

INFRASTRUCTURE/ **PARKING**

BICYCLE PARKING IN RESIDENTIAL AREAS

Overview

In residential areas, all residents should have safe overnight storage for a bicycle. This is crucial to encourage bicycle ownership and cycling. Sufficient bicycle storage should be standard in new housing, through negotiation or regulation. In older areas without indoor private storage, opportunities must be found for neighbourhood storage facilities, secured, shared and possibly co-managed by residents. Bicycle drums are practical small collective on-street lockers.

Background and Objectives

Function

Bicycle parking provision in residential areas is necessary to provide residents with secure overnight storage space for their bicycles, especially when private storage space is lacking. This encourages bicycle ownership and bicycle use.

Scope

All housing needs adequate cycle storing provision. This is one of three indispensable components of the trip chain: storing at home, riding on a cycling network and parking or storing at destinations.

Bicycle parking policy usually strongly focuses on destinations. But increasingly, it has become clear that parking provision at home is just as crucial.

The problem typically arises in **cramped residential areas** with a majority of flats or smaller houses without garages or other storing space. This is typical for most **historic centres and nineteenth-century extensions**. But it may also be an issue in **more recently developed neighbourhoods with small dwellings**.

- **Space is lacking** to keep a bicycle **inside the home**, let alone a bicycle for each member of the family. Only convinced cyclists will take the trouble to carry bicycles up stairs or park them in a narrow hallway, a stairway, a cellar or even the living room.
- Parking bicycles **on the street** overnight is **inconvenient and risky**. In the Netherlands, half of all stolen bicycles are stolen near the owner's home. Being obliged to always attach your bicycle is a nuisance. If the bicycle is always outside and uncovered, it will degrade more easily, or suffer from vandalism. And too many parked bicycles on the pavement will become an obstacle and a visual nuisance.

Such a home situation **strongly discourages bicycle ownership and bicycle use**, even when there is an excellent cycling network and adequate parking at destinations.

In **new housing**, sufficient bicycle storage for all should become a standard provision.

Implementation

Definition

Bicycle parking in residential areas is about providing safe all-night storage space for residents' bicycles. For new homes, indoor provision should be integrated in the development projects from the start and ideally made mandatory through building regulations. In existing neighbourhoods without private indoor storage space, a solution can be found for collective storage space. This can take the form of a neighbourhood storage facility, in an enclosed area or building. An alternative are smaller collective lockers on the street.



Assessing needs and demand in existing residential areas

In smaller houses and flats, the key problems are lack of indoor space and risk of theft on the street at night. Clearly, the problem cannot be solved on the level of each individual dwelling. Only an **area-wide approach** can be effective.

Areas selected for such an approach include:

- Residential areas with mainly flats and houses without their own storage space;
- Residential areas cluttered with parked bicycles at night;
- Residential areas with higher than average bicycle theft rates.

To assess the need, the following **data** should be collected.

- The bicycle ownership rate.
- The rate of available bicycle storage per dwelling.
- The relative bicycle theft rates. Theft statistics are notoriously underestimated, since many thefts go undeclared. However, comparing average theft rates on areas or streets is a valid indicator.
- The number of bicycles parked overnight, both on-street and indoors.
- The wishes of occupants, through a survey. Bicycle owners can be asked if they would like to park differently from the way they do now. Those without a bicycle can be asked if better parking provision would incite them to buy one.

With these data the **need, the quantity and the location for additional neighbourhood bicycle parking** can be assessed. Creating additional storage can be recommended in any of the following situations or a combination of them.

- Much on street bicycle theft, and not enough storage indoors.
- Much on street bicycle parking, and not enough storage indoors (even at low theft rates).
- Few bicycles per household and little storage indoors, certainly when there is also much theft and when residents express a demand.
- A pronounced demand from occupants for additional parking facilities, possibly leading to higher bicycle-ownership.

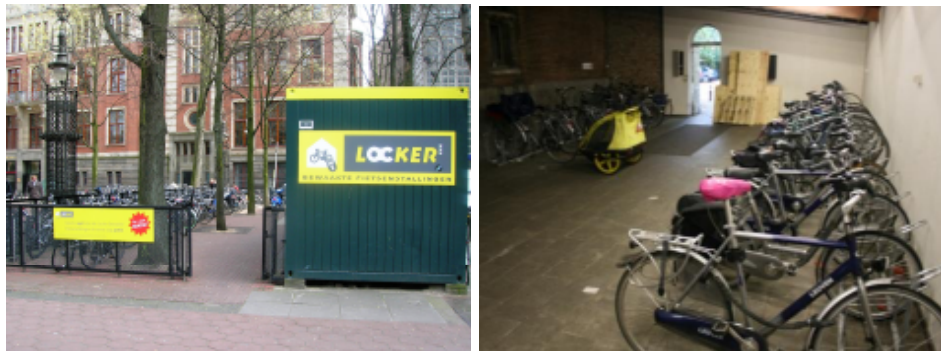
Neighbourhood storage facilities

Public authorities can create and run **neighbourhood storage facilities**: buildings, parts of buildings or enclosed areas used for bicycle parking.

- **Restrict access** to a fixed group of local residents. Each resident has a reserved parking space and access at all times with a key or smart card.
- Detect **opportunities** of available space. New construction may be integrated in public squares or on vacant lots between dwellings. In this case, authorities are dependent on real estate opportunities that need to be seized rapidly and may prove costly. However, there are often opportunities for reconvertng space such as unused commercial storage space or the ground floor or cellar of a large private or public building. Other options may be to cover an enclosed garden, to reserve a part of an underground car garage or simply to convert a garage box for shared bicycle storage.
- Consider adding a small **shared workshop space** with tools for repair.
- **Limit walking distance** for users to max. 150 m. A good location is one that can reach as many potential users as possible within that distance. This is based on Dutch experience (see table below), and may vary elsewhere.

Maximum walking distance to neighbourhood storage	Acceptable for
75 m	46%
150 m	32%
More than 150 m	21%

- Set up proper **financing and management**. Yearly fees in the Netherlands vary from 35€ to 90€, with a policy trend of keeping them below 50€. Willingness to pay is variable, and may be surveyed in advance among potential users. Generally, neighbourhood storage will not be commercially viable without public support. Owners of an unused space may, however, accept low benefits. Including space for mopeds and motorcycles may increase profitability: space for them is scarce, and the owners are often willing to pay higher fees. The main management tasks are user registration, collection of fees and maintenance (not permanent supervision). The manager should preferably live nearby and be easy to reach in case of emergency. It is recommended to draw up a contract with each user.
- Consider a **demand-led approach**. Instead of taking the initiative of rolling out neighbourhood storage, authorities can prepare all the procedures and invite residents to propose initiatives. This has the double advantage: there is some idea of the real demand, and the locals can actively detect and propose location opportunities.



Collective neighbourhood storage, on-street and inside (image sources: F. Boschetti, T. Asperges)

On-street bicycle drums

If demand is relatively dispersed or opportunities for a collective storage facility cannot be found, another option is to provide smaller collective lockers. **Bicycle drums** are a type of collective lockers specifically conceived for neighbourhood storage.

- They can store 5 to 8 bicycles and are designed to fit into a car parking space. They are smaller than a neighbourhood storage facility, but they can be multiplied, which reduces the average distance to homes. Dutch cities have hundreds of bicycle drums, spread all over the city's residential neighbourhoods.
- The procedure for planning permission needs to be streamlined to minimize the time needed.
- A disadvantage is that they may be quite expensive for a limited number of users. Authorities can control pricing.
- There may initially be esthetic objections to these objects. However, if they simply replace a parked car, the visual impact is quite acceptable, and designs are available with a light, transparent look.¹

¹¹ See also fact sheet on PARKING SYSTEMS AND STORAGE FACILITIES



A cycle drum on the parking lane in a residential street, with a bollard protecting access. Utrecht, NL²



Cycle drum with transparent, 'light' design.³

Bicycle parking in new housing

Generally speaking, **bicycle parking must be integrated into all planning processes**. If we take cycling serious as a transport mode, cycling should be planned for in all new buildings and developments and in urban renewal schemes. This is standard for car parking. There is no reason why it should not be standard for bicycle parking.

New housing should provide **sufficient storage space for one bicycle per occupant**.

- Provide for required bicycle storage in **building regulations** for new housing. This should minimally include the obligation to provide sufficient bicycle storage room for all occupants. They could quantify the required minimum provision, for instance number of cycle parking spaces or area for this purpose in relation to number of dwellings or occupied surface (for instance 1 per dwelling + 1 for each bedroom).
- Provide bicycle storage for each dwelling **individually or collectively**. Collective storage is more convenient in multi-storey apartment buildings, for instance on the ground floor or as an outdoor protected covered space in front of the building.
- Guarantee **social safety**. All indoor storage should be easily accessible from the street level, and highly visible. They should be near the building entrance, to provide social control, and near the stairs or elevator, to create a short route. Collective storage should be divided into small compartments (around 12 bicycles), so that users will know and recognize each other and easily detect intruders. Avoid small, hidden access corridors around the back of buildings.
- Provide **on-street visitor parking**, integrated into the design from the start.

Increasingly, cities are exploring the potential of new sustainable neighbourhoods. Often these are conceived as **low-car housing**. The principle is that these dwellings are at least partly reserved for occupants without a car. In return, they have access to a range of alternative mobility solutions, including public transport, shared cars and of course also cycling.

² Image sources: <http://static.panoramio.com/photos/original/15084198.jpg>

³ <http://groenerik.files.wordpress.com/2009/03/fietstrommel.jpg>



Secure and visible external cycle storage for flats
 Portsmouth, UK
 image source: Cycling England, Tony Russell



*The Bike city development in Vienna specifically caters
 cyclists.*
 image source: Fietsberaad

Considerations

Strengths

Neighbourhood bicycle parking

- Provides secure all-night storage for residents
- Encourages bicycle ownership and use
- May involve residents in using and maintaining shared facilities

Weaknesses

Neighbourhood bicycle parking

- Requires time and effort to set up and tun: acquisition of buildings, maintenance, planning permission
- May run into opposition, because of reduced car parking space or for esthetic reasons (in the case of bicycle drums).

Alternative options

The only alternative is to accept chaotic and unsafe on-street bicycle parking and low levels of bicycle ownership. Public bicycles may work for occasional use, but are less convenient and more costly than owning one's own bicycle.