

Feasibility Study

Thermal spring complex, Edremit/Turkey

for:

convex ZT GmbH

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Task and purpose

A feasibility study for a thermal spring complex for a site in Edremit / Turkey is carried out.

The location has been analysed with respect to its suitability for such a project. Following items have been investigated:

- Appropriateness of the site
- Current market situation in the region
- Chances for the development of the project
- Development of a concept for optimal use



Contents:

- 1 Macroeconomic conditions of Turkey**
- 2 Site analysis**
- 3 Proposal design for a thermal spring complex**
- 4 Conclusion**

1 Macroeconomic conditions

Turkey with its 75 million inhabitants has one of the largest growing economies in the world.

- Gross domestic product: **572 billion US\$** (OECD 2005)
7.600 US\$ per capita
- Gross national product: **301 billion US\$**
- Gross national product growth: **10%** (OECD 2005)
- Unemployment: **10%** (2005)



Site in the district Balıkesir in Turkey

Tourism data:

- Tourism income **18,2 billion US\$** (2005)
- International tourists **20,3 million** (2005)



Thermal spring regions in Turkey

The "Turkey Tourism Strategy 2023" is going to improve and raise the thermal tourism in the country until the year 2023. The country has the highest potential in thermal springs among all European countries.

2.1 Infrastructure

The site is in the province of Balıkesir (1.1 million inhabitants) in the western part of the country, near the town of Edremit (60.000 inhabitants).

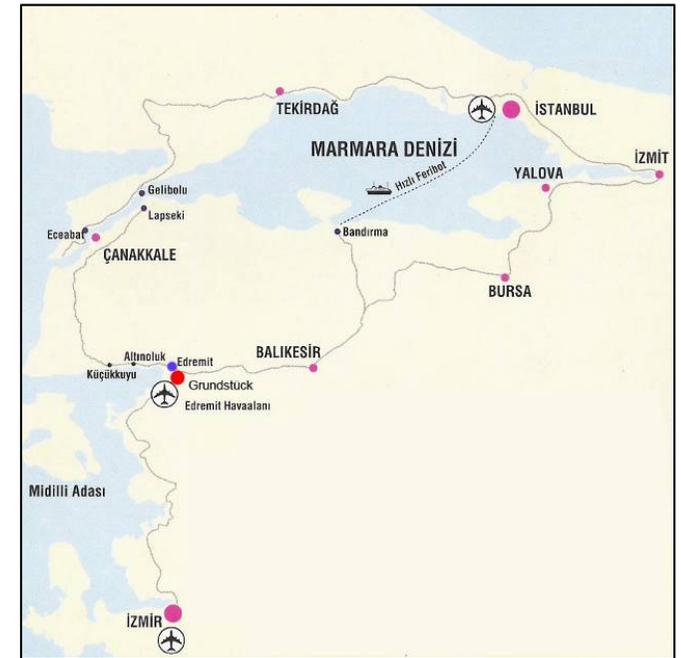
The site is next to the main road to Izmir (E550). There is a bus station in the town which allows connections to all big cities in the country. The airport of Edremit is very small and has to be extended.

Distances to the main cities:

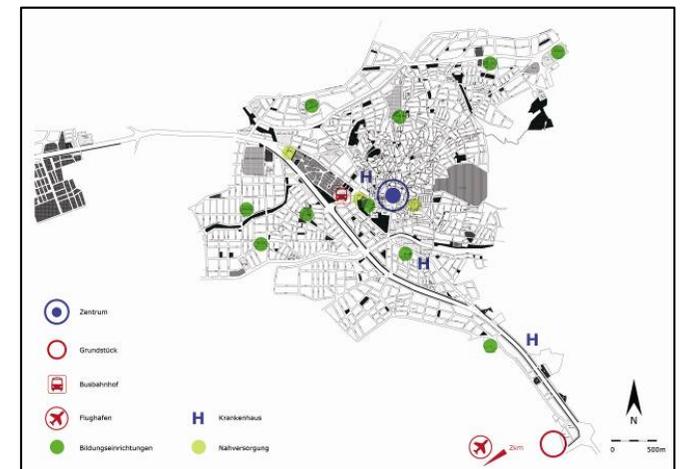
Edremit – Izmir	195 km
Edremit – Istanbul (via Balıkesir)	475 km
Edremit – Istanbul (via Canakkale)	450 km
Edremit – Ankara	600 km

Distances in the near surrounding:

Edremit city centre	4 km
Sea	7 km
Airport Edremit	2 km



Location of the site in the western part of Turkey



Infrastructure in Edremit

2.2 The site

The site has a size of approximately **52.000 sqm.**



size in sqm.	constructible area	open space area	access road area *	allowed levels	gross floor area	density
51.845	7.768	31.802	12.275	4 (general)	31.071	0,60
				6 (for tourism)	46.607	0,90

* planned access roads

The site is dedicated as building land and the use for thermal reasons is desired by the town of Edremit.

2.3 Characteristics of the site

The site plan shows the planned access roads, the neighbouring hotel and the existing main road to Izmir.

Characteristics of the site:

- No difference in level on the site
- Good visibility without any interference
- Little building development in the surroundings
- A thermal hotel is neighbouring
- Existing plans for the future infrastructure (access roads) on the site

There is a well located in the western part of the site.

The temperature of the water is **49°C**.

The well has a dept of **296,00 m**.



Site plan

2.4 The water

The water on the site is a healthy thermal water with curative effect, that can be used as bathwater and as drinking water, proven by the university of Istanbul.

The healthy effect of the water helps with hypertension, rheumatic and intestine diseases. As drinking water the fluorine rate is good for dental hygiene. The water has also a curative anti-aging effect.

**T.C.
İSTANBUL ÜNİVERSİTESİ
Tıbbi Ekoloji ve Hidro-Klimatoloji
Araştırma ve Uygulama Merkezi**

Sayı : 7/98 Tarih 05.02.1998

**BALIKESİR – EDREMIT DERMAN KAPLICA SUYU
Tıbbi Değerlendirme Raporu**

İ.Ü. Tıbbi Ekoloji ve Hidro – Klimatoloji Araştırma ve Uygulama Merkezi Uzmanlarınca 21.01.1998 tarihinde Balıkesir – Edremit Derman Kaplıcası'nı besleyen termomineral suyun kaynağın başında fiziksel ölçümleri yapılamamış, ancak Kaplıca Küvetlerinin musluğunda akan suyun özelliğinin incelenip, buradan alınan su örneğinin laboratuvarlarımızda kimyasal ve bakteriyolojik özellikleri saptanmıştır.

Analiz sonuçlarına göre, Derman Kaplıca Suyu toplam mineralizasyonu sınır değeri olan 1 g/l civarında (1.052 mg / lt) olup özellikle 4.850 mg / l florür içermektedir. Uluslararası değerlendirmeye göre, "fluorürlü sular" sınıfına girmektedir. Anyon içeriği yönünden 570 mg / l'lik sülfat taşınması, standart eşik değerin altında kalmakla birlikte, kaplıca suyunun endikasyonları yönünden içme kürleri olarak da kullanılabilmesini göstermektedir. Ancak, bu kaplıcanın banyo, içme ve su ile yapılacak diğer tedavi uygulamalarının değerlendirilmesinde, bilimsel yöntemlerle klinik araştırmaların gereği, buna ilaveten meteorolojik verilerin de sağlık açısından değerlendirilmesi önem kazanmaktadır. Suda kimyasal ve bakteriyolojik kirlilik tespit edilmemiştir.

Çağdaş Tıp anlayışıyla, yer altı mineralli sularını tedavi unsuru olarak değerlendirmek, bilimsel uygulanmasını sağlamak amacıyla hangi hastalıklarda yararlı olacağını belirlemek üzere, suyun fiziko – kimyasal özelliğini tesbitten sonra, farmakodinamik, fizyolojik ve klinik araştırmasının yapılması ön koşuldur. Türkiye'de ise, zengin yer altı su potansiyeli kadar yaygın ampirik ve geleneksel uygulamalar süregelmektedir; birçok önemli Kaplıcalarımız bilimsellikten uzak kullanımının örnekleridir. Halkımızın uzman hekimin görüşünü dahi almadan kullandığı Kaplıcalardan, yatırımcıların yine geleneksel yöntemlerle finansmanları, çağdaş tıp dışı uygulamaları giderek yaygınlaştırmakta, sağlık için tehlikeli boyutlara çekmektedir.

Merkezimiz ve Anabilim Dalımız bu gidişi önlemek için uygulayıcıya, uygulayana, gerek devlet, gerekse özel sektörden olan yatırımcıya öncülük etmek üzere, bilimsel çalışma aşamalarına girmeden, klinik çalışmalarla etkisi kanıtlanmış gelişmiş ülkelerin kaplıca sularının fiziko – kimyasal benzerliklerinden yararlanarak, ülkemiz sularının tıbbi raporlarını düzenlemektedir.

Certificate from the University of Istanbul

2.5 Tourism in the region

Tourism data in the region:

- 135.000 (in 2006) people from abroad visited the area around and in Edremit
- 150.000 (in 2006) people from Turkey visited the area around and in Edremit

Accommodation in the region:

- 4.000 hotel beds
- 1.100 motel beds
- 340 apartment hotel beds
- 1.100 pension beds

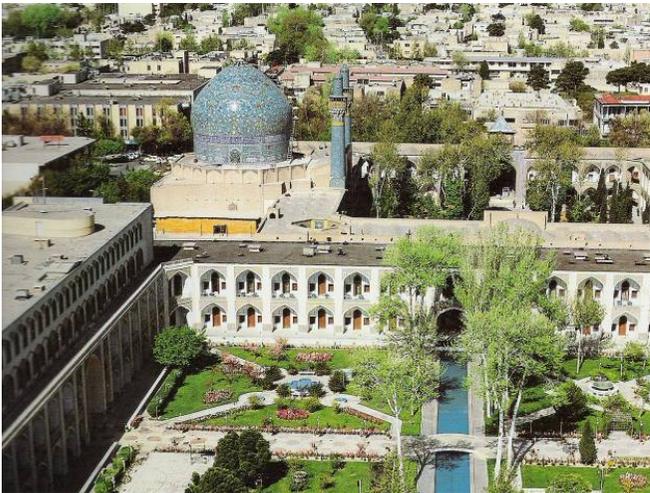
The region around the town of Edremit is known for its summer tourism. The infrastructure is therefore good developed. There are hotels and thermal hotels in different categories. Only deficit regarding to the thermal facilities is their low standard compared to western spa areas.



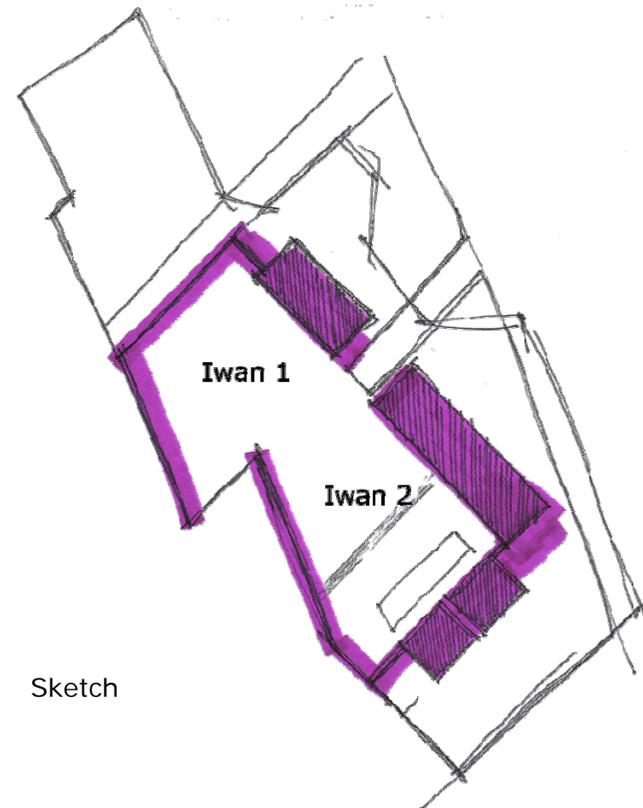
Examples of thermal hotels in the region

3.1 Way to the design

The region with its high historical background in therapeutic and relaxing baths (Hamam and Kaplica) requires a design that identifies with the tradition of the oriental and islamic architecture. Elements of these styles have been taken into consideration. Elements like the Iwan (closed courtyard), garden design, privacy and view protection are included in the design.



Example for an Iwan



Sketch

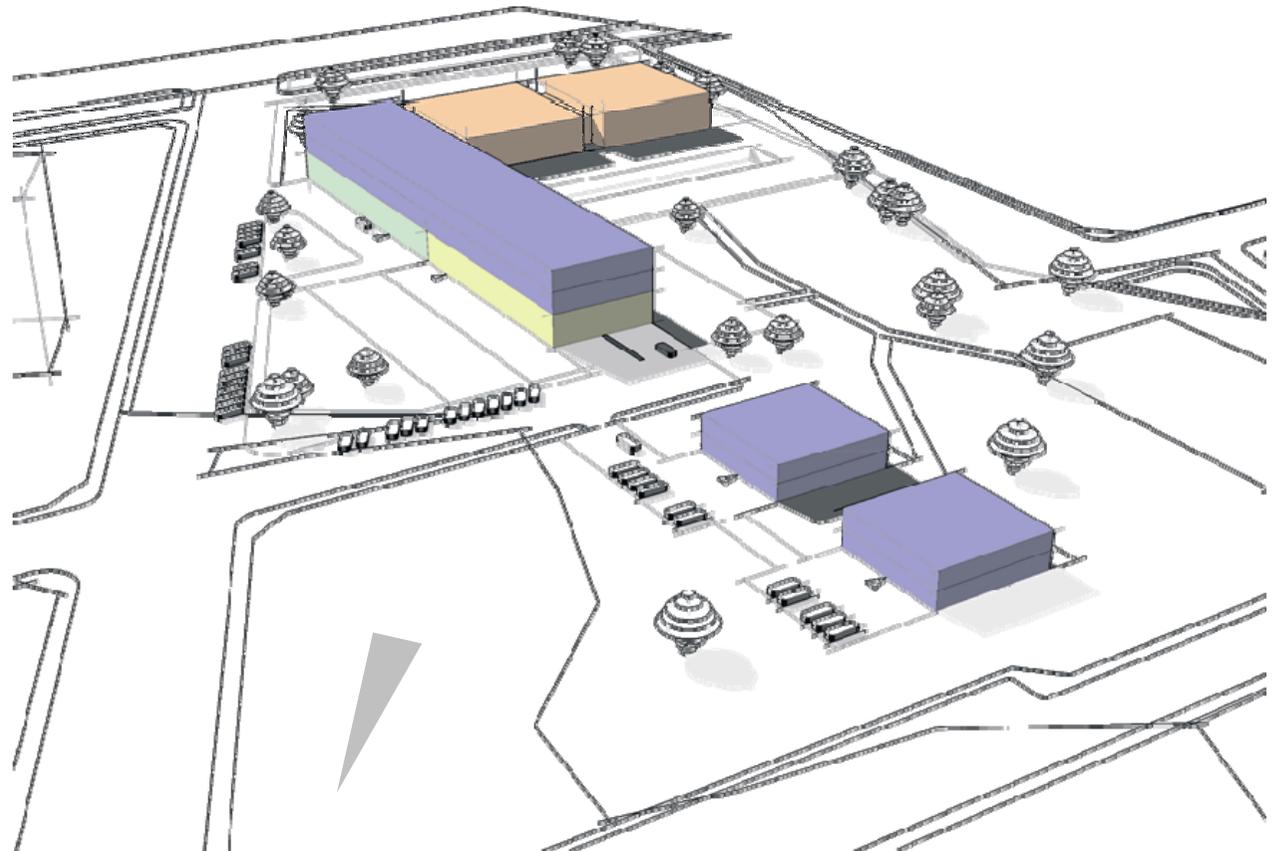
3.2 The design

Target of the project is to create a design that includes the tradition of the region and tries to interpret it in a modern way.

The design includes a 4 star hotel with 120 rooms, 20 apartments and a separate wellness and medical spa area.

2.160 m ²	Wellness
4.320 m ²	Hotel/Apart.
1.200 m ²	Catering
1.000 m ²	Public

An underground car park with two storeys is also designed under the main building.



3.3 The estimated costs for the project

To get a realistic total the estimated costs for a similar project in Austria were reduced by 30% to adjust it to Turkish standards.

	GFA/m ²	€/m ² AUT (100%)	€/m ² TUR (70%)	Costs
Hotel	7.020	1.600	1.120	7.862.400
Wellness; Medical-Spa	2.160	1.900	1.330	2.872.800
Apartment	1.200	1.400	980	1.176.000
Underground carpark	4.000	400	280	1.120.000
Outside facilities	37.000	150	105	3.885.000

Subtotal 16.916.200 €

	Rooms	€/Room AUT (100%)	€/Room TUR (70%)	Costs
Equipment Hotel	120	5.000	3.500	420.000
Equipment Wellness/public spaces	approx. the same as for the hotel			420.000

Total 17.756.200 €

4 Conclusion

Looking back on a traditional background in thermal history this region is very suitable and promising. The tourism in the country is well developed and the conditions for a successful property development are present on this site.

To get visitors from abroad and from Turkey special features have to be offered. Therefore a medical spa complex with separate wellness parts which are mainly used for curative and medical reasons is planned.

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