



The Historical Mura Site Near Barcelona

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Abstract

The author's trip to Spain (to the city of Barcelona and its surroundings) was occasioned by his participation in the International Scientific Symposium: „Bioclimatic Architecture in the Mediterranean, Barcelona, 08-14. June 2006“, where he presented his work entitled „Examples of the Bioclimatic Architecture in Bosnia and Herzegovina“. The author participated in this symposium at the invitation of the Embassy of the Kingdom of Spain in Sarajevo. Presentations of works at the Symposium were held in the city of Vilanova, about 50 km from the center of Barcelona, while the rest of the program was held in the cities of Barcelona and Sitges and in the Mura settlement, about 50 km away by air, north of Barcelona. The three cities and the rural Mura settlement were chosen very thoughtfully in order to connect vernacular architecture, author's bioclimatic architecture and contemporary architecture with an insight into concrete examples of architectural realizations. Vilanova is a new city with examples of contemporary architecture built according to high standards of energy-efficient architecture. In Barcelona, the focus was on the architectural realizations of the architect Antoni Gaudi (Antoni Gaudi and Cornet, 1852-1926). In the City of Sitges, the focus was on its urbanism and several individual buildings of bioclimatic architecture, while in the rural Mura settlement, the focus was on exceptionally well-preserved architectural buildings and equipment for everyday life, in a concrete natural environment

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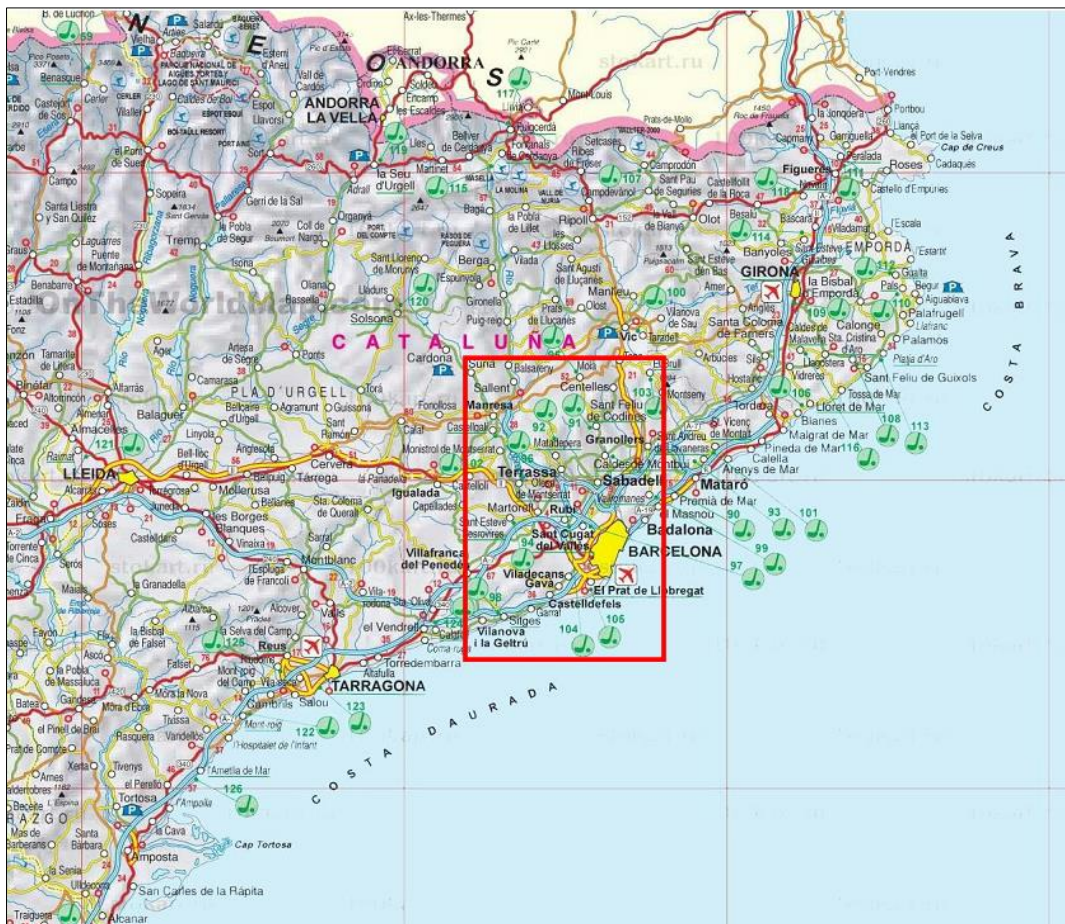
Keywords: Spain, Barcelona, Mura, Synergy of natural environment, social environment and man

1. Introduction

a population of 227)^[1], while the settlement of Mura is located about 50 km north of the city of Barcelona (Figure 1). In the center of the settlement is the Romanesque Church of Sant Martí, and on its edge is the Church of Santa Creu de Palou. The settlement has preserved, original architecture that is a sincere expression of the symbiosis of nature and man. The preserved originality of the settlement, such as the complex of houses and auxiliary buildings of Puig de la Balma, is also reflected in a series of well-organized structures on the properties of its residents, such as fountains, pools for accumulating water for times of drought, threshing floors, orchards, vineyards.. Today, the settlement of Mura is an "open-air museum" visited by a large number of people of various interests (schoolchildren, students of various disciplines, researchers, ordinary people-tourists). In order to better understand the life of the people through their history, a museum and an agro-tourism center have been arranged in the settlement. As part of the symposium "Bioclimatic Architecture in the Mediterranean Barcelona, 08-14 June 2006", three cities and the rural village of Mura were chosen very carefully in order to connect vernacular architecture, author's bioclimatic architecture and contemporary architecture with an insight into concrete examples of architectural realizations. Vilanova is a new city with examples of contemporary architecture built according to high standards of energy-efficient architecture. In Barcelona, the focus was on the architectural realizations of the architect Antoni Gaudi (Antoni Gaudi and Cornet, 1852-1926).

In the City of Sitges, the focus was on its urbanism and several individual buildings of bioclimatic architecture, while in the rural Mura settlement, the focus was on exceptionally

well-preserved architectural buildings and equipment for everyday life, in a concrete natural environment.



Source: Hadrovic, A. (2018). Architecture in the travelogues of an architect. Book 2: The Mediterranean, Faculty of Architecture, University of Sarajevo

Fig 1: Map of Catalonia (Spain). (The red square encompasses the area thSSat was the focus of the symposium)



Source: Haris Bradic (June 8, 2006)

Fig 2: The author in Vilanova



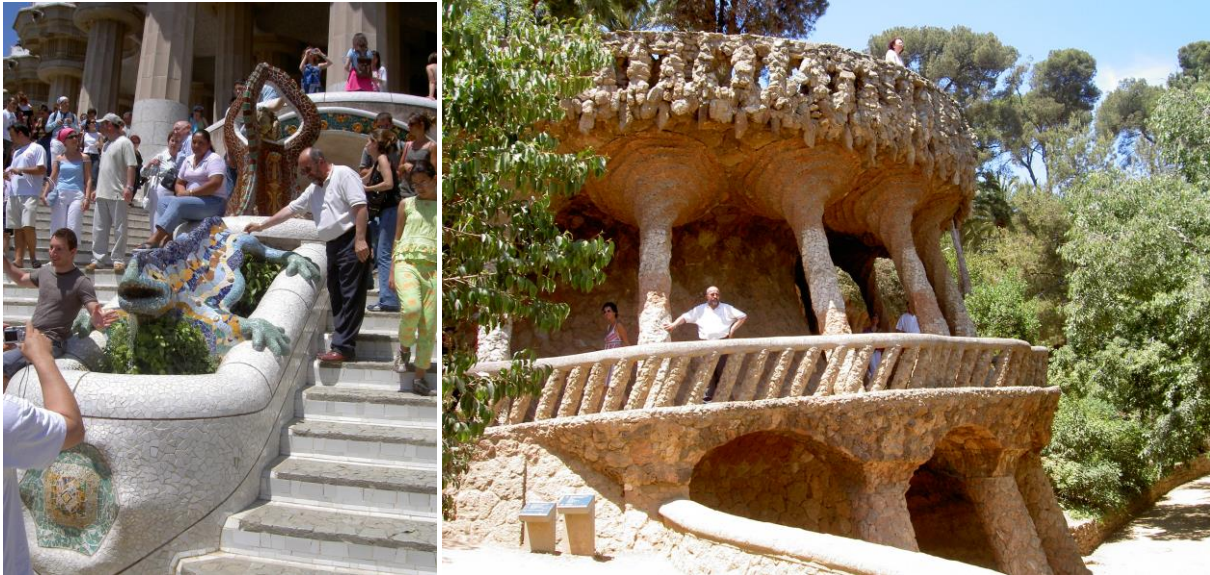
Source: Haris Bradic (June 8, 2006)

Fig 3: The author in Sitges



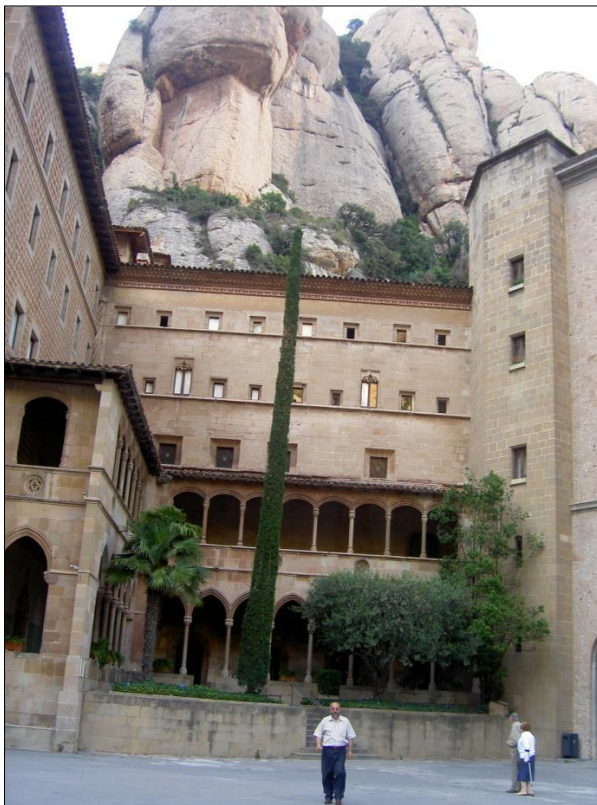
Source: Haris Bradic (June 9, 2006)

Fig 4: The author visiting La Pedrera - Casa Milà



Source: Haris Bradic (June 11, 2006)

Fig 5: The author visits Park Güell



Source: Haris Bradic (June 13, 2006)

Fig 6: The author visiting the monastery of Santa Maria de Montserrat (on the way to Mura)

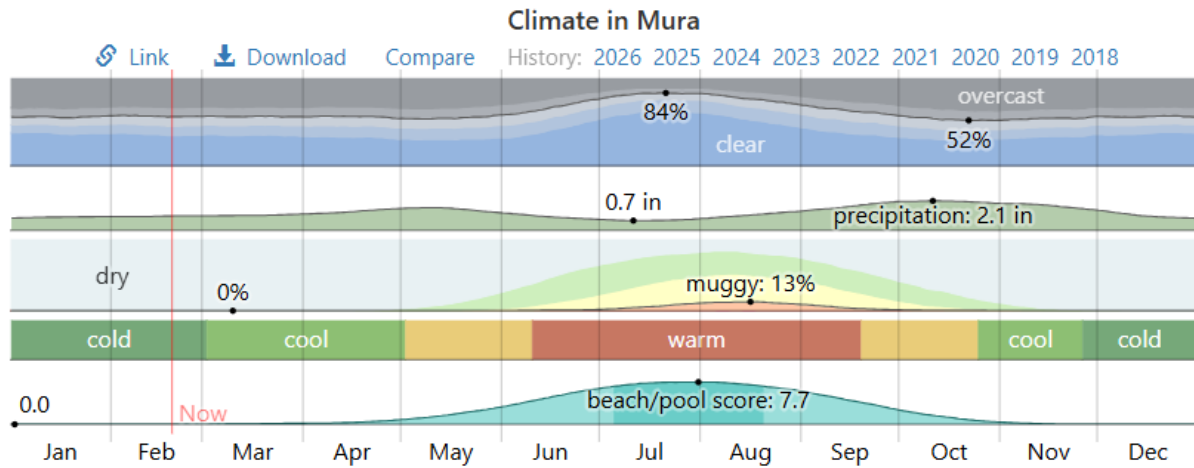


This work is the result of a series of study trips to Türkiye, Europe and the world. The aim of the study trips was to get to know cities on the spot and through their analysis (through 'cabinet work') to contribute to the author's theory of "Architecturally defined space" (ADS) [2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20].

Natural resources and sights

In Mura, summers are short, warm, dry, and mostly clear, and winters are long, very cold, and partly cloudy. Over the

course of the year, temperatures typically range from 0°C to 29°C and are rarely below -1°C or above 29°C. The warm season lasts for 2.9 months, from June 16 to September 12, with an average daily high above 24°C. The warmest month of the year in Mura is July, with an average daily high of 29°C and a low of 15°C. The cold season lasts for 3.8 months, from November 17 to March 11, with an average daily high of below 12°C. The coldest month of the year in Mura is January, with an average daily low of -1°C and a high of 10°C [21] (Figure 7).



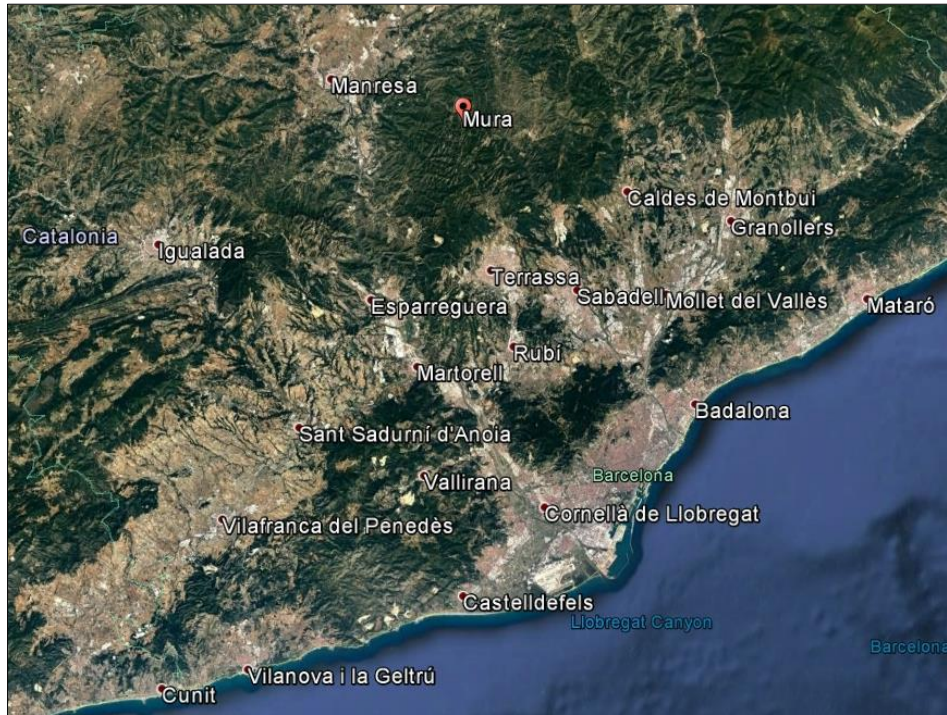
Source: <https://weatherspark.com/y/45856/Average-Weather-in-Mura-Spain-Year-Round>, Accessed: February 19, 2026.

Fig 7: Mura weather by month

In Mura, the average percentage of sky covered by clouds experiences significant seasonal variation throughout the year. The clearest part of the year in Mura begins around June 17 and lasts for 2.6 months, ending around September 4. The clearest month of the year in Mura is July, during which the sky is on average clear, mostly clear, or partly cloudy 82% of the time. The cloudiest part of the year begins around September 4 and lasts for 9.4 months, ending around June 17. The cloudiest month of the year in Mura is October, during which the sky is on average overcast or mostly cloudy 46% of the time [21]. The wettest season lasts for 9.3 months, from September 1 to June 12, with a greater than 15% chance of a given day being a rainy day. The month with the rainiest days in Mura is October, with an average of 5.9 days with at least 0.04 inches of precipitation. The driest season lasts for 2.7 months, from June 12 to September 1. The month with the fewest rain days in Mura is July, with an average of 3.2 days with at least 0.04 inches of precipitation. Rainy days are categorized as those that have only rain, only snow, or a mixture of the two. The month with the most rain days in Mura is October, with an average of 5.9 days. Based on this categorization, the most common form of precipitation during the year is rain alone, with a highest probability of 21% on October 3. Rain falls in Mura throughout the year. The rainiest month in Mura is October, with an average precipitation of 5.4 inches. The rainiest month in Mura is July, with an average precipitation of 18 inches. Mura experiences some seasonal variation in monthly snowfall. The snow period of the year lasts for 1.1 months, from January 5 to February 9, with a sliding 31-day snowfall of at least 1.0 inches. The snowiest month in Mura is January, with an average snowfall of 1.3 inches. The snow-free period of the year lasts 11 months, from February 9 to January 5. The

least snowfall occurs around July 25, with an average total accumulation of 1.0 inches. The length of the day in Mura varies significantly throughout the year. In 2026, the shortest day is December 21, with 9 hours and 9 minutes of daylight; the longest day is June 21, with 15 hours and 12 minutes of daylight. The earliest sunrise is at 6:16 AM on June 14, and the latest sunrise is 2 hours and 2 minutes later at 8:19 AM on January 4. The earliest sunset is at 17:21 on December 9, and the latest sunset is 4 hours and 9 minutes later at 21:30 on June 27 [21]. Mura experiences some seasonal variation in perceived humidity. The wettest period of the year lasts for 2.3 months, from July 7 to September 18, during which the comfort level is humid, oppressive, or miserable at least 3% of the time. The month with the most humid days in Mura is August, with 3.5 days that are humid or worse. The least humid day of the year is March 10, when humid conditions are practically unheard of [21]. The average hourly wind speed in Mura experiences slight seasonal variation throughout the year. The windiest part of the year lasts for 5.2 months, from December 2 to May 8, with average wind speeds exceeding 6.5 miles per hour. The windiest month of the year in Mura is April, with an average hourly wind speed of 7.0 miles per hour. The calmer season lasts for 6.8 months, from 8 May to 2 December. The calmest month of the year in Mura is August, with an average hourly wind speed of 5.9 miles per hour [21].

The Mura area is rich in pine and oak forests and vast arable fields where cereals, fruits and vegetables are grown. The Mura area is home to the famous Sant Llorenç del Munt i L'Obac Nature Park (Catalan: Parc Natural de Sant Llorenç del Munt i L'Obac), (Figure 9.). The highest peak of this nature park is La Mola (1056.8 m) on which the Benedictine monastery of Sant Llorenç del Munt is located.



Source: Google Earth, Accessed: February 18, 2026.

Fig 8: Location of Mura



Source: <https://www.escapadarural.com/que-hacer/parque-natural-desant-llorenç-del-munt-i-l-obac/donde-dormir>

Accessed: February 18, 2026.

Source: <https://www.pinterest.ca/pin/585327282791910810/>,

Accessed: February 18, 2026.

Source: <http://www.manresaturisme.cat/ang/article/7354-the-santllorenç-del-munt-and-l-obac-natural-park>, Accessed: February 18, 2026.

Fig 9: Sant Llorenç del Munt i L'Obac Nature Park (Catalan: Parc Natural de Sant Llorenç del Munt i L'Obac)

Gorg del Padre is a locality in Mura that is rich in water in spring and autumn, where the Les Nespres stream and waterfalls are a particularly natural asset (Figure 10).



Source: <http://elscausdemura.coop/4707-2/>, Accessed: February 18, 2026.

Source: <https://caminos-y-caminatas.blogspot.com/2012/07/ruta-mura-ypuig-de-balma-08072012.html>, Accessed: February 18, 2026.

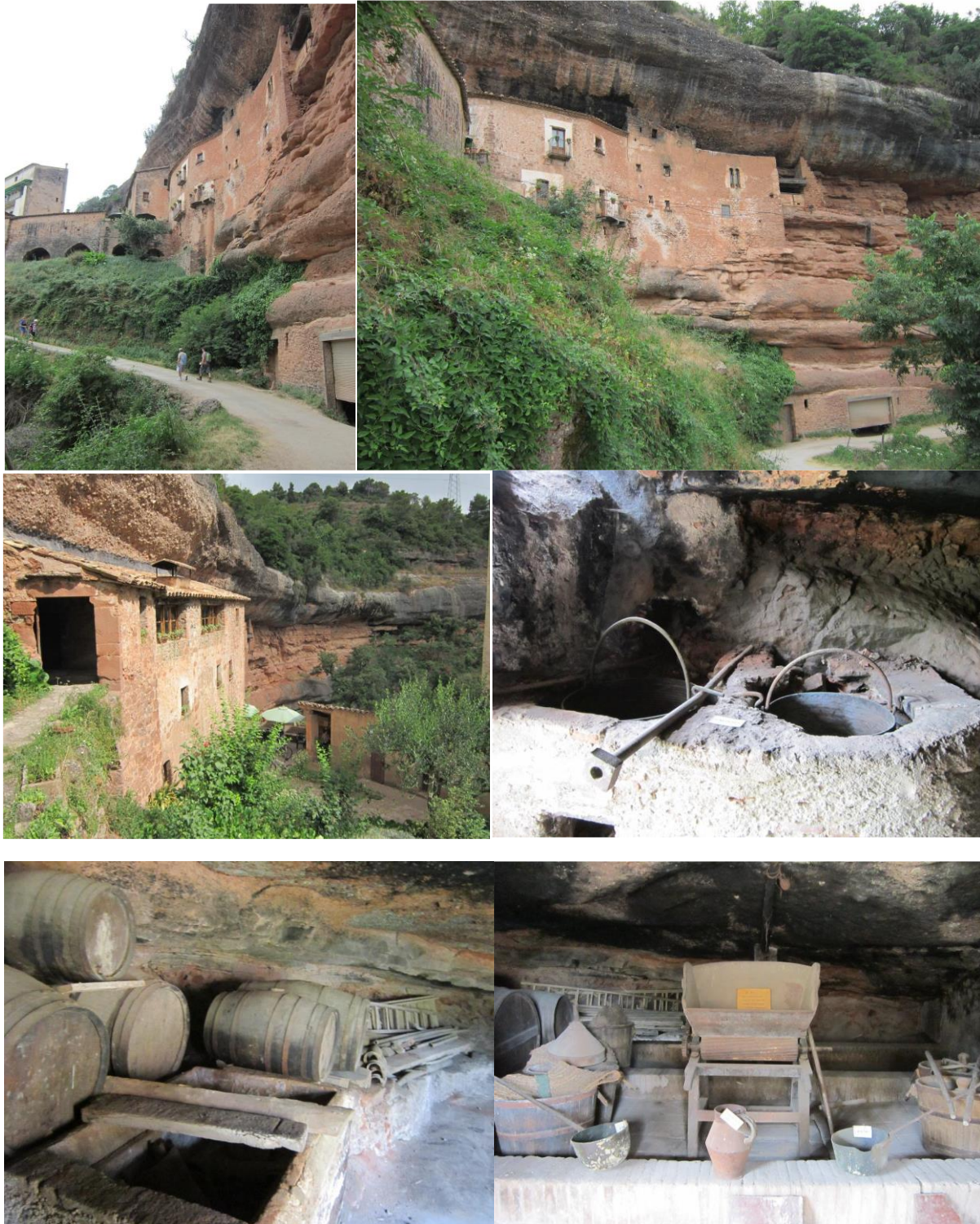
Fig 10: Gorg del Padre

Architectural cultural and historical heritage

The Mura settlement is an example of bioclimatic arrangement of a rural settlement and individual architectural objects where man is in direct relationship with nature. Here man understands nature and uses its reSources in an extremely rational and purposeful way so that, in the end, it looks as if nature has built the architecture into which man has just moved in with his needs (Figure 11). Today, when people do not live the way they did hundreds of years ago, the traces of life framed by various architectural structures have not been erased. Both nature and architecture are being reused through numerous visits by people from different walks of life:

architect-researchers, students of various disciplines, tourists eager for entertainment and to get to know worlds that are not similar to the world in which they usually live.. In addition to preserved examples of original architecture and various equipment that was once used in everyday life, new facilities have been established in Mura, appropriate for the modern age: restaurants (modern facilities in which food and drinks are prepared as they were once done in individual houses in Mura), accommodation facilities (in houses that have been originally decorated), a museum (in which, in a modern and concentrated way, artifacts that testify to the variety of culture of the people of Mura are exhibited)..





Source: <https://caminos-y-caminatas.blogspot.com/2012/07/ruta-mura-ypuig-de-balma-08072012.html>, Accessed: February 18, 2026.

Fig 11: Historical Mura settlement

The Monastery of Sant Llorenç del Munt (Catalan: Monestir de Sant Llorenç del Munt) is a Benedictine monastery located on the La Mola peak of the rocky mountain massif of Sant Llorenç del Munt in the Parque de Sant Llorenç del Munt i l'Obac. The monastery is first mentioned in written records in 986, and then in documents from 1014 and 1018. Napoleon's army (on 30 March 1809) also visited this monastery (and

according to some *Sources* even destroyed it), when the monks abandoned it, until 1871 when Antoni Vergès i Mirassó (1832-1874) restored it and wrote a monograph about it (Figure 12). The monastery was declared (1931) a cultural monument, Béns d'Interès Cultural (category in the register of cultural heritage of Spain).



Source: https://ca.wikipedia.org/wiki/Monestir_de_Sant_Lloren%C3%A7_del_Munt#/media/File:Sant_Lloren%C3%A7_d el_Munt_2.jpg

Accessed: February 18, 2026.

Source: <https://upload.wikimedia.org/wikipedia/commons/0/0a/SantLloren%C3%A7Munt-MonestirLaMola.jpg>

Accessed: February 18, 2026.

The Church of Sant Martí in Mura (Catalan: Església Sant Martí de Mura) is a single-nave church built in 1066, on the site of an earlier pre-Romanesque church built in the 10th century. The main space of the church (the nave) is vaulted with a barrel vault. On the east side of the church is a

semicircular apse decorated with six arches supported by columns whose capitals are decorated with acanthus leaves made of stone. This church was rebuilt and remodeled several times, during the 12th and 17th centuries, as can be seen from its current state (Figure 13).



Source: <http://www.mura.cat/card/81/Esglesia-de-Sant-Marti.html>, Accessed: February 18, 2026.

Fig 13: Church of Sant Martí in Mura

The Church of Santa Creu de Palou in Mura (Catalan: Església Santa Creu de Palou de Mura) is a Romanesque single-nave church located on the edge of the village of Mura. In written *Sources*, the Church of Santa Creu de Palou is mentioned in 1225 (as a church in the parish of Santa Cruz, without specifying the exact location), and in 1285 as Santa Creu de Mura. This church was part of the castle of Mura, in the locality of Palou or El Farell.

The base of the main space (nave) of the church is rectangular

in shape. The physical structure of the church can be seen segments of its renovation, of its original construction (in the 11th century) and later. Its semi-circular apse is vaulted with a segmental dome while the walls of the apse on its outside are decorated with nine arches grouped in three units. The vault above the main space (nave) of the church has collapsed (Figure 14). Some of the building elements of the church can be seen on the houses in L Mura, where they were used as building material.



Source: <http://trailsantllorenç.blogspot.com/2011/02/santa-creu-de-palou-405-m.html#.W1xdQtR94-U>, Accessed: February 18, 2026.

Fig 14: Church of Santa Creu de Palou in Mura

The Molí del Mig Museum (Catalan: Museu Molí del Mig) is an 'open-air museum' in La Mura where there is a complex of buildings of various uses (houses, barns, mills, wine and other food storages, auxiliary facilities..), a canal with a

raft.. The rural physical structure of the Mura settlement, which has been preserved to this day, originates from a long period of time, from the 10th to the 19th century (Figure 15).



Source: <http://www.mura.cat/card/123/Casa-Museu-Moli-del-Mig.html>, Accessed: February 18, 2026.

Fig 15: Moli del Mig Museum

The Agrotourism Center in Mura (Catalan: Center d'Agroturisme a Mura) is a complex of facilities in the village of Mura that today are at the service of various profiles of visitors. In addition to the contents that make up the Molí del Mig Museum complex, the Center d'Agroturisme a Mura has

a large number of houses for rent dating back to the 12th century. In order to be comfortable in everything for their visitors, the houses have modern equipment (kitchens and bathrooms, for example), (Figure 16).



Source: <http://puigdelabalma.com/en/>, Accessed: February 18, 2026.

Source: <https://www.pinterest.com/pin/137782069822528213/>, Accessed: February 18, 2026.

Source: <https://rvdmediagroup.com/en/charming-villages-mura/>, Accessed: February 18, 2026.

Fig 16: Agrotourism center in Mura

Along the road from Barcelona to the city of Manresa (and La Mura) is the Monastery of Santa Maria de Montserrat. It is a Benedictine monastery located about 48 km from Barcelona, on the Montserrat mountain, in a picturesque natural environment dominated by unusual rock shapes carved by nature. The monastery was founded in the 11th century, after which it was expanded and renovated several times. It is considered the most important religious center in all of Catalonia. The monastery basilica houses a statue of the Virgin of Montserrat (the Black Virgin), which is one of the most revered saints in Barcelona and its surroundings. The monastery is still active today, with more than seventy monks. In addition to the road, the monastery can be reached from Barcelona by train and two cable cars. The Basilica of the Monastery of Montserrat is basically a single-nave Gothic building that has been rebuilt and remodeled over time so that today you can see elements of Catalan Renaissance and traditional architecture. At its base, the basilica measures 68.32 m x 21.50 m, while the height of the top of its dome is 33.33 m. Inside the basilica are statues of saints (Ezekiel, Jeremiah, Isaiah and Daniel) made (1896) by the Catalan

sculptor Josep Llimona i Bruguera (1864-1934) in wood. The altar of the basilica was made (1958) by the sculptor Montserrat Mainar (1928-2015) and depicts biblical scenes: The Last Supper (L'últim sopar), The Wedding of Cana (Les noces de Cana) and The Multiplication of the Loaves and Fishes (La multiplicació de pans i peixos). The cross in the altar (from the 15th century) is the work of the Florentine artist Lorenzo Ghiberti (1381-1455). Above the altar is the room of the Virgin. The monastery complex houses a museum that houses paintings by many famous artists (Alexandre de Riquer, Joan Llimona, Joaquim Vancells, Dion Baixeras and Lluís Graner), and a printing house founded in 1499. After the Spanish Civil War (1936-1939), the facade of the monastery basilica was renovated (1942-1968) according to a project by the architect Francisco Folguera and decorated with reliefs by the Catalan sculptor Joan Rebull Torroja (1899-1981). During the reign of General Francisco Franco (1892-1975), the monastery of Santa Maria de Montserrat was considered a gathering place for scholars, artists, politicians and students, and was often visited by the general's security services (Figures 17,18,19).



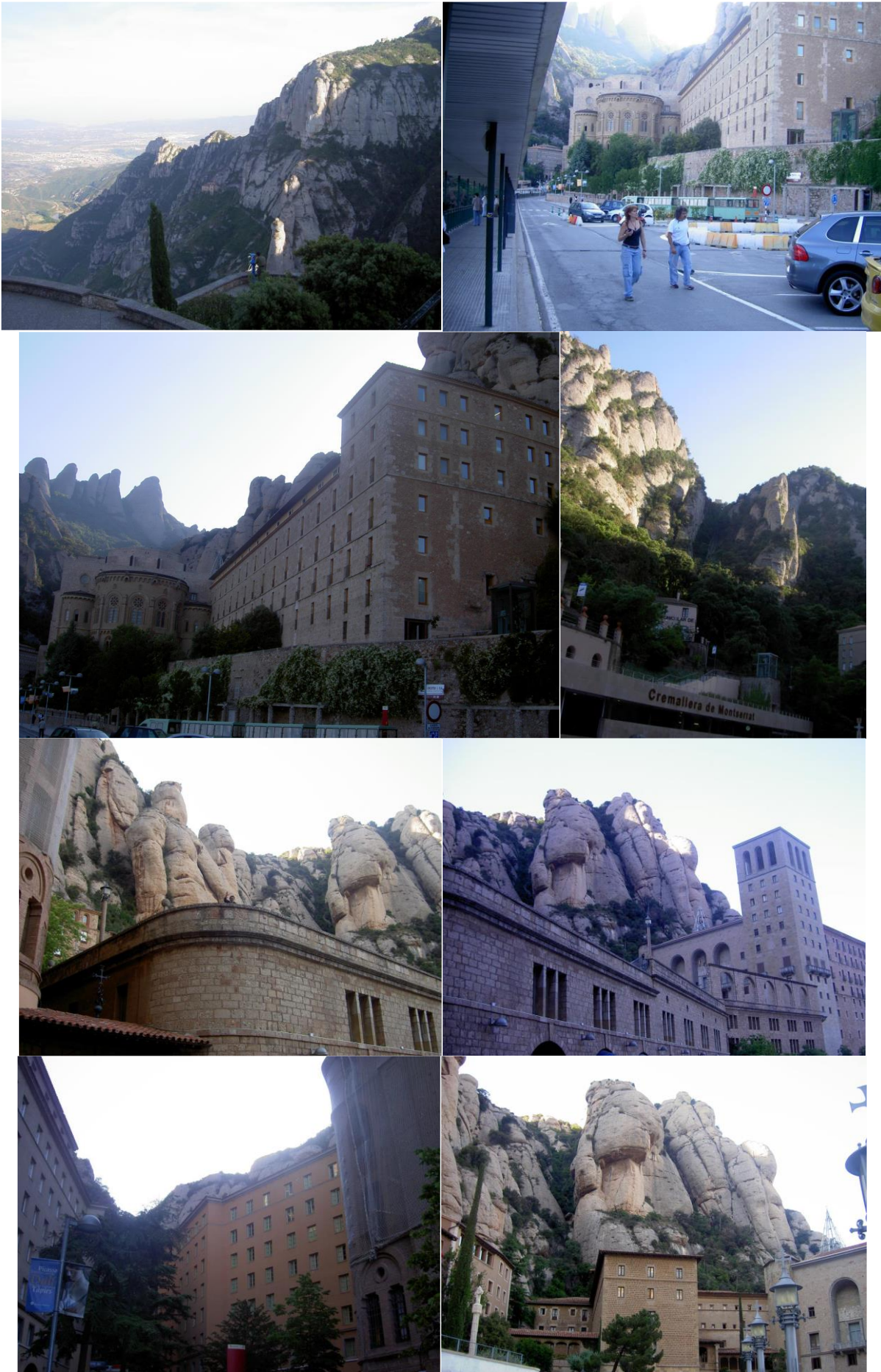
Source: Author (June 13, 2006)

Fig 17: The cogwheel railway, the Cremallera de Montserrat, takes you up to the monastery of Santa Maria de Montserrat



Source: Haris Bradic (June 13, 2006)

Fig 18: Square in front of the monastery





Source: Author (June 13, 2006).

Fig 19: Monastery of Santa Maria de Montserrat

Conclusion

The author's trip to Spain (to the city of Barcelona and its surroundings) was the occasion for his participation in the International Scientific Symposium: BIOCLIMATIC ARCHITECTURE IN THE MEDITERRANEAN, Barcelona, 8-14 June 2006, where he presented his work entitled "Examples of Bioclimatic Architecture in Bosnia and Herzegovina". The symposium "Bioclimatic Architecture in the Mediterranean, Barcelona, 8-14 June 2006" was exceptionally designed by selecting four locations (Vilanova, Sitges, Barcelona and Mura), each specific in its own way, in order to connect vernacular architecture, authorial bioclimatic architecture and contemporary architecture with an insight into concrete examples of architectural realizations. Vilanova is a new city with examples of contemporary architecture built according to high standards of energy-efficient architecture. In Barcelona, the focus was on the architectural realizations of the architect Antoni Gaudí (Antoni Gaudí i Cornet, 1852-1926). In the city of Sitges, the focus was on its urban planning and a few individual buildings of bioclimatic architecture, while in the rural settlement of Mura, the focus was on exceptionally well-preserved architectural buildings and equipment for daily life, in a specific natural setting. Mura as a settlement grew out of the natural setting, and man and society built structures and designed equipment for daily life that are in symbiosis with the natural environment.

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