



PROGRAMME BRIEF



ZER ABC LISBOA



General Framework

Climate change is an issue of global concern, considered by the UN as the greatest threat to human health in the 21st century. Recent data confirms projections that a few years ago would have been considered exaggerated. The historic Paris Climate Summit (COP21) agreement, signed in December 2015 by 195 member states of the United Nations Framework Convention on Climate Change (UNFCCC) and the European Union, committed to a joint effort to contain the global temperature rise significantly below 2o C in relation to preindustrial temperatures.

Climate projections for Lisbon point to annual average reductions in rainfall and increasing occurrence of extreme weather events, with intense or very intense precipitation, accompanied by strong gale-force winds. The projected scenarios also point to both average and maximum temperature increases, especially maximums in the Autumn season, tropical nights and an increase in the frequency of heat waves. These changes may have environmental, social, economic, technological and heritage-level impacts upon the municipal territory, affecting the city's natural ecosystem, human activities, and the built environment.

This scenario requires an adaptation and mitigation response, supported by integrated planning and management, capable of responding the elevated level of unpredictability associated to increased climate risks.

Commitment to future generations

In 2016 Lisbon was the first capital city to sign the “Global Covenant of Mayors for Climate & Energy”, committing to reducing CO2 emissions by at least 40% by 2030.

In June 2018, Lisbon Municipality concluded and approved its Sustainable Energy and Climate Action Plan (PAESC), committing to reduce Green House Gas (GHG) emissions by 60% until 2030.

In October 2019, Lisbon Municipality joined 94 cities worldwide to declare global climate emergency at the C40 World Mayors Summit in Copenhagen. This “Green New Deal”, signed by almost one hundred of the world's largest cities is a commitment to concrete measures aiming at significant reductions of polluting emissions over the next decade, a process already underway.

By undersigning the Commitment Charter with the C40 Cities Climate Action Plan “Deadline 2020” and prioritizing the definition of a path towards climate safety, to support the implementation of the Paris Agreement, Lisbon's leading position was reinforced with the PAESC goals already delineated for a 60% GHG emissions reduction to be achieved by 2030. This effort was reaffirmed concerning limiting the global temperature increase to 2o C regarding pre-industrial levels, and the intent to commit to a temperature increase not exceeding 1.5o C, as approved unanimously by all of Lisbon's municipal deputies at the city's Municipal Assembly (municipal parliament), voted as Resolution No. 7 AML 2019.

To reach the goals with which the C40 cities have committed requires measures upon the most polluting sectors, such as industry, buildings, waste treatment, and, of course, mobility.

As European Green Capital 2020, Lisbon has committed to reducing polluting emissions. Lisbon's ambition as European



Green Capital isn't centred on celebrating the success of the city's quick transformation experienced over the last decade, but instead to reinforce its commitment, by mobilising the entire society and all economic agents for collective action.

The “new cigarette smoke”

Air pollution is considered the “new cigarette smoke”, one of the principal dangers for future generations. Despite being silent, air pollution affects the health and safety of Europeans, especially children, who are increasingly suffering from respiratory problems. Furthermore, air pollution affects children's neurological development and their cognitive capacities. Children exposed to higher levels of pollution are more likely to develop chronic diseases and cardiological problems as adults.

One of the reasons why children are more vulnerable to the effects of air pollution is due to their quicker pace of breathing in comparison to adults, absorbing polluting agents with greater ease. According to the WHO, 93% of children under the age of 15 breathe the polluted air every day, seriously jeopardizing their health and development. Of these, around 600,000 die from acute respiratory infections. Moreover, if the number of children with respiratory disturbances are accounted for, the affected population segment is much greater, and growing.

According to the WHO, 9 in 10 people worldwide are subject to air pollution, and 7 million die prematurely each year because of that exposure. The WHO establishes that air pollution is a critical factor of risk associated with non-transmittable diseases, causing approximately 24% of cardiovascular deaths, 25% due to strokes, 43% due to Chronic obstructive pulmonary disease (COPD), and 29% associated with lung cancer.

Lisbon's current scenario

In Portugal, data from the European Environmental Agency (2016) estimates that air pollution is associated with almost 6,000 deaths per year, 4,900 of which from exposure to high levels of very fine particulate matter (PM2.5), 610 from NO2 and 320 from high levels of ozone (O3).

Pollution associated to road transport is the principal cause of smog, especially in Lisbon where this sector emits 63% of NO2 and 62% of PM10 fine particles. Despite all other sectors having managed to reduce emissions, road transport emissions in the city have increased 26.1% since 1990.

Promoting active mobility -walking and cycling- may have a greater impact than ever. Considering current levels of polluting emissions, the European Cyclists' Federation (ECF) claims that cycling may avoid 16 million tonnes of CO2 emissions annually, avoiding 18,000 premature deaths in the EU.

Another issue in large cities is space management; city space capacity is finite. Space is a scarce resource to be valued. In Lisbon, almost 400,000 cars enter the city every day. Eight in 10 bring only one occupant, blocking streets, creating kilometres of traffic jams, which last for hours. If Lisbon's own residents' cars are added to this equation, an estimate exceeding 600,000 cars fight for street space on a daily basis. This congestion affects everyone, with a direct impact upon car users and public transport, reducing the commercial speed and frequency in the bus and tram network, delaying 400,000 passengers who choose the Carris public transport network.

In 1990 Lisbon had 185 cars per 1,000 inhabitants, thirty years later the situation has worsened, currently at 514.1 vehicles per 1,000 inhabitants (IMT, 2018). Most of the commutes in Portugal's two largest the metropolitan areas area currently by car, with



58.9% of mode share in Lisbon, and 67.6% in Porto. Automobility's pressure has become unbearable to the city, affecting quality of life and with awful consequences upon the environment and people's health.

Furthermore, on average each automobile is parked 95% of the day. If compared to water consumption, that is equivalent to wasting 5 litres of water for each glass drunk.

Another scourge to resolve is road danger. Between 2007 and 2017 at least 142 people were killed and another 1,112 seriously injured due to traffic incidents in Lisbon.

In general, between 60 and 80% of all road deaths and serious injuries are 'vulnerable road users' victimized while walking, cycling or on motorcycles. Over 60% of all pedestrians who were run-over were crossing on or near crosswalks, and year after year more pedestrians are run over while crossing on a green light for pedestrians than walking across on a red pedestrian light.

Seniors (65 years and older) represent over one third of all pedestrians killed or seriously injured from being run over. Lisbon's population is increasingly older; therefore, Lisbon Municipality has developed a series of measures to improve their accessibility, increasing social inclusion and reducing the vulnerability of the elderly. A city that is inclusive to the most vulnerable is inclusive to all.

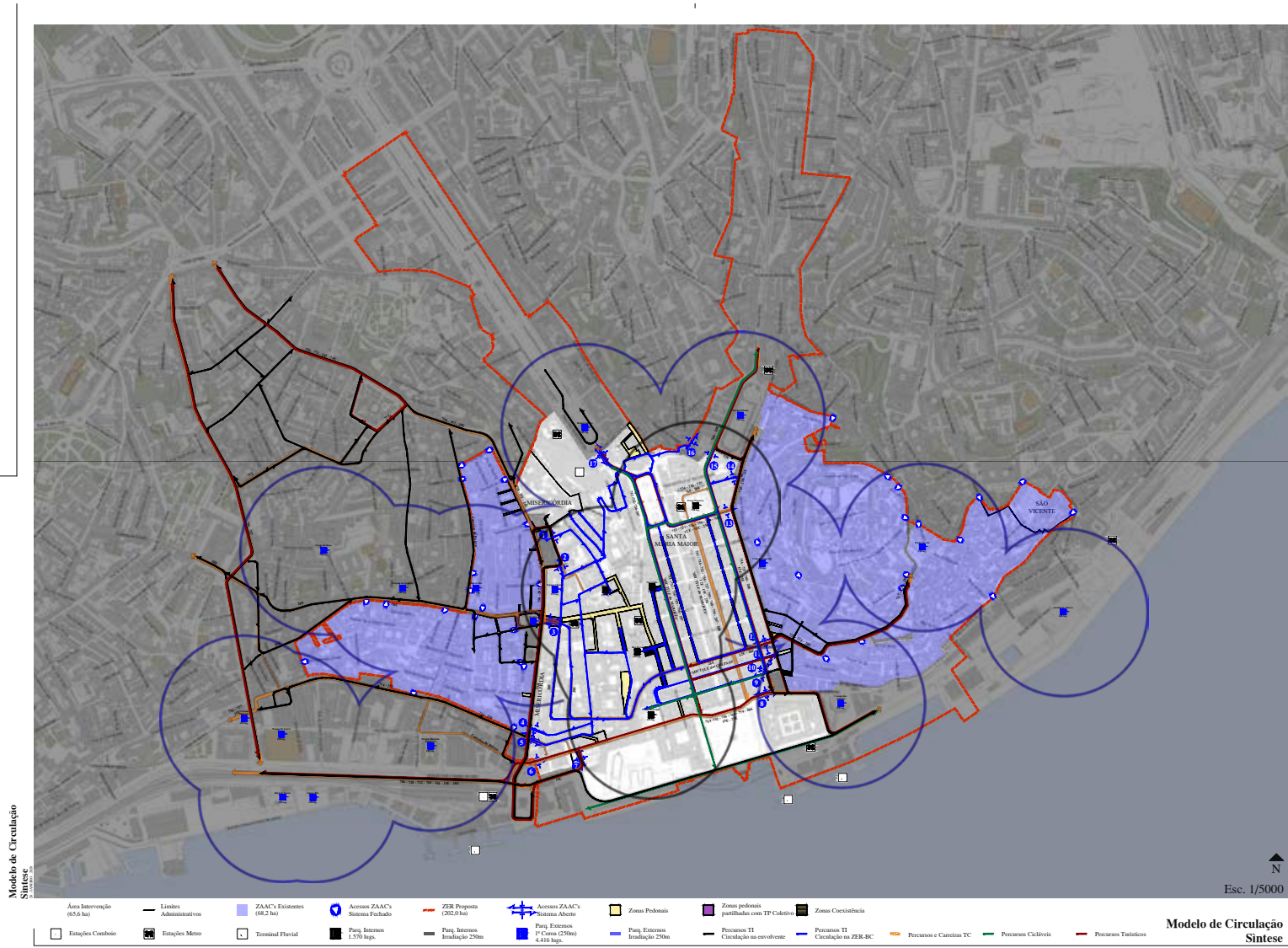
Lisbon's Downtown

Despite being a compact and essentially flat city district, easily accessed walking and with a potential for pedestrian and cycling mobility, Lisbon's Baixa (downtown) has various problems which the ZER ABC policy wants to solve, namely:

- Narrow pedestrian pavements in comparison to the high volume of existing pedestrian flows;

- Lack of accumulation space for people waiting at crosswalks;
- Insufficient crosswalks, many of which aren't lowered (or elevated crossings) and lacking tactile pavement;
- Non-existence of comfortable, smooth, anti-slip pavement, especially in sloped areas;
- Lack of space for social activities and resting;
- Too much on-street signage, publicity furnishings, and bollards, which compromise pedestrian flows and safety on pavements;
- Non-existence of dedicated cycling corridors, integrated in the city's cycling network;
- Lack of public benches, water fountains and washrooms;
- Lack of vegetation (trees, bushes and ground covering vegetation).

Foremost, automobility's dominance is notorious in this central city district, with the greatest amount of car-parks available.





The ZER ABC Programme

Three levels of action are foreseen in the ZER Avenida Baixa Chiado (ABC) programme:

A. Public space improvement interventions in the surrounding arterials accessing the area, Av. da Liberdade and Av. Almirante Reis, aiming at improving public transport, pedestrian and bicycle access to Baixa.

Access to the historical centre

Av. da Liberdade

- Pedestrian pavement widening in the side laneways, improving pedestrian accessibility, comfort and safety;
- Introduction of cycletracks connecting the existing cycling network at the central axis with the city's Baixa downtown;
- Restore the original traffic circulation model in the side laneways;
- Recover the original public walk "Passeio Público", between Restauradores Square and Rua das Pretas / Praça da Alegria;
- Reduction of one lane in the South-North direction, in the avenue's central carriageway.
- Elimination of on-street car-parking and reinforcement of delivery and passenger **pick-up and drop-off locations**.

Av. Almirante Reis

- Introduction of a bidirectional cycletrack connecting with "Baixa" downtown, between Rua Febo Moniz and Martim Moniz square;
- Elimination of on-street car-parking and reinforcement of delivery and passenger pick-up and drop-off locations.





B. Creation of the new ZER, with controlled access at Baixa and Chiado neighbourhoods, permitting access to residents, local businesses, active mobility and public transport.

ZER Baixa - Chiado

- Reduced Emissions Zone with controlled access for motor traffic;
- On-street parking substituted by resident-exclusive parking;
- Deliveries restricted to the night period, with vehicles under 7.5 tons;
- Creation of cycle infrastructure between the Central Axis and the Riverside, between Av. da Liberdade and Rua do Ouro, and between Av. Almirante Reis and Rua dos Fanqueiros Transversal cycling connections at Rua do Comércio and Rua da Betesga;
- Reinforcement of pedestrian characteristics of Rua Nova do Almada and Rua Garrett;
- Conversion of Largo do Chiado into a fully pedestrian square;
- Carris bus circulation improvements at Rua dos Fanqueiros;
- Creation of public transport priority routes at Rua da Prata, Rua do Ouro, Rua dos Fanqueiros and Rua da Conceição.





C. Expansion of the Controlled Automobile Access Zones (ZAAC) at the surrounding Bica and Castelo neighbourhoods, and modification of the traffic circulation model and parking policy to eliminate through traffic and increase areas for resident vehicles, while eliminating on-street parking and increasing pedestrian areas.

Surroundings

- Resident exclusive parking and specific designated areas;
- Expansion of Bica and Castelo neighbourhood Controlled Automobile Access Zones (ZAAC);
- E24 tram route to be extended 0,6km to Cais do Sodré public transport and ferry boat hub;
- Elimination of constraints to Carris public transport at Rua de São Paulo e Rua da Escola Politécnica;
- Pedestrian pavement widening at Rua de São Pedro de Alcântara, and passage permitted only for public transport, cycling and pedestrians;
- Largo do Camões, Rua do Loreto, Largo do Calhariz, public transport, cycling and resident priority;
- Rua de São Bento with a public transport corridor;
- Car traffic circulation modifications at Rua de São Pedro de Alcântara, Largo do Calhariz, Largo do Chiado, and Rua de São Bento.





D. The following measures will also be implemented:

- Environmental restrictions will be increased, only allowing access to EURO 4 (after 2005) or more recent vehicles, and new means of control implemented as of April, 2021;
- Speed limit reduction to ≤ 30 km/h, in line with Lisbon Municipality's road safety Vision Zero Programme for 2030;
- Improvements to bus and tram network performance, increasing Carris' service offer, especially assuring regularity and the creation of 2km of new bus corridors;
- Creation of coexistence neighbourhood zones with a maximum speed of 20km/h;
- Increase number of crosswalks and prioritize pedestrians;
- Increase amount of parking for residents, instead of on-street short-term parking;
- Increase bicycle parking and the number of bikeshare stations in the area;
- Increase pedestrian area by 4.5 hectares (twice the area of central Terreiro do Paço Riverside square);
- Prioritize local traffic instead of through traffic;
- Restrict motor access and traffic near schools;
- Assess, jointly with operators, the implementation of last mile logistics solutions, which allows for merchandise delivery using cargo-bikes, smaller and cleaner and non-polluting delivery vans and trucks.
- Optimize tourist vehicle circuits, restricting access to occasional vehicles and organizing their stopping areas.

Therefore, public space shall be adjusted to a new reality, prioritizing pedestrian and public transport in specific streets, and pedestrian and cycling in others.

Connections to the existing cycleway network will be assured by linking Av. da Liberdade and Martim Moniz and Terreiro do Paço squares, and bidirectional cycle tracks at Rua do Ouro, Rua da Betesga, Praça da Figueira and a one-way cycle track at Rua dos Fanqueiros. A cycle track will also guarantee transversal connections at Rua do Comércio. Over 5.7 km of cycling network is expected to contribute to an increase in the number of bicycle-users.

More and Better Public Transport

Lisbon's Baixa is currently the city's best public transport served area, with over 80% of the city's population having a direct BUS and/or Metro connection directly to this downtown. Public transport is already the mode chosen by 59% of the people who travel to this part of the city. Nonetheless Carris' service will be further reinforced linking to and in the area, namely the following:

- Baixa/Marquês de Pombal shuttle on an electric bus;
- Electric bus route (706);
- Extension of the E24 tram;
- Reinforcement of night bus network service with attention to solutions aiming at the labour force accessing this part of the city.



ZER Baixa Chiado Intervention Areas

The total intervention area covers 65.6 hectares (ha) in the city core. An access and traffic management model will be implemented to reduce car entry into the intervention zone, achieved by means of user segmentation, prioritizing residents, storekeepers, active mobility and public transport services instead of occasional and through car traffic.

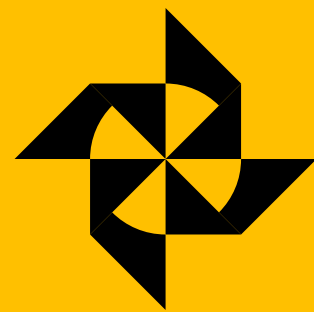
The segmentation, vehicle entry and traffic circulation will be subject to specific regulation. Parking space previously designated for short-term parking will be converted into resident only parking or specified uses (deliveries, taxi, reserved parking, etc.) or these spaces will be recovered as public space. One of the novelties associated with this model is simplification of access attributes for parking and stopping, based upon the permission conceded and not on the users' profile. The model will be more intuitive and flexible, resulting in fewer parking badges.

With these measures introduced in the ZER ABC intervention area, car traffic reductions are expected to reach up to 75% on some streets. Overall, a reduction of 40% in the number of motorised traffic is expected, from the current levels of 100,000 vehicles to 60,000; avoiding up to 60,000 tonnes of CO2 emissions per year.





BADGE	SEGMENTS COVERED	ACCESS WITHOUT LIMITATIONS	ACCESS WITH LIMITATIONS	ON-STREET PARKING
	Residents National Health Service and Social Security Institutes Caretakers	Yes	No	Authorized (except in designated areas)
	Public collective transport Essential utilities (Water, Electricity, ...) Pre-school and primary school children's transport Private on-street parking Carshare vehicles Regular tourist transport services Tourist activity quadricycles and tricycles (*) Automobiles locally based (**)	Yes	(*) Subject to parking authorization (**) Limited to one automobile, property of the establishment, for logistical operations	Authorized in designated areas
	Garage or parking lot space property owners or tenants Electrive vehicles (except tourist activity vehicles)	Yes	No	No
Others	Invitees (*) Hospital patient transport (**)	No	(*) Subject to invitation from resident, maximum 10 per month (**) Subject to hospital notification	No



ZER

AVENIDA
BAIXA
CHIADO