BEST Lisbon Summer Course 2015

Creative Engineering and Design Thinking Boot Camp: *becoming a modern tourist in old Lisbon*

Final document with selected groups and themes

Students to be involved in the 2015 BEST Design Thinking Boot Camp will design solutions for real **urban challenges** emerging in Lisbon. Students will be organized in **teams of 3 to 4 students**, bringing together a wide range of science, engineering, management, urban planning and architecture skills. **Each team will address a specific challenge (as listed below)**, by observing current crowds of tourists over two weeks in August in old Lisbon and by designing human-centred systems and new technical solutions to help promoting a new culture of doing tourism in the digital world.

> *How to help current tourists to learn sustainable paths of making tourism? How to help old cities and their local citizens to improve quality-of-service, while preserving their local heritage?*

To answer these questions, the 2015 BEST Design Thinking Boot Camp will experience new learning paths for tourists, through *knowing, making and playing* in the fabric of the physical and digital worlds towards modern and sustainable cities.

The ultimate goal is to foster modern tourists in old urban systems, which involve multidisciplinary work with professionals from different backgrounds and are as much about the process, institutional design and mobilization, as about development of specific expertise and substantial theories. In contrast to traditional urban planning, more recent planning of innovative cities and regions focus on the participation, communication and interaction of the various stakeholders involved in the planning process, making use of advanced technical skills and design solutions.

Accordingly, the 2015 BEST Design Thinking Boot Camp has been planned in a way to allow students to experience a new framework of creative engineering and design thinking oriented to foster the use and application of new technologies and services by tourists. The goal is to tackle the ever critical issues of local mobility and sustainability, together with preserving local heritages and promoting local economic development.

Schedule:

1. Schedule for allocation of groups and challenges

08 July 2015: the Organizers will identify and predefine **teams**, in a way to bring together a wide range of skills and nationalities in each team.

15 July 2015: each team will vote on potential challenges to be addressed. A maximum of three challenges may be selected by each team.

20 July 2015: Teams will be notified by the Organizers about their specific Challenge to be addressed.

2. Schedule for group work, seminars and presentation of results

01 August 2015, Saturday: starting date and meeting in Lisbon.

- Meeting with BEST Lisbon coordination

03 August 2015, Monday:

- 10h-13h: Seminar 1 and initial discussion; venue: **CIUL, Council of Lisbon**
  - Presentation of Lisbon and related challenges for sustainable tourism:
    - **Manuel Heitor** (IST)
    - **Rita Castelo Branco** (CML)
    - **Tiago Farias** (IST)
    - **Rosália Vargas** (Ciencia Viva)
    - **Rita Prata** (CML, "Lisbon Walks")
    - **Patricia Baptista** (IST)
    - **Andre Pina** (IST)
  - Initial discussion of challenges by teams (3 min per team).
- 12h-18: Project work
- 18h-20h: Seminar 2 and Discussion; venue: **Pavilhão do Conhecimento**
  - Discussion of challenges with teams (3 min per team).
  - Seminar 2: **André Pina** and **Patrícia Baptista** (IST);

04 August 2015, Tuesday:

- until 17h: Project work
- 17h-19h: Seminar 3 and Discussion; venue: **Associação do Turismo de Lisboa, ATL**
  - **Vitor Costa**, ATL
  - **Tiago Farias** (IST)
  - Discussion of challenges with teams (3 min per team).

05 August 2015, Wednesday:

- until 17h: Project work
- 17h-20h: Seminar 4, Presentations and Discussion; venue: **Centro de Inovação da Mouraria**
  - **1st presentation by each team** - 10 min, oral;
  - Seminar 4: **Patricia Baptista** and **André Pina** (IST);

06 August 2015, Thursday:

- until 18h: Project work
- 18h-20h: Seminar 5 and Discussion; venue: **CIUL, Council of Lisbon**
    - Seminar 5: **Angelo Ramalho** (ALSTOM)

07 August 2015, Friday:

- until 17h: Project work
- 17h: trip to Colares, Sintra

08 August 2015, Saturday@Colares, Sintra

- 17h-24h: Presentation and Discussion with dinner
- **2nd presentation by each team - 15 min, oral**; venue: Colares

10 August 2015, Monday

- Project work

11 August 2015, Tuesday:

- until 18h: Project work
- 18h-20h: Presentations and Discussion; venue: CIUL
- **3rd presentation by each team - 15 min**, **oral and written draft paper** (3 pages);

12 August 2015, Wednesday

- Project work

13 August 2015, Thursday:

- 11h-13h: Final Presentation and Discussion; venue: **Camara de Comércio de Lisboa**
- **Final presentation of team results (15 min, oral) and final written paper** (3 pages).

Lisbon Best Coordination

- Guilherme Farinha, guilherme.a.farinha@gmail.com
- David Vicente, dmvicente.pt@gmail.com
- Raquel Castanheira, raquel.soares.castanheira@gmail.com

Scientific Coordination and main Faculty involved:

- **Manuel Heitor**, Full Professor at IST and Director of IN+/LARSyS - Instituto Superior Técnico, Universidade de Lisboa, Portugal; contact: mheitor@ist.utl.pt ; http://in3.dem.ist.utl.pt/
  See at: http://in3.dem.ist.utl.pt/research_team.asp?TeamTipoID=1&TeamID=44

- **Tiago Farias**, Associate Professor at IST and Researcher at LAETA / IDMEC - Instituto Superior Técnico, Universidade de Lisboa, Portugal; contact: tiago.farias@tecnico.ulisboa.pt

- **Patrícia Baptista**, Postdoctoral Researcher at LAETA / IDMEC - Instituto Superior Técnico, Universidade de Lisboa, Portugal; contact: patricia.baptista@tecnico.ulisboa.pt

- **Andre Pina**, Postdoctoral Researcher at IN+/LARSyS - Instituto Superior Técnico, Universidade de Lisboa, Portugal; contact: andre.pina@ist.utl.pt ; http://in3.dem.ist.utl.pt/

Invited experts:

- **Rita Castelo Branco**, Council of Lisbon
- **Rosália Vargas**, Ciência Viva
- **Inês Oliveira**, Ciência Viva
- **Rita Prata** (CML, "Lisbon Walks")
- **Angelo Ramalho**, ALSTOM

Admnistrative Support:

- **Ana Marçal**, CIUL, Council of Lisbon

List of Challenges and groups

Challenges	Groups
A: in-Lisbon places of knowledge green path	**6:** "Name tbd"
B: in-Lisbon biodiversity green path	**3:** "Name tbd"
C: in-Lisbon green path for Tastes of the city	**7:** "Name tbd"
D: in-Lisbon green path for wandering the streets	**4:** "Name tbd"
E: out-of-Lisbon beaches green path for sur	**3:** "Name tbd"
F: Cultural Belém easy and green accessibility	**5:** "Name tbd"
G: Tourists exploring Culture Lisbon in the Lisbon metro and "last mile" electric mobility	**1:** "Name tbd"

Challenge A: in-Lisbon places of knowledge green path

Group 6: "Name tbd"
- Angel Lorente, alorente312@gmail.com
- Marco Cherubin, marco.cherubin@mail.polimi.it
- Ece Atil, ece.atil@gmail.com

Challenge: Design optimized mobility paths between several key places of knowledge and locations of cultural and leisure in the city of Lisbon in terms of: i) cost; iii) travel time; and iii) potential CO_2 and local pollutants emissions. At least two distinct paths should be identified, namely for periods of two and three days. It is required the use of different transportation modes, including forms of electric mobility (2, 3 or 4 wheels). An adequate title and marketing strategy should be identified, together with a proper implementation and diffusion strategy.

Background Information: Lisbon has several points of cultural and leisure interest that maybe connected through different transports (taxi, private car, bike, train, bus, metro, electric cars, etc). The information provided on how to get from one point to another is dispersed and, very often, unclear. The aim of this challenge is to improve/create systems to make tourists aware of the options in terms of three main variables, namely time, cost and emissions. Inspiration can be obtained from "**Ciência Viva Guide 3: In Lisbon, discovering science and technology – PLACES OF KNOWLEDEGE**"

Suggested methodology: The team should identify and select a set of 10 points of touristic/leisure interest to be visited in two or three days. Students should experience and evaluate different means of transportation to visit the ten attractions and design potential "green routes" optimizing the three pre-defined variables. Students are expected to develop optimized solutions in terms of cost, time and emission levels for several routes that may connect the selected points, creating a grid that will help the user to decide on options available.

Expected Deliverables:
- Presentation 1 (Aug 5): proposal of selected locations; initial proposal of routes; ideas for innovative solutions;
- Presentation 2 (Aug 8): selected locations; proposal of routes supported by data and detailed calculations; ideas for innovative solutions; initial idea of final product/presentation
- Presentation 3 (Aug 11): selected locations; improved routes supported by detailed data and improved calculations; improved selected ideas for innovative solutions; initial draft text (3 pages);
- Presentation 4 (Aug 13): selected locations; final routes supported by detailed data and improved calculations; final ideas for innovative solutions; final text (3 to 5 pages, with annexes, as adequate) and digital or paper dissemination material for tourists;

Materials:
- "Ciência Viva Guide 3: In Lisbon, discovering science and technology – PLACES OF KNOWLEDEGE"

- City map with main points of interest;
- Public transportation information (bus, train, metro);

Promoter: Ciência Viva
Main contact person: Inês Oliveira (ioliveira@cienciaviva.pt)

Tutor(s): David Vicente (david.vicente@BEST.eu.org), Guilherme Farinha (guilherme.farinha@BEST.eu.org) and Raquel Castanheira (raquel.castanheira@BEST.eu.org)

Challenge B: in-Lisbon biodiversity green path

Group 2: "Name tbd"
- Ioanna Kotsira, ioanna-dani@hotmail.com
- Georgios Blanas, blanas404@gmail.com
- Natalien Isenia, natalienisenia@live.com

Challenge: Design optimized mobility paths between various gardens in the city of Lisbon in terms of: i) cost; iii) travel time; and iii) potential CO_2 and local pollutants emissions. At least two distinct paths should be identified, namely for periods of two and three days. An adequate title and marketing strategy should be identified, together with a proper implementation and diffusion strategy.

Background Information: Lisbon has several gardens with great historical and cultural interest that maybe connected through different transports (taxi, private car, bike, train, bus, metro, electric cars, etc). The information provided on how to get from one point to another is dispersed and, very often, unclear. The aim of this challenge is to improve/create systems to make tourists aware of the options to visit several gardens in terms of three main variables, namely time, cost and emissions. Inspiration can be obtained from "**Ciência Viva Guide 2: In Lisbon, discovering science and technology – BIODIVERSITY IN THE CITY**".

Suggested methodology: The team should identify and select a set of gardens of touristic/leisure interest to be visited in two or three days. At least 10 different gardens should be selected. Students should experience and evaluate different means of transportation to visit the ten attractions and design potential "green routes" optimizing the three pre-defined variables. Students are expected to develop optimized solutions in terms of cost, time and emission levels for several routes that may connect the selected points, creating a grid that will help the user to decide on options available.

Expected Deliverables:
- Presentation 1 (Aug 5): proposal of selected locations; initial proposal of routes; ideas for innovative solutions;
- Presentation 2 (Aug 8): selected locations; proposal of routes supported by data and detailed calculations; ideas for innovative solutions; initial idea of final product/presentation
- Presentation 3 (Aug 11): selected locations; improved routes supported by detailed data and improved calculations; improved selected ideas for innovative solutions; initial draft text (3 pages);
- Presentation 4 (Aug 13): selected locations; final routes supported by detailed data and improved calculations; final ideas for innovative solutions; final text (3 to 5 pages, with annexes, as adequate) and digital or paper dissemination material for tourists;

Materials:
- "Ciência Viva Guide 2: In Lisbon, discovering science and technology – BIODIVERSITY IN THE CITY"
- City map with main points of interest;
- Public transportation information (bus, train, metro);

Promoter: Ciência Viva
Main contact person: Inês Oliveira (ioliveira@cienciaviva.pt)

Tutor(s): David Vicente (david.vicente@BEST.eu.org), Guilherme Farinha (guilherme.farinha@BEST.eu.org) and Raquel Castanheira (raquel.castanheira@BEST.eu.org)

Challenge C: in-Lisbon green path for Tastes of the city

Group 7: "Name tbd"

- Rok Hafner, rok.hafy@gmail.com
- Binasa Drndar, binasa.drndar@gmail.com
- Pieter Van Broekhoven, pieteryoshiro@gmail.com
- Christina von Dwingelo-Lütten, chrissy_vdl@web.de

Challenge: Design optimized mobility paths between 10 key locations **pastry and unique culinary** in the city of Lisbon in terms of: i) cost; iii) travel time; and iii) potential CO_2 and local pollutants emissions. At least two distinct paths should be identified, namely for periods of two and three days. An adequate title and marketing strategy should be identified, together with a proper implementation and diffusion strategy.

Background Information: Lisbon has several points of **pastry and unique culinary** that maybe connected through different transports (taxi, private car, bike, train, bus, metro, electric cars, etc). The information provided on how to get from one point to another is dispersed and, very often, unclear. The aim of this challenge is to improve/create systems to make tourists aware of the options to visit **pastry and unique culinary sites** in terms of three main variables, namely time, cost and emissions. Inspiration can be obtained from "**Ciência Viva Guide 4: In Lisbon, discovering science and technology – TASTES OF THE CITY**"

Suggested methodology: The team should identify and select a set of 10 **pastry and unique culinary** sites to be visited in two or three days. Students should experience and evaluate different means of transportation to visit the ten attractions and design potential "green routes" optimizing the three pre-defined variables. Students are expected to develop optimized solutions in terms of cost, time and emission levels for several routes that may connect the selected points, creating a grid that will help the user to decide on options available.

Expected Deliverables:

- Presentation 1 (Aug 5): proposal of selected locations; initial proposal of routes; ideas for innovative solutions;
- Presentation 2 (Aug 8): selected locations; proposal of routes supported by data and detailed calculations; ideas for innovative solutions; initial idea of final product/presentation
- Presentation 3 (Aug 11): selected locations; improved routes supported by detailed data and improved calculations; improved selected ideas for innovative solutions; initial draft text (3 pages);
- Presentation 4 (Aug 13): selected locations; final routes supported by detailed data and improved calculations; final ideas for innovative solutions; final text (3 to 5 pages, with annexes, as adequate) and digital or paper dissemination material for tourists;

Materials:

- Ciência Viva Guide 4: In Lisbon, discovering science and technology – TASTES OF THE CITY"
- City map with main points of interest;
- Public transportation information (bus, train, metro);

Promoter: Ciencia Viva, CML

Main contact person: Inês Oliveira (ioliveira@cienciaviva.pt), Rita Castel-branco (rita.castelbranco@cm-lisboa.pt)

Tutor(s): David Vicente (david.vicente@BEST.eu.org), Guilherme Farinha (guilherme.farinha@BEST.eu.org) and Raquel Castanheira (raquel.castanheira@BEST.eu.org)

Challenge D: in-Lisbon green path for wandering the streets

Group 4: "Name tbd"
- Madalina Manolache, madalina.manolache@architravel.ro
- Michele Galasso, galassomichele.galasso@gmail.com
- Borjana Bogatinoska, borjana95@gmail.com

Challenge: Design optimized mobility paths between several main cultural interest points in the city of Lisbon in terms of: i) cost; iii) travel time; and iii) potential CO_2 and local pollutants emissions. At least two distinct paths should be identified, namely for periods of two and three days. An adequate title and marketing strategy should be identified, together with a proper implementation and diffusion strategy.

Background Information: Lisbon has several historical streets of cultural interest that maybe connected through different transports (taxi, private car, bike, train, bus, metro, electric cars, etc). The information provided on how to get from one point to another is dispersed and, very often, unclear. The aim of this challenge is to improve/create systems to make tourists aware of the options to visit several water fountains in terms of three main variables, namely time, cost and emissions. Inspiration can be obtained from "**Ciência Viva Guide 1: In Lisbon, discovering science and technology – wandering the streets**".

Suggested methodology: The team should identify and select a set of several historical water fountains of cultural interest to be visited in two or three days. At least 10 different sites should be identified. Students should experience and evaluate different means of transportation to visit the ten attractions and design potential "green routes" optimizing the three pre-defined variables. Students are expected to develop optimized solutions in terms of cost, time and emission levels for several routes that may connect the selected points, creating a grid that will help the user to decide on options available.

Expected Deliverables:
- Presentation 1 (Aug 5): proposal of selected locations; initial proposal of routes; ideas for innovative solutions;
- Presentation 2 (Aug 8): selected locations; proposal of routes supported by data and detailed calculations; ideas for innovative solutions; initial idea of final product/presentation
- Presentation 3 (Aug 11): selected locations; improved routes supported by detailed data and improved calculations; improved selected ideas for innovative solutions; initial draft text (3 pages);
- Presentation 4 (Aug 13): selected locations; final routes supported by detailed data and improved calculations; final ideas for innovative solutions; final text (3 to 5 pages, with annexes, as adequate)

Materials:
- "Ciência Viva Guide 1: In Lisbon, discovering science and technology – wandering the streets"
- City map with main points of interest;

- Public transportation information (bus, train, metro);

Promoter: Ciencia Viva, CML
Main contact person: Inês Oliveira (ioliveira@cienciaviva.pt), Rita Castel-branco (rita.castelbranco@cm-lisboa.pt)

Tutor(s): David Vicente (david.vicente@BEST.eu.org), Guilherme Farinha (guilherme.farinha@BEST.eu.org) and Raquel Castanheira (raquel.castanheira@BEST.eu.org)

Challenge E: out-of-Lisbon beaches green path for surf

Group 3: "Name tbd"

- Natalia Pączko, natalia.paczko@gmail.com
- Beatriz Rincón Pozuelo, beabrp2@gmail.com
- Marko Lavrenčič, ma.lavrencic@gmail.com

Challenge: Design optimized mobility paths to get to key locations for surf in the surroundings of Lisbon in terms of: i) cost; iii) travel time; and iii) potential CO_2 and local pollutants emissions. At least two distinct paths should be identified, namely for periods of two and three days. An adequate title and marketing strategy should be identified, together with a proper implementation and diffusion strategy.

Background Information: Lisbon surroundings have several points for surfing that maybe connected through different transports (taxi, private car, bike, train, bus, metro, electric cars, etc). They include Costa da Caparica, Carcavelos, Guincho, Praia Grande, Praia Pequena, Ericeira, among many others in a range of 40 km. The information provided on how to get from one point to another is dispersed and, very often, unclear. The aim of this challenge is to improve/create systems to make tourists aware of the options to do surf in terms of three main variables, namely time, cost and emissions.

Suggested methodology: The team should identify and select a set of 10 points for doing surf to be visited in two or three days. Students should experience and evaluate different means of transportation to visit the ten surf locations and design potential "green routes" optimizing the three pre-defined variables. Students are expected to develop optimized solutions in terms of cost, time and emission levels for several routes that may connect the selected points, creating a grid that will help the user to decide on options available.

Expected Deliverables:

- Presentation 1 (Aug 5): proposal of selected locations; initial proposal of routes; ideas for innovative solutions;
- Presentation 2 (Aug 8): selected locations; proposal of routes supported by data and detailed calculations; ideas for innovative solutions; initial idea of final product/presentation
- Presentation 3 (Aug 11): selected locations; improved routes supported by detailed data and improved calculations; improved selected ideas for innovative solutions; initial draft text (3 pages);
- Presentation 4 (Aug 13): selected locations; final routes supported by detailed data and improved calculations; final ideas for innovative solutions; final text (3 to 5 pages, with annexes, as adequate)

Materials:

- City map with main points of interest;
- Public transportation information (bus, train, metro);

Promoter: "Comboios de Portugal" (Portuguese trains)

Main contact person: tbd, Comboios de Portugal (Mail:…; mobile:…)

Tutor(s): David Vicente (david.vicente@BEST.eu.org), Guilherme Farinha (guilherme.farinha@BEST.eu.org) and Raquel Castanheira (raquel.castanheira@BEST.eu.org)

Challenge F: Cultural Belém easy and green accessibility (Câmara Municipal de Lisboa)

Group 5: "Name tbd"

- **Kasia Waśniowska,** kasia.wasniowska@gmai.com
- **Antonis Vamiadakis,** vamiadakisantonis@yahoo.com
- **Iga Zjawin,** iga.zjawin@gmail.com

Challenge: Design optimized mobility paths in Belém in a way to guarantee easy access for tourists, including access for the elderly and tourists with limited mobility (e.g., using wheel chairs). An adequate title and marketing strategy should be identified, together with a proper implementation and diffusion strategy.

Background Information: Belém is a small area of Lisbon with several points of cultural interest. However, accessing those buildings and monuments and moving between them is a great challenge, especially for the elderly and people with reduced mobility. It is one of the busiest areas of Lisbon and perhaps the one that receives the highest number of tourists, covering all the historic district, from the Monastery of Jeronimos, the Belém Cultural Centre, the Coach Museum, in addition to green spaces and existing catering establishments on site. But when they want to move to the area that faces, by the river, they may only do so through an underpass that, beyond its ghastly and poor lighting aspect, not always provides the best conditions of hygiene and safety. The historic area of Belém needs to be rethought, looking for a solution that allows the direct connection of the entire surroundings from the Mosteiro dos Jeronimos to the Tagus river.

Suggested methodology: The students should visit the area and go to the several monuments in the surroundings. They should observe the flux of tourists and how they move within the area, as well as to interview people and become aware of existing problems and gather opinions regarding possible solutions. Students are expected to present a project of intervention to the area that will improve its accessibility and connection between monuments/gardens.

Expected Deliverables:

- Presentation 1 (Aug 5): proposal of selected locations; initial proposal of routes; ideas for innovative solutions;
- Presentation 2 (Aug 8): selected locations; proposal of routes supported by data and detailed calculations; ideas for innovative solutions; initial idea of final product/presentation
- Presentation 3 (Aug 11): selected locations; improved routes supported by detailed data and improved calculations; improved selected ideas for innovative solutions; initial draft text (3 pages);
- Presentation 4 (Aug 13): selected locations; final routes supported by detailed data and improved calculations; final ideas for innovative solutions; final text (3 to 5 pages, with annexes, as adequate)

Materials:

- City map with main points of interest;
- Public transportation information (bus, train, metro);

Promoter: CML
Main contact person: Diogo…, Sara …, CML

Tutor(s): David Vicente (david.vicente@BEST.eu.org), Guilherme Farinha (guilherme.farinha@BEST.eu.org) and Raquel Castanheira (raquel.castanheira@BEST.eu.org)

Challenge G: Tourists exploring Culture Lisbon in the Lisbon metro and "last mile" electric mobility

Group 1: "Name tbd"

- Marianna Coulentianos, marianna.coulentianos@ensam.eu
- György Csadó, gyurka00@gmail.com
- David Peterson, davpete@student.chalmers.se

Challenge: Design optimized mobility paths that maximize the way tourist may use the Lisbon metro to visit key places of culture in the city of Lisbon making additional paths for "last mile" electric mobility, around selected metro stations. The analysis should include an optimization strategy and in terms of: i) maximum places to be visited by metro; ii) installation in a few selected metro stations of stations equipped with forms of electric mobility (2, 3 and 4 wheels); iii) cost. Distinct paths should be identified, namely for periods of two and three days. An adequate title and marketing strategy should be identified, together with a proper implementation and diffusion strategy.

Background Information: Lisbon has several points of cultural interest that maybe connected through different transports (taxi, private car, bike, train, bus, metro, electric cars, etc). The information provided on how to get from one point to another is dispersed and, very often, unclear. The aim of this challenge is maximize the way tourist may use the Lisbon metro to visit key places of culture in the city of Lisbon. It is possible to plan the installation, in a few selected metro stations, of stations equipped with forms of electric mobility (2, 3 and 4 wheels).

Suggested methodology: The team should identify and select a set of 20 points of cultural interest to be visited in two or three days and optimize visiting paths making use of the Lisbon metro. Students should experience and evaluate the use of the Lisbon metro to visit the 20 attractions and design potential stations equipped with forms of electric mobility (2, 3 and 4 wheels) to be installed in a few selected metro stations. Students are expected to develop optimized solutions in terms of cost and feasibility.

Expected Deliverables:

- Presentation 1 (Aug 5): proposal of selected locations; initial proposal of routes; ideas for innovative solutions;
- Presentation 2 (Aug 8): selected locations; proposal of routes supported by data and detailed calculations; ideas for innovative solutions; initial idea of final product/presentation
- Presentation 3 (Aug 11): selected locations; improved routes supported by detailed data and improved calculations; improved selected ideas for innovative solutions; initial draft text (3 pages);
- Presentation 4 (Aug 13): selected locations; final routes supported by detailed data and improved calculations; final ideas for innovative solutions; final text (3 to 5 pages, with annexes, as adequate)

Materials:

- Map of the metropolitan network;
- Documentation on the equipment currently in used by Lisbon Metropolitan;

- "Ciência Viva Guide 3: In Lisbon, discovering science and technology – PLACES OF KNOWLEDEGE"
- City map with main points of interest;
- Public transportation information (bus, train, metro);

Promoter: Transportes de Lisboa; **Main contact person**: tbd

Tutor(s): David Vicente (david.vicente@BEST.eu.org), Guilherme Farinha (guilherme.farinha@BEST.eu.org) and Raquel Castanheira (raquel.castanheira@BEST.eu.org)

References

Belter, T., Harten, M., and Sorof, S. (2013). Working paper on the costs and benefits of cycling. SustraMM.

British Standards Institute (2005). Design management systems. Managing inclusive design – Guide.

Buhalis, D., Darcy, S. and Ambrose, I. (Editors), (2012). Best Practice in Accessible Tourism. Inclusion, Disability, Ageing Population and Tourism . Channel View Publications.

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EC (2014), Mapping skills and training needs to improve accessibility in tourism services. European Commission.

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Portugal (2010). Decreto-Lei n. 137/2010 de 28 de Dezembro. Lisbon, DGCI.

Portugal (2012). Circular da DGCI n 19/93 de 20 de Agosto. Lisbon, Diário da República.

UNEP (2008), Climate Change and Tourism: Responding to Global Challenges, World Tourism Organization, United Nations Environment Programme. UNEP.

Patricia Baptista, André Pina, Gonçalo Duarte, Catarina Rolim, Gonçalo Pereira, Carlos Silva, Tiago Farias, From on-road trial evaluation of electric and conventional bicycles to comparison with others urban transport modes: case study in the city of Lisbon, Portugal, Energy Conversion and Management, Volume 92, 1 March 2015, Pages 10–18.

Patrick Condon, Kari Dow, Transportation for Sustainable Communities: A cost and impact comparison between alternative transportation modes (http://www.cnu.org/sites/www.cnu.org/files/condoncnu19finalpaper_0.pdf)

NATIONAL RENEWABLE ENERGY LABORATORY for US Department of Energy, TRANSPORTATION ENERGY FUTURES SERIES, Alternative Fuel Infrastructure Expansion: Costs, Resources, Production Capacity, and Retail Availability for Low-Carbon Scenarios, 2013 (http://www.nrel.gov/docs/fy13osti/55640.pdf).

Tools

Carbon Footprint (2015). Carbon footprint calculator, as available at http://cotap.org/carbon-footprint-calculator/ ; also at: http://www.carbonfootprint.com/carbonsoftware.html

Carbon Account, http://www.thecarbonaccount.com/

EPA Carbon footprint calculator, http://www3.epa.gov/carbon-footprint-calculator/

Ecological footprint, http://myfootprint.org/subscription.php

Partnership for low carbon transport, http://www.slocat.net/?q=content-stream/187/ghg-assessment-tools

http://www.capterra.com/emissions-management-software/

EC sustainable Tourism – projects and results, http://ec.europa.eu/enterprise/sectors/tourism/sustainable-tourism/index_en.htm

Software tool used world-wide to calculate air pollutant and greenhouse gas emissions from road transport - http://emisia.com/copert

Lisbon transport network - http://www.transporlis.pt/ or http://mapas.sapo.pt/

Lisbon bikelane maps - http://www.cicloviaslx.com/

Related Projects:
EC sustainable Tourism, http://ec.europa.eu/enterprise/sectors/tourism/sustainable-tourism/index_en.htm

Sustaining Tourism, http://www.ams-institute.org/home/; see also, *www.sustainabletourism.net/carbon.html#responsible*

Sustainable Tourism Gateway, http://www.gdrc.org/uem/eco-tour/eco-tour.html

UNESCO – teaching and learning for a sustainable future, http://www.unesco.org/education/tlsf/mods/theme_c/mod16.html

Global Sustainable Tourism Council (GSTC), https://www.gstcouncil.org/en/

Amsterdam sustainable mobility, AMS: http://www.ams-institute.org/home/

Amsterdam smart city, http://amsterdamsmartcity.com/projects/theme/label/smart-mobility

SIMON – Assisted Mobility for Older and Impaired Users, http://simon-project.eu/

FR-EVUE – Freight Electric Vehicles in Urban Europe, http://frevue.eu/

Pro E.bike – Promoting electric drive delivery, http://www.pro-e-bike.org/project/