

Bikedispenser and OV-Fiets Rental Scheme, The Netherlands

“Worry free commuting via rental bike!”





Facility:

Fully automated 'self service' bicycle rental stations and public transport bicycles.

Provider:

OV-Fiets / NS Netherlands rail network

Supplier / Manufacturer of System Equipment:

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Designer / Architect:

Springtime Industrial Design, Branding and Research.
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General Description:

"Bikedispensers" are vending machine-style self-service bike rental stations, that have by some been likened to 'Pez' candy dispensers, for the way they issue bikes and their playful appearance. The Bikedispenser concept was created in 2005 by Dutch designers and a pilot scheme ran in Eindhoven in 2006. The automated system is now being incorporated into the national OV-Fiets (public transport bicycle) service in Holland, which rents bicycles from hire-points at rail stations.

The Bikedispenser is promoted as a part of a wider response to provide the 'missing link' in transport systems, to get people efficiently between the rail station and their final destinations – the egress part of their journey. Accordingly, the Bikedispenser helps facilitate the use of a bicycle as an extension of a rail trip. As part of the OV-Fiets cycle scheme, it is targeted at frequent train users, mainly commuters. Those who sign up to the Bikedispenser scheme are also entitled to low-cost rental of standard bikes at over 100 other locations on the country's rail network.

In the Netherlands, the use of the bicycle for the access trip to rail stations is very common (31% of all access trips). For the egress, the "last mile" of a journey, only 9% of travellers use the bicycle, which frequently is a second private bicycle, parked at the station on arrival. The OV-Fiets scheme was introduced in 2002 to start to tackle this issue, with the aim of increasing cycle use over car use, for this part of the journey. To date most of the rental venues are manually operated and the Bikedispenser may help facilitate a wider service not so limited by labour time, open hours etc.

It is envisaged that the Bikedispenser scheme will expand to be





Image: These early Bikedispensers presented smaller bikes, and had different access slots. They were modified to suit the OV-Fiets system.

accessible at other, non-transport locations including residential and commercial areas. For architects, specifiers or urban planners, the Bikedispenser meets a need to store a substantial number of bikes in a compact and safe environment. However, unlike other automatic bicycle dispensing solutions, such as some of the Japanese automated underground parking stations, or Biciberg in Spain, Bikedispenser relies upon a uniform bicycle design and as such is geared towards bike rental rather than providing the possibility of parking for cyclists with their own bikes.

The first prototype Bikedispensers were designed for a small-wheeled bicycle design resembling a folding bike (but which wasn't), though this didn't seem to attract much media acclaim or win favour with the authorities at whom the system was being targeted. When OV-Fiets agreed to install some trial Bikedispensers at railway stations, the design of the dispensing aperture and internals were modified to suit the larger OV-Fiets public bikes, similar to those already in circulation from 130 transport hubs in the Netherlands.

In appearance Bikedispensers offer a refreshing solution and through careful system design, appear well-positioned to integrate smoothly into the target market in Holland and locations abroad. Time will tell how well the system fares in face of recently fast moving international competition in this sector where bikes and public transport meet.



Location of Facility:

The Bikedispenser system is designed for train stations, transportation hubs, parking garages and similar locations. In the future it is envisaged it might be installed in places such as residential areas and amusement parks. The technology of the Bikedispenser also enables underground installation upon specification.

In 2007 Bikestation was launched at two train stations in Holland, with plans for further expansion.

In Arnhem the Bikedispenser is located at station Arnhem-Zuid.



Image: Bikedispenser at Arnhem-Zuid Station.



Image: Bikedispenser at Arnhem-Zuid Station.



Image: Bikedispenser at Nijmegen-Lent Station.



Image: Bikedispenser at Nijmegen-Lent Station.



Image: Inauguration at Nijmegen-Lent Station.

Bikedispenser.com developed a strategic partnership with OV-fiets, so a potential of 30,000 OV-fiets users can use the Bikedispensers. In Arnhem, the Bikedispenser will be used by commuters between station Arnhem-Zuid and the industrial areas of Gelderse Poort and Kronenburg.

In Nijmegen, the Bikedispenser is located at Nijmegen Lent.

All users of the Bikedispenser at Arnhem-Zuid and Nijmegen-Lent will automatically become a member of OV-fiets which therefore entitles them to rent bikes at other stations in the Netherlands.

Scale (capacity):

2 'production' dispensers installed to date, at rail stations in Holland. Expansion to other stations is imminent.

50-100 bikes per dispenser. A percentage of spaces need to be maintained for users returning cycles.

The current Bikedispensers in Arnhem and Nijmegen form two out of five automated bike rental systems that have been deployed among the 130 OV-Fiets public transport bike rental stations at OV/ NS rail stations. The remaining majority of the rental stations are still manned by OV-Fiets employed staff.

Cost of Provision:

Official information about system provision costs is not available. However it is estimated that the supply and installation of one Bikedispenser, without cycles, costs between €80,000 - €150,000, depending on its capacity and installation configuration.

It is understood that the current Bikedispenser installations were in part funded by a Netherlands government initiative. This aimed to promote development of innovative and attractive solutions for the use of bicycles in combination with rail journeys, aiming at encouraging bicycle use on the egress part of a rail journey. The program included a development subsidy for innovative concepts, the most prominent of them being OV-Fiets.

Charges (cost to user):

The costs involved are €9.50 per year and €2.85 per rental transaction of up to 20 hours.

There is also the possibility for regular rail users to pay for a month's rental in advance, at the discounted rate of approximately €25, still with a 20 hour limit on any one rental instance.

Length of use:

The OV-Fiets pricing structure allows time for people to take the bikes home, but with a limit of 20 hours, after which they will be penalised.

Access:

Bicycles can be rented 24 hours per day, Monday to Sunday inclusive.



Images: Only bikes have access inside the Bikedispenser.

Collection and deposit of the cycles is exclusively via the special shaped 'hole in the wall', which as part of the automation, feeds bikes out to users. It also 'sucks' them in again when returned bikes are placed on the ramp at the entrance. This way there is no need for users to enter the facility physically. The cycle-only access point removes opportunity for people to tamper with, or face risk from proximity to the automated mechanism.

Signage:

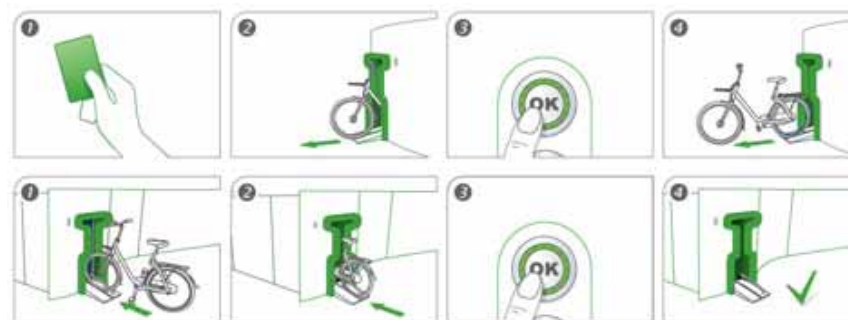
The Bikedispenser is a 'self-contained' unit and the bicycles are enclosed behind a distinctive perforated silver-grey façade, which is made most noticeable because of the toyfully shaped and coloured bike access point.

There is some Bikestation.com signage and information graphics on the outside of the enclosure, but the distinctive presence of the installation plays an important role in letting people know what it is and where.

Environmental or "wayfinding" signage are dependent upon the stations where the Bikedispensers are installed.



System Interface:



The interaction with the Bikedispenser scheme is similar to other third generation bicycle hire schemes, using RFID technology. By holding an OV-Fiets 'chipcard' near to the reader on the outside of the unit, the user starts the process of renting a bicycle within 15 seconds.

When users return the bike, the system will recognize the user and

complete the transaction. The bicycle disappears and the details, provided with the visualised graphics for the system (above), explain that the bike will then “be stored in a safe and indoor location while you are already on your way and in time for your next train”.

Commuters interested in the service of the Bikedispenser in their neighbourhood are requested to become a member of the OV-fiets rental scheme. With the OV-fiets membership, they will be able to use the Bikedispenser and its bikes, and also rent bikes at all over 100 other stations in the Netherlands.



A short video including demonstration of the usage process can be seen here:

<http://www.youtube.com/watch?v=tp9YQUHFqSg&feature=related>



Urban Furniture/ Parking equipment:

The enclosure of Bikedispenser is essentially a large-scale bike locker, with the necessary mechanics built inside, to issue and retrieve rented bikes in and out of storage. However, the effort that has been put into the appearance of this solution makes a landmark example, against a background of many cycle locker and parking compound designs, which serve only to scar the urban landscape, often with uninspiring and uncommunicative brick-type forms. By contrast the Bikedispenser's industrial design forces the whole sector to think several steps ahead with the example it sets. The Bike-shaped hole on the front not only ads humour to the installations but acts to prevent people wandering in and it will only fit the bikes from the rental fleet through the slot.



The internal cycle storage provided by the Bikedispenser offers a space efficient solution, thanks to bikes being stored 16cm apart from each other, versus 75cm or more for other parking systems. Compared to other covered or indoor storage systems, the Bikedispenser offers a compact way of storing the bikes to be rented and so capitalises on floor-area available by accommodating more bikes to be rented.

Bicycles used with this system:

The latest revisions of the OV-Fiets bikes that the Bikedispenser issues are supplied by established Dutch bicycle manufacturer, Gazelle.



Limited information is available about the detail of the cycles at this stage, but it can be confirmed that they have been specifically developed (based around previous models) for this system and integrate a passive RFID chip to communicate with the Bikedispenser parking units.

Security, Guardianship and Lighting:

In some cases there may be distant guardianship from on-site station staff, although the design is meant to operate as an unmanned service, so has built in measures in attempt to maintain a secure solution.

The all-enclosed nature of the Bikedispenser, which doesn't permit human entry, reduces the risk of theft and vandalism to the bikes while they are parked - which has been a problem to many uncovered on-street self service rental schemes.

The system demands users have both a card and a pin number, which is entered on the keypad of the rental station. This makes it less likely for a bike to be taken out should a card fall into the hands of someone who isn't the registered user.

The robustness of the bicycles themselves, against possible



vandalism or breakage, is not known at this stage.

Extra ambient lighting is proposed, to be supplied by the stations or other sites where Bikedispenser is located.

Maintenance and Servicing:

Maintenance is handled as part of a contract with NS national railways to provide OV Fiets/ Bikedispensers for its travellers.

Service Period (how long facility meant to last):

Estimated 10 years.

Strengths:

- Visual benchmark among other bicycle parking and bicycle rental solutions
- Fits a lot of bikes into a small space (bikes just 16cm apart)
- Enclosure protects parked bikes from weather and reduces likelihood of vandalism or theft
- Very low rental costs will encourage use
- Strong identity and market positioning
- Integration with train stations permits the scheme to be piloted in a few sites to start with before expanding, with ready network of venues and users

Weaknesses:

- The large, solid on street enclosed form of the unit may not suit all locations looking to install cycle rental schemes
- Reduces natural sight-lines/visibility in the immediate environment for other users
- Few have been implemented to date, so a fuller evaluation of the system and its safety and longevity is hard to establish at this stage

Marcus Willcocks July 2008

Useful References:

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