



# REVITALISING

# HATAY

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Post-Disaster Urban Recovery

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A COLLECTIVE DESIGN PROCESS

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PROJECT COORDINATED BY

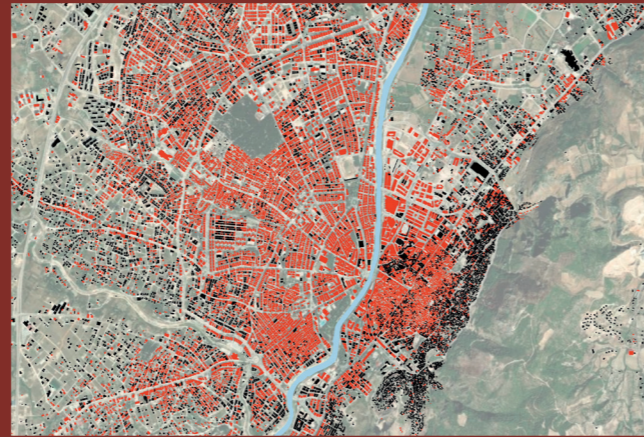


# I → February 6 Earthquakes



## A MAJOR DISASTER

On February 6, 2023, at 04:17, a 7.7 magnitude earthquake centered in Kahramanmaraş's Pazarcık district was followed by a 7.6 magnitude quake at 13:24, centered in the Elbistan district. These earthquakes brought the largest disaster within Türkiye's borders in the past 50 years due to the loss of life and the scale of destruction. While official records indicate around 17,000 casualties in the 1999 Marmara Earthquake which was considered one of the biggest in Türkiye's modern history, the Kahramanmaraş earthquakes resulted in 50,096 officially reported deaths.



■ Survived buildings ■ Demolished buildings

2. Aerial photograph showing standing and damaged buildings, Antakya

## DAMAGE ASSESSMENT

A month after the earthquakes, damage assessments conducted in 11 affected provinces revealed 35,355 buildings completely collapsed, with an additional 17,491 buildings requiring urgent demolition. Moreover, 179,786 buildings were classified as heavily damaged,

40,228 moderately damaged, and 431,421 slightly damaged. While 59% of the material losses were related to residential buildings, the destruction also heavily affected historical and cultural structures, schools, administrative buildings, hospitals, and hotels.

## SCALE OF THE TRAGEDY

The fault segments ruptured during the earthquakes correspond to seismic gaps that had accumulated tectonic stress over 500 years. The earthquakes occurred along the main and northern branches of the East Anatolian Fault Line, directly affecting provinces including Adana, Adıyaman, Diyarbakır, Elazığ, Gaziantep, Hatay, Kahramanmaraş, Kilis, Malatya, Osmaniye, and Şanlıurfa. The total area impacted, approximately 115,177 km<sup>2</sup>, is larger than the combined size of the Netherlands, Belgium, and Switzerland.

### THE EARTHQUAKE ZONE IS

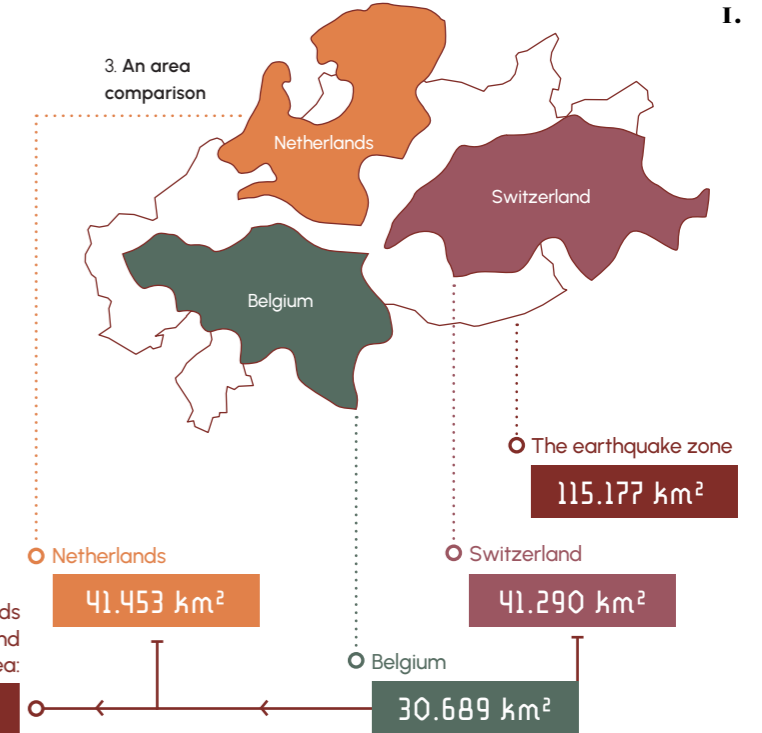
### LARGER THAN THE COMBINED

### SIZE OF THE NETHERLANDS,

### BELGIUM, AND SWITZERLAND.

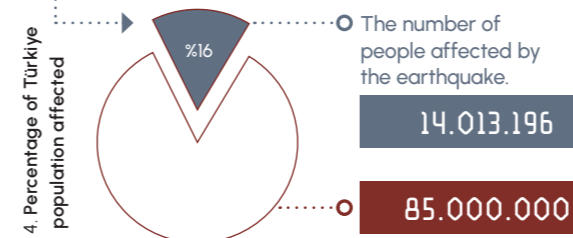
Belgium, Netherlands and Switzerland total area:

113.432 km<sup>2</sup>



## IMPACTED POPULATION

The earthquakes, including aftershocks lasting for days, directly affected 14 million people, representing 16% of Türkiye's population. Beyond the loss of life, 1,971,589 people were displaced, forced to leave the earthquake zone. In total, 1,161 municipalities across 11 provinces were affected. The number of students whose education was interrupted reached 4.1 million. Additionally, 12% of all hospitals in Türkiye are located in the earthquake-affected region.



## CHANGING LIVES

Before the earthquakes, the 11 provinces were home to 3.8 million employed individuals, accounting for 13.3% of the national workforce. These regions, pivotal in sectors such as agriculture, textiles, and heavy industry, saw 52% of the workforce in services, 29% in industry, and 8% in agriculture. The physical and economic damages severely disrupted these sectors, causing significant production losses. Export-oriented businesses faced challenges due to infrastructure damage and loss of both regular and skilled labor.

% 10,3  
Amount corresponding to the 2023 Annual National Income

# II → Hatay and Antakya

While Kahramanmaraş was the epicenter of the February 6 earthquakes, the destruction was most striking in Hatay and Antakya. Hatay, with a population of 1,686,043, constitutes 12% of the population in the earthquake-affected provinces. Beyond its population size, Hatay and Antakya hold significant regional and provincial importance. Understanding the destruction's scale here requires recognizing these characteristics.

## HATAY AS A REGIONAL CROSSROAD

Antakya, with its multi-layered structure past to present, is a fascinating city in every aspect, as host to many civilizations, such as the Assyrians, Romans, Persians, Arabs, and Ottomans. Researching the identity of Antakya means embarking on a journey through history and following the traces of different cultures. The traces left by each of these numerous cultures have made Antakya the unique city it is today.

Moreover, due to its strategic location, the city acts as a bridge between the Mediterranean and the Middle East. It holds valuable water resources, is rich in natural resources and has the fertile lands that offer high agricultural productivity potential. Hatay also has a wind energy potential and rich biodiversity. Its natural and cultural assets, including its coastline, and being a cradle of early Christianity, give it historical and touristic significance.



ANTAKYA IS A CITY WITH A RICH HISTORY AND CULTURAL HERITAGE, INFLUENCED BY CIVILIZATIONS SUCH AS THE ASSYRIANS, ROMANS, PERSIANS, ARABS, AND OTTOMANS.

5a.



5b.



## ANTAKYA, AN URBAN MELTING POT

Antakya, the urban center of Hatay, stands out for its urban characteristics. Historically significant due to two key natural features: Its secure location between mountains, leading to its selection as the capital of the Seleucid Empire, moving from present-day Samandağ to Antakya and its strong relationship with water resources and agricultural lands, aligning with its urban macroform.

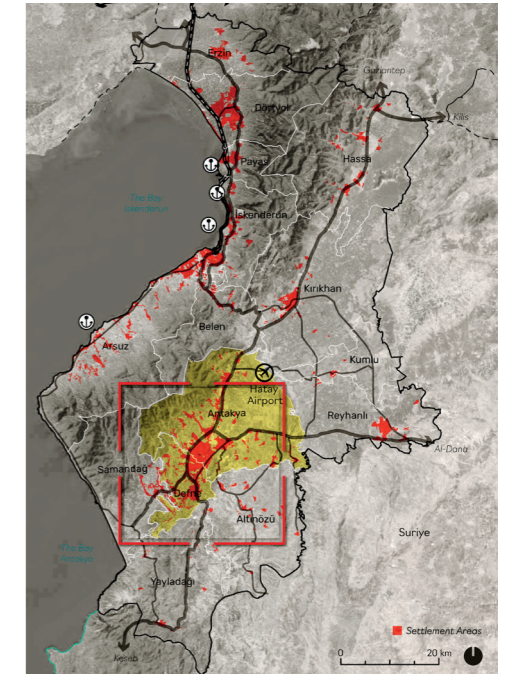
Understanding a settlement's urban form requires analyzing its topography. Antakya is nestled between the Nur Mountains in the north and Kel Mountain in the south, within the Lower Orontes Valley. The Amik Plain, with high agricultural productivity, extends to the northeast, while the Orontes River, running north-south through the Lower Orontes Valley, shapes the city's macroform.

The city's strategic location along routes to Damascus and Latakia, coupled with its production activities, historically positioned Antakya as a regional trade hub. This function is evident in the urban space through markets, bazaars, inns, and small workshops.

As a site of early Christianity, with Islamic legacies in its urban fabric, Antakya holds

historical and symbolic value. Thus, the earthquakes and the resulting destruction signify not just the physical collapse of buildings and urban spaces but also the erasure of Antakya's image in different ethnic and religious groups' minds.

6. Antakya within Hatay Region



5c.



5d.



5. Snapshots of Antakya's cultural fabric

# III → How The Project Evolved

## PROJECT PROCESS

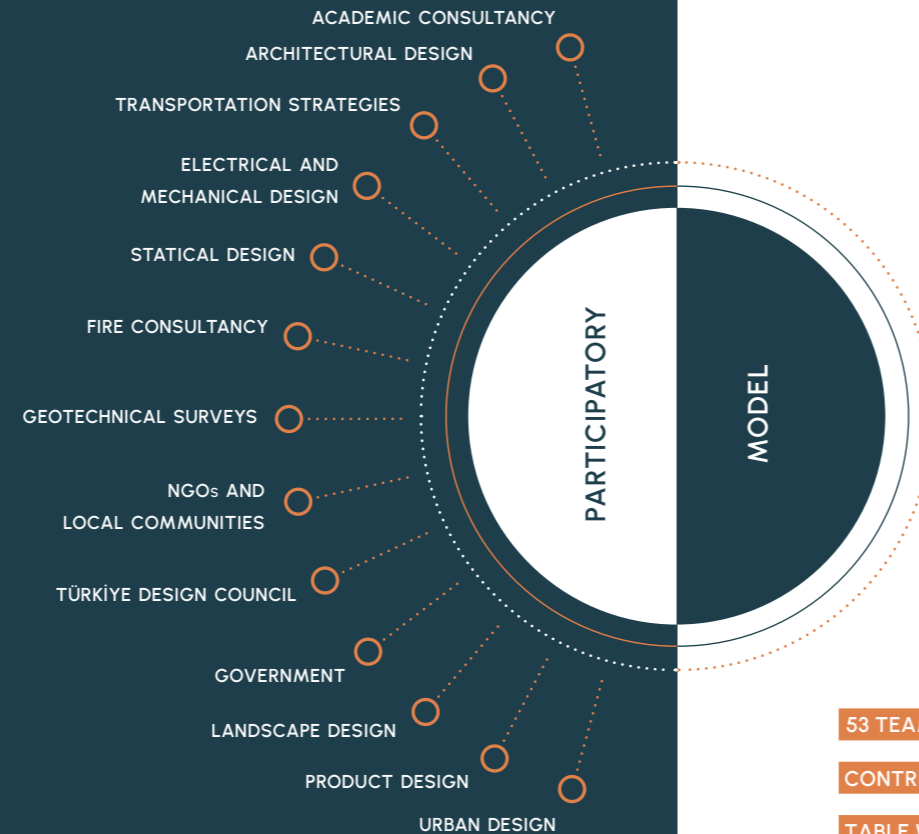
Efforts for recovery and adaptation to normal life have started with studies covering the entire province of Hatay. It has been planned to initiate urban projects in districts such as İskenderun, Samandağ, Kırıkhan, and Hassa. However, it was decided that the center of reconstruction would be Antakya. At this point, the Türkiye Design Council came to the forefront as a key actor, adopting principles such as:

- Creating a multidisciplinary design environment,
- Promoting diversity and fostering social impact within the design environment,
- Defining a design process that enables social participation,
- Ensuring and controlling the conditions for sustainable designs,
- Viewing design as part of the educational process to cultivate conscious, confident, free-thinking, and responsible individuals,
- Enhancing design awareness through the research, documentation, and effective communication of past and present national and international design activities and knowledge.

## SHARED DECISION MAKING

With these goals in mind, a “**shared decision-making table**” was established. While the scale of destruction and necessary inter-

ventions required the intervention capacity of the central government, understanding the settlement's needs demanded detailed local intervention. The Türkiye Design Council created a transitional scale between these two administrative mechanisms. The shared decision-making table included:



## AT THE NATIONAL AND

## INTERNATIONAL LEVEL, 76

## PARTICIPATION EVENTS HAVE BEEN HELD.

This decision-making mechanism aimed to replace the traditional project prioritization process with innovative approaches, such as:

1. **Collaboration** → Participation
2. **Solidarity** → Assistance
3. **Listening** → Speaking
4. **Emotions** → Opinions
5. **Taking Action** → Thinking
6. **Acting Together** → Acting Alone
7. **Building Better** → Building Faster
8. **Planning Ethics** → Planning Techniques

In summary, the shared decision-making mechanism consisted of 53 teams, 1.000 professionals, and thousands of Antakya residents. With the participation of these teams and the local community, 76 engagement activities were conducted at both national and international levels, including:

- A Project Kick-off Meeting
- 22 Design Coordination Meetings
- 3 International Large-Scale Workshops
- 7 International Conference Presentations and Meetings
- 5 Comprehensive Field Visits
- 13 Meetings with Public Institutions
- 5 Large Public Gatherings
- 20 Children's Activities

## 53 TEAMS AND APPROXIMATELY 1000 INDIVIDUALS HAVE

## CONTRIBUTED TO THIS SHARED DECISION-MAKING

## TABLE WITH THEIR DESIGNS, IDEAS, OPINIONS, AND

## CONSULTANCY SERVICES.

7. Participatory events and site visits



# IV → Hatay Master Plan

While the reconstruction of Antakya began under the leadership of the shared decision-making table, regional and strategic-scale studies were initiated to guide other settlements in the province. Subsequently, three different working areas were identified in Antakya's settlement center:

1. MASTER PLAN AREA REFERRED TO AS THE "NEW CITY"
2. PILOT AREA ALONG ORONTES RIVER
3. CONSERVATION-ORIENTED HISTORIC CITY CENTER PLAN

The area east of the Orontes River is referred to as the **"Historic City Center,"** while the area to the west is identified as the **"New City."** In a sense, the Orontes River represented the line stitching these two projects together. Additionally, the pilot project area, selected for immediate implementation, is located at the geometric center of the settlement, where these two areas intersect. Physically situated on the west bank of the river, it also partially falls within the historic conservation area due to its status.

## STRATEGIC FRAMEWORK

To guide the development of the strategic framework, a vision study was conducted using participatory methods through workshops. The common vision decisions derived from this participatory process:

### Regaining Residents

Ensuring that the pre-earthquake population of Antakya returns to their living spaces.

### Preservation of Property Traces

Maintaining pre-earthquake property rights and restoring them to rightful owners.

### A City Addressing Future Needs

Planning not only for current needs but also anticipating future requirements.

### Maintaining the City's Character

Restoring the pre-earthquake character by aligning construction decisions with Antakya's culture and daily life.

### Adopting Urban Resilience Standards

Developing resilient construction criteria considering the region's geological conditions and technological advancements.

### Improving Sustainable Infrastructure

Enhancing resource management through efficient and conscious infrastructure systems.

### Improving Transportation and Mobility

Promoting pedestrian and bicycle use and reducing vehicle dependency with a transportation strategy.

### Improving Urban Planning

Designing public spaces, green areas, and commercial functions in line with urban memory.

### Effective Management of Urban Development

Implementing controlled planning to prevent urban sprawl and protect rural areas.

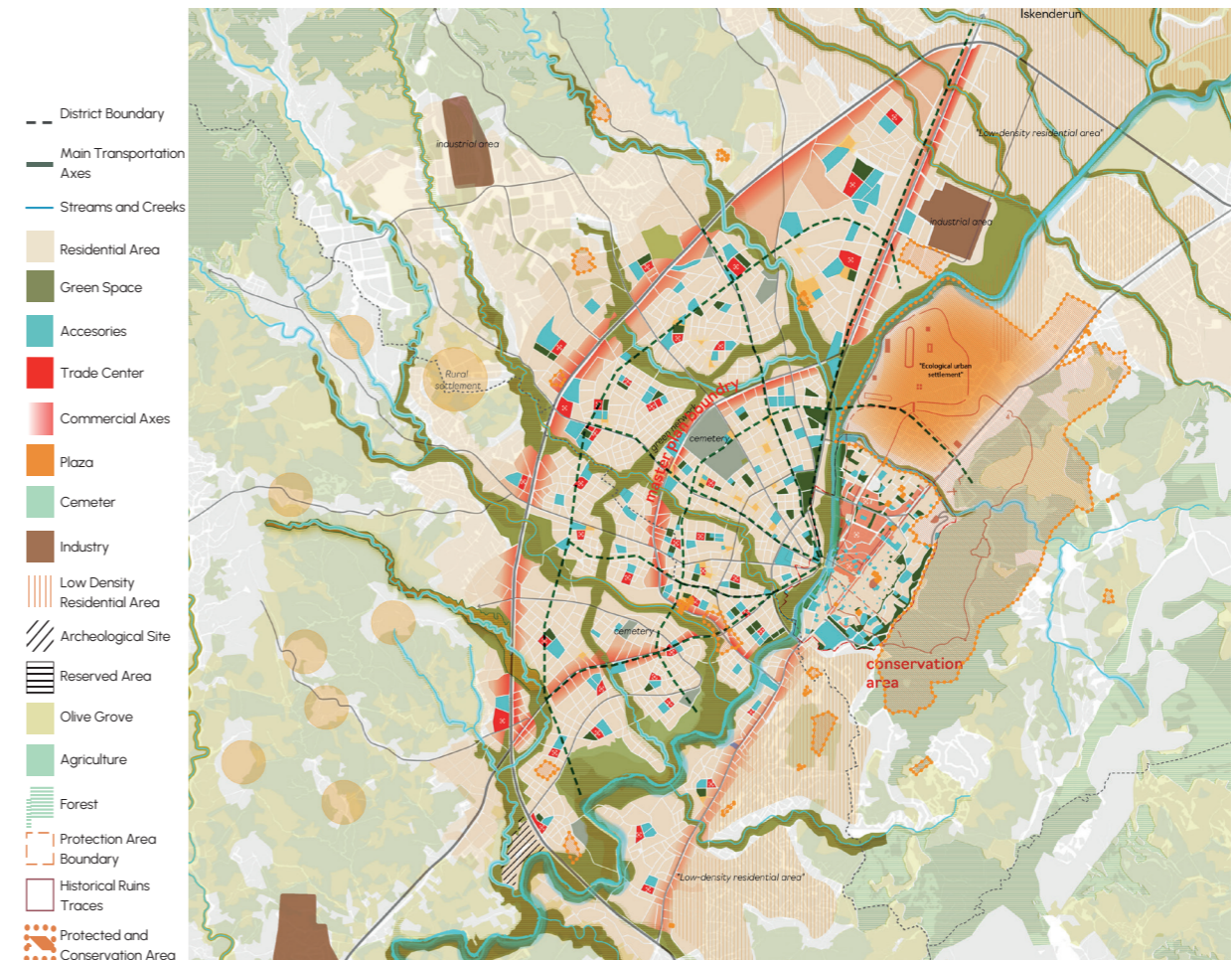
### Flood-Resilient Infrastructure Design

Ensuring flood-resistant development to protect Orontes River and its inhabitants.

### Preserving the Natural Environment

Adopting an environmentally conscious approach in redesigning the city.

11. Master plan, city center scheme



8. Master plan area



9. Pilot area along Orontes River



10. Historic City Center Plan



## INPUTS FROM UPPER-SCALE PLANS

In line with the above vision, established through a joint decision-making mechanism, strategic framework studies were conducted.

A general strategic framework was developed to guide urban initiatives in districts such as Iskenderun, Samandağ, Kirikhan, and Hassa. Additionally, upper-scale planning decisions were incorporated to form a cohesive whole.

- Developing settlement and urban zones without harming fertile agricultural lands, natural resources, or renewable energy areas.
- Establishing protective land use decisions in disaster-prone areas.
- Promoting marine tourism in Arsuz and Samandağ.
- Alleviating traffic between Belen and Antakya by creating a Payas-Hassa connection.

### 1. Transportation and Accessibility

- Evaluating the potential of high-speed rail and cross-border railway projects.
- Addressing limited access due to topographic barriers and post-earthquake secondary hazards (e.g., landslides).
- Assessing the potential of the coastal strip.
- Strengthening road connections along the north-south and east-west axes.
- Enhancing the link between Payas and Hassa through the Amanos Mountains.
- Developing maritime transport to support the tourism sector.

### 2. Renewable Energy

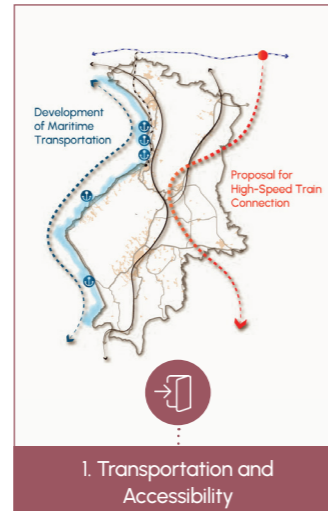
- Utilizing potential sustainable energy sources.
- Establishing solar energy systems using topographical and solar potential.
- Increasing wind energy plants to harness wind potential.

### 3. Cultural Continuity

- Ensuring the sustainability of cultural heritage through a balance of preservation and usage.
- Leveraging nature tourism potential along the Amanos Mountains.
- Revitalizing the coastal zone designated for tourism.

### 4. Sustainable Ecology

- Establishing green buffer zones in areas where natural thresholds overlap with urban boundaries.
- Preserving coastal ecosystems and developing nature-based coastal alternatives.
- Defining zones for protection, rehabilitation, and usage in Amik Plain according to sustainable development principles.
- Promoting organic and sustainable agricultural practices while supporting agricultural products.



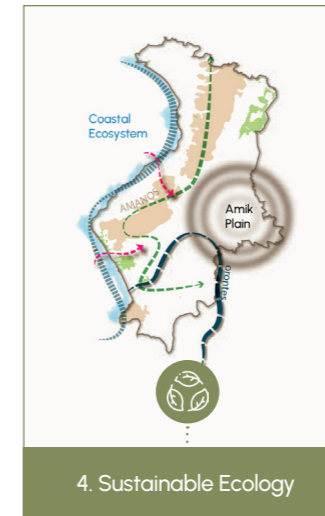
1. Transportation and Accessibility



2. Renewable Energy



3. Cultural Continuity



4. Sustainable Ecology

## HATAY MASTER PLAN

The conducted studies were based on upper-scale planning decisions and the strategic framework while integrating key analytical findings. Although these findings align with traditional planning approaches, post-earthquake factors prioritized certain aspects, such as the risks from natural disasters, including earthquakes, and social vulnerabilities.

These insights guided the objectives for the New City Zone:

- Establishing a vibrant city center as before the earthquake
- Accelerating the return of displaced residents to Antakya
- Meeting future needs with sustainable infrastructure services
- Ensuring resilient urban development against potential future hazards

## New Transportation Design

A transportation scheme was developed to connect the historical city center with the new urban zone seamlessly, optimizing plot sizes, courtyard dimensions, and building heights, including pedestrianization schemes and parking capacities.

## Defining Urban Foci

Based on macro-urban and historical development analyses, commercial, cultural, and administrative centers were identified and integrated with the transportation plan.

## Network of Public and Green Spaces

A comprehensive green corridor was established, including areas with high liquefaction and flood risks near the Orontes River which became its backbone.

## Accessible Facilities and Infrastructure

Facilities such as schools, hospitals, religious sites, and sports areas were planned to comply with regulations and link spatially with the green network.

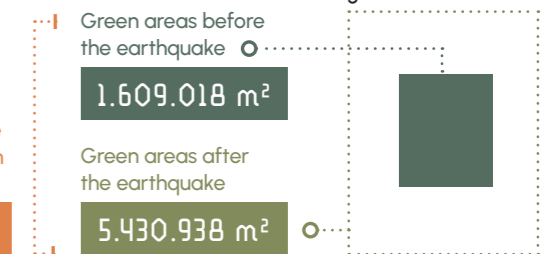
## Numerical Summary of the Master Plan

Total Study Area: **29,692,699 m<sup>2</sup>**  
 Existing Parcels: **87,626**  
 Existing Buildings: **58,309**  
 Current Zoned Area: **10,556,211 m<sup>2</sup>**  
 Average Number of Floors: **2.35**

Proposed Zoned Area: **15,846,444 m<sup>2</sup>**  
 Green Areas Increased by **% 337**  
 Facilities Increased by **% 186**

The increase rate of green areas

**% 337**



12. Master plan increase in green areas.

# V Pilot Area Along Orontes River

The detailed urban design studies conducted in the pilot project area, considered the core of Antakya, aim to achieve the following objectives:

- Meeting future needs with sustainable infrastructure services,
- Ensuring accessibility through sustainable and clean transportation modes,
- Creating a pedestrian-focused, livable city center,
- Developing resilient and durable urbanization to cope with future hazards,
- Promoting public transport-oriented mobility.

Key streets along with connecting routes form the main framework for the design concept, ensuring connectivity between the pilot area and the master plan area. The area along the Orontes River, marking the eastern and south-eastern boundaries of the design area, has been reinforced with pedestrian and bicycle paths.

The general layout of pre-earthquake urban blocks has been preserved, while integration with service roads has been enhanced. Residential blocks are designed to incorporate courtyard systems, prioritizing shared spaces. The transportation framework addresses the needs of both current users and the new design scheme.



13. Aerial render

Public spaces, central to the existing urban fabric, have been revisited in the design. While some public buildings damaged in the earthquake are being reconstructed on-site, new facilities and open spaces have been planned according to the design strategy. Significant public structures, integral to urban memory, have been preserved, while new facilities have been added where necessary. The eastern and southeastern sections near the Orontes River have been integrated into the pilot area with green corridors and pedestrian mobility. Green systems have been strengthened, ensuring preservation along stream lines.

## GREEN SPACE DESIGN

The large-scale decisions include a landscape restoration plan integrating Atatürk Park with the Orontes River. Major transportation axes in the area are being transformed into green corridors through afforestation. The adoption of courtyard systems in residential design fosters shared spaces, while uninterrupted green axes and air corridors are established along the riverbanks to encourage pedestrian use.

Average Number of Floors: 5.5	Project Area: 720,468 m <sup>2</sup>
Number of Blocks: 132	Zoned Area: 192,969 m <sup>2</sup>
Residential Units: 4,774	Facility Area: 93,230 m <sup>2</sup>
Commercial Units: 2,037	Green Space: 153,264 m <sup>2</sup>
Number of Independent Units: 6,811	Road Area: 169,211 m <sup>2</sup>
Increase in Green Spaces: 272%	

14. Numerical Data for the Pilot Project Area

## TRANSPORTATION FRAMEWORK

The main transportation arteries in the design area have been preserved. Atatürk Avenue has been redeveloped into a boulevard suitable for electric buses, trams, bicycle lanes, and pedestrian paths. Inner roads are designed for service and bicycle use. The central square with the Atatürk monument, surrounded by cultural and public buildings, is planned as an integrated pedestrian-priority area.



15. Transportation framework map



16. Emergency framework map



17. Green space design map

## EMERGENCY FRAMEWORK

Aligned with the project's primary goal of creating resilient urban settlements against disasters, the pilot project area is designed to:

- Minimize potential damage from hazards.
- Adapt to global threats like climate change.
- Ensure preparedness for emergencies and disasters.

Green areas and public open spaces have been designated as potential gathering points. Existing facilities, after rehabilitation, are proposed as temporary shelter zones. Sufficient urban open spaces have been left, and building distances have been carefully considered to ensure safety. Courtyard systems provide immediate gathering spaces. Emergency access to gathering and shelter areas has been planned with multi-modal routes, utilizing green and pedestrian corridors to avoid road blockages.

## SUMMARY OF PILOT PROJECT AREA

### OBJECTIVES AND ACHIEVEMENTS

The pilot project area, designed in phases based on principles and frameworks, serves as a model planning system and end-product (sample) for post-earthquake renewal in Antakya. It incorporates residential zones, commercial areas, socio-cultural facilities, a transportation system, and open and green spaces. New socio-cultural facilities, such as libraries, theaters, mosques, primary schools, cultural centers, and urban sheds, have also been created, which were not present in the pre-earthquake area.

PILOT AREA PROJECTS

19a. Street view from the pilot area



19b. Urban Blocks 7B



19c. Urban Blocks 6-1, 6-2, 6-3



18. Pilot project area render



19d. Urban Block 1B-1, 1B-2

19e. Urban Block 5

19f. Urban Block 3-1, 3-2



19g. Green spaces along the Orontes River



19h. Concert Hall



# VI → Antakya Historic City Center

The Antakya Historic City Center, one of the oldest settlements in Anatolia is home to a unique wealth of tangible and intangible cultural heritages owing to its multicultural structure, which plays a key role in the region. Reviving these potentials and ensuring their transfer into the future has been set as the main objective. Within this scope, both the Hatay Antakya Historic City Center Conservation-Oriented Revised Implementation Zoning Plan and the 1/500 Settlement Plan have been prepared based on the area's historical and spatial development process, natural thresholds (such as the Orontes River and fault lines), artificial thresholds (such as protected areas, registered buildings, and registered plots), settlement textures and types of use, population density, and its user profile.

Antakya is an "open-air museum" with many layers of historical ruins, numerous mosaics and other cultural artifacts that either have already been unearthed or not. All artifacts excavated in the provincial center and other districts are exhibited in the new archaeological museum built in Antakya.

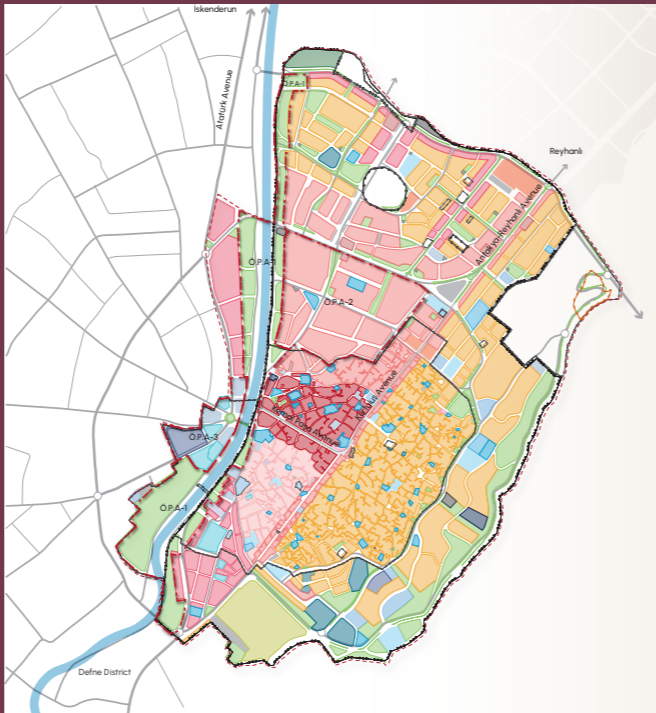
20. Urban fabric of historic city center



## CONSERVATION PLAN LAYOUT

The 1/5000 and 1/1000 scale conservation zoning plans prepared for the historical city center of Antakya, Hatay, aim to contribute to the protection of the city's historical and cultural heritage and its sustainable development. In the zoning plan studies for the Antakya Historic City Center, land identification studies were conducted, and the existing 1/5000 and 1/1000 scale maps, as well as the geological and geotechnical studies essential for the zoning plan, were approved. Detailed analyses of the current situation were carried out. Additionally, based on the opinions obtained from institutions and organizations, on-site inspections, and meetings with agencies, a planning approach was established, and conservation-oriented zoning plans were prepared.

21. Conservation plan



## METHODS AND REFERENCES

Urban design studies have been prepared for Antakya City Center, which stands out with its historical richness and cultural texture, within the scope of post-earthquake restoration works. The 1/500 Scale Settlement Plan prepared for Antakya Urban Protected Area aims to establish a connection between the past and the future of the city in the light of references to the natural, historical, legal and built environment, and to address the city with a holistic conservation approach.

## SETTLEMENT AREA STUDIES

In the 1930s, the radial urban planning system brought together the old and new city by connecting the western and eastern parts of the Orontes River at the center of the historic Roman Bridge. The building blocks designed along the main streets that radiate from the center formed the characteristic identity of the new city. The western side of the city, which suffered significant damage after the earthquake, will be shaped by new courtyard building blocks and structures that draw from the city's history and culture, based on this radial urban plan. Most of the residential buildings in the new city area, particularly around the Roman Bridge, which can be

RESIDENTIAL ZONES	64,21 ha
COMMERCIAL ZONES	67,27 ha
TOURISM	2,63 ha
SERVICES	25,15 ha
GREEN	33,90 ha
ROADS	73,74 ha

considered the main center of the city, became unusable due to the earthquake. In the western part of the river, the aim is to design a new settlement fabric that builds upon the traces that exist in the city's memory, using modern urban design principles.

22a.



22b.



22c.



22. Settlement area studies renders



23a. Before earthquake



23b. After earthquake



23c. Under construction



23d. Conceived project



24a. Before earthquake



24b. After earthquake



24c. Under construction



24d. Conceived project



25a. Before earthquake



25b. After earthquake



25c. Under construction



25d. Conceived project



Before earthquake



After earthquake



Under construction



Conceived project

#### TTV HATAY DESIGN AND PLANNING COLLABORATION GROUP

##### MASTER PLAN AND URBAN DESIGN

Urban Renewal Centre, KEYM

DB Architects

Foster + Partners

Buro Happold

##### TRANSPORTATION STRATEGY

##### AND MASTER PLAN

MIC-HUB

Ugur Surveying

##### ARCHITECTURAL DESIGN

A Architectural Design

Adeas Architects

Baka Architects

Bilgin Architects

Bjarke Ingels Group, BIG

Boran Ekinci Architects

Cinici Architects

DB Architects

Dome + Partners

Inter National Design, IND

KAA Works

Kayabay Architecture

Kentin Mimarları

Kreatif Architects

NSMH

Rasa Studio

Sour Studio's

Studio For A Design

TECE Architects

Viva Architects

Yalin Architecture

We're Architects

##### LANDSCAPE AND COMMUNAL AREAS

Mdesign

ON Design

Studio Neoge

TO Studio

##### ENGINEERING WORKS

Anka MEP

Apsis Project and Consultancy

Buro Statik Engineering

Elektra Engineering

Inntech Engineering

Mado Engineering

Mekatölye

Perform Engineering

Saina Consulting

Static Istanbul Academy

Tepaş Engineering

Tez Yapı Structural Engineering

YMH Engineering

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Ethos Fire Consultancy

Paarla City Solutions

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Geotech Group

Ka Consulting

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RJ Models, Architectural Model Makers

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