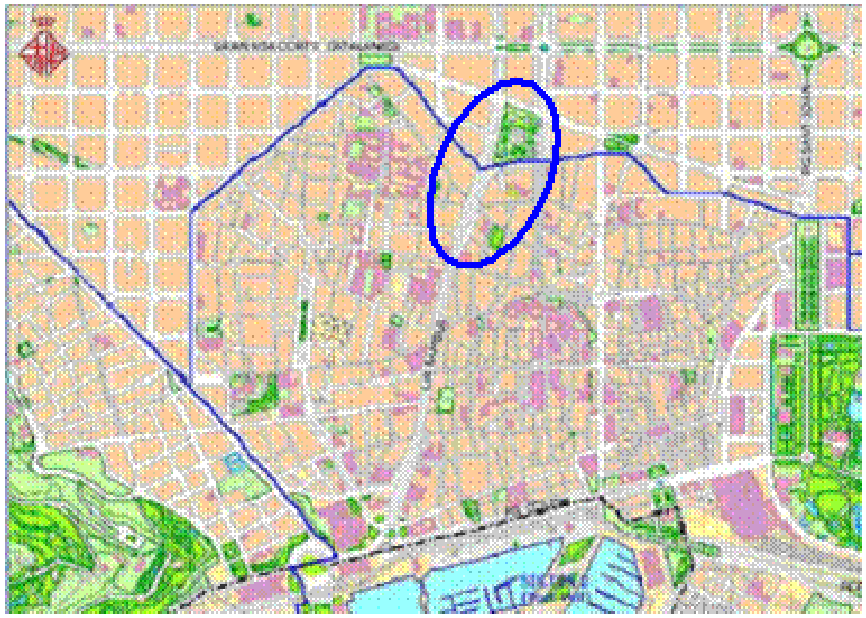
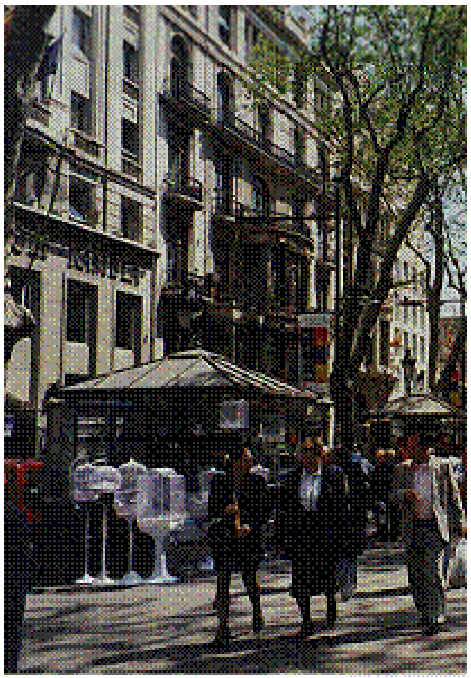
THE SOUNDSCAPE APPROACH

Pilot study in Barcelona

Selected site

- The north section of the Rambla





Data collection

- Soundwalks carried out
  - 5-9 April 2006
  - Two soundwalks (Route A and Route B) were performed at the same time. They started at the subway station in the middle of la Rambla and ran as far as Plaza Catalunya.

Data collection

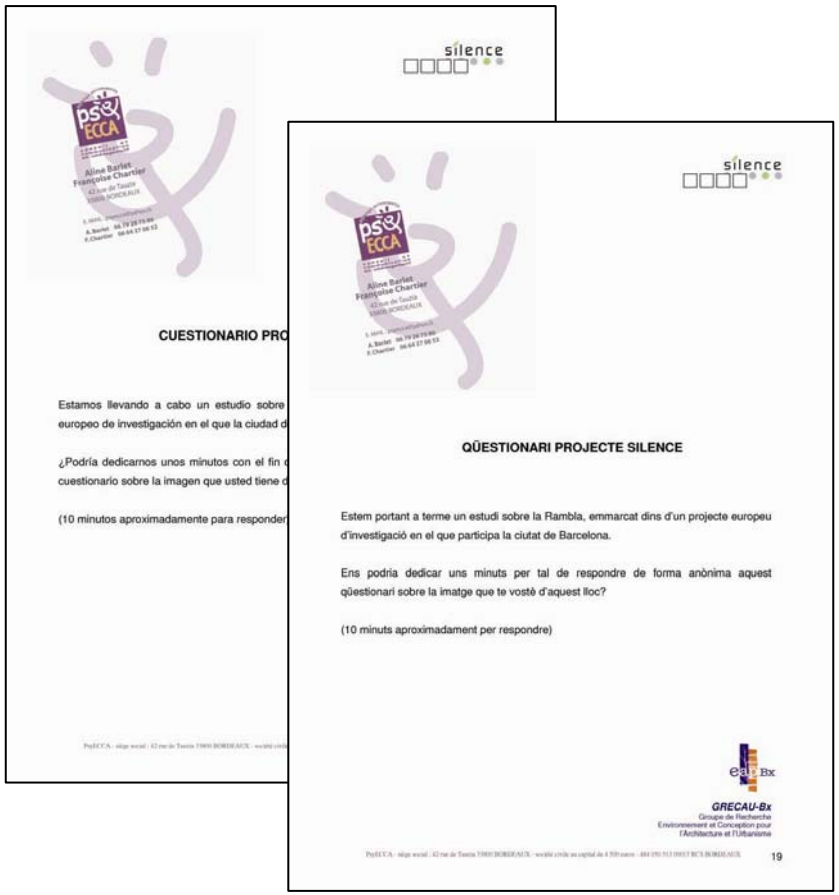
- Soundwalks carried out

Soundwalk A was carried out on the right sidewalk of la Rambla, between the buildings and the road.

Soundwalk B was conducted on the central part of la Rambla.

Data collection

- Citizen surveys carried out (5-8 April 2006)



27 questionnaires (in Spanish and Catalan) were completed.

The full results are available on the ***Listen to your city!*** CD-Rom - Full report: Soundscape approach as a tool for urban design (PDF - Part 2)

Presentation of the site

- Location of the site in the town

  - one of the most famous avenues in the world;
  - a long, wide boulevard between the port and the central hub/square Plaça Catalunya (popular focal point and important public transport interchange);
  - plenty of people at any time of day and night;
  - used both for leisure purposes (walking and shopping) and business (near City Hall and different office buildings).

Presentation of the site

- Access to the site
  - La Rambla is served by buses 14, 38, 59 and 91 and can be reached on foot from Plaça Catalunya (underground and bus)

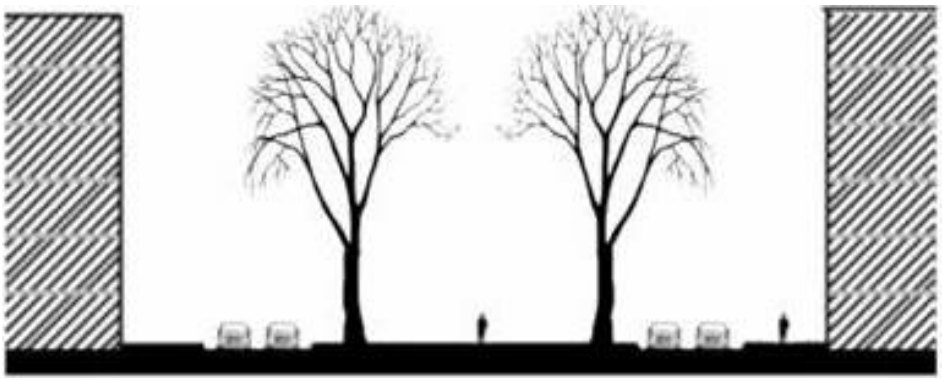
Description of the site

- Volumetric analysis
  - two sidewalks and two roads, one in each direction, plus a very wide central promenade;
  - a slight slope rising from the subway station to Plaça de Catalunya.

Description of the site

- Buildings / Vegetation

  – Buildings are high but far enough away from each other on each side of the avenue. The central area of la Rambla is tree-lined on each side.



Description of the site

- Urban furniture
  - a lot of urban furniture on the Rambla site but not a sound source;
  - due to their position (for example the different kiosks), they are as much a visual as an acoustic barrier between the central area and the sidewalks of the avenue.

Description of the site

- Buildings / Vegetation / Surface material / Urban furniture

Sound sources

- Human activities

Sound sources

- Mechanical activities

Sound sources

- Transport & Animals

Soundscape analysis

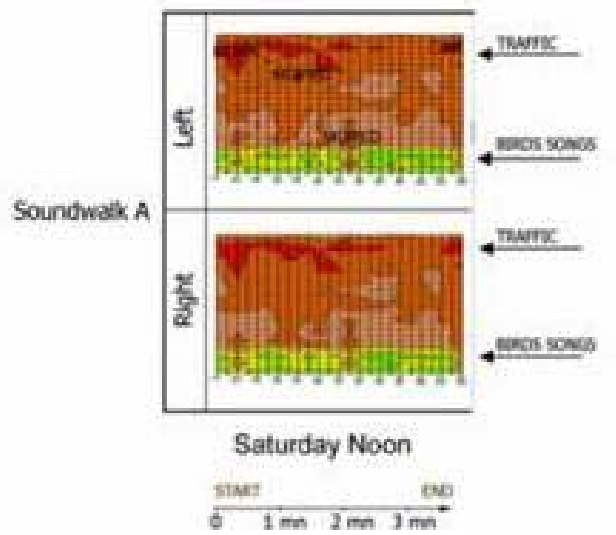
- Soundscape changing with the location in the site
  - On the two routes the prevailing components of the soundscape are: traffic noise, voices/speech, human activities and bird song.

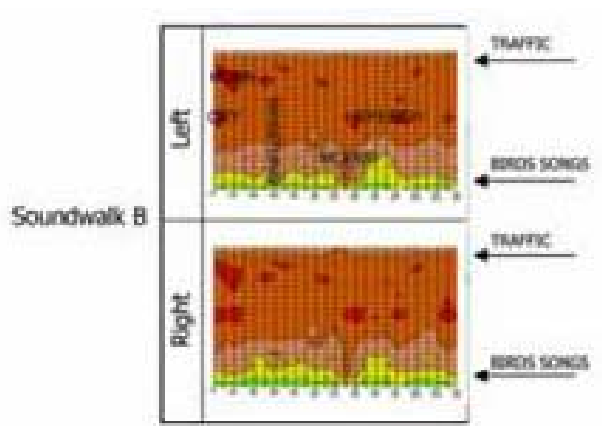
Soundscape analysis

- The characteristic frequency bands of main urban sound sources can be seen on the acoustic images:
  - **traffic, in the low frequency band around 80 Hz (soundwalks A and B);**
  - **human voices in the medium frequency band around 500 Hz (soundwalk B);**
  - **bird song between 3.15 kHz and 12.5 kHz mainly soundwalk B).**

Soundscape analysis

- All these noises are audible on the two recordings but in different proportions. For route A, traffic noise is predominant throughout the soundwalk, whereas speech is as loud as traffic on route B.





Subjective data analysis

- frequented by the dwellers of Barcelona, new residents as well as old ones
- frequented all day long, by people who go there alone or with friends
- used for all kind of activities such as strolling around, relaxing or meeting friends
- site arrangement: congested pedestrian space and insufficient number of benches to sit down
- social life: real meeting point, lively place, but also for a percentage of the interviewees not very secure and not very convivial
- physical environment: not satisfactory for majority of the people questioned

Subjective data analysis

- interviewees give contrasted evaluation of the sound environment (qualitative dimension)
- much more unanimous in the evaluation of the noise level (quantitative dimension)
- more than 88% of the users consider it to be a noisy place
- most frequently heard sources refer to traffic and the types of vehicles, which evaluated as being most unpleasant
- conversations constitute frequently heard sources but belong to the most pleasant sources together with birdsong (though not heard much in La Rambla)
- two types of sources: traffic and people, which are the most representative of La Rambla's soundscape, due to their continuous presence and acoustic intensity.

Objective data analysis

- ROUTE A: For the whole length of the route, traffic noise prevails whatever the day of the week or time; only the passage under the arcades is quieter.

- ROUTE B: The studied site can be divided into several parts in accordance with their soundscape characteristics: café terraces, the flower market, the bird market and two ‘no man’s lands’ (where traffic noise prevails).

Recommendations

1) Reduce truck and bus traffic and promote electric vehicles for city buses

2) Promote a more harmonious flow of traffic, avoid traffic lights which create pulsing traffic, encourage slower driving through urban arrangement (zigzags…)

3) Favour the most pleasant activities on La Rambla, i.e. the human ones

4) Try to extend urban furniture such as the existing kiosks all along La Rambla, as they modify the perception of traffic noise

⇨ **Recommendations 3 & 4 show the real added value of the soundscape approach. Classical noise maps would not have been sufficient to suggest such actions to be taken.**

More information

- CD-Rom *Listen to your city!*
  - Extracts from Barcelona soundwalks
  - The soundscape approach – the method in brief
  - Full report: Soundscape approach as a tool for urban design
  - Full report: Recommendations for soundscape design
  - Web: www.silence-ip.org
  - Contact: ojung@polis-online.org

Pictures and graphs – source GRECAU-ENSAPBx