Universal square bike storage facility impact on other users:

1.5 km from the City Centre of Manchester the **site** is very accessible and can be reached by a variety of means including private car, public transport and on foot. Walking: Approx 15 minutes from Piccadilly station.

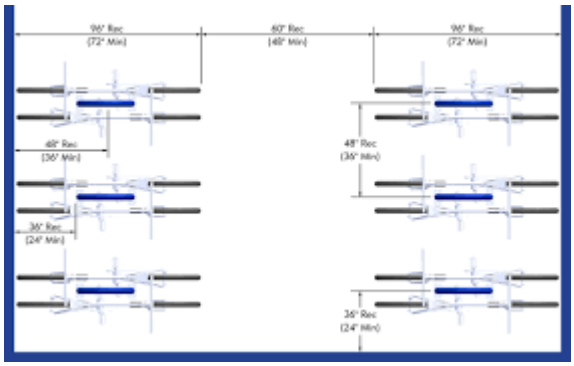


Cycle storage space in universal square:

Bicycle storage facilities are protected spaces for storing a bicycle. These include individual and collective lockers, as well as cycle stands. They may be supervised, free or paying. The space allows cyclists to store a bicycle. Short-term parking systems Cyclists first and foremost need to able to park bicycles. Parking means leaving the bicycle behind for a short time, 2 h or less. They will want to park as near as possible to their destination, typically less than 50 m.. This demand needs to be met with

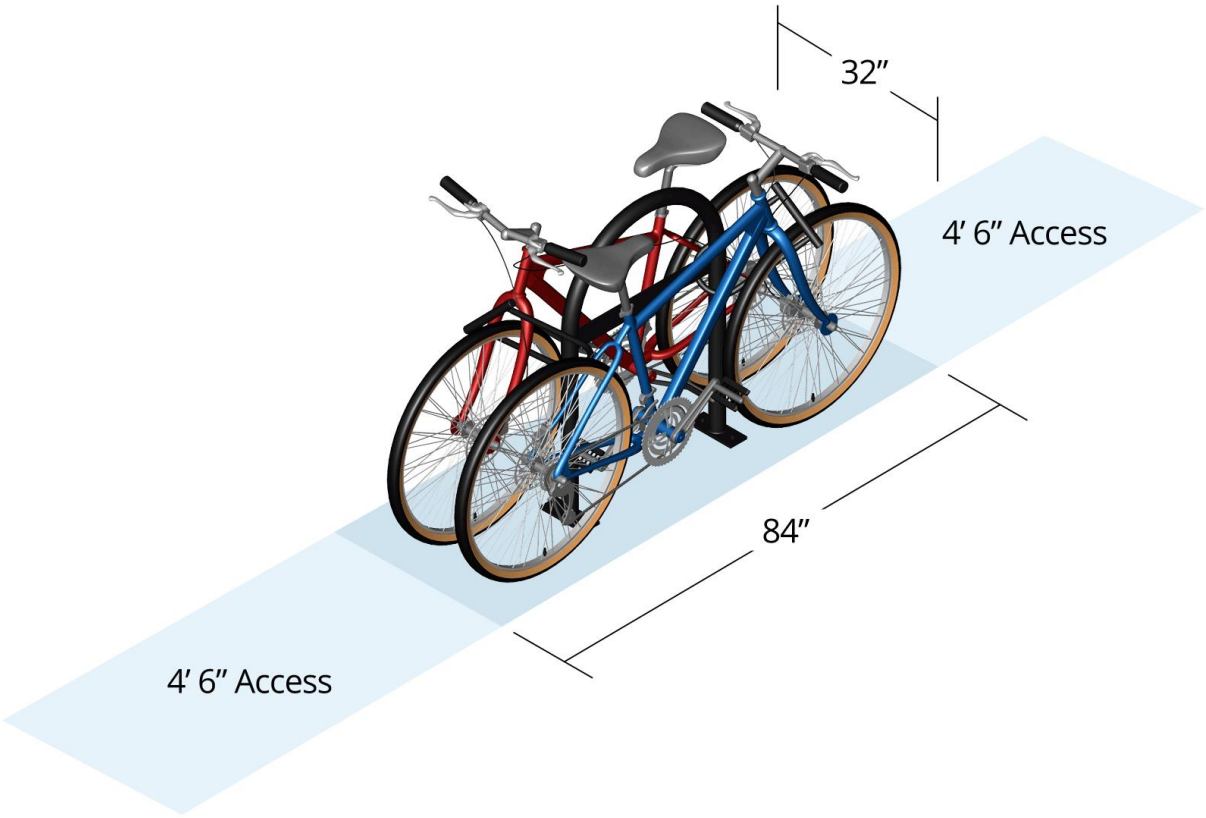
a dispersed offer of small parking facilities, at short distance intervals. The simplest way is to allocate reserved bicycle parking space, without installing a parking system.

This is be done by simple marking, by different surface materials or using street furniture. This in itself will already incite cyclists to park there. The advantage is that space is left free for other uses. However, it is only suitable for bicycles that have their own kickstand and fitted lock. Even then, the bicycle is not attached to a fixed object and risks falling over or being stolen or vandalized. It is recommended to provide a fixed structure that supports the bicycle and to which it can be attached. This can take the form of a stand, for a single bike or one on each side, or of a rack, for multiple bicycles in a row.



What protects against theft? It should be possible to secure both the frame and the front wheel. If only a wheel can be attached, thieves may detach the wheel. If the bicycle only has a fitted lock, not attached to the parking system, thieves may just lift the bike and break the lock later– Supply and demand for cycle parking The system is easy to use, self-explanatory and require minimum effort. Sophisticated anti-theft devices may be confusingly difficult to operate.

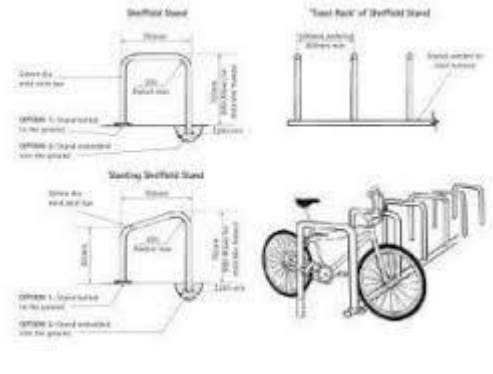
In view of these requirements, it is not surprising that the inverted U-shaped bar is widely recommended. The height is between 0.7 m and 0.8 m. The bicycle frame leans against it and the frame and a wheel can be attached with a single lock. It is easy to use and suitable for all types of bicycle. It’s a simple, low-tech and robust design that makes it easy to install and difficult to vandalize. It is inexpensive and requires minimal maintenance. An extra horizontal bar is useful to support smaller bicycles.



The destination attracts large number of cyclists. A considerable share of the cyclists wants to park their bicycle for a period of more than one hour.

Impact on other users:

The universal square cycle storage is a prestigious new construction, it is more easily accessible and less expensive. There is assured social safety. Making sure the entrances are visible and at places with sufficient social control. Supervision and automation Access management and supervision is organized by staff personnel or partly or fully automated. Supervision by personnel is generally appreciated by users. They have someone to turn to in case of problems and perceived safety increases. The usage of the facility outside peak times is restricted, Staff is often supported by partially automated supervision. Camera supervision (CCTV) and electronic access systems allow reducing the number of personnel and exploitation costs. This technology now allows access and supervision to be unmanned and fully automated, doing away with all need for staffing. This allows 24-hour operation. In those cases special care is taken to assure social safety, let in daylight and provide views to the streets outside, integrate 24-hour functions nearby, such as a sandwich shop. Bicycles are safely and neatly allowing other building users safe acces to the building e.g. pedestrians and car users. In addition, specific parking positions of the bicycles this reduces the depth and maneuvering space needed. The centre-to-centre distance can be reduced to 0.5 m (or even 0.4 m) and the depth to 1.4 m. The inconvenience is that parking space can only be accessed from one direction.



Allow a standard space consumption of 1.8 m2 per bicycle. This includes the parking space itself (1.3 m2) and a shared access path for two rows (0.5 m2 per bicycle). This can vary from around 1 m2 for compact solutions up to 3 m2 with a more comfortable width of 0.8 m. Only use two-tier parking as a last resort. Parking on two-tiers, one bike above another, significantly reduces space consumption, up to 50%. In very large parking facilities, this may be unavoidable to reduce the distance to be walked. However, lifting bikes requires a serious effort that many cyclists will try to avoid. The effort may be reduced by sinking the bottom tier slightly below ground level and by providing ramps for the upper tier, or by providing lifting mechanisms. Space gained by a angled parking Danish guidance on bicycle parking dimensions (slightly larger dimensions are recommended) Bicycle parking and storage solutions are that a two-tier parking system …with sunken lower tier … or extractable wheel gutters High-low rack Considerations Strengths Good-quality parking systems and storage facilities ,making parking and storing bicycles safer, more convenient and more orderly; including very cost-effective and little space-consuming products, such as the inverted U shape stand . Including automated solutions, highly secure and reducing personnel costs Weaknesses Good-quality parking systems and storage facilities can take up considerable space, with reduced impact on all other building users.

Designers and developers have considered the needs of everybody likely to use a car park and provide facilities that are convenient and safe for all.



At the universal square there are a total of approximately 25 spaces for cycle storage. 15 can be parked at the front and then 5 at the back.



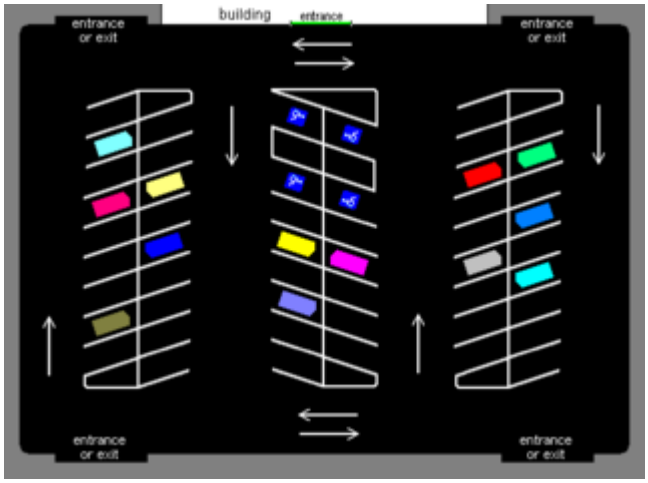
Car park in universal square:



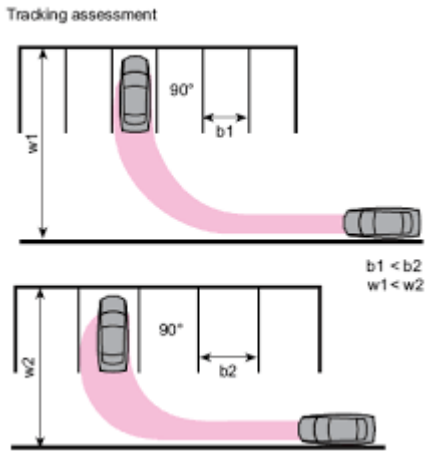
Over 900 car park spaces are available at the universal square.

A building for Everyone: Objectives The car park in universal square promotes the concept and philosophy of universal design and encourages building users, pedestrians, cyclists and building staff to be innovative and think creatively about a design that meet the needs of all building users. The objectives of the car park is to : • identify and promote best practice with regard to universal design of the built and external environment • provide best practice guidelines while recognising existing regulations in the square • provide guidelines that are usable by and accessible to the target audience • promote the achievement of universal design in the building.

A Universal Design Approach," which aims to provide practical guidance on the universal design of buildings, places and facilities. Universal design places human diversity at the heart of the design process so that buildings and environments can be designed to meet the needs of all users. It therefore covers all persons regardless of their age or size and those who have any particular physical, sensory, mental health or intellectual ability or disability. It is about achieving good design of car park spaces, so that people can access, use, and understand the environment to the greatest extent and in the most independent and natural manner possible, without the need for adaptations or specialised solutions. Why universal design? People are diverse - some are left-handed and some right-handed - and vary in their age, size and functional capacities. Illness or disability (whether temporary or permanent) can also affect characteristics such as a person's mobility, dexterity, reach, balance, strength, stamina, sight, hearing, speech, touch, knowledge, understanding, memory, or sense of direction.



People of diverse abilities should be able to use buildings and places comfortably and safely, as far as possible without special assistance. People should be able to find their way easily, understand how to use building facilities such as intercoms or lifts, and know what is a pedestrian facility and where they may encounter traffic. Given the wide diversity of the population, a universal design approach, of the car park has been made, which caters for the broadest range of users from the outset, can result in buildings and places that can be used and enjoyed by everyone. That approach eliminates or reduces the need for expensive changes or retro fits to meet the needs of particular groups at a later stage. It is good practice to ascertain the needs of the range of expected users as early as possible, and to check the practicality and usability of emerging designs with a diverse user panel. For example: • The space beside the car park not just allows wheelchair users but also people with buggies; people with suitcases or shopping trolleys; people using walking or mobility aids; and people with visual difficulties • larger toilet compartments provide easier access to wheelchair users; those with luggage or parcels; parents with pushchairs or accompanying small children; those using walking or mobility aids; and larger-sized people • The design of the car park facilitated others involved in using the building using their surroundings safely and comfortably. It provides accessibility in approach to all entrances and exits to the building, and the use and adaptation of existing environments. Those who manage the car park also have a duty of care to adhere to relevant legislation and regulations including equality legislation, building regulations and health and safety regulations.



As standards and requirements develop, the information on the car park will be updated. All building usesr – A person regardless of age, size, ability or disability using facilities in a building or associated external environment will feel safe using this car park. Designated car parking is

available– Car parking spaces reserved for the use of car users with disabilities, whether as motorists or passengers. A pavement is the part of a roadway used by pedestrians and is adjacent to the car park space.– A designated area is close to a building entrance or other facility where passengers can alight from a car or taxi. Soffit – The underside of any construction element, the underside of a flight of stairs. Step nosing – The leading edge of a step or landing. Street furniture – Items located in street and other pedestrian environments such as lamp posts, litter bins, signs, benches, and post boxes. Tactile paving surface – A profiled paving or textured surface that provides guidance or warning to pedestrians with visual difficulties. Universal Design = Useable = Understandable - Understanding user needs – For example an older person may require many resting places due to discomfort when walking for long distances.



Creating an accessible and understandable external environment is potentially the most challenging task facing designers due to constraints posed by the natural landscape and spatial limitations of the existing built environment. However, built of the car park has sought to optimise accessibility and understanding through the creative placement of routes and features. This involved strategic thinking during the earliest design stages to ensure, for example, pedestrian access, that routes and building entrances are positioned to provide convenient access with minimal changes in level. The car park allows space for everybody to use, whether as pedestrians, motorists or passengers. Where there is a sloping site, level access should be provided at various points to ensure barrier-free access for all. Please note that travel distances are minimised where possible. For Safety and convenience The design of vehicular environments, such as car parks and setting-down points, honour the needs of motorists and pedestrians, but above all, provide environments that are safe for all to use. Car parking facilities are sufficient for the expected level of use and include spaces for people who require proximate access to the building or facility served by the car park. For example: older persons, parents with young children, or deliveries. The design of pedestrian environments are easy to understand, logical and consistent. This will help people who use an environment regularly to memorise a route and to develop a mental map of the area. It will also help people who encounter an area or route for the first time. Well-designed features will help guide and orientate a person and provide a degree of predictability within an environment.

Vehicular Environments, car park provision Car parks should are very accessible, easy to use, and provide sufficient parking spaces within a well-designed environment to meet the needs of all people expected to use them. The provision of an adequate number of off-street parking spaces discourage indiscriminate parking, which can obstruct access and make the roadway environment hazardous for everybody. Wherever car parking facilities are provided, they consider the needs of all car users, including parents and carers with young children; people who need to load and unload goods and shopping; people who may not be able to walk very far or carry goods over a long distance; people with visual difficulties; people with hearing difficulties; and people who use larger vehicles such as vans with rear hoists that enable wheelchair users to travel while seated in their

wheelchair. The provision of designated spaces for car users with disabilities is commonplace within all car parks.



The provision of parent and child parking spaces in car parks serving shopping developments is also now accepted good practice. Less common is consideration of the needs of people who require larger bays, proximate parking and easy access, but who are not entitled to use designated spaces or parent and child bays. In many locations, the criterion for occupying a designated car parking space is that the driver or a passenger in the vehicle is the holder of a parking permit, such as a Disabled Parking Permit. This precludes access by people who are temporarily injured; pregnant women; people who are unwell; and people who are not able to walk long distances due to a medical condition but who are not otherwise holders of a Blue Badge parking permit. Designers and developers have considered the needs of everybody likely to use a car park and provide facilities that are convenient and safe for all.