

Bicycle parking facilities

Purpose

This note aims to raise awareness of the bicycle parking facilities available to encourage cycling and improve conditions for existing cyclists.

What to look for in a bicycle parking facility

For cities and towns in Queensland to thrive, planners and engineers must be aware that the continual addition of car parking is not sustainable. For example, as tertiary education facilities grow in enrolment numbers, staff numbers and building improvements, there cannot necessarily be an equivalent increase in car parking spaces. The provision of appropriate bicycle parking facilities will encourage people to ride to common destinations such as schools, universities, shops and cinemas. Facility effectiveness can be measured by high and increasing usage rates and low theft/crime rates.

Two factors to consider when designing and locating bicycle parking are the type of facility and location.

Type of facility

A facility should provide **security, protection and safety** for the user and the bicycle. For appropriate security the bike frame and wheels should all be lockable. Appropriate protection will ensure the bike cannot be damaged due to the design of the rack (e.g. pinching one wheel). Locating the facility where users do not feel threatened should provide safety.



Figure 1
If parking is not available, bicycle riders will use a pole or tree: a potential hazard for pedestrians and motorists, as well as the rider.

Aim

This series of notes has been designed to assist planners and engineers to provide for cycling in their local area.

The Cycle Notes should be read in conjunction with:

- *Guide to Traffic Engineering Practice, Part 14 - Bicycles* (Austroads, 1999), and
- *Queensland Manual of Uniform Traffic Control Devices, Part 9 - Bicycle Facilities*

Contents

What to look for in a bicycle facility

- Types of facility
- Location

Types of bicycle parking facilities available Types of bicycle parking facilities described

Where are facilities needed?

Maintenance

Bicycle parking facility suppliers

Location

To attract people to cycling, bicycle parking facilities must be conveniently located for the user and have a high level of security. Bicycle parking facilities must be:

- located within view of staff, customers and passers-by or covered by TV cameras.¹
- easily accessible by users
- well lit
- close to public transport interchange
- kept free of graffiti
- signed to indicate the nearest public phones and places of safety
- well maintained.



Bicycle parking facilities

Types of bicycle parking facilities available

There are three categories of bicycle parking facilities. These can be classified into three security classes as outlined in *Part 14*.

| Security class | Example of type of facility | When it is required |
|---------------------------|--|--|
| Security class 3 (low) | Bicycle racks or rails, may or may not be housed under an open shelter | Effective and low cost way of providing short to medium term parking Can be used for longer-term parking if surveillance is provided The addition of a shelter provides all weather protection |
| Security class 2 (medium) | Enclosure, shelter or compound | Lockable structure where users have a key and are responsible for locking their bicycle within the enclosure |
| Security class 1 (high) | Individual bicycle locker | Long term parking Maximum security - best for commuters to all-day workplaces |

Types of bicycle parking facilities described

Bicycle parking facilities come in a variety of styles. Some are better than others and many older-style bike racks no longer comply with the *Australian Standard for Bicycle Parking Facilities (AS2890.3)*.² The preferred types are described below.

The type of lock favoured by bicycles users is a small D-Lock. This is more secure than a cable lock but only able to lock a small section of the bike. Bicycle parking facilities must suit a variety of locks including D-Locks and cable locks.

Bicycle racks and rails - security class 3 (low)

The traditional “toaster rack” style of bicycle parking facility that holds one wheel does not meet Australian Standards (AS2890.3).² These older racks do not allow the frame and wheels to be locked to the rack and can damage the wheels.

Newer rack designs allow for multi-point locking and are based on a horizontal railing design. A hitching rail (see Figure 2) or any similar structure consisting of a horizontal bar with vertical supports is ideal for outdoor bicycle parking.

As long as the principle of multipoint locking is applied to bicycle parking design, the facility can be as ornate as the site requires (see Figure 3).



Figure 2
Bicycle parking rail

Figure 3
Ornate bicycle parking rail



Bicycle rails are best arranged in clusters or groups and situated near buildings that have on-site security. In the case of restaurants or small shops, facilities should be placed where the owners of the bikes or other

patrons can see them. When a bike rack might be mistaken as street art, bicycle symbols on the ground may be necessary.

Racks for several bikes also require multi-point locking principles (see Figure 4). Some bike racks incorporate plastic coated chains which can be secured by the user's own lock. This means that the user only needs to carry a padlock.



Figure 4
Bicycle rack for several bikes

Figure 5
Bicycle enclosure



Bicycle enclosure - security class 2 (medium)

Groups of bicycle parking rails within an enclosure provide a higher level of security. Enclosures can be a room, compound or purpose built area and should be fitted with a roof for increased security and weather protection. Chain-mesh or other ‘see-

through’ walling allows natural surveillance.

Such facilities are usually associated with a workplace or educational facility. Distribution of keys and on-going access issues are managed by the “employer”. If a high level of security is required, it may be possible to install a surveillance camera to monitor the door to the enclosure.

Bicycle lockers - security class 1 (high)

Bicycle lockers provide the highest level of security. They restrict access to one user and are particularly effective for all day and all night parking, especially in public places where there is a high risk of theft or vandalism. The lockers have room to store helmets, clothes and other cycling gear along with the bicycle.

Lockers being used by the public need to be managed. They can be either rented to a single user for a period of time, or casual users can obtain a lock and key from the facility manager. It is also possible to manage lockers automatically with electronic access control similar to that used by some airport luggage lockers.

In Queensland, bike lockers are provided at two out of three QR train stations.

Figure 6
Bicycle lockers



Where are facilities needed?

Bicycle parking facilities are required to reduce bicycle theft and the risk of pedestrian injury due to inappropriate parking of bicycles. Secure parking facilities also encourage people to ride. In 1987, the Insurance Council of Australia (*Bulletin, July 1987*) estimated the cost of bicycle theft in Australia each year was around \$7million. Since 1987, investment in bicycles has increased. While there have been improvements to bicycle parking facilities, this has not occurred at a rate commensurate with the increased cost and use of bicycles.

Checklist 1 **Dos and don'ts about types of bicycle parking facilities**

- DO** install bike parking devices that support the frame of the bicycle, not just the wheel.
- DO** install parking devices that accept a variety of locks.
- DO** make the parking facility simple. Inverted U's are simple, relatively vandal-proof and low maintenance.
- DO** provide cover from the elements if possible.
- DON'T** install bicycle parking devices which are too short or could be a hazard to pedestrians.

A guide to the number and type of bicycle parks required for each type of land use (e.g. shops, banks, restaurants etc.) is presented in Table 10.1 of *Part 14*. Providing good quality bicycle parking facilities will encourage people to arrive by bicycle instead of car. This reduces traffic congestion and allows people to enjoy the health benefits of cycling.



Bicycle parking facilities

Key destinations where bicycle parking facilities must be considered include shopping centres, restaurants, workplaces, schools and other educational institutions and public transport interchanges. At workplaces, bicycle parking facilities can be offered in combination with shower, change and clothes locker facilities.

Checklist 2 Dos and don'ts of locating bicycle parking facilities

- DO** place short-term parking as close to the building entrance as possible
- DO** make bicycle parking visible to bike riders, building security, foot traffic and anyone who might approach the building. Visible parking facilities reduces incidents of theft and vandalism.
- DON'T** reduce the visibility of bicycle parking facilities by installing them in out-of-the-way places or by screening them with landscaping.
- DON'T** place bicycle parking where an irrigation system waters bicycles.

Maintenance

To ensure continued use of bicycle parking facilities they must be maintained. Poorly maintained facilities will have an adverse effect on patronage, and the wider use of bicycles as a form of transport.

Recurring maintenance costs should receive as much consideration in budgeting as the initial construction and installation costs. For example, QR has an annual maintenance budget that reflects the number and type of bike parking facilities provided by the organisation. This includes a major refit of bike lockers every 10 years with the lockers having a 20 year life.

Checklist 3 Dos and don'ts of bicycle parking facilities maintenance

- DO** keep bicycle parking areas clean.
- DO** perform regular inspections of the facilities for defects or damage.
- DO** repair vandalism, remove graffiti and replace failed lighting as quickly as possible (ideally within 24 hours of reporting).

Bicycle parking facility suppliers

There are a number of manufacturers and suppliers of bicycle parking facilities. Many of them have websites which display the variety of styles available. Some local governments undertake a tendering process for bicycle parking facilities.

Other references

1. The presence of closed circuit TV cameras does not necessarily mean the site is under live surveillance. It may instead be subject to image recording for law enforcement and conviction reasons. Facility users may gain a false sense of personal safety if they think threatening activities are being monitored live and assistance should soon be at hand. In this instance, appropriate signing is necessary.
2. *Australian Standard for Bicycle Parking Facilities (AS2890.3)*.

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