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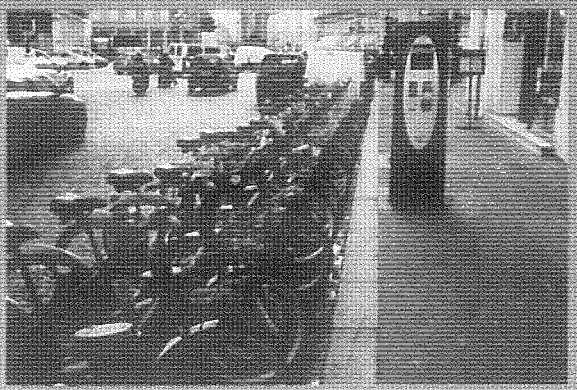
# Dublin City Cycle Scheme

## Phase 1: Potential Sites



Dublin City
Baile Átha Cliath

## Introduction

This report has been complied by an inter departmental working group in Dublin City Council tasked with identifying suitable city centre locations to accommodate bicycle stations as part of the Dublin City Bicycle Scheme Project.

The Dublin City Bicycle Scheme Project is managed and co-ordinated by Dublin City Council in consultation with the company JCDecaux. JCDecaux are providing Dublin City Council with the bicycle station infrastructure as part of a contract agreement which includes, in addition to corporate advertising structures subject to the planning process, use of panels for civic information purposes and a way finding signage scheme for the city centre. The Bicycle Scheme is the largest of the civic projects agreed and its implementation is a current priority.

The purpose of this report is to initiate a process of in depth consultation on city centre sites which could be considered viable and suitable to accommodate a bicycle station. This report is the first publication of the working group. It is not a final list of sites selected or indeed a completed list of the only sites under consideration. It is published and circulated to initiate the consultation phase on this project and provide an example of the range of possible sites considered.

The aim of this report is to generate thought and discussion on how a Bicycle Scheme network can best serve the city centre in terms of connecting places of interest, connecting public transport stations with places of work, connecting city centre neighbourhoods with the wider city centre etc. The sites presented in this report are an initial list arising from the working group's analysis to date.

## Character of the Dublin City Bicycle Scheme

It is important to note at this stage of the project that whilst there are many potential suitable sites across the city, the bicycle scheme network currently proposed provides 450 bicycles spread over a possible total of 50 bicycle stations. This will largely determine the spatial extent of the network. The distribution would equate to on average nine bicycles per station. The system's design may however warrant a greater concentration of bicycles at key locations such as Heuston and Connolly Stations. The final network design may result in a greater concentration of bicycles at key locations with less than 50 bicycle stations overall. The purpose of this consultation phase is to determine such matters and arrive at a network design which reflects the character of the city centre, its key spaces and key areas of activity.

An important design consideration for the network is the regular spacing of bicycle stations. Case studies in other European cities have proven that a greater frequency of bicycle stations within a concentrated area proves more successful with users of the system when operational. This occurs because (i) on renting a bicycle, if the station closest to the cyclist has been emptied of available bicycles during peak periods, there are other station options within close walking distance to rent a bicycle (ii) if returning a bicycle to a station where the it has become full owing to a high rate of bicycle return (again likely at the destination points during peak periods) another station facility close by facilitates a return (iii) if a cyclists takes a bicycle and wishes to exit the system at an early stage, there are bicycle station options in visible locations and close at hand to facilitate a return (iv) for the purposes of monitoring, maintaining and redistributing bicycles daily on the system by a maintenance crew, a closer concentration enables bicycles to be redistributed and repaired if necessary at regular intervals.

For these operative reasons a spacing of one station within every c300 meters is a requirement of the system design. There may be flexibility in some instances but long distances between destination points should in general be avoided. Moving between origin and destination points may require intermediate stations therefore to support the routes chosen.

With 450 bicycles to distribute and providing stations at regular frequency, it will not be possible to widen the spatial extent of the system significantly beyond the city centre. The concentration is likely to be restricted to the area between the Royal Canal (northern extent) and Grand Canal (southern extent). It should be noted that whilst the initial system of 450 bicycle units may not extend spatially to include suburban areas and the city area beyond the canals, there is considerable scope that the system is one which can be expanded upon and grow over time to cover such areas. A successful design, implementation and use of the system as initially planned will improve the chances of a wider spread of the system in the longer term.

A Phase II expansion of the system is therefore envisaged subject to the success of the initial Phase I which is the subject of this current analysis. A Phase II expansion should be able to integrate a concentrated system of bicycle stations within the city centre to the inner suburbs, village centres and the various framework development areas in the wider city area. A Phase II expansion would also allow parts of the city which are subject to public transport works to be re-visited with possibilities to place additional stations within the city centre. For example locations such as St Stephens Green North, streets where a surface rail alignment is proposed and areas of current construction could be re-examined for additional locations.

## Typical Design of a Bicycle Station

A bicycle station design requires one automated ticket terminal accompanied by a row of bicycle parking bollards (bornettes) onto which a bicycle unit is attached. The stations can be arranged with rows of bornettes (essentially docking points for the bicycle) positioned parallel with the footpath. Typically the bicycle is secured at right angles to the footpath with the ticket terminal located either at the centre of the row or at either end of it. To allow bicycles to be returned there are usually more bornettes provided at each station than bicycles (a typical design would provide 15 bornettes with an occupancy of nine bicycles at the station). The design of the station can vary to the condition of the site ( for example bornettes can be positioned in multiple rows, be distributed between existing on street features such as trees etc.

The bicycle is locked to the bornette by a magnetic coupling system. A slot on the bornette couples with a projecting plate on the bicycle frame. The equipment, both the bicycle frames and bornettes, are designed to be robust and hardwearing to withstand damage as best possible. The equipment is designed to be as vandal proof as possible but obviously cannot be totally impervious to vandal damage. The daily management of the system ensures regular visits to stations by maintenance personnel to repair any damages and ensure that equipment in good working order is presented to the public. The positioning of stations is equally cognisant of security. Station locations should typically be located in prominent areas and/or areas of high pedestrian footfall for passive surveillance.

To accommodate space for the bicycle stations within the city centre streets, options will involve installation on either the street surface parallel with the public footpath or on wider areas of pavement. Locations on the street will necessitate removal of on street car parking. A station could occupy the equivalent space occupied by three to five car-parking bays (approximate). The exact space required would depend on factors such as the amount of bicycles intended for the location, area of road space available in addition to parking such as double yellow lines or wide pavement area etc. Whilst footpath locations could be considered where wide paving areas exist or where space on the street is restricted, the majority of locations are likely to be chosen as on street location solutions.

Images of bicycle scheme equipment in Paris and Seville are provided further below in this report.

## Renting a Bicycle and Maintaining the System

The bicycle scheme operates on a rental basis whereby a bicycle is released to the user through the station terminal from either (i) entering membership card details if a customer signs up for membership of the scheme (similar to regular users of the Luas who can avail of

a smart card facility) or (ii) entering credit card details to release a bicycle for use. The system does not operate with coin payment option.

A ticket terminal operates with a central monitor which can provide such details as the bicycles available to take out at the station, the next nearest stations to the location, the availability of bicycles there and the overall spread of stations on the network to facilitate route planning. Information is submitted at the terminal by using side buttons and a keypad panel (similar to the side button panels on an ATM machine) as opposed to touch screen computers. The screen options allow members to enter card details (a smart card sensor may be provided) or alternatively allow one-day users to enter credit card details. Becoming a member of the scheme will ensure security is provided should a bicycle unit not be returned when hired by the member. A one-day user will also be required to give security (taken as a reading of the credit card) in the event of a bicycle not being returned.

The model for Dublin has one in three terminals with credit card facilities. Annual subscribers or people who have already subscribed at a credit card terminal can use all terminals on the system. When mapping the distribution network, terminals with credit card reading capability can be identified. The location of stations should also ensure that a general area is serviced with a credit card reading terminal in addition to other terminals.

The terminals proposed for Dublin dispense a ticket at each station. The terminal design will have one side for screen and keypad display. The terminal design may include a map panel on the opposite side showing the cycle station distribution.

The operative terms and conditions are a matter of design agreement and can be tailored to Dublin City's requirements. The pricing of the system's use (hire price per hour etc) is also a matter to be determined at the design stage. Precedents in other European cities allow free rental for a certain initial time period to encourage use of the system. Again the details of free rental over a certain time period and other incentives to encourage use of the scheme can be tailored to Dublin City. The consultation phase of the project will explore such issues.

As stated above, a bicycle system requires daily management and maintenance. As part of the provision of a bicycle scheme, JCDecaux provides the management and maintenance facilities including its equipment and staffing. It is an important element of the overall scheme and critical to the success of the network. The management and maintenance system provides small-scale service vehicles which visit sites, redistribute bicycles throughout the day and carry out cleaning, repairs and removal of damaged equipment. A central operation station is required to co-ordinate the system, monitor its electronic information relaying and provide back up assistance to users of the scheme.

In choosing locations, due regard must be had for the ability of the location to be serviced by maintenance staff and for safe vehicle pull in to redistribute bicycles.

## Installation Requirements

Bicycle station infrastructure may be perceived as light infrastructure which is mobile in terms of its possible locations and flexible with respect to relocation. In reality however the infrastructure is highly sophisticated with each bornette electronically connected with the ticket terminal and the ticket terminal in turn relaying information to other stations and a central operations control centre. The equipment requires foundations with precise and level positioning of bornettes. The installation of the infrastructure has to ensure that such foundations do not disrupt existing underground services. As a result, the site selection phase requires full scoping of the potential locations with respect to the site suitability for (i) electrical connection and (ii) avoidance of disruption to underground services. The design phase needs to be informed therefore by site survey results.

In considering locations at this stage therefore, due regard should be given to the fact that not all sites may be feasible due to underground services. Future editions of the draft progress report and consultations will inform on the site survey progress and findings.

## Presentation of Site Options Within this Report

To arrive at a final short list of best sites, it is intended to present a long list of potential sites for the purposes of examination. Sites that may not be feasible can be eliminated from the list with a rationale documented as to why the sites were not considered viable or suitable to be part of the network. The information provided within the report is presented with a fact sheet(s) per site. Each site is presented with the street name and/or associated place of interest, a 1:1000 scale map showing the location (note that the general location is presented at this stage, site specific pin pointing is too early at this stage of the programme) and two images of the location. The rear of the fact sheet sets out a rationale as to why the location could be considered suitable under the headings of:

- ***2005-2011 Development Plan Zoning Objective***
- ***DED and 2006 Population Level***
- ***Framework Plans/ Local Area Plans or similar initiatives for the area.***
- ***Transport 21 Proposals for the Area***
- ***Location with respect to Strategic Cycle Network or future cycle route proposals.***
- ***Existing Road Designation and Existing Flow of Traffic***
- ***Significant Developments Proposed close to site.***
-

A concluding justification summary is provided for each site. A space is provided below each justification summary for the readers own notes and feedback.

There are two maps included within this report indicating a wider range of potential sites reviewed internally by the working group (Map 1) and the locations presented within this report (Map 2). It is seen from the two maps that a larger list of sites was refined to reach the current list of 122 possible locations. Sites considered at an earlier stage but eliminated are colour coded on Map 1. Reasons for omitting these locations included access issues for servicing a station and possible disruption owing to Transport 21 public transport works at the location.

The alignment of existing and future public transport corridors are shown as indicative lines. Routes of future public transport corridors may require significant changes at street/footpath level. It is important that the network of bicycle stations are not significantly disrupted or require relocation at a time of public transport construction works in the medium to longer term (applies to Dart underground stations, Luas lines and stations, Metro stations etc).

In addition to seeking comment on locations presented in this report, it is hoped that local knowledge of various parts of the city by other Council staff through their work will prompt suggestions on locations perhaps not included or considered to date. A second edition of this report after this first consultation will produce a refined list of potential locations and may include newly identified locations for further review and comment.

## Branding and Naming of the Bicycle Scheme

The consultation stages at a later date will include consideration of an identity, logo and brand name for the system. For now, the project is simply referred to as the Dublin City Bicycle Scheme.

## Providing Feedback and Comment

The working group would greatly welcome comments and views on the bicycle scheme and in particular the location suggestions (presented or not included and to be considered). Comments and suggestions on the operation stages of the scheme would also be welcomed.

The working group hope that the selection and short-listing of best sites is achieved with a broad consensus.

The working group would encourage feedback and comment as soon as possible to inform our ongoing work. A suggested expiry for initial comments is the week ending **Friday 30th May 2008.** There will be subsequent consultations after this period and parallel presentations and workshop meetings to discuss the scheme and progress on site selection.

Comments and feedback can be provided by emailing or submitting suggestions to the following members of the working group:

Robert Fennelly Planning and Economic Development Department, Block 4 Floor 3. Email rob.fennelly@dublincity.ie Tel: 222 3483

Edel Kelly Roads and Traffic Department Planning Section, Block 2 Floor 5. Email edel.Kelly@dublincity.ie. Tel 222 2132.

Niall Gormley Roads and Traffic Department Cycle Network Section, Block 2 Floor 5. Email niall.gormley@dublincity.ie. Tel 222 3829.

It is preferential that comments are made in the form of an email or memo so the working group can compile the list of suggestions for analysis. We intend holding presentations and workshops on this report over the coming weeks. Feedback can be given at these meetings if this proves more convenient. Suggested dates for meetings will be circulated to the various Council departments over the coming weeks.

**Timescales Going Forward**

The key timescales moving forward with this project are June 2008 to conclude on the best location suggestions and complete the plan phase of the system. September 2008 to launch the implementation stages of the system with a significant public relations exercise in promoting the system and encouraging its use. Demonstrations are proposed to coincide with Car Free Week in September 2008. Early Spring 2009 is targeted as the completion of construction and implementation stages with a fully operational bicycle network installed and operational at this time.

Images of Bicycle Scheme Networks (Paris and Seville).

*Image 1: Bicycles attached to bornettes on a side street.*

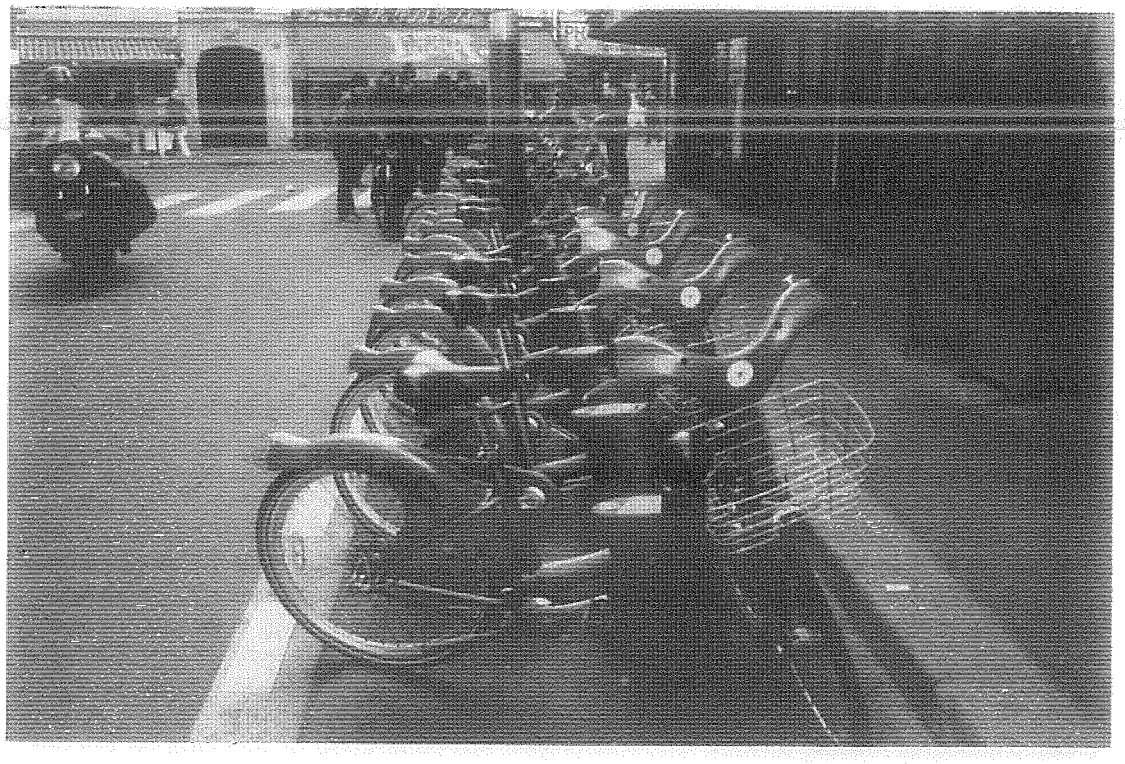


***Image 2: Further view showing the integration of the equipment on street.***

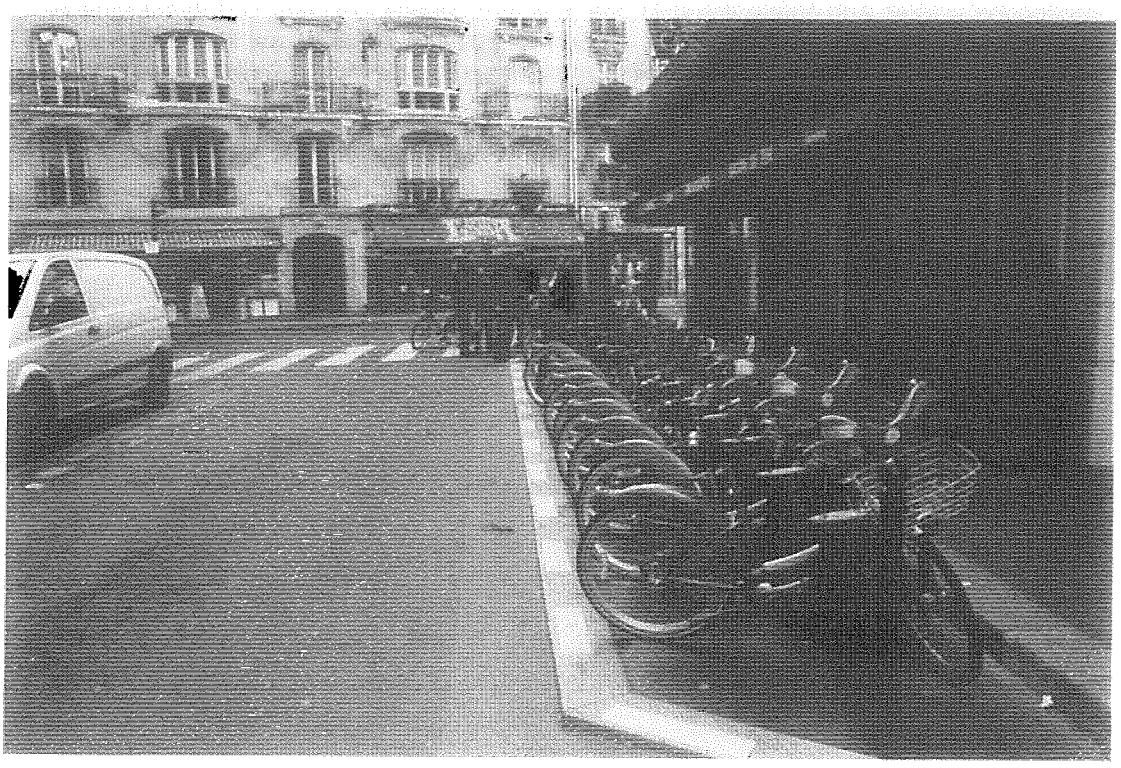


*Image 3: A city centre station with full occupancy (an important destination location for users of the scheme). The ticket terminal is on the footpath beside the bicycles.*

***Image 4: A bicycle station with high levels of bicycle departures by contrast to Image 3. This location is close to a rail station entrance. A large number of bicycles are rented during morning peaks from public transport locations to the city centre employment areas.***

*Image 5 and 6: View of the bicycle parking docking station (a bornette) and a view of its locking mechanism.*

*Image 7: View of the rear panel on a ticket terminal. The terminals in this example are double fronted and can provide a map on one side (as in this view) showing the location of other stations locally.*

***Images 8 and 9: Examples of maintenance equipment vehicles on the streets servicing the stations and redistributing bicycles.***

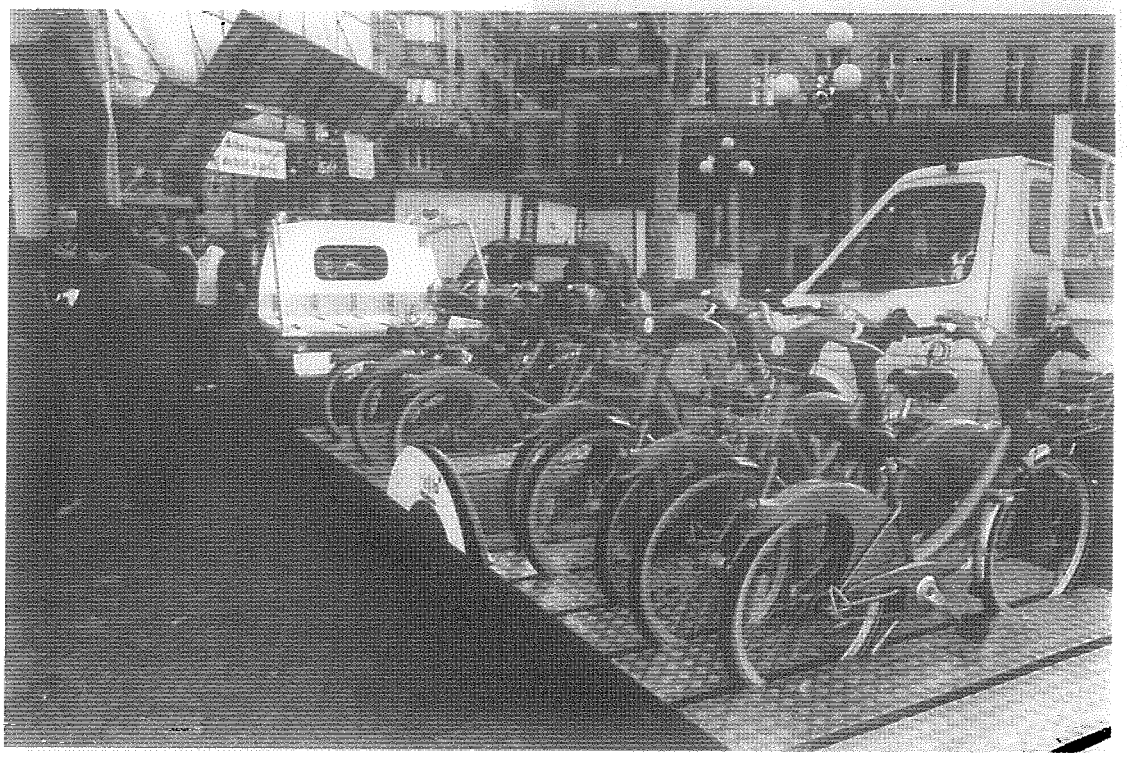
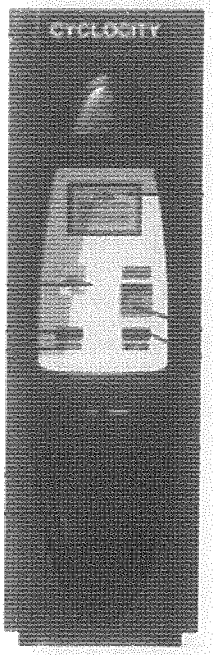



*Image 10 and 11: Examples of a station under construction on a paved area. In this particular location, provision of a large number of bicycles was considered warranted owing to the high population levels in this particular ward and to encourage cycle movements from it to the city centre.*

Image 12: Example of bicycle unit design intended for the Dublin City scheme.

**Image 13: Example of ticket machine terminal and parking bornette designs as intended for the Dublin City scheme. The design and colour scheme of this particular unit is similar to the Seville Bicycle Scheme (Sevici). The Dublin City scheme will use similar equipment.**



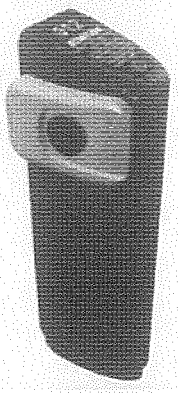



*Image 14: Photographs of a ticket terminal (front and rear display) in use in Seville.*

**Image 15: Image of a terminal display area from the Seville scheme.**

Image 16: A bicycle locked into its parking bornette, Seville example.

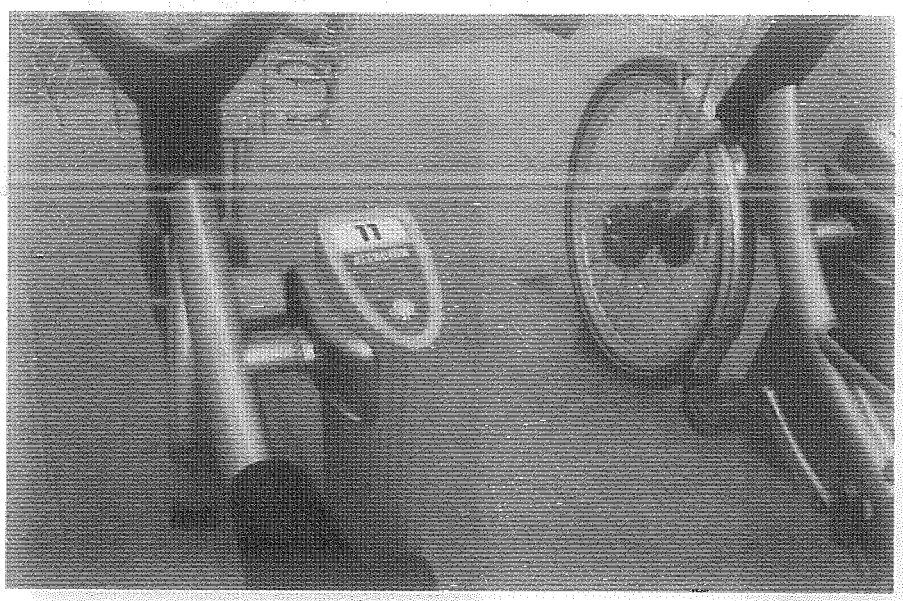


Image 17: View of a bicycle station Seville.