

# The Earthquake' 99

We didn't forget, and never will...



*Sakarya Metropolitan Municipality & Adapazari Earthquake and Cultural Museum*

*Natural Disasters are inevitable events that we face with. In the disasters, obtaining the most effective and quick coordination between institutions and civil society is essential. Because, proper and well-timed intervention makes possible to reduce the loses. Civil societies are very important and indispensable partners in these kind of coordinates. I believe that this conference will throw a light on creating stronger and more conscious civil organizations thanks to telling live lessons.*

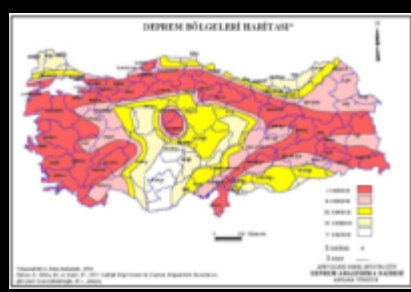
*Best Regards*

*Zeki TOÇOĞLU*

*Mayor of Sakarya Metropolitan Municipality*

# *Earthquakes in the Sakarya's History*

20th June 1943	Center: Hendek (in Sakarya)	6.6 md
	339 Death	
	2.240 Damaged Buildings	
22nd July 1967	Center: Mudurnu (in Balıkesir)	6.8 md
	89 Death	
	7.116 Damaged Buildings	
17th August 1999	Center: Gölcük	7.4 md
	3.891 Death	
	26.551 Damaged Buildings	



## ***Physical description of the earthquake***

**Magnitude:** 7.4 md

**Settlements that have damaged:**

*İzmit, Gölcük, Bolu, Düzce, Avcılar, Yalova, Değirmendere, Adapazarı*



# ***Physical discription of the earthquake in Adapazari***

## **Number of Died and injured people:**

**3.891** *Death*

**5.180** *Injured*

## **Damaged and collapsed buildings:**

**15.781** *collapsed Buildings*

**10.514** *Damaged Buildings*

**9.699** *Less-Damaged Buildings*

**6.275** *Undamaged Buildings*

# What was the earthquake's effect on Sakarya's economy?

## Housing

### Housing

70% of all buildings were damaged.

50% of all buildings were lapsed completely .

30% of all buildings were collapsed.

Total 8244 disaster dwellings were built in Karaman, Camili and Ferizli settlements.

Sakarya had 564 schools. 16 of them were collapsed and 49 schools were less-damaged. After the earthquake, 2 billion USD had spent for rebuilding of these schools.

## Education

Total Economic Lost of the 99' Earthquake	Cost (Billion \$)
Housing	1.290
Trade	489
Infrastructure	706
Added value lost	330
Emergency aid expenditures	152
<b><u>Total Damaged Lost (even sum)</u></b>	<b><u>2.967</u></b>

**90% of the infrastructure of the city was damaged completely.**

**Sewerage system;** 1.478 km sewerage rebuild again. 585 billion USD had spent for this construction.

**Water System ;** 2.356 km water-line reconstructed completely and it cost 93 billion USD.

**Rain-water System;** 131-km-rain-water-system was reconstructed in 29billion USD.

## Infrastructure

# ***What was the earthquake's effect on Sakarya's economy?***

## **Dealers, Tradesmen and Industrial firms' losing cost;**

8645 businesses and 133 industrial enterprises like TUVASAS (Turkiye Railroad Industry), Sugar Works, TZDK (Turkiye Agricultural Equipment Institution) damaged by the earthquake.

Total damaged cost was 488 billion USD.

## **Manufacturing Industry's losing cost;**

Rate of capacity utilisation decreased from 75,4% to 39,7%. Total cost, 96 billion USD.

## **Effects on Gross Domestic Product;**

Sakarya's GDP decreased from 3199 USD (1998) to 2585 USD (2000).

# ***What was the earthquake's effect on Sakarya's economy?***

**Number of Shutdown Business;** 2362 firms had shutdowned between September 1999 and July 2001. 50% of these firms shutdowned because of the earthquake.

**Effects on Unemployment;** to the official numbers, unemployment number increased from 6357 people (in 1998) to 14.118 people (in 2000). After the earthquake 6000 people removed from 397 industrial establishments.

**Agricultural Sector;** 3300 agriculture and livestock structures collapsed. Total lost in this sector 2,5 billion USD.

**TOTAL ECONOMIC LOST in SAKARYA; 819 billion USD**



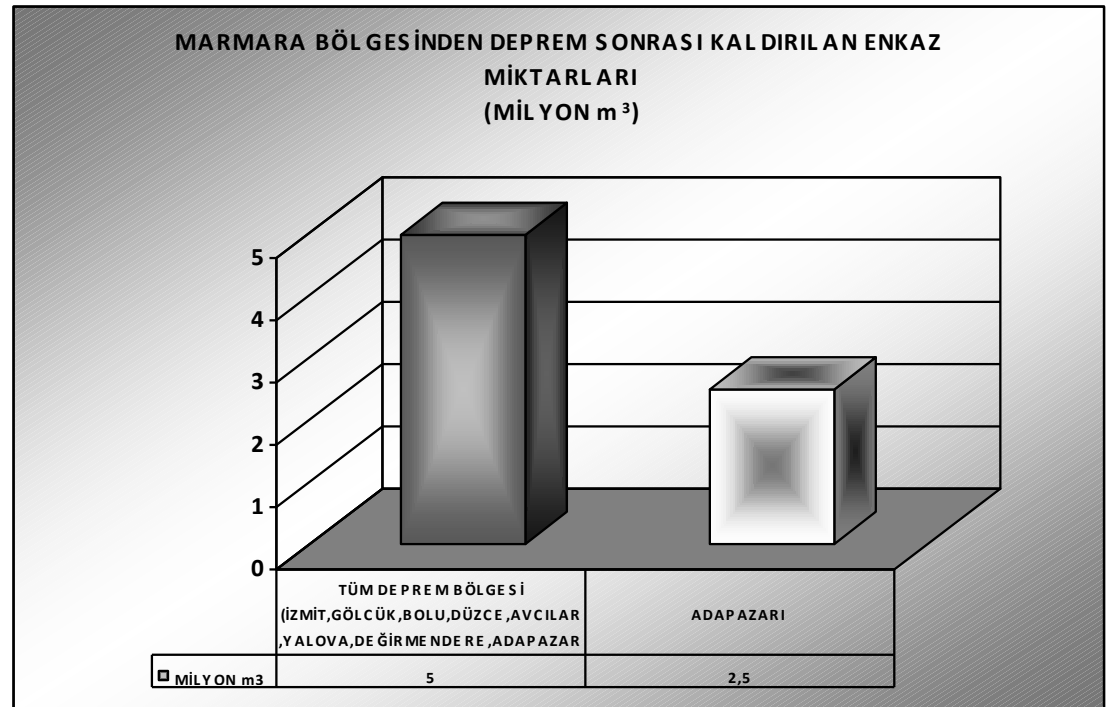
# What was the earthquake's effect on Sakarya's economy?

22 health facilities were damaged. Instead of collapsed hospitals, 2 hospitals were built. For these constructions, 5,5 billionUSD had spent.

**Health**

Half of the total amount of debris in the earthquake region had removed from Adapazari. This situation has showed the serious effect of the earthquake in Sakarya.

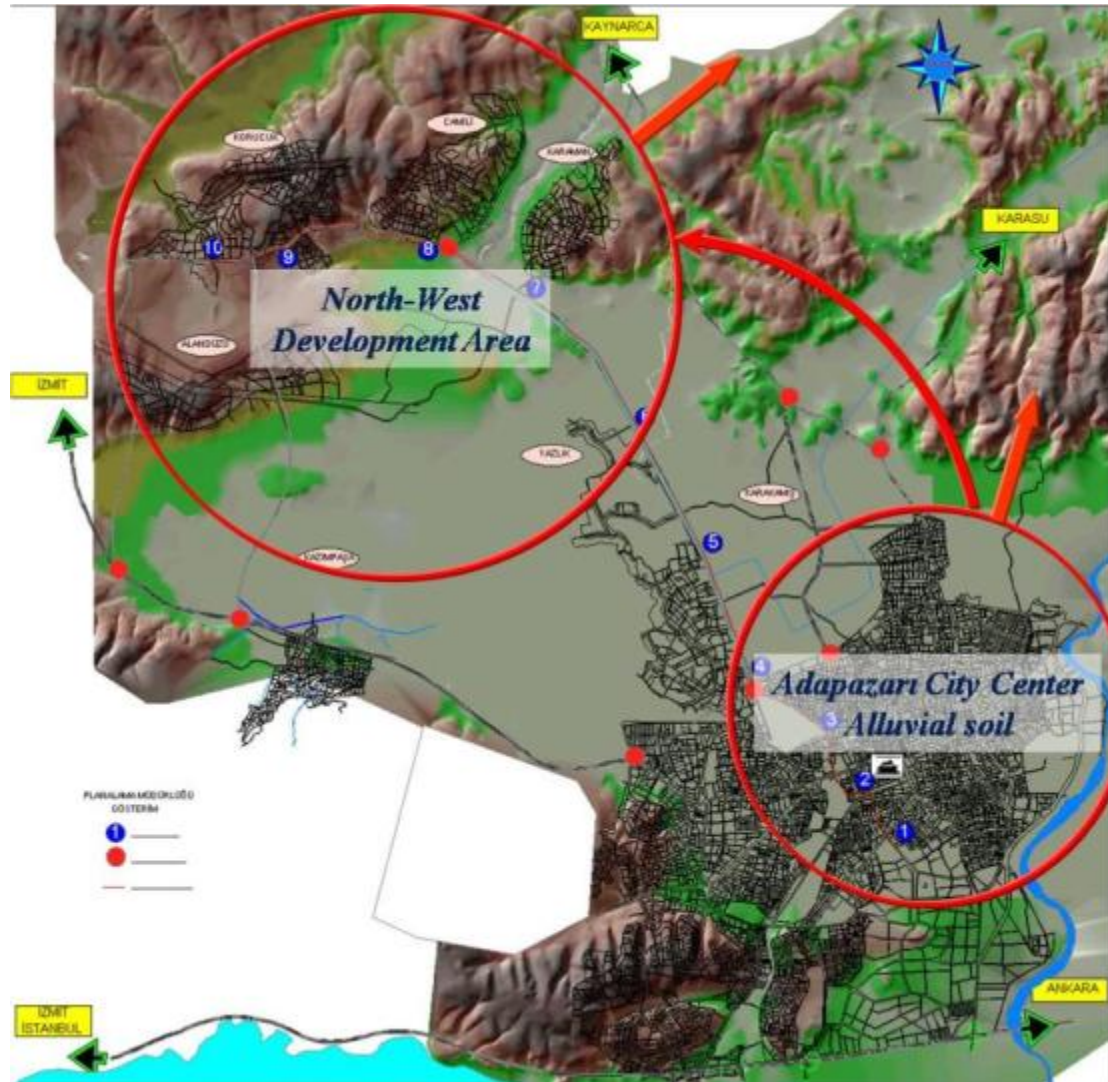
**Debris Removal Efforts**



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# **PLANNING STUDIES**

# Before The Earthquake *Studies for Locating New Settlement Area*



*Map of Convenience  
Analyse for  
Housing Areas*

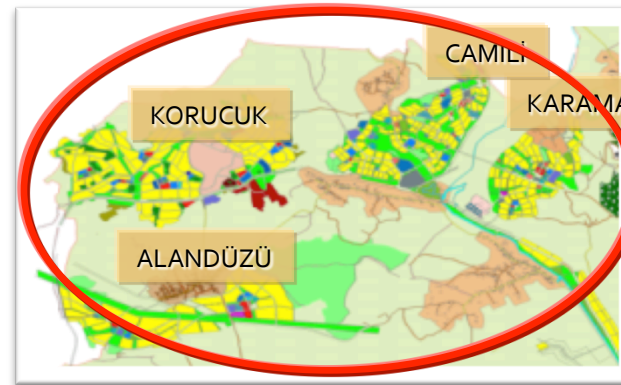
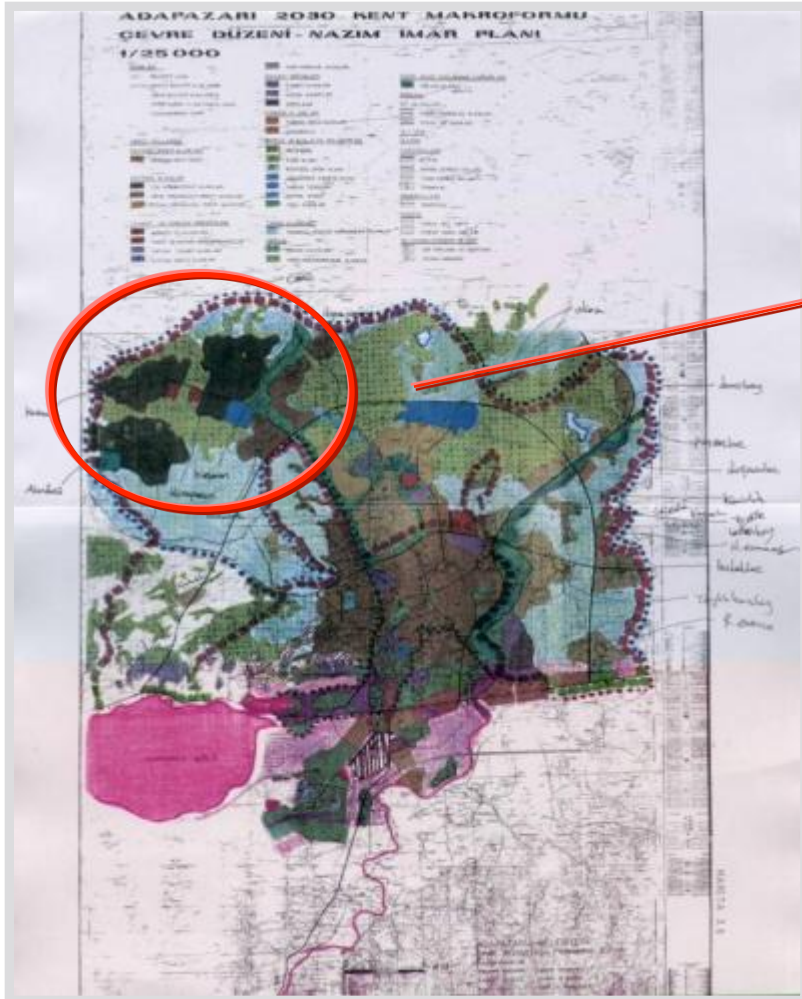
# ***Preparatory Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake***

## ***Planning Studies***

### ***a. Development Works in New Settlement Area;***

Sakarya Metropolitan Municipality started 1/25000 Master Plan studies for the year of 2030 in 1996. By this plan, Karaman, Camili, Korucuk and Alandüzü located as housing areas. After the 99' Earthquake, Ministry of Public Works and Settlement evaluated this plan and approved. Thereby, new developing area located. According to this plan, permanent disaster dwellings have been built.

# Before The Earthquake *Studies for Locating New Settlement Area*



03.11.1999  
1:5 000

## ***1:25000 Master Plan (1996)***

New settlement areas located by this plan. Construction of disaster dwellings has been built in the new area speedily (korucuk, camili, karaman, alandüzü).

*Master plan of new settlement areas had been made before the earthquake'99*

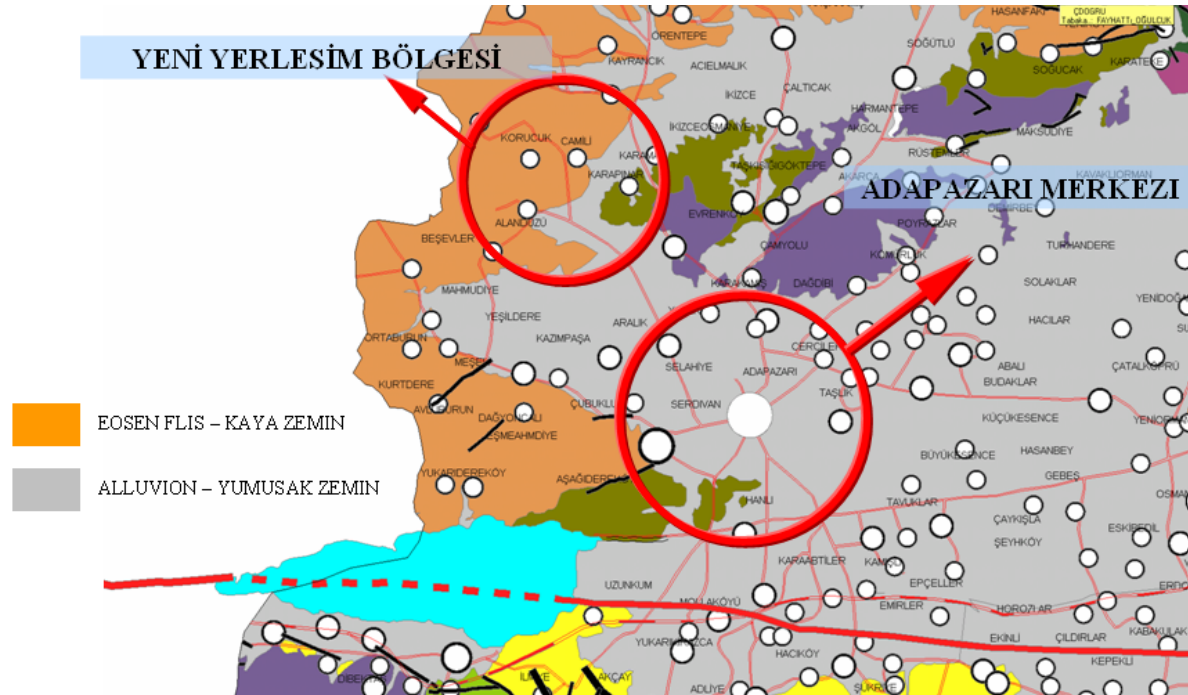
# Preparatory Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake

*Damaged City Center;*

Legal housing permission reduced from 5 floor to 2 floor in the city center because of its geological structure.

***Investments for New Settlement Area; Works for Making the Area Attractive***

Geological Structure of New Settlement Area



# ***Preparoty Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake***

## Disaster Dwellings;

For our citizens who collapsed their dwellings, 7824 disaster dwellings was built in the new settlement area. Governorship building, Public Hospital and other public institutions have moved this area.



# ***Preparatory Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake***

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## Expropriation Works in New Developing Area;

According to the anti-squatting law, Sakarya Metropolitan Municipality expropriated 200-ha-area in Korucuk. In these area new housing developing plans had been made.

## Housing Developing Works;

In this expropriated area, Sakarya Metropolitan Municipality built 3766 dwellings cooperation with TOKI (Housing Development Administration of Turkiye) .

3000-housing-project was also planned by cooperation with Sakarya Metropolitan Municipality and a private company. New housing projects of local municipalities will have continued.

Private companies' projects are also developing.



# ***Preparoty Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake***

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## Master Plan Works;

Environmetal Plan (1:100.000) approved by Sakarya Metropolitan Municipality Council, Provincial Council and Ministry of Environment . Master plan works for 2030 drawn to a scale of 1:25000 are about to complete.

Sakarya's economic and socio-cultural developing strategies set out by this plan.

New Settlements Area's population projection of 2030 is 350.000 inhabitants. This area will developing as a second center.

# ***Preparatory Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake***

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The prepared plan is an earthquake-focused plan. And the main function of this plan is;

- to make attractive the new placement area- city center- with structuring conditions, population predictions, all reinforcements and investment programs until the next earthquake process.
- to ensure to develop our city's ground from alluvium ground through to strength ground

# ***Preparatory Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake***

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## ***Works for Making the New Settlement Area Attractive***

### **New Settlement Access Road**

As a part of urbanization strategy of Sakarya Metropolitan Municipality, to increase the accessibility of the new settlement area 12-km-long access road was built by the WB credit. After building this way, the area's occupancy rate increased by 100%.

# ***Preparatory Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake***

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## **Governor Building (Campus)**

925 employees work in this campus

## **Korucuk Education and Investigation Hospital and Yenikent Public Hospital (Karaman);**

614 employees work in Korucuk Education and Investigation Hospital

441 employees work in Yenikent Public Hospital

# ***Preparatory Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake***

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## ***Disaster Education Coordination Center Project***

Education center aims to organize the society for the disaster struggle by seminars and trainings in municipal districts (for example, collecting station, district rescue team, fire team, training for first aid etc.) to reach people at the appropriate time and to decrease loss in human lives in the disaster.

This is Fire Department's project.

# ***Preparatory Works Against Destructive Effects of Possible Earthquakes and Studies after the Earthquake***

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## ***Neighborhood Centers Project***

The Centers include library, youth center, disaster rooms and room of the head of neighbourhood. In the disaster rooms, there are Rapid Reaction and first-aid equipments. Besides, seminars and trainings about disasters will run. These centers has built and activated in two neighborhood (Ozanlar and Cumhuriyet).

17 AĞUSTOS 1999

Türkiye bir yıl önce deprem ile uyanmıştı. 10 binlerce insan hayatını yitirdi. Yardımlar milyar dolarlara ulaştı. Ancak 17 Ağustos'un bu yasağı depremlerinin çığlığı sırıyordu.

# Orada kimse var mı?

17 Ağustos 1999'den itibaren 2,4 milyar dolarlık yardım toplandı. 10 binlerce insan hayatını yitirdi. Yardımlar milyar dolarlara ulaştı. Ancak 17 Ağustos'un bu yasağı depremlerinin çığlığı sırıyordu.

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3000 MİLYAR DOLAR

## 'Deprem gerçeğini geç fark ettik'

Deprem gerçeğini geç fark ettik. Deprem gerçeğini geç fark ettik. Deprem gerçeğini geç fark ettik.



## Yardım skandalları

Yardım skandalları. Yardım skandalları. Yardım skandalları.

UNUTMADIKI!...



BUGÜN YAŞAMAK GELMİYOR İÇİMİZDEN...

# ***Why should we share our live lessons??***

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Before the 17th August 1999 earthquake, Sakarya was one of the most successful cities in Turkiye which have been developing in socio-economic status. Unfortunately, the earthquake was damaged Sakarya considerably by all means.

In the 99' Earthquake, 70% of the buildings in Sakarya was seriously damaged or collapsed. According to the official figures, 3.891 people died and almost 5.180 people have been injured. After the earthquake, most buildings was damaged seriously, so, a major part of the center population has moved to the districts and villages near the city center.



## ***Why should we share our live lessons??***

Adapazarı's inhabitants realized in the later times of 17<sup>th</sup> august that the city was collapsed. Everyone thought that only their site collapsed, but they were wrong. Sakarya city center's (Adapazarı) most popular streets and sites were closed by the collapsed buildings, even walking in these areas was impossible. Ground and first floors of uncollapsed buildings had combined and most of these building damaged very badly. Deaths were buried to mass graves with shovels to avoid the epidemic diseases.

**Sakarya will never forget the horrors of the earthquake.**

# ***Why should we share our live lessons??***

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That day was one of the darkest and the most suffering time of the Sakarya's history. But, we know we'll be face with this situation again. And, so, **we believe that the importance of sharing our living stories for having individual control and safeguarding us from harmful effects of the disasters.**

# ***Why should we share our live lessons??***

*we should share our live lessons*

- to having individual control and safeguarding us from harmful effects of the disasters and to get ready for possible disasters in the future*
- for taking immediate steps and organized against the natural disasters that victims of the misfortune face with*
- To getting over traumatic shock easily and quickly*
- For developing empathy*
- To knowing not alone*

***pains will be relieved if you share...***

## ***What has changed after the earthquake in our social life?***

*"17<sup>th</sup> August 1999 was the date all families' daily life changed dramatically. We had lived 11 people together in a tent for three months. We shared our all pains. After that, we had lived 7 families together in our garden. We washed our clothes in a large pan. We made our plans daily. We didn't think about tomorrow."*

*"Our children's games had changed. In their games, they were using the earthquake as a game material. In their pictures, they always used a ruin, a crane or a shovel. In mornings, our husbands went to the ruins not to work. New words had come on the scene as tent-city, prefabric buildings etc."*

*"We learned to live without our lovers. And we discover the meaning of "dying is as natural as living", indeed."*

***the memory souvenirs...***

# Earthquake tents and prefabric dwellings...



# Living standarts were very low...



Our citizens had to lived in the construction city for 3 years. In the rebuilding duration, one of the biggest problems of the city was unemployment



Winter never was so cold...



# *Collapsed and Damaged Buildings*





# Infrastructure

All infrastructure systems has damaged by the earthquake. Sewer and water system was renewed completely. These works finished by May 2002. (total 550 km)



# ***One of the most modern and effective department in Turkiye: Sakarya Metropolitan Municipality Fire Department***

In the earthquake fire station building was collapsed, and all the equipman and fire engines were lapsed . MERP Project had been made by 4 billion euro-grant from European Union .



# *Public Investments in the New Settlement Area*



Public Hospital - Karaman



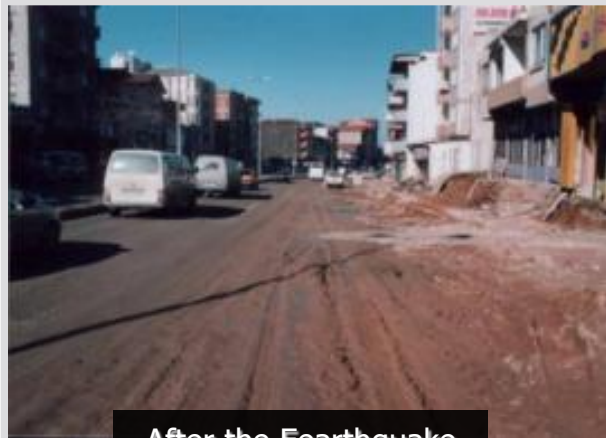
Public Hospital - Korucuk



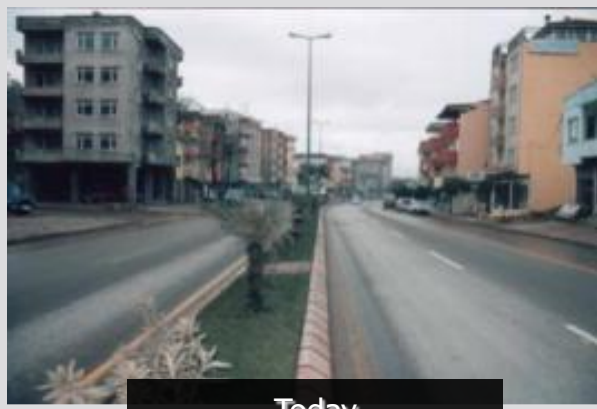
Korucuk High School



Disaster Dwellings



After the Earthquake



Today





After the earthquake



Today

# ADAPAZARI EARTHQUAKE & CULTURAL MUSEUM



UNUTMADIK, UNUTMAYACAĞIZ  
17 Ağustos 1999 depreminde vefat edenlere Allah'tan rahmet diliyoruz.



# *The Earthquake and Cultural Museum*

Adapazarı Earthquake & Cultural Museum located on Kavaklar Street in Sakarya City Center and it uses of 450 m<sup>2</sup>. The museum constructed as a art gallery. It's construct had started in 2000 and finished in 2004.

The museum consists of exhibition stands, cafeteria and cinevision. Pictures about the 1967 and 1999 earthquakes, an electronic stand that occurs an artificial earthquake, collapsed buildings' construction techniques, seismograph, other seismic supplies are on exhibition in the museum.

There is also an exhibition for some live lessons for 99 earthquake. People's stories about 99 earthquake has been exhibited here.

# *The Earthquake and Cultural Museum*

The purposes of the The Earthquake and Cultural Museum' founding are

- \* for making Sakarya's citizens and visitors from the other cities/countries conscions of the earthquake
- \* for making unforgetable of disaster's effects,
- \* to discover living safely against the earthquake.

The Earthquake and Cultural Museum is the 1<sup>st</sup> earthquake museum in Turkiye and 4<sup>th</sup> in the world. It aims to increase earthquake consciousness of the society. It also hosts some cultural activities. The museum was built by the Ministry of Public Works and Settlement in 2000. And the building was carried to Adapazari Municipality. After the decoration, it opened in 17<sup>th</sup> August 2004. The museum has been awarded as Culture Prize by Local Development Awards in Turkiye.



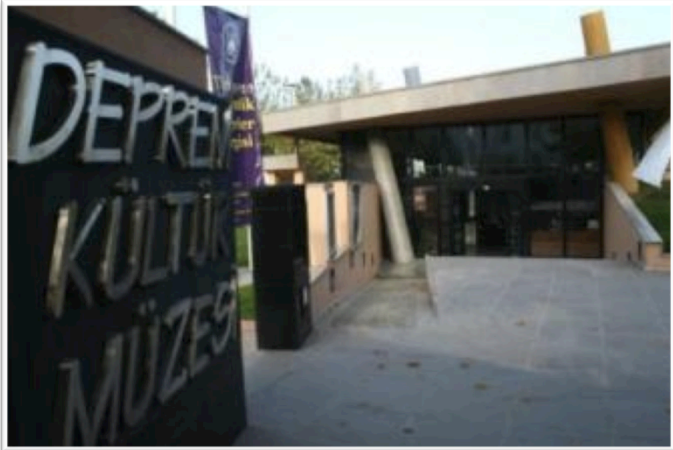
# *The Earthquake and Cultural Museum*

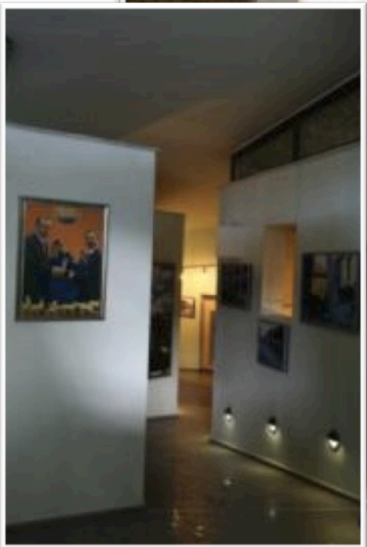
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Permanent exhibit is “99 earthquake photographs”. There is also an earthquake simulation in the museum permanently. It makes the 99’ earthquake come alive again and again. This simulator is especially used for “be safe in earthquake” trainings. These trainings are preparing particularly for the elementary and primarily school students.

During the 2009, 4614 students from 70 different schools had had “safeguarding in natural disasters” training in the museum.

# *The Earthquake and Cultural Museum*





*Permanent exhibit is “earthquake photographs”*

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***Some photos from the  
earthquake exhibit***

# A destroyed city....















# *Crystal Monument*

*In memoriam of our losts...*



# Journal of cultural and earthquake museum



Ö gün 1936 yılındaki babaçığım den 220 3  
30 yaşında olan babaçığım 10 yaşında  
dayan güzel babaçığım kaybettim. Niye Allah'ın  
lepi ki Allah ruhuat eylesin bu depreme yakın  
her akşam babaçığım seni çok özledim  
Ruhunu alandan sonra keşke almasaydın şimdi  
taki akademiye gibi beninde babaçığım

Sonnet  
SAVZAK  
TÜM ÖLÜLERİN RUHUNA  
EL FATİHA  
Sonnet

✱ 17 Ağustos 1933 depreminde  
Ben 7 ki can verdim.  
Ablam, Eniştem yeğenimin  
kızı Esimin kuzeni Eşive iki  
cacığı İbr ev sonda bitti.  
Ve ben hala o acıyı duyuyorum  
Erenlerdeki Eren kent sitesini  
5 ci batta oturuyordum eşim ve  
Ben garderobum altında kaldık  
Apartman boşaldığı bir neden sonra  
garderolam altından çıktık ben  
hala o geceyi yazıyorum  
hic unutmadım Bütün olanlara  
rahat diliyorum Cennette rahat  
olsunlar:  
Hayriye Özcan

Visitor number is about  
1000 people (weekly)

*Trainings for the elementary and primarily school students.*



# *activities in the museum*



Art exhibition



Simulator



Exhibition area