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## Cycle Parking & Storage and our approach to a changing world



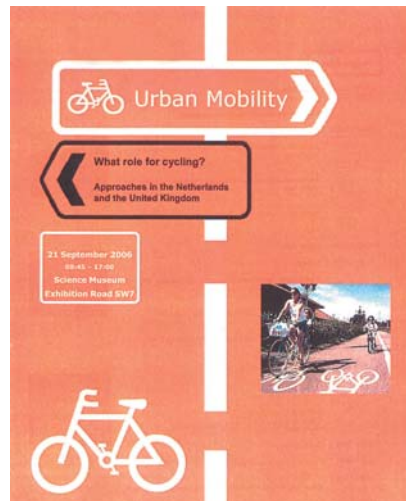
about grontmij

**Grontmij is a leading sustainable design, engineering and management consultancy active in the growth markets of water, energy, transportation and sustainable planning and design.**

At the core of our business is the principle of sustainability by design that is a leading value proposition for our customers. Grontmij is the fourth largest engineering consultancy in Europe with over 150 offices across the region and a further 20 offices globally. We employ over 8,000 professionals around the world. Our value chain of services stretches from major renewable water and energy infrastructure through designing efficient and environmentally-sensitive mobility and transportation networks to shaping our urban and green living spaces.

Whilst we are approaching our 100th anniversary, and benefit from the experience nearly a century provides, we prefer to look to the future to enhance the world we live in. By applying sustainability considerations to all our design, consultancy and management services right across the value chain, our highly-skilled, expert people are able to create lasting solutions that plan for, connect and respect the future.

02



## Our expertise in Bicycle Parking and storage



Bicycles are an important form of transportation to and from public transport, and experience shows that good bicycle parking facilities are important if more commuters are to be encouraged to cycle. As cyclists are sensitive to diversions, the placing of bicycle parking must be considered carefully with regard to the access conditions at the location.

Bicycle parking facilities should preferably be incorporated in the townscape so that they function in the best possible way, without disrupting the other traffic in the area.

Grontmij has extensive experience with designing bicycle parking facilities in the streetscape, on squares and at cultural meeting venues.

## We offer a range of services:



- Analysis and evaluation of the requirements for bicycle parking
- Analysis of design and location of bicycle parking
- Outline and project proposal
- Main project, tender and contracting
- Construction management, project follow-up and expert inspection



## UK-Holland Exchange



There has been an exchange of cycling experiences between the UK and Holland for many years. A good example is the 2006 Congress in London entitled: 'Urban Mobility: What Role for Cycling, Approaches in the Netherlands and the United Kingdom'. Grontmij took part in this event, which was partially dedicated to the preparation for the London Olympics in 2012.

## Design Manual for Bicycle Traffic



This authoritative manual provides designers with best practice and the latest developments in relation to bicycle traffic engineering. Covering all aspects from planning through to design and parking, the manual also incorporates the principles of sustainable traffic safety.

Specialists from Grontmij have contributed content to this and other manuals issued by CROW (Centre for Research and Contract Standardisation in Civil and Traffic Engineering) such as managing cycling during peak times and at large events. CROW is the Dutch national information and technology platform that produces guidelines for transport, infrastructure and public space.

**Grontmij has a highly experienced team in cycling parking and storage with several specialists having dedicated most of their transportation planning life to bicycle friendly infrastructure and promoting its use.**

There are numerous references, ranging from policy making through to innovations in infrastructure, a selection of which is included below



## Hedensted Station



**Client.** Hedensted Municipality and the National Rail Authority

**Contract Amount.** DKK 2.8 million

**Year.** 2004-2006



### Project description:

Hedensted Station wishes to re-open as a stop for trains and it also wishes to have improved potential for transferring between different modes of transportation. In cooperation with Møller & Grønborg and Atkins, Grontmij has been responsible for the production of the programme project, which includes establishing two parallel platforms and a pedestrian bridge with elevators as a link between the two platforms and the two parts of the town divided by the railway line.

A preliminary survey was conducted that included consideration of the possibilities for pedestrian traffic to transfer between different modes of transport. This was presented in the form of drawings and descriptions and formed an important element in the project.

After the programme phase, the Grontmij consultancy team continued to work on the main project and has subsequently had a supervisory role in the performance of the work.

Detailed design work has been performed on the programme project, with special emphasis on access for the disabled. The arrival areas' central location at the station is emphasised through e.g. extensive use of black, Chinese basalt. The bridge over the track is designed as a special element in white concrete with transparent elevators at each end and is supported by pillars in black concrete.

Access to the existing Parking areas at the station has been incorporated in order to increase their utility in conjunction with the station. Renovation has also been carried out on the existing pedestrian tunnel under the track in order to ensure good access for cyclists. Bicycle parking facilities have been established in the form of single-pitch roofing with lighting.

The stairs to the bridge over the railway track are illuminated with newly developed fixtures that provide good lighting for the steps. In addition, measurement was performed on 2.5 kilometres of main track and track points with regard to the track renovation, in addition to measurement work for establishing the station.

Grontmij has performed the following services:

- Localisation-survey regarding the placing of the station
- Preliminary survey, including evaluation of passenger numbers and installation costs
- Production of programme project, including detailed design
- Production of project proposal
- Production of main project
- Inspection and construction management
- Handover procedure

The project also included:

Analyses, Cost-benefit analyses, Bicycle parking, Data collection, Pilot projects, Feasibility studies, Quality assurance, Measurement/registration, Planning, Project Management, handling authorities, Diagram project, Terminals and bus stops

## Cycling Challenges and Solutions in Amsterdam



Location. The Netherlands  
Client(s). VU Amsterdam

Period. 2009 -



Insufficient Bicycle parking facilities at Central Station, Amsterdam, contributing to clutter on the streets



The 2006 Bicycle parking facilities on Buitenveldertselaan, Vrije Universiteit Amsterdam

### Project description:

Amongst Amsterdam's population of approximately 730,000, over 80% of people over 12 years old own a bicycle.

One of the main reasons for this is the introduction of paid parking in large parts of the city, whereby the bicycle is once again seen as an attractive alternative to the car for short distances.

In Amsterdam, the modal choice is currently 35% bicycle, 40% car and 25% public transport. The number of journeys made by bicycle is the greatest in the city centre. Although the policy adopted has certainly contributed to the renewed popularity of the bicycle in the city, there remain a number of challenges:

- too few storage / parking facilities
- the nuisance caused by bicycles parked in public areas (including the eyesore factor)
- bicycle theft (every year around 150,000 stolen)
- low use of the bicycle among ethnic minorities
- too much time spent waiting at traffic lights
- lack of road safety

Amsterdam is working on the completion, improvement and expansion of the Main Bicycle Network, using the principles of cohesion, directness, safety, comfort and attractiveness. This is now followed by the construction of a Core Bicycle Network. This network will interconnect the main public transport interchanges and various city amenities. The network also incorporates adequate storage and parking facilities and allows bicycles to be taken onto trains, trams or the metro. The main (political) discussions are now mainly focused on improving both on and off-street parking for bicycles.

Prior to the project, Grontmij had devised an environmental vision and an overall vision with respect to the outdoor space on the VU campus in Amsterdam. The main points of departure were to maximise open green space on the campus and to create a clearly-defined, attractive appearance for the whole site. In response to this document, Grontmij was commissioned to translate the vision into a concrete design.

A start was made on this in the summer of 2009. Before the start of the new academic year, a design was drawn up for bicycle parking facilities at Buitenveldertselaan, offering space to 1,200 bikes. Large green areas provide the area with a feeling of quality and a chance for visitors to linger awhile.

The next design is for the Boelelaan entrance (see picture). The aim here is to replace hardstanding as much as possible with green. Tall grass will adorn the entrance area and make for various pleasant places to linger. Next year, we will start on the design for the central area and the peripheral green zones.

## Additional Bicycle Parking facilities in Bruges City Centre



Client. City of Bruges

Grontmij Fee. 39,800 Euros (excl. VAT)

Period. 2007 - 2008



Potential areas highlighted for Bicycle parking facilities in public spaces

### Project description:

The study for additional bicycle parking facilities was carried out in the framework of the Stedenfonds, an agreement on urban funding between the City of Bruges and the Flemish Community. This "Plan" for additional parking spaces must provide the administration with a tool for systematically expanding parking facilities for residents. In addition to the study into bicycles, Grontmij also carried out research into car parking.

The study should provide the administration with an insight into the current problems - the nature, scope and location of parking problems - and present concrete solutions.

Bicycle parking for residents in the historic heart of Bruges is of a highly specific nature. The narrow-fronted houses offer little space for bikes to be parked inside. The building density and the heritage value of the surroundings impose significant preconditions with respect to finding suitable space for bicycle parking within the urban fabric.

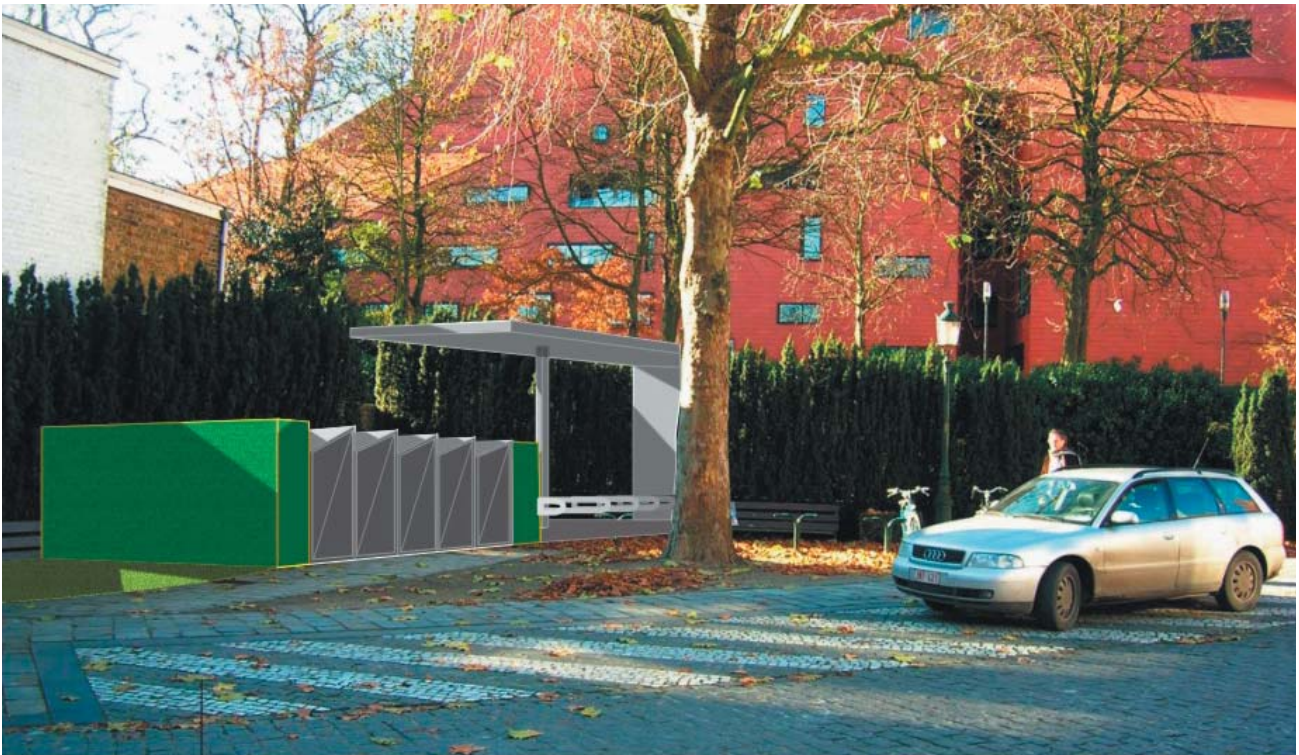
A picture of the situation was gained on a street-by-street basis. On the basis of a census, the need for parking spaces was defined for the whole of the city centre. It was possible to identify two important categories: on the one hand, the highly inconvenient situation for on-the-premises bicycle parking and, on the other hand, the 'unsafe' situation, whereby bikes were parked outside at night-time. The map indicates clearly-defined problem zones in the city centre.

Taking the Bruges context into account, the next step was to build up a catalogue of possible parking facilities, including quality objectives and criteria for integrating these within the urban fabric.

The outline of the problem and possible solutions were then reviewed amongst various residents. On the basis of the interviews, we gained a much clearer picture of residents' concerns and their expectations vis-à-vis the local authority in fleshing out the solutions.

Finally, a number of priority zones were worked out in greater detail.

The urban planning study enabled us to explore the potential of various kinds of bicycle parking facilities in these areas, such as neighbourhood cycle sheds, bicycle lockers and cycle racks.



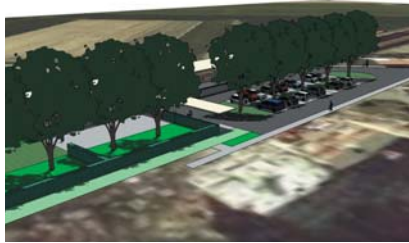
Example of the implementation strategy  
On-street combination: bike lockers and open racks

## Reconstruction of Melsele station forecourt



**Location.** Melsele, Belgium  
**Client(s).** Municipality of Beveren  
**Total investment.** EUR 490,000

**Grontmij fee.** EUR 32,000  
**Period.** 2006 -



### Project description:

Formulation of a design including supervision of work for the reconstruction of the station forecourt in Melsele. The dilapidated station forecourt in Melsele is to undergo reconstruction.

The new development will include a fully-equipped car park and both platforms in the station will be covered by a canopy to improve the comfort of travellers. The green open space close to the railway will remain intact.

The station forecourt is in a rather sorry state today, with its elongated strip of tarmac with bicycle parking facilities. The access roads are outmoded and the bicycle storage area is run-down. Reconstruction plans have been in the pipeline for years, but they've never been carried out, not least because of objections from local residents who were concerned that the adjacent park would disappear as a buffer between them and the Antwerp-Ghent railway line. However, the new design retains the greenery. Grontmij is coordinating this project.

## Feasibility study for station area in Veurne



**Location.** Veurne, Belgium  
**Client(s).** Municipality of Veurne

**Grontmij fee.** EUR 10,000  
**Period.** 2009 -

### Project description:

The station forecourt in Ostend is to be fully renovated. The NMBS Holding, De Lijn, rail infrastructure operator, Infrabel, and the Municipality of Ostend have freed up 128 million euros for the project.

The ambitious "station project" will radically alter the station, its functions and its surroundings. The old station building is to be modernised, there will be parking facilities for 1,000 bicycles and 700 cars. The building of the De Lijn transportation company will be demolished and the tram engineering works relocated to a new zone in the port. The station project will accommodate all public transport functions and facilities under one

single roof. The lay-out of the surroundings will also undergo reconstruction. On the site of the tram engineering workshop, an office and residential complex will be built and water features will be introduced to form a link between the Maria Hendrika Park and the Mercator yacht marina. The assignment includes a request for exemption from the environmental impact assessment for the Ostend station project.





## Expansion of car & bicycle parking facilities & construction of cycle path in Waregem



Location. Waregem, Belgium

Client(s). Municipality of Waregem

Total investment. EUR 862,065

Grontmij fee. EUR 79,940

Period. 2005 -

### Project description:

Municipality of Waregem: expansion of car and bicycle parking & construction of a cycle path in the vicinity of the station.

The projects consists chiefly of: break-up of existing hardstanding, installation of infrastructure pipelines, infiltration lines, drains, relining of drains, bituminous road paving, parking strips in concrete paving stones, cycle path in red bituminous materials, kerb stones and drainage channels, construction of open and covered bicycle parking areas and metal porticos and an entrance awning.

## Accessibility improvements at 16 bus stops



**Location.** Muiden, the Netherlands  
**Grontmij turnover.** EUR 30,000.

**Period.** 2009 - 2009



### Project description:

Muiden is to improve the layout of all bus stops within its municipal boundaries on the number 110 route between Weesp and Bussum. 16 bus stops will be adapted so that they are accessible for persons with a limited mobility and are uniformly laid out in conformity with current guidelines.

For Muiden, the project is both extensive and challenging because the bus stops and their direct vicinity will be reconstructed with the aid of new materials to produce a refreshing and more clearly defined appearance.

The work consists of the following adaptations:

- raising the height of the bus stop. This means that the bus can be boarded and alighted at the same height;

- application of black & white markings on the perimeter of the (raised) platform, so that the bus stop is clearly visible;

- installation of directional guidance and blister paving for sight-impaired persons. The blister paving indicates the point at which the bus can be boarded or alighted;

- installation of new and repositioning of existing shelters. Where possible, shelters will include information and timetables on bus services;

- positioning of new street furniture such as bike racks, benches and litter bins.



## Redesign of Ternat station forecourt

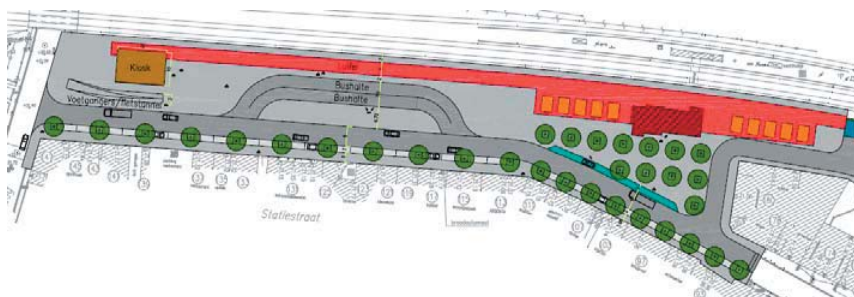


Location. Ternat, Belgium

Client(s). Municipality of Ternat

Grontmij fee. EUR 152,709.

Period. 2004 - 2009



### Project description:

As part of a redevelopment scheme for the station forecourt in Ternat, Grontmij drew up a provisional design layout.

This project consisted of drawing up a preliminary and finalised design, tendering, safety coordination and supervising of redevelopment work on the station forecourt.

The provisional design for the traffic-related structure forms the basis of a preliminary study into the redesign of the Ternat station forecourt. This provisional design incorporates the desired organisation of mobility structure in the vicinity of the station. The purpose of the provisional design is to provide an integrated framework for the spatial and traffic-related development of the station forecourt in Ternat. The actual redevelopment of the station forecourt is inextricably linked to the traffic circulation role of the area for the centre of Ternat as a whole and to the current and future spatial development of this part of Ternat. The regeneration of the station forecourt must be instrumental in improving the quality of life in the neighbourhood and the revitalisation of the centre in general. The provisional design integrates the development of the various modes of transport and users of the public space in a single conceptual entity.

This enables the creation of a vision with respect to the traffic-related development of the station forecourt in the long term and a number of objectives being formulated for the various users (pedestrians, buses, cars, trains, etc.) of the area in question. Car parks, waiting areas, bus stops and cycle storage facilities are integrated in the spatial environment of the station, thus creating optimum traffic circulation.

## Additional Grontmij References



Additional information about some of our projects.



### Greenwich Peninsula



As part of the public realm masterplan that will help transform Greenwich Peninsula, Grontmij has designed a series of bicycle lanes as well as shared spaces where pedestrians, motorists and cyclists all have equal priority.

150 bicycle parking spaces in the form of 'Sheffield stands' are being installed across the area, which all comply with Transport for London's standards for bicycle parking as set out in Chapter 8 'London Cycling Design Standards'.

### Congestion Free Bicycle Highways



Grontmij undertook the process management and co-ordinated various stakeholders for this project that served to improve the Dutch bicycle network and associated parking facilities. The bicycle highways are up to 10 miles long and have been specifically designed for commuters to alleviate congestion during peak hours. Adopted by several cities across the Netherlands, the highways have been developed by local authorities in conjunction with the Department for Transport and the Dutch Cycling Federation.

### Planning Additional Bicycle Parking Space in Central Bruges, Belgium



Insufficient parking space for bicycles in Bruges meant that several parts of the city centre appeared cluttered with carelessly parked bicycles. Grontmij was therefore tasked with identifying the most suitable locations for bicycle parking. To address the space constraints imposed by the city centre, a variety of parking solutions were employed including lockers, multi-level sheds and individual stands.

### Evaluation of the Dutch National Cycling Network



Grontmij was commissioned to carry out a study into use of the Dutch national cycling network and the needs of its users.

Based on the study's findings, various improvements to the network have been made including the development of continuous routes, better signage and the inclusion of stopping areas at points of interest.

## Næstved Banegårdsplads, Denmark

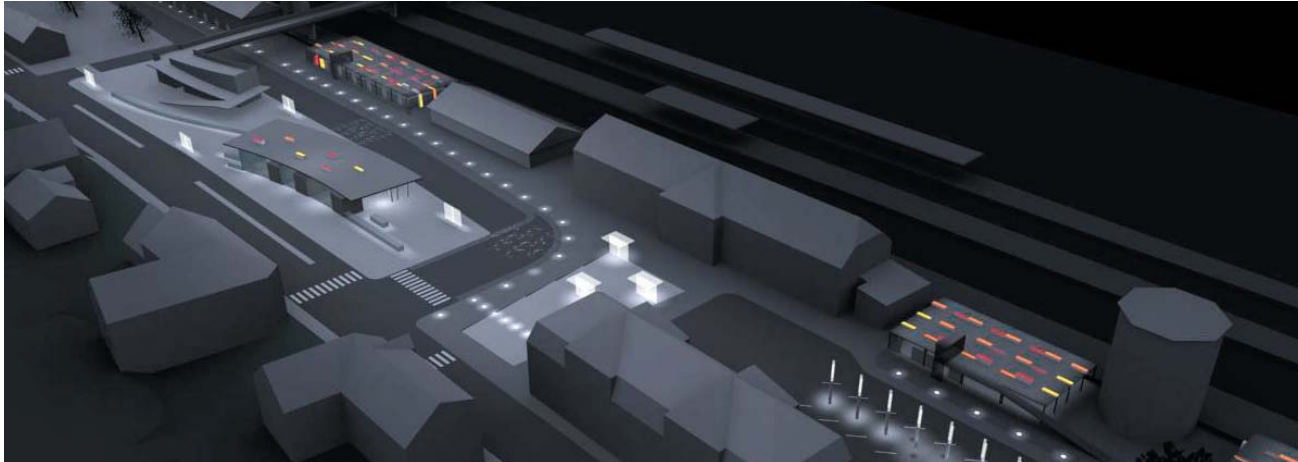


**Client.** Næstved Municipality, DSB and STS.

The project was performed in cooperation with the Architects Andersen & Sigurdsson

**Fee.** DKK 2.5 million.

**Year.** 2002-2007



**Feasibility study, concept proposal and outline and project proposal for a new traffic terminal on Banegårdspladsen in Næstved.**

The project includes a compact, telematics controlled bus terminal with associated bus depot, new bicycle and car parking facilities and concourse installation with associated road and track connections.

## Traffic terminal, Grenaa, Denmark



**Client.** Grenaa Municipality

**Fee.** DKK 1.6 million.

**Year.** 1999-2003

Planning and designing, construction management and supervision in connection with establishing a new traffic terminal in Grenaa.

## Master plan for the A/bus network, Greater Copenhagen, Denmark



**Client.** HUR

**Fee.** DKK 0.4 million.

**Year.** 2002

Producing a master plan for the design of public transport interchanges on the A/bus network in the Greater Copenhagen area. The plan includes proposals for 25 transport interchanges, where either 2 or more A/buses cross each other and/or where the A/bus network has a transport interchange with the S/bus, S/train or Metro.



## Concept catalogue for the A/bus network, Greater Copenhagen, Denmark



Client. HUR  
 Fee. DKK 0.2 million  
 Year. 2001-2002



Advanced stops.  
 Production of a concept catalogue for advanced stops in connection with the A/bus network in the Greater Copenhagen area.

## Software Application for Bicycle Network Problem Areas



A GIS-based software application was developed by Grontmij to provide nine local authorities in the Haaglanden region of the Netherlands with an overview of known trouble spots on the bicycle network, for instance, where bicycle lanes are not continuous.  
 The tool allows the local authorities to continuously monitor the network to identify problems as they arise and collate data with a view to making improvements.

## St. Heddinge station area, Denmark



Client(s). Stevns Municipality, STS  
 Architect. Charlotte Skibsted's Tegnestue  
 Grontmij fee. DKK 700,000  
 Project period. 2004-2005



Project for the renovation of the station concourse and congestion limitation in Jernbanegade in St. Heddinge.  
 The project includes establishing a new bus terminal with associated station concourse and renovation of connecting roads, bicycle paths and parking facilities for both bicycles and cars. A survey was carried out of commuter transfer patterns.

## Jernbaneplassen Lyngby, Denmark



**Client(s).** Lyngby-Taarbæk Municipality, DSB S-trains, The National Rail Authority, HUR

**Architect.** Holscher Architects, Charlotte Skibstedes Tegnestue

**Grontmij fee:** DKK 2,000,000

**Project period.** 2003 - 2006

Producing the project proposal and main project, as well as construction management and inspection in connection with the renovation of Jernbaneplassen in Lyngby.

The task includes both a construction project, which includes establishing an elevator and new access to the platform and renovation of other platform access routes, and also a project for the terminal and concourse facilities with e.g. new bus platforms for 16 buses, new bicycle lanes and bicycle parking facilities and a central pedestrian link between the station and the centre of town

The project is produced in cooperation with Holscher Architects and landscape architect Charlotte Skibsted.



## Svendborg Traffic terminal, Denmark



**Client(s).** Svendborg Municipality & DSB

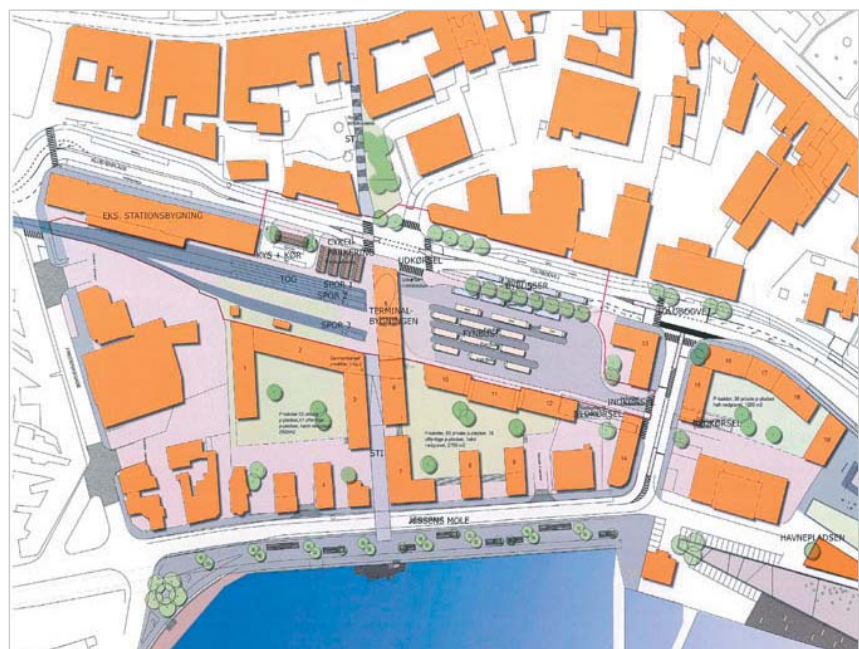
**Architect.** Land+

**Grontmij fee.** DKK 600,000

**Project period.** 2000-2004

Producing a coherent overall plan for a part of the harbour area in Svendborg with the aim of integrating a new traffic terminal into the overall town environment.

Based on the overall plan, a project-basis and outline proposal for the traffic terminal was produced that included a new bus terminal and new station facility with associated car parking and bicycling parking facilities. A survey was carried out of commuter transfer patterns.



## Nørreport station, Denmark



Location: Copenhagen, Denmark

Client: City of Copenhagen

Architect: COBE Architects, Public Architects

Grontmij fee: DKK 14,000,0000

Project period: 2009 - 2014



### Project description:

Grontmij has been appointed for the regeneration of Nørreport station, Denmark's busiest train station. We won the project after unanimously winning an international architecture contest organised by the municipality of Copenhagen.

We will be heading all engineering tasks, including access roads, pavements, constructions, electricity and plumbing jobs. This will completely change the area of Nørreport train station, which is used every day by more than 250,000 people travelling by train, metro, bus, car, bicycle or foot.

### Hat-trick at Nørreport train station

We have already won the bids for renewing the ventilation system and the renovation of the entire train tunnel construction at Nørreport station. This "hat-trick" now means that Grontmij will be playing a leading role in the extensive and demanding task of modernising, repairing and improving the busiest station in Denmark, including the entire traffic terminal square.

### Bicycle parking

The architecture competition's winning project involves a vision for bicycle parking, which the unanimous panel of judges described as "a brilliant brainwave". The chairman of the panel of judges said about the project plan: "So logical that everybody gets the idea as soon as they have arrived".

The chairman of the panel of judges said about the project plan:

**“So logical that everybody gets the idea as soon as they have arrived”.**



#### User-oriented design

The main idea behind the project is to facilitate easy and proper bicycle parking. For this purpose, the winning team has invented the so-called “bicycle beds”, which are placed in strategic areas around Nørreport, where people typically want to “plant” their bicycles. The bicycle beds are lower than the square itself, thereby indicating to people where to place their bicycles. At the same time, the bicycles will take up less space visually. This solution allows people to “plant” their bicycles in a quick and easy manner without creating the usual bicycle chaos.

#### Discrete and elegant station buildings

The station buildings will be constructed in the same soft mode as the “bicycle beds”. The glass facades have been pushed back below the roofs that look like floating discs.



For more details or to  
arrange a further consultation,  
please contact ↓

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