Sustainability - BREAAAM
- 25 Energy & Maintenance
- 28 DOKVAST Building Dashboard App
- 30 Reference - DOBOTEX
- 31 Reference - DOBOLOGIC | BAKKER GROEP | DB SCHENKER
- 32 Reference - RHENUS LOGISTICS
- 33 Reference - DB SCHENKER | NSN
- 34 Reference - NEWLOGIC II | TESLA
- 35 Reference - DOKVAST FUTURE DEVELOPMENT
- 36 Contact



## Introduction

DOKVAST BV is a professional developer and investor in sustainable Logistic Real Estate.

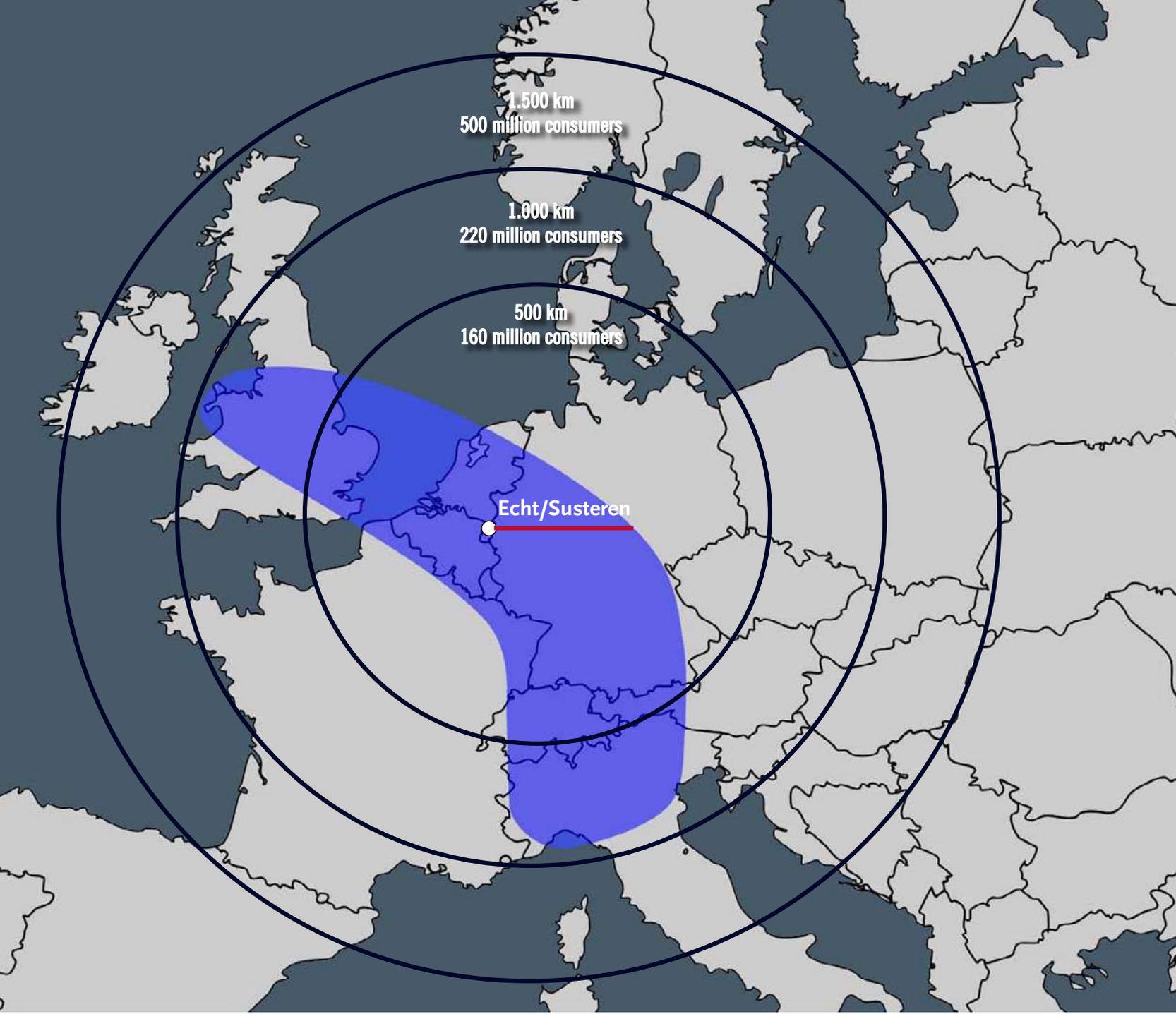
In close cooperation with you, we look forward to realize your perfect, future-proof and sustainable Distribution Center at Echt-Susteren, Limburg, The Netherlands.

To build up and maintain a long-term relationship with our clients, the experienced DOKVAST team ensures perfection by closely monitoring its projects. In addition to functionality and feasibility, particular attention is given to comfort, appearance and sustainability. We are convinced that buildings of the future will and should be energy-neutral, CO<sub>2</sub>-neutral and healthy to work in.

DOKVAST's expertise in sustainability is showcased in a number of unique projects including a BREEAM Outstanding Site.

We invite you to have an inspiring look!

THE DOKVAST TEAM



The Central European position of The Netherlands

# The Netherlands



The Netherlands is one of the most densely populated countries in the world, with over 16 million people living in an area of just 41.785 square kilometers.

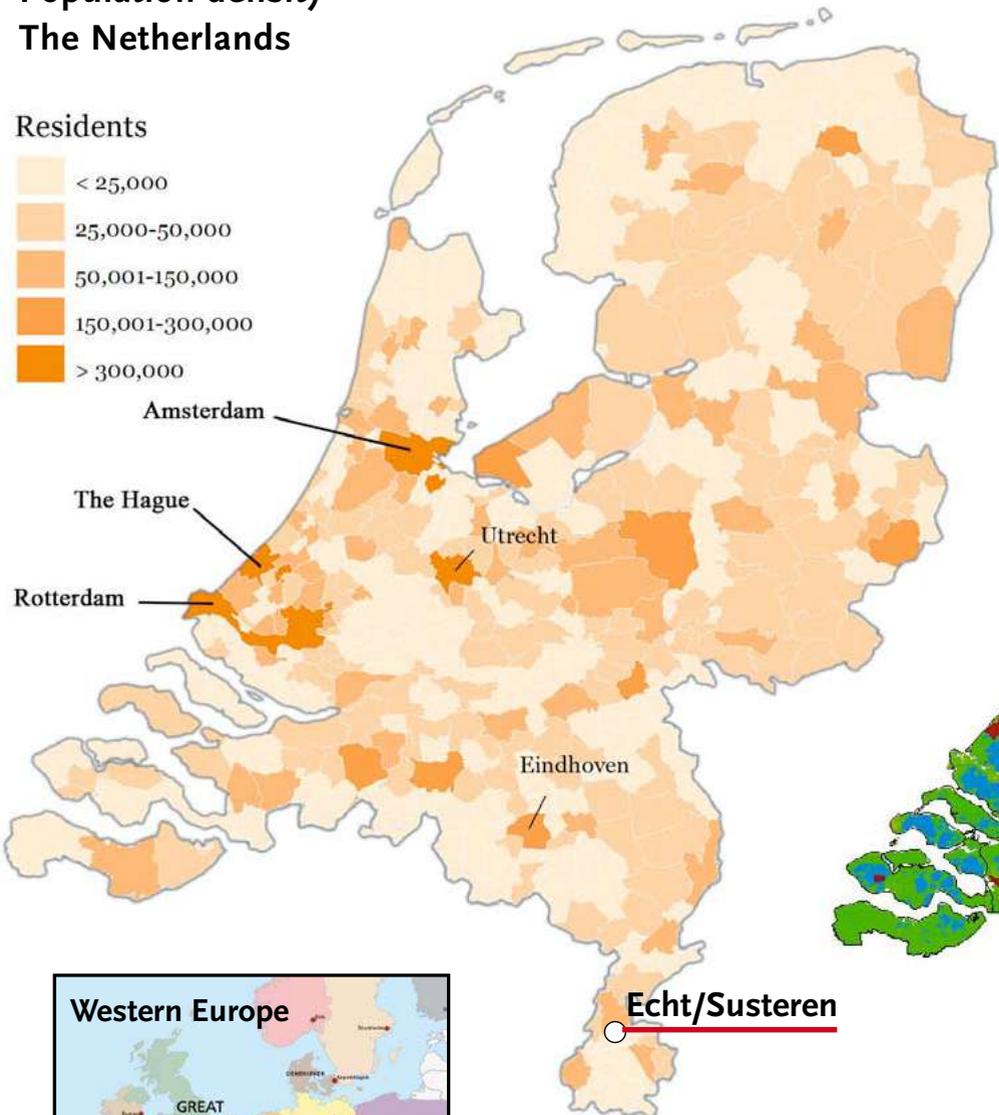
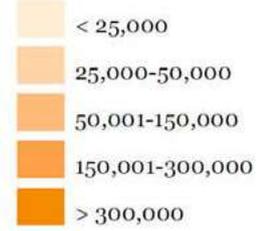
The country is bordered by Germany to the east, Belgium to the south and by the North Sea to the north and west. The Netherlands is a prosperous country, with a well educated, flexible, motivated and multilingual workforce. It ranks among the top in the quality-of-life index. The country has an open economy with a strong focus on international trade.

Given its strategic position, the Netherlands has an important role as the 'Gateway to Europe'. It has excellent infrastructure, with an extensive network of roads and motorways, most of which are toll-free. The country also boasts one of the most efficient rail networks in Europe. The Netherlands has two 'Main Ports': Amsterdam Airport Schiphol and the Rotterdam Harbour. Schiphol is the fourth busiest airport in Europe and known as a major international hub. The port of Rotterdam is the largest harbour in Europe and among the busiest in the world. It is served by an extensive network of inland waterways to facilitate transshipment, with waterborne transport (maritime and inland) making a significant contribution to the Dutch economy.

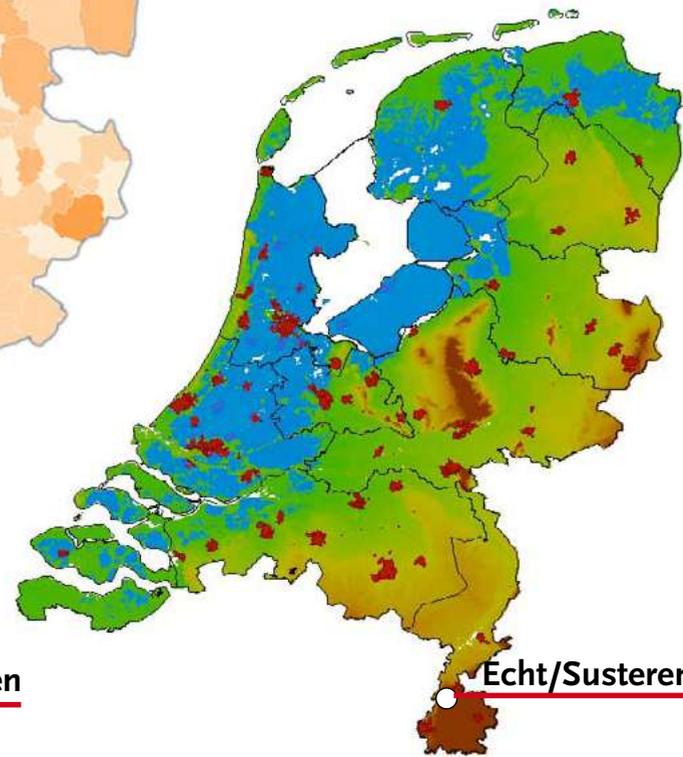
There are several organizations that assist you in familiarizing yourself with the business climate of the Netherlands. They include the Netherlands Foreign Investment Agency [NFIA - [www.nfia.com](http://www.nfia.com)] and the Agency for International Business and Cooperation [EVD - [www.agentschapnl.nl](http://www.agentschapnl.nl)].

**Population density  
The Netherlands**

Residents



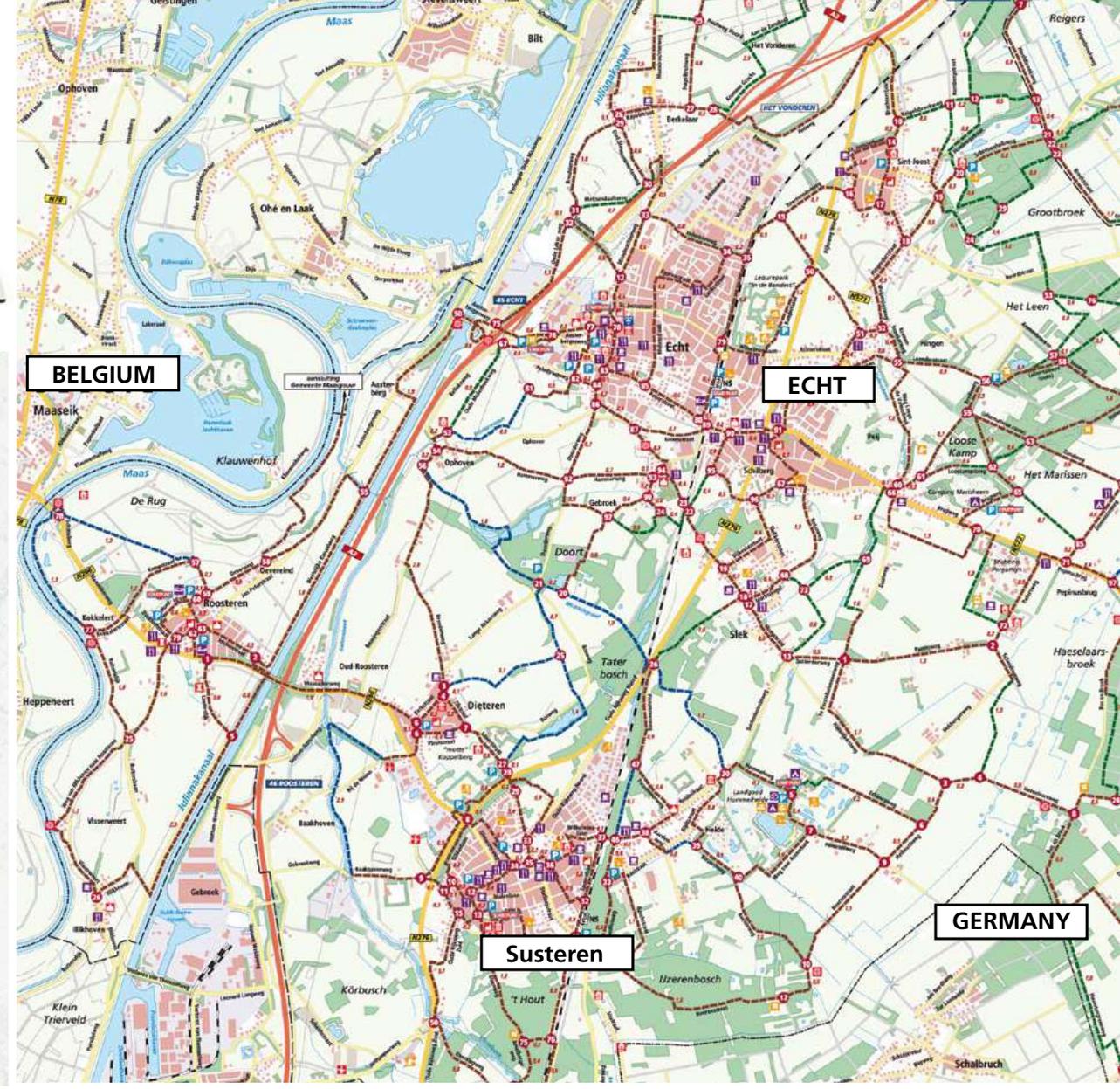
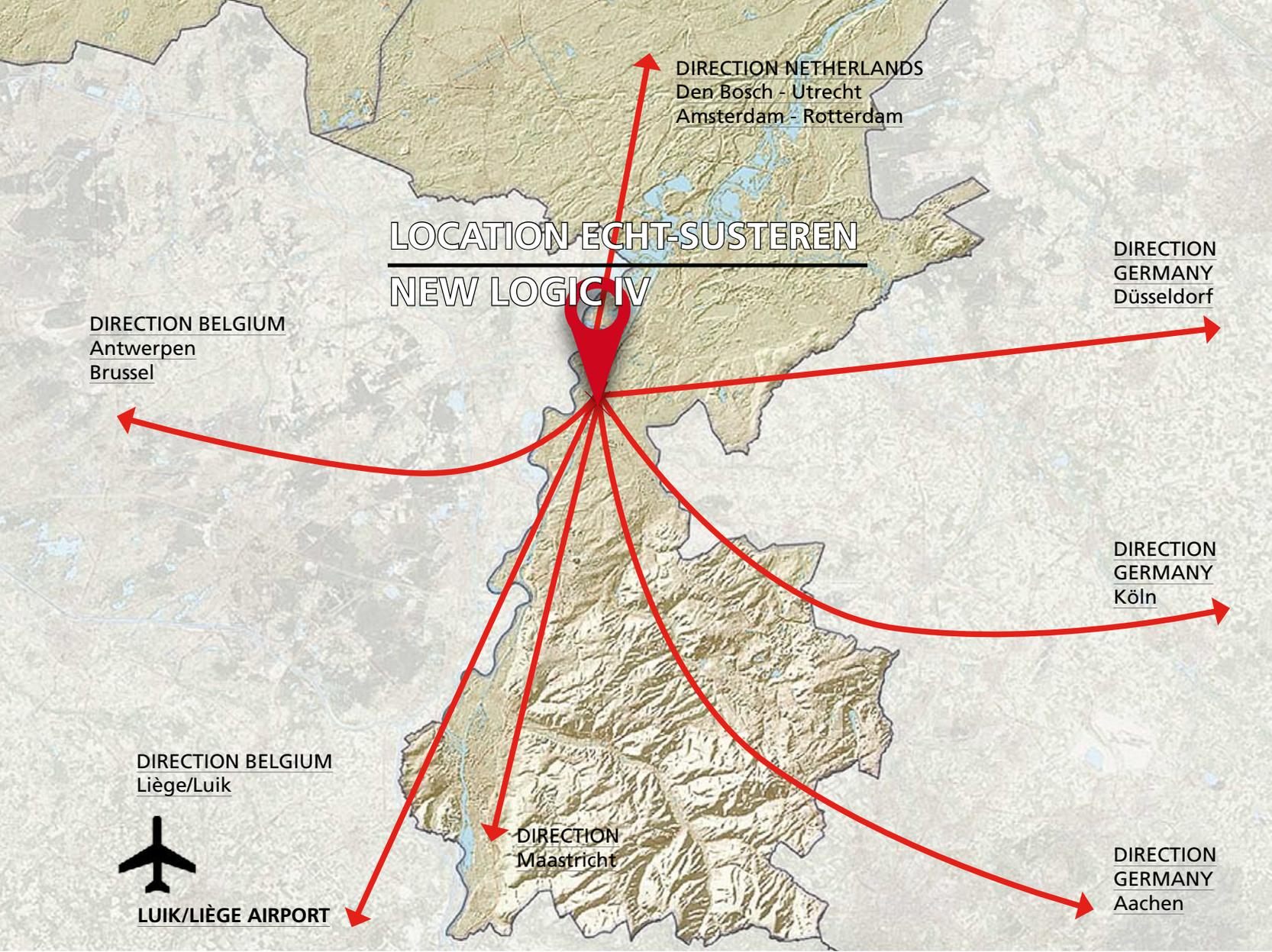
**Parts of The Netherlands  
below sea-level**



**Additional information**



**Logistic operations of international companies in The Netherlands**



**Location ECHT-SUSTEREN - Transport & roadmap**

**Location ECHT-SUSTEREN**

# ECHT-SUSTEREN

*pleasant working & living*

Echt-Susteren is a beautiful green city with an extensive outer area. The town is situated extremely favorable, centrally between Roermond and Sittard-Geleen, the Belgian Maaseik and German sites Waldfeucht and Selfkant. The border of Central and South Limburg runs through Echt-Susteren. At its narrowest point, the town is just 4.8 km. Wide. This means you can walk in one hour from Germany via the Netherlands to Belgium.

Almost 32.000 people live in Echt-Susteren. Formerly known as two separated cities; Echt and Susteren. The total surface of Echt-Susteren is 103,47 Km<sup>2</sup> from which 284 hectare is intended for industrial activities.

The core 'Echt' provides a modern and attractive shopping center. And also culture lovers get their money's worth. Several cycling and hiking routes lead you along numerous interesting monuments.

The city is located in the centre of Limburg within the south east of the tristate city area. The border of the south east area is between Eindhoven, Arnhem, Nijmegen, Dortmund, Bonn and Liège. Its also located near the logistic hotspot Venlo with great connections in all directions. For instance the A2 highway, the second longest highway in the Netherlands and the Canal Queen Juliana, which leads in the river Maas.

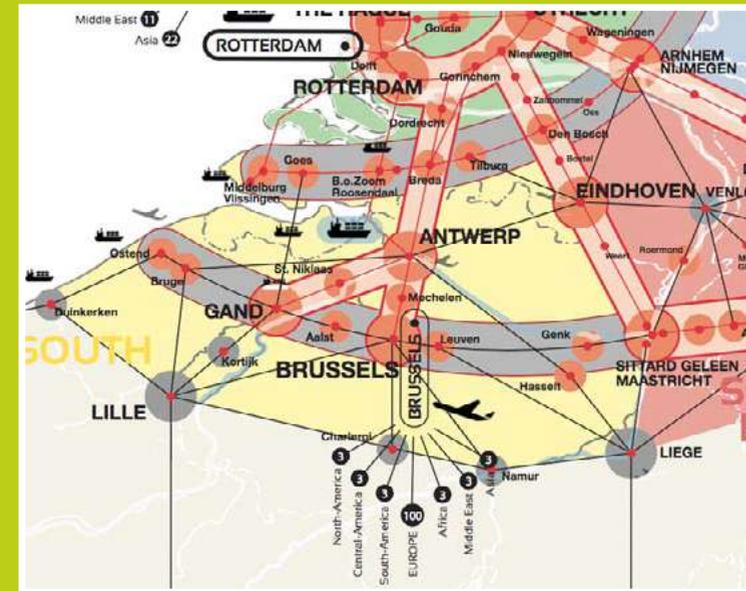
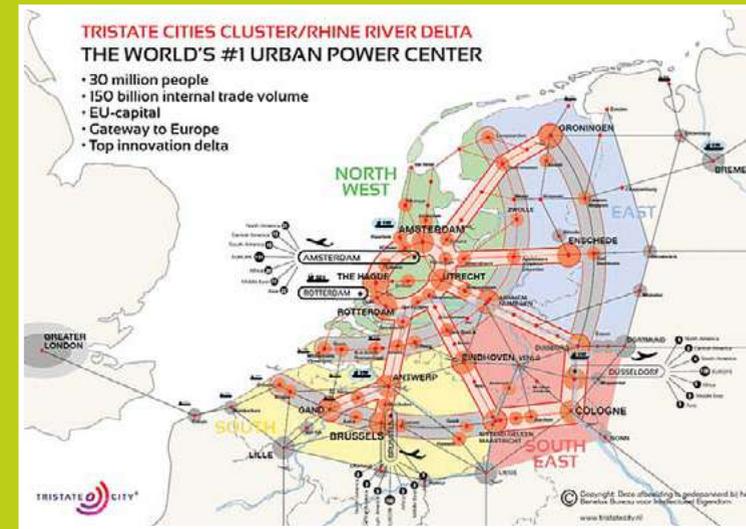
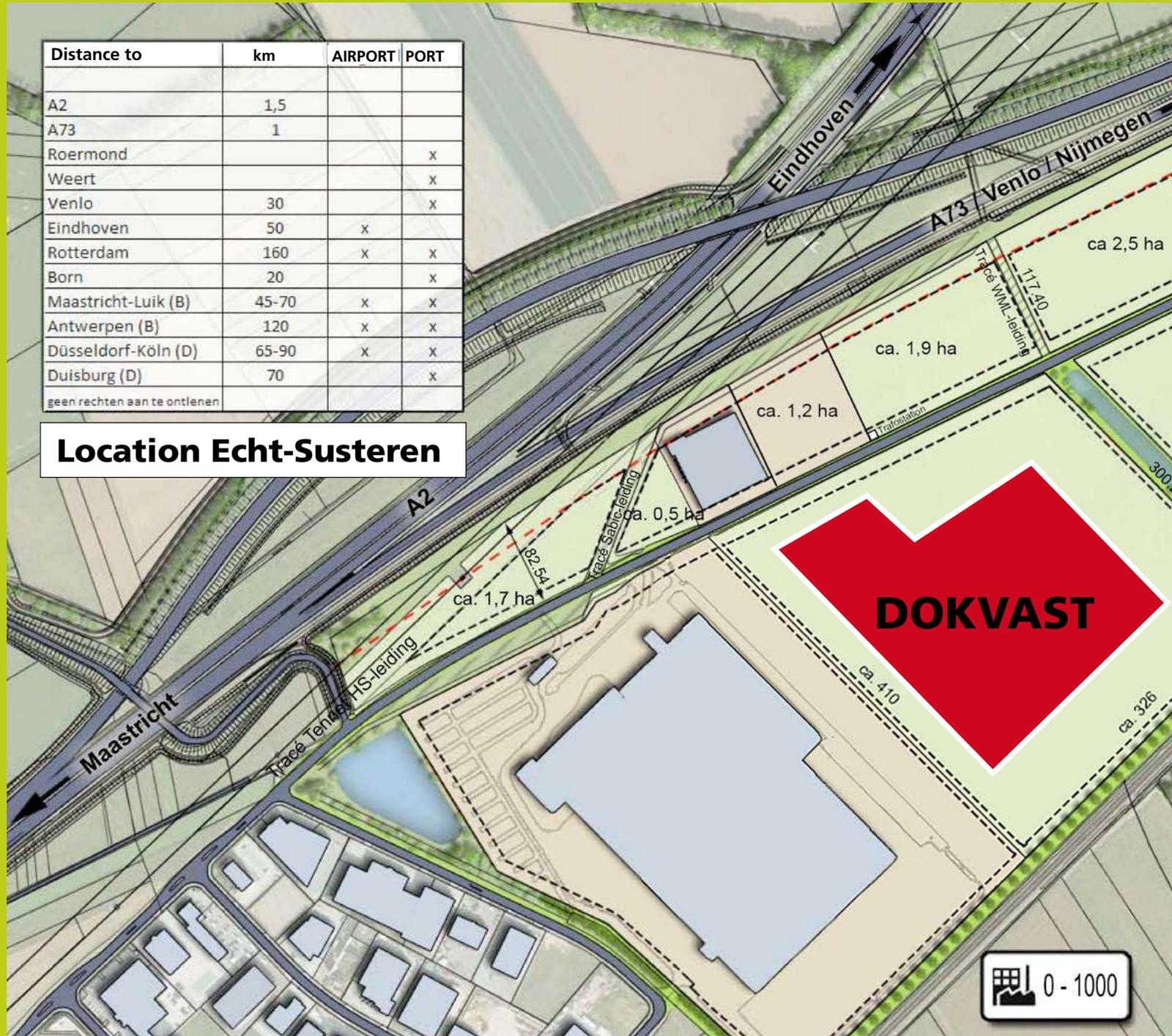
Gemeente **Echt-Susteren**



Distance to	km	AIRPORT	PORT
A2	1,5		
A73	1		
Roermond			X
Weert			X
Venlo	30		X
Eindhoven	50	X	
Rotterdam	160	X	X
Born	20		X
Maastricht-Luik (B)	45-70	X	X
Antwerpen (B)	120	X	X
Düsseldorf-Köln (D)	65-90	X	X
Duisburg (D)	70		X

geen rechten aan te ontlenen

### Location Echt-Susteren



### ECHT-SUSTEREN Access & infrastructure



TristateCity is developed as umbrella-model for local city marketing and presents The Netherlands as a large green Megacity. While maintaining one's own identity, cities can participate and use the agglomeration force that The Netherlands has. In doing so, we not only look beyond the Edge City but also involve our immediate neighbours: Belgium, Flanders and Germany, Nord Rhein Westfalen.

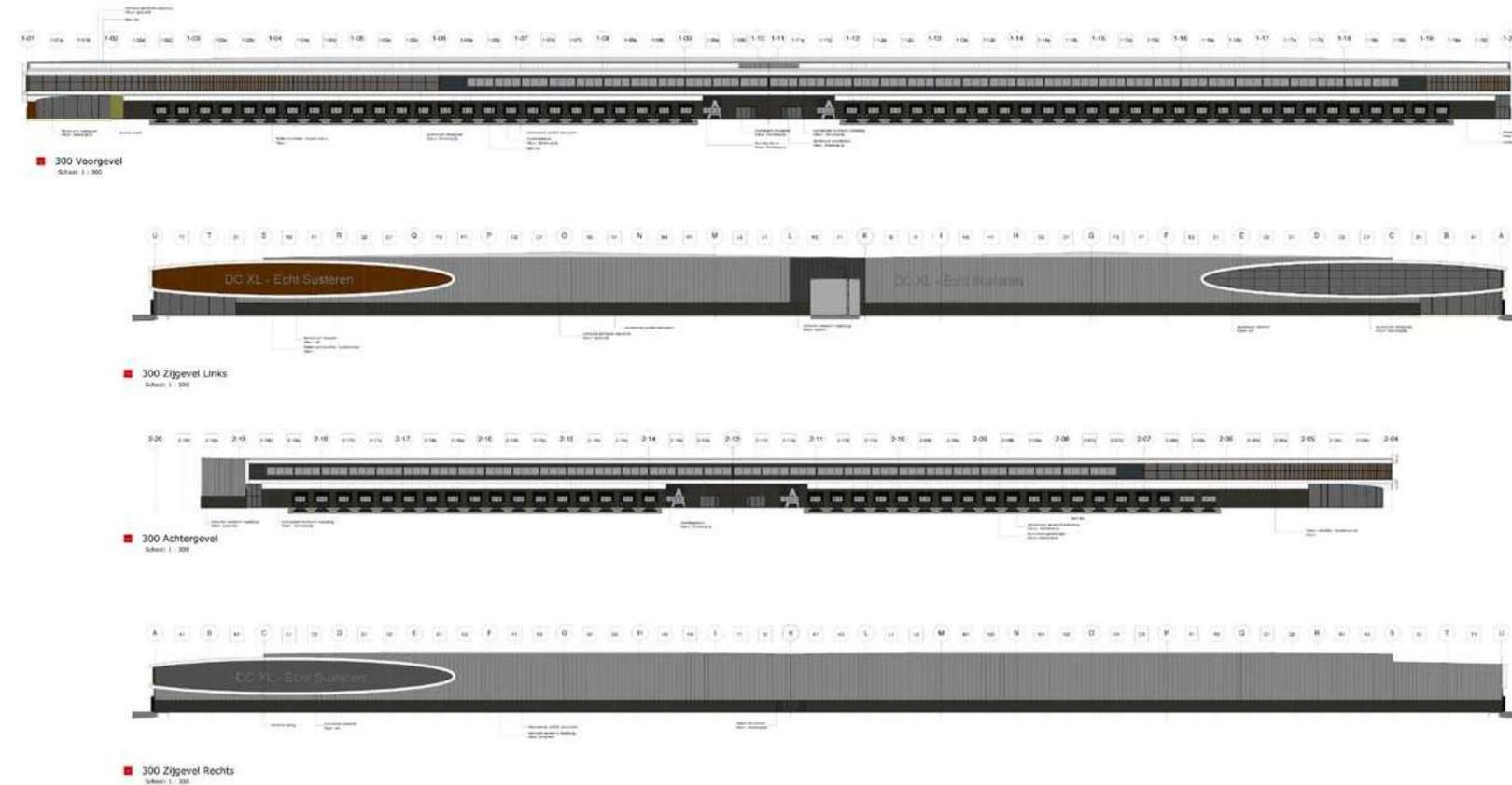
The Dutch economy is for 50% in the Randstad (western part of The Netherlands) and 50% in the ring around that.

Source: [www.tristatecity.nl](http://www.tristatecity.nl)

### ECHT-SUSTEREN

Echt-Susteren is in the center of Limburg. The actual DC is in the north of the city. From here it is only a two-hour drive to the ports of Rotterdam and Antwerp. Echt-Susteren is part of the Tristate city: South East area.

It is easily accessible by road via the A2 and A72 (or N274, N276, N296, N572). By boat via the Juliana Canal or by train. Logistic Hotspot is only a 35-minute drive from this location.



## DC surroundings

Exacte uitvoering hoogteverschil tussen berm provinciale weg en kavel Dokvast (ca. 1500-1750mm) nader te onderzoeken en af te stemmen met grondwerker.

Exacte uitvoering en positie WML-leiding met mogelijke impact van kraterberekening nader te onderzoeken en af te stemmen met Waterleiding Maatschappij Limburg (WML) en Gemeente.

Exacte posities erfgrans (tpv hoofdentree Noord, hoek gebouw Noord-Oost en positie WADI) nader af te stemmen met Gemeente en Dokvast.

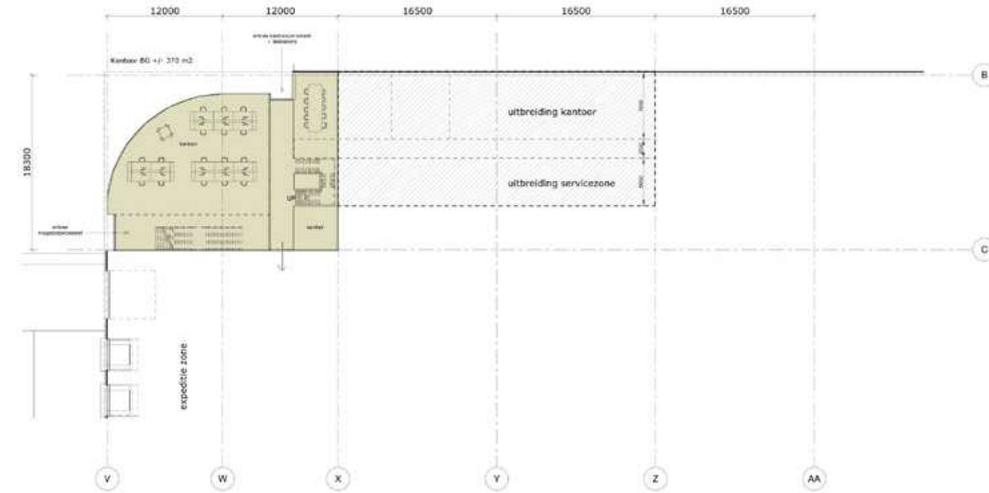
Exacte positie rooilijnen en mogelijke afwijking van het bestemmingsplan nader af te stemmen met Gemeente.

Aantal parkeerplaatsen op basis van eerdere opgave Gemeente ASVV/CROW (parkeernorm : 1,15 parkeerplaats per 100 m<sup>2</sup> BVO) waarbij het uitgangspunt is aangehouden dat de eindgebruiker minimaal in 2 diensten werkt, waardoor het totaal aan parkeerplaatsen mag worden gehalveerd. Wanneer de eindgebruiker meer parkeerplaatsen nodig heeft is er een mogelijkheid voor extra parkeren op naast gelegen kavel.

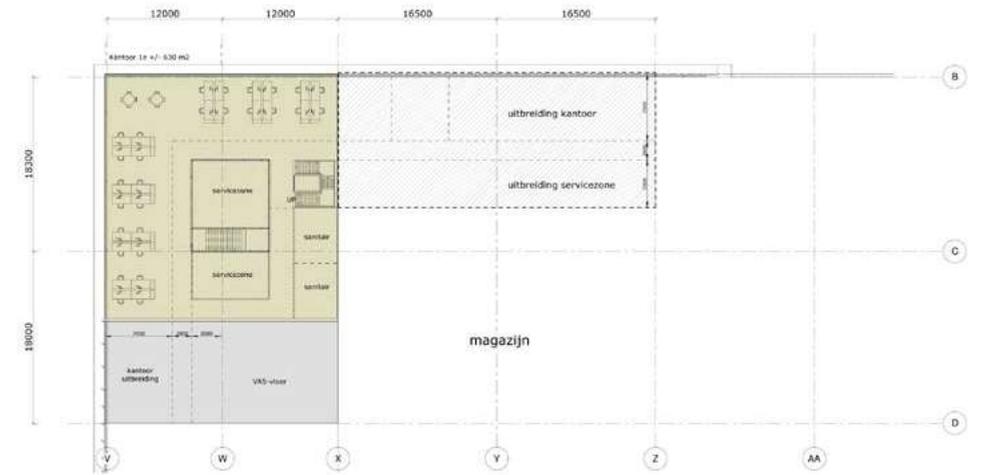
## DC Front/Back View - East/West - South/North



Begane grond



Verdieping

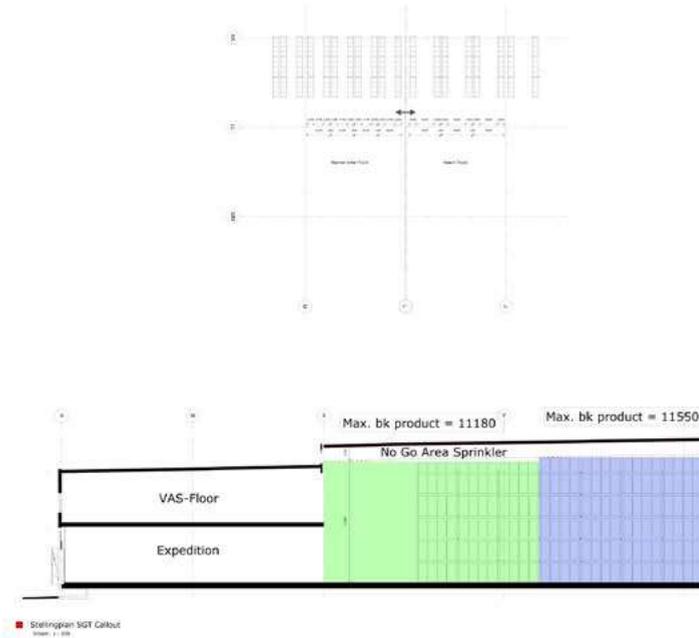
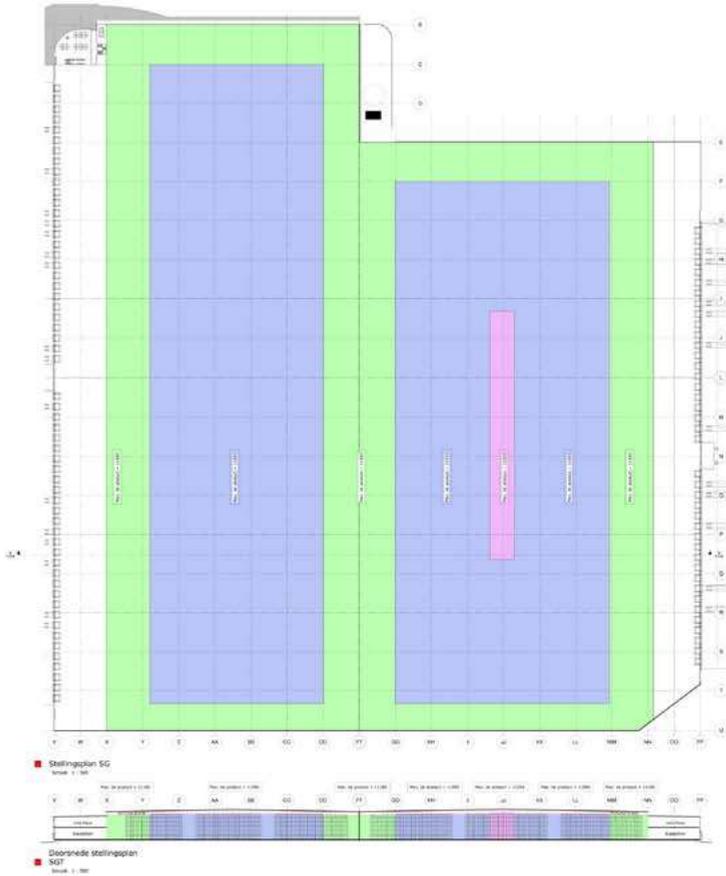


## Terrain Lay Out Warehouse

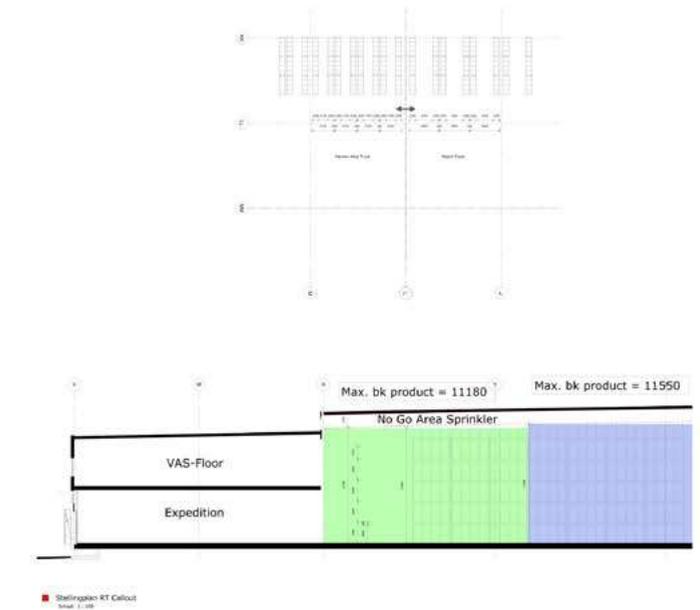
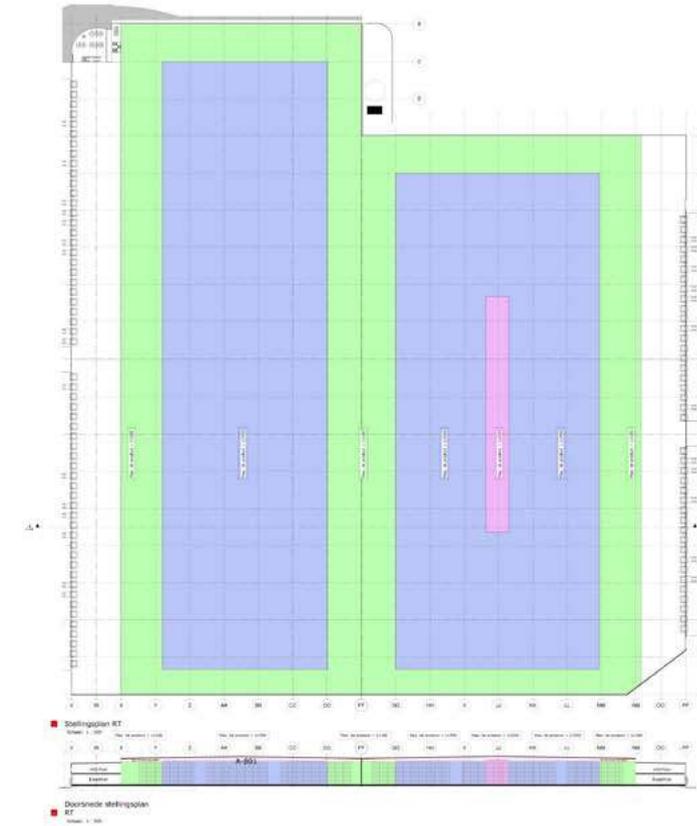
850 BVO Oppervlaktes	
Naam	Oppervlakte
Kantoor MAG. 01	375,54 m <sup>2</sup>
Magazijn 01	22340,55 m <sup>2</sup>
Mezzanine 01	3333,09 m <sup>2</sup>
Kantoor 01 1e verd.	556,85 m <sup>2</sup>
	26606,03 m <sup>2</sup>
Magazijn 02	22785,18 m <sup>2</sup>
Mezzanine 02	3892,40 m <sup>2</sup>
	26677,58 m <sup>2</sup>
Magazijn 03	22659,73 m <sup>2</sup>
Mezzanine 03	3455,87 m <sup>2</sup>
	26115,60 m <sup>2</sup>
Magazijn 04	19567,35 m <sup>2</sup>
Mezzanine 04	2746,71 m <sup>2</sup>
	22314,07 m <sup>2</sup>
<b>Totaal</b>	<b>101713,28 m<sup>2</sup></b>

## Office Lay Out [ind.]

## Racking Plan



## Racking Plan



## Logistics Lay Out Racking

NUMBER OF PALLET PLACES [ind.]

BLOCK PALLETS

EURO PALLETS

Reach truck 100%

93.636

124.845

Narrow Aisle Truck 100%

126.3954

169.272

Expeditie-zone achter docks: ca. 30 m

Maximale hoogte in de nok: 13.55 m

Afschot (algemeen): 16 mm/m<sup>1</sup>

Afschot (laatste vak/lage dakrand): 26 mm/m<sup>1</sup>

No Go Area Sprinkler Installatie: 1.25 m

Producthoogte (onderste 5 lagen): 1.8 m

Verdiepingshoogte stellingsliggers: 2.05 m

Toplaag (toplaag): 0.77 m

Liggermaat stellingmodule: 3.6 m

Totale stapelhoogte incl. toplaag: 6 lagen



**Location Echt-Susteren - bird's eye view**



## Location Echt-Susteren - Office & Docks



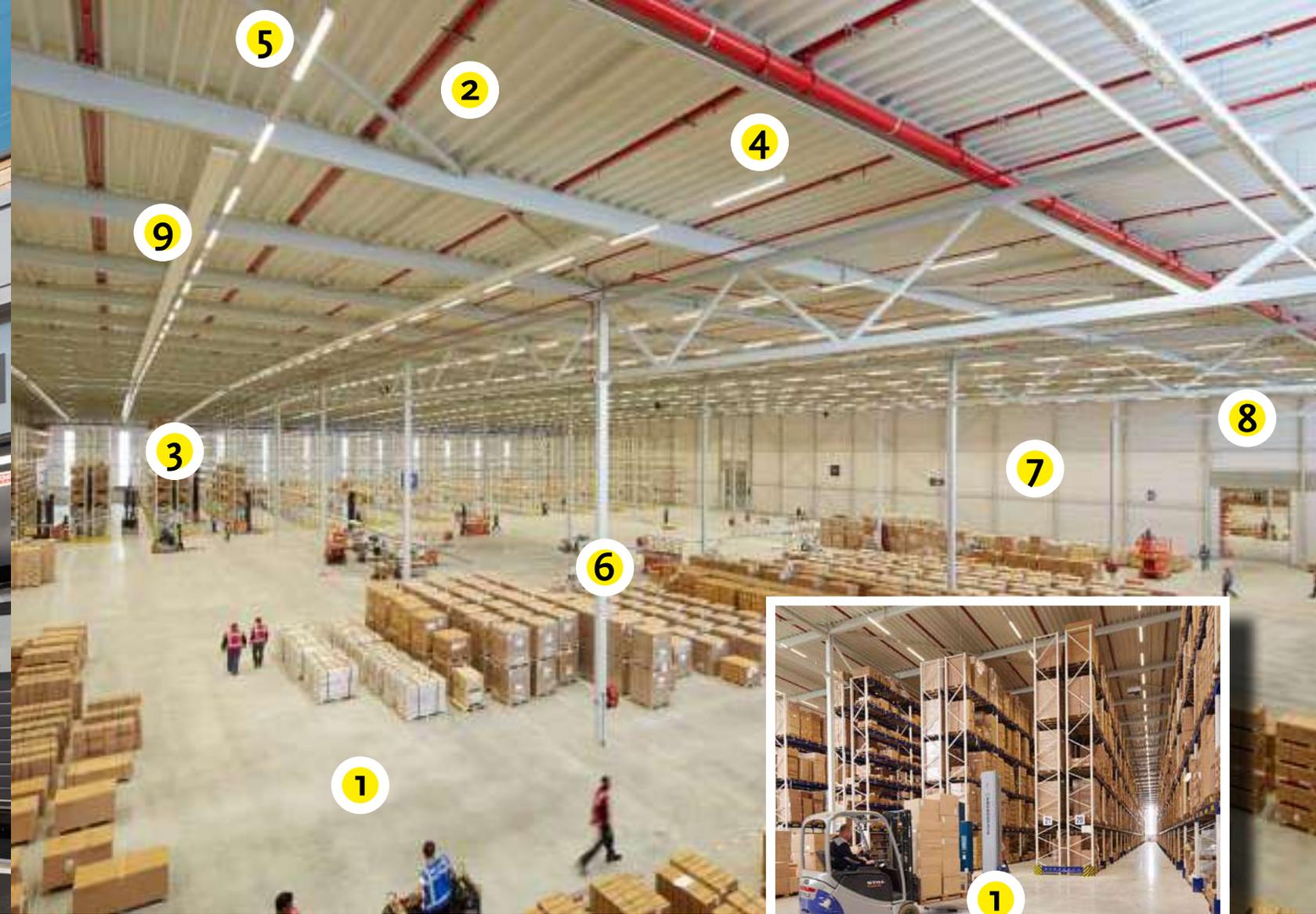
**Location Echt-Susteren - Officefront**



## DOCKING AREA

technical descriptions

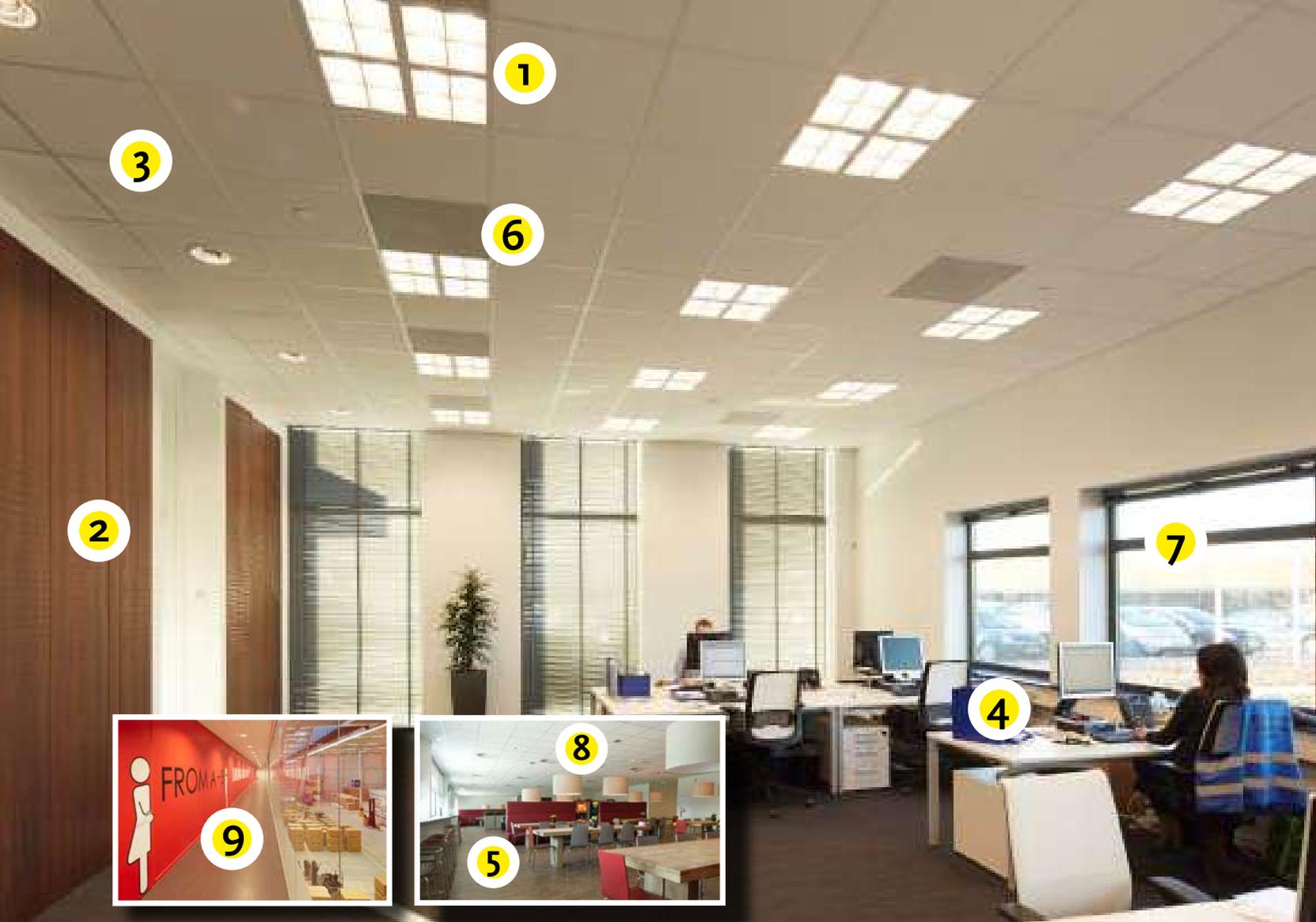
1. Concrete floor at docking area
2. Prefab concrete plinth with PIR insulation
3. Deformable shelters
4. Electric overhead doors with panorama window and high insulation
5. Leveller with maximum load of 80 KN & telescopic lip
6. Dry penant sprinkler head for docking over night
7. LED lighting
8. Steel sandwich panels with FM aproved high value per insulation
9. Polycarbonate windows for more natural daylight
10. Fencing according to TAPA



## WAREHOUSE

technical descriptions

1. Flat floor in according DIN 18.202 - zelle 4
2. ESFR sprinkler installation in compliance with FM regulation, K25 sprinklerhead
3. Polycarbonate windows for natural daylight
4. White coated steel roof - max. height: 13.700 + floor [max. storage height 12.200]
5. LED lighting
6. Construction grid suitable for wide and narrow aisles and suited for solar panels
7. Cellular concrete walls fire resistant for longer than 150 minutes
8. Separate steel structure for each warehouse [fire compartment]
9. Sustainable heating system with energy low consumption

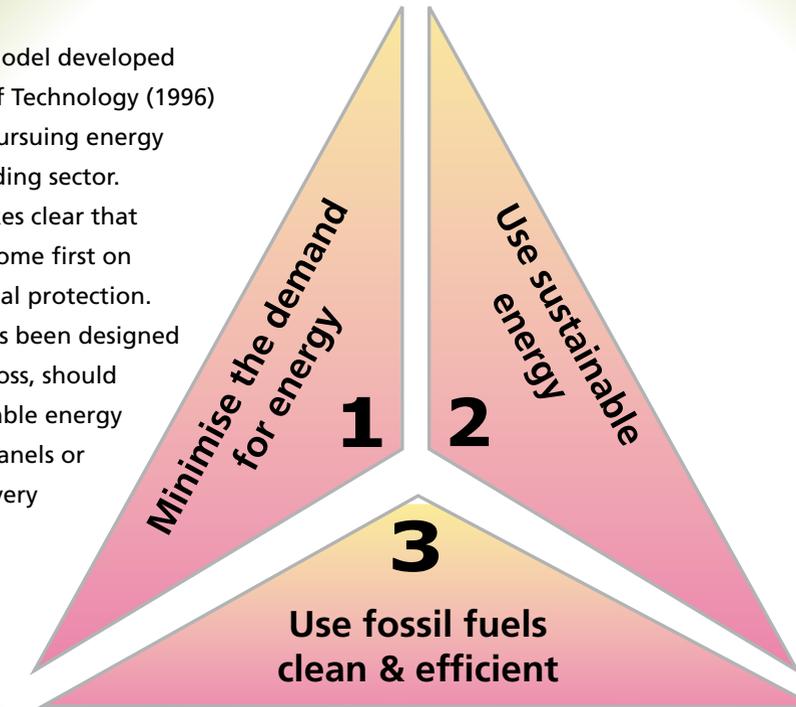


## OFFICE AREA technical descriptions

1. LED lighting in accordance with Health & Safety regulations [ARBO]
2. Build in cabinets
3. Acoustic system ceiling - height 3.500 mm + floor
4. Low sill for better working environment
5. Metal stud walls with a first layer of plywood
6. Variable air volume system and CO<sub>2</sub> detection (A/C in each room)
7. Coated aluminium window frames with triple glazing
8. Canteen
9. Hallway to changing rooms

## THE TRIAS ENERGETICA CONCEPT

The Trias Energetica: a model developed by the Delft University of Technology (1996) – acts as a guide when pursuing energy sustainability in the building sector. The Trias Energetica makes clear that energy savings have to come first on the path to environmental protection. Only when a building has been designed to minimise the energy loss, should the focus shift to renewable energy solutions, such as solar panels or heat exchange and recovery systems.



## Trias Energetica

*First, we need to limit energy demand through energy saving.  
Second, renewable sources should be used to meet the remaining energy demand.  
Only then should fossil fuels be used, as efficiently and cleanly as possible.*



Isolation



LED lighting



Testing



*The most sustainable energy is saved energy*



BREEAM - NL RATING		SCORE
PASS	IV	★
GOOD	V	★★
VERY GOOD	≥ 55%	★★★
EXCELLENT	≥ 70%	★★★★
OUTSTANDING	≥	★★★★★



BREEAM sets the standard for best practice in sustainable building design, construction and operation

# BREEAM®

BREEAM is the world's foremost environmental assessment method and rating system for buildings. 250.000 buildings have a certified BREEAM assessment rating and over a million registered for assessment since it was first launched in 1990. BREEAM sets the standard for best practice in sustainable building design, construction and operation. It has become one of the most comprehensive and widely recognized measures of a building's environmental performance. It encourages designers and clients to consider designs that promote low carbon and minimize energy demands before considering energy efficiency and low carbon technologies.

A BREEAM assessment uses recognized measures of performance, which are set against established benchmarks, to evaluate a building's specification, design, construction and use. The measures used represent a broad range of categories and criteria from energy to ecology. They include aspects related to energy and water use, the internal environment (health and well-being), pollution, transport, materials, waste, ecology and management processes.

A certificated BREEAM assessment is delivered by a licensed organization, using assessors trained under a UKAS accredited competent person scheme, at various stages in a buildings life cycle. This provides clients, developers, designers and others with: market recognition for low environmental impact buildings, confidence that tried and tested environmental practice is incorporated in the building, inspiration to find innovative solutions that minimize the environmental impact, a benchmark that is higher than regulation, a system to help reduce running costs, improve working and living environments, a standard that demonstrates progress towards corporate and organizational environmental objectives.

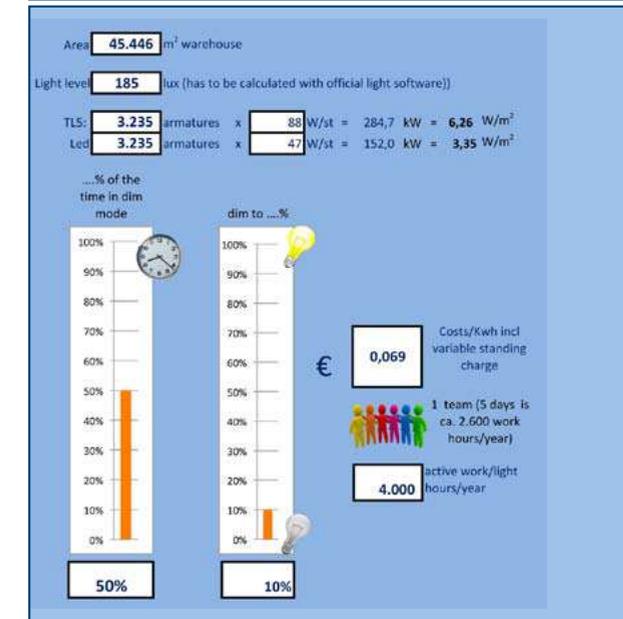
To obtain a BREEAM rating, DOKVAST invests in a range of facility features items including:

- LED lighting
- Above-average insulation
- Wind tight building
- Alarm system with intelligent connections to other building installations

These features significantly reduce the operational costs for the client. Depending on usage, the costs saved are in the range of € 2,- to € 3,- per square meter and as a result these figures can reduce the rental price per square meter.



TL5	Led	Led dim
285 kW	152 kW	84 kW
1.138.720 kWh	608.180 kWh	334.499 kWh
€ 78.572 per jaar	€ 41.964 per year	€ 23.080 per year
<b>Savings</b>	<b>€ 36.607 per year</b>	<b>€ 55.491 per year</b>



## Dokvast Building Dashboard App

Dokvast has developed a unique Building Dashboard App that provides clear and understandable information on the use and financial effects of the various sustainable savings measures. The app makes it possible to view the daily meter readings for electricity, gas and water per unit, department or the entire building. Within the Building Dashboard, a distinction is made between the use by the building and the systems/equipment that the tenant has installed. This makes it clear which energy saving measures produce returns for the owner and the tenant.



*The homepage gives an overview of the total usage and year prognose of electricity, gas and water.*



*There are seperate usage overviews of electricity, water and gas. You can view the usage per year, month or day! Different sections and/or installations of the building can be turned on or off, to get a more detailed overview of your usage.*



*Installations of the building create their own tickets when they encounter a malfunction in their system. However it is also possible to create your own ticket when you encounter a default in the building, which has not been registered. Every created ticket will be send to Dok Vast to be processed for reparation. The app will keep you updated about the current status of the tickets, no more need to worry!*

*The app also contains all the relevant information about the building and premises. It is possible to share a selection or complete folders to who it may concern.*



Maintenance, repair requests and malfunctions can be reported easily via the Building Dashboard on the iPad. In most cases, a ticket is created automatically in the event of a malfunction. It is also easy to send a repair request manually via the app, accompanied by a photo if required. Since Dokvast has direct access to all the information, the technicians can resolve problems quickly and properly.

Another advantage of the Building Dashboard is that the tenant always has all the photos and documents, such as design drawings and maintenance contracts, at his/her immediate disposal.

Our app was used for the first time for the New Logic II (Tesla) project. A Building Dashboard will be provided with all of Dokvast's future largescale projects.

Reference



Reference



**DOBOTEX**  
De Brand,  
's-Hertogenbosch

TERRAIN	8.590	m <sup>2</sup>
OFFICE	1.121	m <sup>2</sup>
VAS	2.000	m <sup>2</sup>
WAREHOUSE	5.293	m <sup>2</sup>

**PUMA-DOBOLOGIC**  
Zevenheuvelenweg  
Kraaiven - Tilburg

TERRAIN	72.673	m <sup>2</sup>
OFFICE	1.480	m <sup>2</sup>
VAS	5.390	m <sup>2</sup>
WAREHOUSE	44.856	m <sup>2</sup>



Reference



Reference



RHENUS LOGISTICS  
Ekkersrijt  
Son (Eindhoven)

TERRAIN	80.000 m <sup>2</sup>
OFFICE	1.100 m <sup>2</sup>
VAS	5.500 m <sup>2</sup>
WAREHOUSE	53.000 m <sup>2</sup>



DB SCHENKER  
Vossenbergh West II  
Tilburg

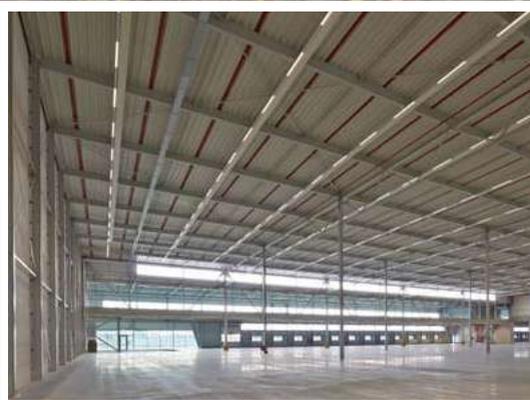
TERRAIN	69.411 m <sup>2</sup>
OFFICE	1.413 m <sup>2</sup>
VAS	3.795 m <sup>2</sup>
WAREHOUSE	42.897 m <sup>2</sup>



Reference



Reference



NEW LOGIC II  
Vossenbergh West II  
Tilburg

TERRAIN 72.956 m<sup>2</sup>  
OFFICE 1.800 m<sup>2</sup>  
VAS 4.393 m<sup>2</sup>  
WAREHOUSE 44.856 m<sup>2</sup>



PUMA-DOBOLOGIC  
Zevenheuvelenweg  
Kraaiven - Tilburg

TERRAIN 72.673 m<sup>2</sup>  
OFFICE 1.480 m<sup>2</sup>  
VAS 5.390 m<sup>2</sup>  
WAREHOUSE 44.856 m<sup>2</sup>



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## HabeonArchitecten

onderdeel van Heembouw Groep

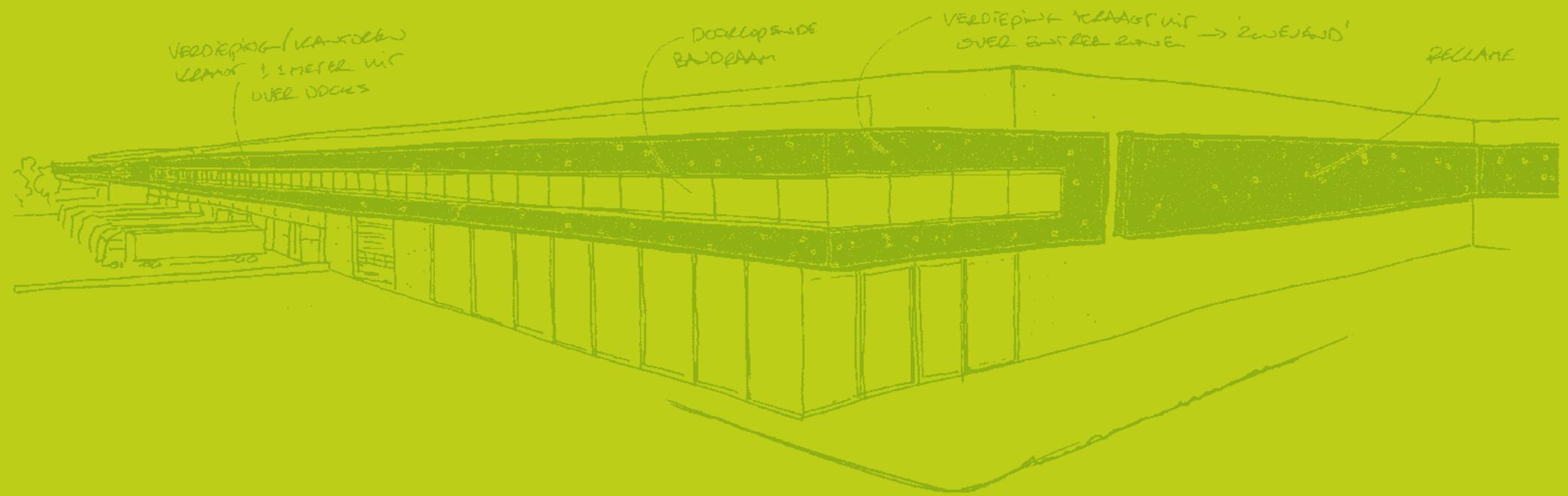
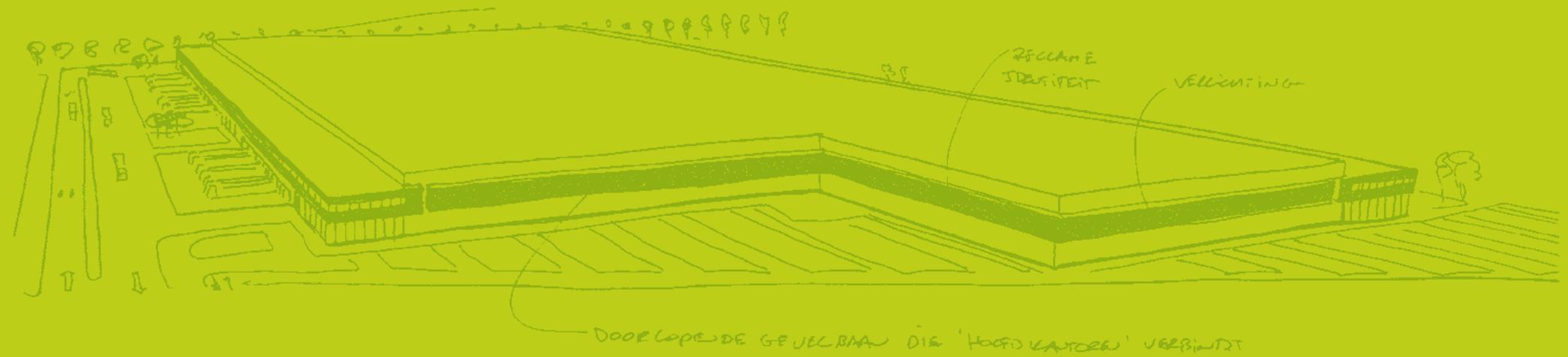
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*we*  
**KEEP**  
ON BUILDING  
*every*  
**GREEN**

**DOKVAST** 