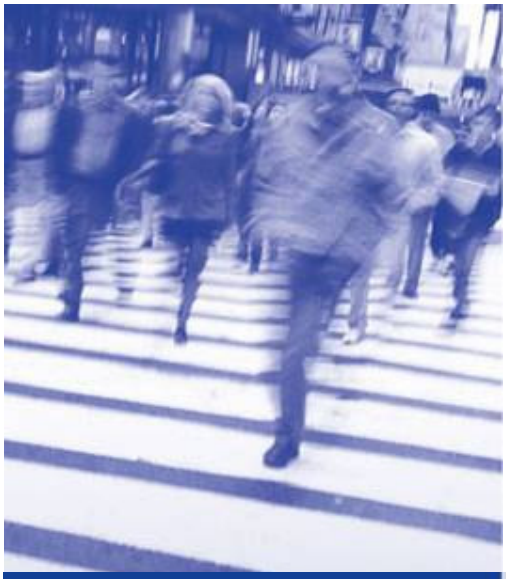

CiViTAS
Cleaner and better transport in cities

ARCHIMEDES
AALBORG • BRIGHTON & HOVE • DONOSTIA - SAN SEBASTIÁN • IAŞI • MONZA • ÚSTÍ NAD LABEM

Donostia – San Sebastian

R57.1 Study of Vertical Transport in Donostia – San Sebastian

Donostia – San Sebastian

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1. Introduction

1.1 Background CIVITAS

CIVITAS - cleaner and better transport in cities - stands for CIty-VITAlity-Sustainability. With the CIVITAS Initiative, the EC aims to generate a decisive breakthrough by supporting and evaluating the implementation of ambitious integrated sustainable urban transport strategies that should make a real difference for the welfare of the European citizen.

CIVITAS I started in early 2002 (within the 5th Framework Research Programme);
CIVITAS II started in early 2005 (within the 6th Framework Research Programme) and
CIVITAS PLUS started in late 2008 (within the 7th Framework Research Programme).

The objective of CIVITAS-Plus is to test and increase the understanding of the frameworks, processes and packaging required to successfully introduce bold, integrated and innovative strategies for clean and sustainable urban transport that address concerns related to energy-efficiency, transport policy and road safety, alternative fuels and the environment.

Within CIVITAS I (2002-2006) there were 19 cities clustered in 4 demonstration projects, within CIVITAS II (2005-2009) 17 cities in 4 demonstration projects, whilst within CIVITAS PLUS (2008-2012) 25 cities in 5 demonstration projects are taking part. These demonstration cities all over Europe are funded by the European Commission.

Objectives:

- to promote and implement sustainable, clean and (energy) efficient urban transport measures
- to implement integrated packages of technology and policy measures in the field of energy and transport in 8 categories of measures
- to build up critical mass and markets for innovation

Horizontal projects support the CIVITAS demonstration projects & cities by :

- Cross-site evaluation and Europe wide dissemination in co-operation with the demonstration projects
- The organisation of the annual meeting of CIVITAS Forum members
- Providing the Secretariat for the Political Advisory Committee (PAC)
- Development of policy recommendations for a long-term multiplier effect of CIVITAS

Key elements of CIVITAS

- CIVITAS is co-ordinated by cities: it is a programme “of cities for cities”
- Cities are in the heart of local public private partnerships
- Political commitment is a basic requirement
- Cities are living ‘Laboratories' for learning and evaluating

1.2 Background ARCHIMEDES

ARCHIMEDES is an integrating project, bringing together 6 European cities to address problems and opportunities for creating environmentally sustainable, safe and energy efficient transport systems in medium sized urban areas.

The objective of ARCHIMEDES is to introduce innovative, integrated and ambitious strategies for clean, energy-efficient, sustainable urban transport to achieve significant impacts in the policy fields of energy, transport, and environmental sustainability. An ambitious blend of policy tools and measures will increase energy-efficiency in transport, provide safer and more convenient travel for all, using a higher share of clean engine technology and fuels, resulting in an enhanced urban environment (including reduced noise and air pollution). Visible and measurable impacts will result from significantly sized measures in specific innovation areas. Demonstrations of innovative transport technologies, policy measures and partnership working, combined with targeted research, will verify the best frameworks, processes and packaging required to successfully transfer the strategies to other cities.

1.3 Participant Cities

The ARCHIMEDES project focuses on activities in specific innovation areas of each city, known as the ARCHIMEDES corridor or zone (depending on shape and geography). These innovation areas extend to the peri-urban fringe and the administrative boundaries of regional authorities and neighbouring administrations.

The two Learning cities, to which experience and best-practice will be transferred, are Monza (Italy) and Ústí nad Labem (Czech Republic). The strategy for the project is to ensure that the tools and measures developed have the widest application throughout Europe, tested via the Learning Cities' activities and interaction with the Lead City partners.

1.3.1 Leading City Innovation Areas

The four Leading cities in the ARCHIMEDES project are:

- Aalborg (Denmark);
- Brighton & Hove (UK);
- Donostia-San Sebastián (Spain); and
- Iasi (Romania).

Together the Lead Cities in ARCHIMEDES cover different geographic parts of Europe. They have the full support of the relevant political representatives for the project, and are well able to implement the innovative range of demonstration activities.

The Lead Cities are joined in their local projects by a small number of key partners that show a high level of commitment to the project objectives of energy-efficient urban transportation. In all cases the public transport company features as a partner in the proposed project.

2. Donostia – San Sebastian

The city of Donostia -San Sebastián overlooks the sea and, with a bit more than 180,000 inhabitants, keeps a human scale. Some people consider the balanced combination of small mountains, manor buildings, and sea as the setting for one of the most beautiful cities in the world. We have a tradition in favouring pedestrians, cyclists and public transport.

For about twenty years, the city has been enforcing a strong integrated policy in favour of pedestrians, bicycles and public transport. Considering walking and cycling as modes of transport has led to the building of a non-motorised transport network for promoting this type of mobility around the city.

Likewise, the city has extended its network of bus lanes. The city holds one of the higher bus -riding rates, with around 150 trips per person per year.

2.1 Objectives in CIVITAS

The CIVITAS project is a perfect opportunity to expand our Sustainabile Urban Transport Strategy. With the package of CIVITAS measures Donostia-San Sebstián wants to:

- Increase the number of public transport users
- Decrease the number of cars entering in the city centre
- Increase the use of the bicycle as a normal mode of transport
- Maintain the high modal share of walking
- Reduce the number of fatal accidents and accidents with heavy injuries
- Reduce the use of fossil fuels in public transport.

3. Background to the Deliverable

This deliverable refers to Measure number 57, Vertical Transport in Donsotia -San Sebastian.

This report presents a review and evaluation of the vertical transport systems (lifts, funiculars, escalators and ramps) already operational and under construction in the city. The report also presents a study of the needs and possibilities for new implementation of vertical transport systems, to further facilitate and improve the accessibility and connection between neighbourhoods located in the high and low areas of the city.

3.1 Summary Description of the Task

As part of Task 11.6.2: 'Vertical Transport', the city of Donostia – San Sebastian has carried out an evaluation of existing public vertical transport systems and it will use the study new when considering the need for, and the location of, future vertical transport in the city, expanding the policy of vertical transport in the city to support cycling and walking inside and towards the city centre.

4. STUDY OF VERTICAL TRANSPORT IN DONOSTIA – SAN SEBASTIAN

4.1 Introduction

4.1.1 Background and Purpose of the Study (STUDY POINT 1)

Technological, social and economical changes in recent years have created opportunities for the development and construction of new means of transport, including Vertical Transport Systems.

This new Vertical Transport Systems should be understood as complementary to other mobility strategies - for pedestrians and cyclists - and public transport that are already in place. They could furthermore be considered in terms of collective public transport that complements existing bus and train services.

The objective of this report is to study and evaluate the Vertical Transport Systems (such as lifts, escalators and ramps) that already exist in the city of San Sebastian and to identify possibilities for the implementation and further development of Vertical Transport Systems that could interconnect areas of the city that are located at different heights. The Vertical Transport Systems will not only improve the access to existing infrastructures, but it will also interconnect them through the creation of new routes for pedestrian and cyclists.

It is not the aim of this report to describe in detail and find solutions to the existing problems, but to locate and describe the problems to inform and help further develop the improvement plan.

4.1.2 Location and Field Features (STUDY POINT 2)

This study has been developed in the city of San Sebastian, a city covering a surface of 6,000 hectares, of which 34% is urban and 66% is rural.

San Sebastian is a city surrounded by mountains and therefore some of its land is located in low areas of land, and others at much higher altitude. The main public transport systems and pedestrian and cyclist facilities are located in the low and flat areas and therefore this report focuses on the high areas for further development. The study will focus on the 10 most populated neighbourhoods in the city. Some of these neighbourhoods are the ones that have the biggest vertical mobility problems and therefore the ones that offer bigger possibilities for improvement.

Furthermore, this report will look into possible improvements in the flat areas of the city in which both pedestrian and cycling infrastructures get disrupted by the configuration of the land.

4.2 Description of the Work Done

4.2.1 Vertical Transport Systems (STUDY POINT 3)

The different types of vertical transport systems in the city that have been studied are arranged in relation to the specific needs and characteristics of the areas.

The table below shows the characteristics that are considered when evaluating the installation of new vertical transport systems.

COMPARATIVE TABLE FOR LIFTS, ESCALATORS or RAMPS		
CONCEPT	**LIFTS**	**ESCALATORS AND MECHANICAL RAMPS**
Installation cost	Relatively cheap, depending on the external finish	Relatively expensive
Maintenance cost	Relatively cheap	Relatively expensive
Energy consumption	Low	Medium
Slopes where installed	Very steep slopes, close to verticality. Steep slopes if combined with footbridges, and medium slopes for inclined lifts.	Medium (27 – 35º) for escalators and small (6-12º) for ramps.
Height difference overcome	Lift cover drops ranging from 8 – 30 metres, a landing and emergency exit must be provided every 11 metres.	Each flight or escalator can overcome height differences from 6 to 10 metres,
Carrying capacity	480 persons/hour/direction	4500-11000 person/hour/direction
Accessibility	Complete	Limitation for wheelchairs, prams, elderly people, and persons using a walking stick.
Attractiveness for user	Acceptable so long as there is at least one glass window providing external visibility	Very high

4.2.2 Present State of the Different Elements of Vertical Transport Systems (STUDY POINT 4)

An inventory containing all the information about the vertical transport systems in the city has been created. Photographs, characteristics of the terrain and existing data regarding the already existing vertical transport systems, have been included in this inventory.

See below the summary table of the existing vertical transport systems in San Sebastián.

LOCATION	**TYPE**	**OPENED**	**HEIGHT DIFERENCE**
Sagües	Lift	2002	11 m.
Mundaiz	Lift	2003	10 m.
Larratxo	2 Lifts	2007	35 m.
Larratxo	3 escalators	2007	21 m.
San Luis	Lift	2007	8 m.
Martín Santos	Lift	2008	23 m.
San Roque	4 escalators	2008	35 m.
Aquarium	Lift	2008	13 m.
Buenavista	2 Lift	Sept 2009	23 m.

4.2.3 Criteria for Assessing the Introduction of Public Vertical Transport Systems in a District of the City (STUDY POINT 5)

For the assessment of the introduction of new public vertical transport systems, each neighbourhood has been assessed under the following criteria:

A. Population served and demographic characteristics.
B. Travels to and from the district concerned (distribution among the different means of transport)
C. Pedestrian and cycle connectivity
D. Public transport alternatives
E. Demographic characteristics
F. Topographic features and their relation to the buildings and activities.

4.2.4 Study of the Different Areas and Evaluation of the Priority of Installation (STUDY POINT 6)

This study has looked into ten neighbourhoods, which were selected due to their centrality, high population, unfavourable orography and the existence of discontinuities on the pedestrian and cycling paths.

This phase's two main aims were to plan new cycling and pedestrian paths located on high and low terrains of the city, and to improve the mobility of citizens between non easily accessible areas of the city with the aim of facilitating a further social development of this areas.

4.2.5 Intervention Proposals (STUDY POINT 7)

This table shows the six places (included in ARCHIMEDES Task 6.7) proposed for the installation of vertical transport systems and their updated status:

LOCATION	TYPE	BUDJET	HEIGHT DIF	STATUS	END WORKS
AITZGORRI – AVANC	2 Lifts	1.555.609 €	40 m.	Under construction	December 2009
MONTPELIER	2 Lift	200.000 €	15 m.	Under construction	December 2010
ALDUNAENE	Lift	350.000	18 m.	Under construction	October 2009
AZKUENE - GOMISTE	Lift	491.045 €	20 m.	Out to tender	2010
RUTILITA	Lift	226.531 €	7 m.	Under construction	November 2009
LIZARDI	5 escalators	2.739.688 €	27m.	Approval	2010/2011

This table shows the proposals that need further consideration:

LOCATION	TYPE
ALDAKOENEA	Lift
BIDEBIETA	Lift
LOIOLA – INTXAURRONDO	Lift
ESTACIÓN DE ATOCHA	Lift
AIETE – MORLANS	Lift
AVANCO – AIETE	Lift
AUNITZ –AKULAR	Lift

4.3 Conclusions

The Vertical Transport Systems already in use in the city have created opportunities for the development of pedestrian and cycling infrastructures that connect areas in different altitudes of land therefore reducing the use of private transport in the city.

Most of the pedestrian and cycling infrastructures in the city centre are already linked and therefore this report focuses on the lifts and ramps that are located in neighbourhoods situated at different land heights. The development and implementation of Vertical Transport Systems, in conjunction with the infrastructure already existing in the city, have encouraged citizens to walk or cycle to connect locations within the city like for example the bus and Renfe train stations.

The main output of the study is the decision to build five new lifts and 5 escalators that will create new opportunities for different neighbourhoods. Once these elements are in place it will become possible to measure how walking, cycling and private transport movements changes because of the use of the Vertical Transport Systems.

The proposed improvements on Vertical Transport Systems in those neighbourhoods will further link the pedestrian and cycling infrastructures in the centre of town with the ones in the rest of the neighbourhoods.

The improvement of the Vertical Transport Systems will additionally improve access to the areas that will create new possibilities for social development allowing people to live in areas that were not easily accessible beforehand.

4.4 Problems Identified

No problems have been detected at this stage.

4.5 Risks and Mitigating Activities

The introduction of elevators and escalators is entering a phase during which citizens could make complaints against the location and manner of the intervention. The introduction could be delayed because of the complaints.

4.6 Future Plans

ADS's aim for the next 12 months is to use the Vertical Transport Study Version 1, updating the status of each project.

As part of this the vertical transport projects identified as "in study" will be reanalysed.

New zones to locate vertical transport elements will be identified and included in the Vertical Study Version 2.