

Gaudí and *trencadís* mosaic

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“Colour is life”
Antoni Gaudí i Cornet



Foreword Pablo Longoria (WMF)

In 2014, the Güell gatehouses were included on the World Monuments Watch list to draw attention to Antoni Gaudí's amazing designs and the conservation needs of the site. This led to an inspired look at the gatehouses, their use today, and the importance of Gaudí and Catalonia's home-grown art nouveau, *modernisme*, in Spain and around the world. Most importantly, it led to a renewed appreciation of *trencadís* in Gaudí's body of work.

Trencadís is a Catalan word which literally means 'easily broken' or 'brittle'. It describes the technique developed by Antoni Gaudí to cover the surfaces of his architectural creations and soon became one of the key elements, and the iconic image, of modernisme, the artistic movement that emerged at the end of the 19th century in Spain, at the same time as art nouveau in France and Arts and Crafts in the United Kingdom.

This technique adheres to two key ideas of Gaudí's philosophy: the representation of nature through colour, and cutting building costs, to such an extent that *trencadís* used 'broken' recycled ceramics as its primary raw material. As the text in this book explains, the technique developed by Gaudí consisted of breaking ceramic objects into pieces and rearranging them in different patterns and motifs on different surfaces. He worked with fellow *modernista* artist, Josep Maria Jujol, in the pursuit of the fashionable trend in Europe at the time of applying man-made art to architecture.

Gaudí first used *trencadís* at the Güell gatehouses, one of the first buildings commissioned by Eusebi Güell to test this imaginative young architect. As a result of this work, Güell went on to commission Gaudí to do other projects — Palau Güell, Park Güell, the church at the Colònia Güell — which would eventually be awarded World Heritage status, the first two in 1984, and the last in 2005.

When the World Monuments Fund first became interested in the gatehouses, they were closed to the public and in a poor state of conservation. Subsequently, Barcelona City Council approached the owner of the site, the University of Barcelona, and signed an agreement to restore the gatehouses in exchange for running its visitor programme.

Thanks to support from American Express, the World Monuments Fund developed two projects involving Barcelona and *modernisme* in association with the University of Barcelona. The first project was associated with sustainable tourism, a hot topic in most tourist destinations. *Modernisme Invisible* is a mobile app that gives a broad overview of the movement, from Barcelona's seven most-visited iconic *modernista* landmarks to a hundred or so buildings throughout the city that showcase the outstanding beauty of *modernisme* and often go unnoticed by visitors and locals.

The second initiative is this book, in which Mireia Freixa and Marta Saliné i Perich tell the story of Gaudí and *trencadís*, and the way it evolved through the use of a variety of materials, from household crockery picked out of the rubbish, to fragments of discarded glass bottles and ceramic tiles. The book documents the traditional techniques, illustrated with photographs by Pere Vivas, who beautifully captures the art behind Gaudí's unique approach to architectural design.

The commitment of the World Monuments Fund to cultural heritage conservation has ensured that one chapter in the book would be devoted to the preservation of *trencadís*. A number of restoration projects have been criticised by visitors to the sites, who felt their authenticity had been lost by replacing original, damaged fragments with new ceramic pieces, sometimes using a different technique to the original one. To address these

issues, the book includes an article by Dr. Jaume Coll Conesa, director of the Museo Nacional de Cerámica y Artes Suntuarias "González Martí" in Valencia regarding the methods used in the restoration of *trencadís* mosaics.

The World Monuments Fund's initiatives, and those of World Monuments Watch in particular, seek to open up a dialogue about heritage, its importance in our lives, and the fact that we are frequently surrounded by sites that enrich our lives but we fail to notice until the need to preserve them becomes apparent. With our many partners and colleagues, we hope this book triggers a similar conversation about Gaudí's inventiveness and the ways *trencadís* enriches Barcelona's streetscape and delights locals and visitors alike, as well as those who can admire this work on the *Modernisme Invisible* app and in this book.

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The World Monuments Fund was founded in 1965 and is dedicated to advocacy for and the conservation of the world's cultural heritage sites. Throughout its history, the organization has carried out interventions in more than 600 sites in over 100 countries. The WMF has had the privilege of working in Spain since the 1970s and is grateful to its many partners throughout the country. You can learn more about our work at www.wmf.org

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Introduction

Trencadís ceramic mosaic is the most distinctive element of our home-grown art nouveau, *modernisme*, and the architecture of Antoni Gaudí i Cornet (1852-1926). Without this technique, the bench in Park Güell wouldn't exist, and nor would the façade of the Casa Batlló, or the chimneys on the rooftops of the Palau Güell and La Pedrera. But what lies beyond its wonderful expressiveness and beauty? This is a fascinating topic that we will try to unravel in these pages.

We can provide some answers that justify the great success of *trencadís* during the *modernista* period. Firstly, the local tradition of covering walls with coloured tiles: a hygienic and cost-effective resource that had been used in Catalonia and Valencia since the Middle Ages and become widespread since the 18th century. But we should also mention the fact that the architects, designers and manufacturers were perfectly in tune and created top-quality designs that were mass produced for an enthusiastic public. Lluís Domènech i Montaner (1850-1923) and Antoni Gaudí were the two Catalan *modernista* architects who explored the decorative potential of ceramics, mosaic and *trencadís* in greater depth. But it was Gaudí, with his associate Josep M. Jujol i Gibert (1879-1949), who took the technique into a different realm, creating wall coverings the likes of which had never been seen before. Even so, other architects who were their contemporaries, also made an outstanding use of mosaic and *trencadís*, including Gaudí's assistant Francesc Berenguer i Mestres (1866-1914), or Antoni M. Gallissà i Soqué (1861-1903), Josep Puig i Cadafalch (1867-1956), Alexandre Soler i March (1874 -1949) and Antoni de Falguera i Sivilla (1876-1947). In addition to the architects who recognised the expressive potential of this technique, we should also consider the workshops of mosaicists of the calibre of Mario Maragliano Navone (1864-1944), Lluís Bru i Salelles (1868-1952) and Eliseu Querol i Vilarroya (1895-1980).

This book takes an in-depth look at Gaudí's use of *trencadís*, although the first two chapters will explore the historic and cultural context he worked in. It will then look at the different techniques of mosaic and *trencadís*, their functions, and the materials used. The third chapter, which forms the core of the book, analyses the systems Gaudí used to create his

mosaics, starting with the gatehouses of the Güell Estate in Pedralbes, where they were applied using the Hispano-Arabic technique of cutting glazed tiles into geometric shapes, breaking them into pieces (the name *trencadís* comes from the Catalan verb '*trencar*', meaning 'to break'), and applying them to the outer surface like a skin. Other breakthroughs can be seen on the chimneys of the Palau Güell, on the façade and roof of the Casa Batlló — where he also experimented with glass *trencadís* —, at the Torre Bellesguard and the church in the Colònia Güell, culminating in the panels of the hypostyle hall and undulating bench in Park Güell, where he worked with Josep M. Jujol to create a visually stunning ensemble that predated the *modernista* aesthetic. The book concludes with a series of chapters that pinpoint the problems with the restoration and conservation of *trencadís* mosaics and look at their current use and abuse.

The big question we have faced when writing this book is to ascertain whether Gaudí was the first person to use this technique. We believe that we can say, in all certainty, that Gaudí reinvented a technique that had been used in the past and created a new, modern formula consisting of reusing discarded pieces of pottery. However, it is Gaudí himself who confirms his new approach to materials and coverings in a conversation with one of his associates, Cèsar Martinell, on 22nd January 1926. They are discussing the completion of the first tower of the Sagrada Família, and Gaudí talks about the mosaic cladding: "The pointed roofs some architects use in their buildings..." (after he had designed the conical turret for the Palau Güell) "... are not eye-catching enough as a result of the poor-quality cladding..." (Martinell, 1951). Martinell defines the pinnacle-shaped turrets as one of Gaudí's great contributions to architecture but he also recognises that their importance is also down to the materials used. The dome above the main drawing room at the Palau Güell that is the centrepiece of the rooftop, which master and pupil refer to, is made from discarded materials, vitrified sandstone from lime kilns, broken up and applied to the roof and made to resemble *trencadís*. This statement highlights the fact that, in his later years, Gaudí acknowledged that he had devised a new formula in the use of architectural cladding.



Antoni Gaudí i Cornet

The architect of colour

Antoni Gaudí completed his primary and secondary education in his home town Reus, which was experiencing rapid growth at the time and had a thriving working class and a liberal bourgeoisie. In 1870, the family moved to Barcelona and Gaudí enrolled at the city's recently founded Provincial School of Architecture. In the early 1880s, Gaudí began working with the architect Joan Martorell i Montells (1833-1906), who had a profound influence on his work as well as his way of understanding architecture. Gaudí always considered him his teacher. In the years leading up to the Barcelona Universal Exhibition (1888), Gaudí began working as an architect in his own right and, like the other architects of his time, remained true to an eclecticism we could call “pre-modernista”, although he always used brickwork in a special way. In his early works — Casa Vicens (1883-1885), the gatehouses to the summer home of his patron Eusebi Güell (1883-1887), and his main residence, Palau Güell (1886-1890), just off La Rambla — the architect combines the use of historic styles with elements of great decorative originality using hitherto unseen building techniques. He gradually abandoned pastiches of different styles to embark on a new experimental search that took as its starting point the constructive forms and principles of the Gothic period which can be seen in the School of Santa Teresa in Barcelona (1886), the Episcopal Palace in Astorga (1887-1894), and the crypt and apse (1984-1900) of his most iconic work: the Sagrada Família. However, Gaudí evolved beyond the Gothic by introducing the parabolic arch, which is the underpinning and underpinned element at one and the same time.

By the early 20th century, Gaudí had become a much-valued architect among Barcelona's bourgeoisie. He built a series of houses in the new centre of the modern city, the Eixample, which showcase the abstract and organic forms of the worldwide art nouveau movement, as seen in the Casa Calvet (1898-1900), while evolving towards ever-freer forms in the Casa Batlló (1904-1906) and the Casa Milà (1906-1912), which was nicknamed La Pedrera (the Catalan for ‘quarry’). One of Gaudí's most important works, Park Güell (1900-1914), shows a direct British influence. At the behest

of his patron, he designed a beautiful garden city for the most affluent members of Barcelona's bourgeoisie. Finally, the church at the Colònia Güell (1908-1914) was approached as a small-scale trial run for what was to become his masterpiece: the Sagrada Família. After Gaudí had completed La Pedrera, he worked for a single private client — Eusebi Güell — on two major commissions that were in the pipeline: Park Güell and the church at the Colònia Güell. However, both projects were curtailed in autumn 1914 when they were cancelled by the Güell family. From this time until his death on 10th June 1926, Gaudí devoted himself solely to the Sagrada Família.

From a very young age, Gaudí had shown an interest in the use of ceramic mosaic as a material for cladding. This is revealed in his essay *Ornamentación* (1878), which we will discuss at length in this book and quote from Laura Mercader's edition (Mercader, 2002) or through texts compiled by his associates and followers. This interest prompted him to visit the studios of one of the last craftsmen versed in the ancestral secrets of glazed ceramics, Joan Baptista Cassany i Folguera (¿-?). Folguera was based in Manises on the outskirts of Valencia, and the trip, which Gaudí undertook in 1887 with Domènech i Montaner, is described by the latter in 1903, in an article written to mark the death of the architect Antoni M. Gallissà (Casanova, 2002).

The durability of ceramics makes them the ideal medium for the application of colour to architecture. The use of a broad colour spectrum is, as we well know, one of the great challenges that faced the architectural theorists of the 19th-century, from Gottfried Semper (1803-1879) to John Ruskin (1821-1897) (Fanelli and Gargiani, 1999) and, of course, the Barcelona architects of the second half of the 19th century. Elies Rogent i Amat (1821-1897), for instance, who was the director of the Barcelona School of Architecture when Gaudí was studying there, made colour the most important element in the decoration of the main assembly hall of Barcelona University (1863-1892), the building that best represented the Barcelona of the day (Freixa, 2018).

Types of mosaic in antiquity

Mosaic is defined as an ornamental system made of small pieces placed side by side. Visually it consists of a surface embedded with materials like stones, marble, glass or fired clay in different colours which can be arranged to create any type of geometrical, figurative or abstract design.

The way the materials are arranged can be summed up by the word *opus*, indicated by the production process or manufacturing system, and is a term that has been used since Roman times. The word *musivum* — mosaic — refers to the world of Ancient Greece and Rome. However, if we go a little further back in time, we find the Greek word *μούσα* which means ‘muse’ and immerses us in the idea of beauty and inspiration. It is said that the Romans adopted this word because the art of mosaic was so sublime that it could only be inspired by the muses, which gave rise to the expression *opus musivum* meaning “made by muses”. Stricter, less emotive translations would be “mosaic work”, “made of mosaic” and “mural work”.

The earliest mosaics, known as *opus lithostrotum*, were made of small stones and their imagery was widely used by the *modernistas*. The *opus sectile* created drawings based on large regular forms, usually made of stone and marble, to create specific forms and splashes of colour that evolved into geometric and figurative motifs. These mosaics remind us of the geometrical ones found in the Arab world. Mosaic gradually evolved towards more perfect drawings and, as Pliny the Elder wrote, it developed as an art form that imitated painting, making it everlasting. According to Pliny, in a definition that has come down to us today, “mosaic is a painting made of stone”, a perfect system for perpetuating beauty. This principle led to the creation of workshops in the Vatican during the Renaissance and Baroque periods, that rendered masterpieces by great painters as mosaics.



opus lithostrotum



opus sectile



opus tessellatum



opus regulatum



opus vermiculatum



opus musivum



opus segmentatum



opus spicatum

The need for perfection to imitate the brushstrokes of paintings made it necessary to cut stones, glass and ceramics into small pieces called tesserae. Each individual piece, or tessera, has no meaning in its own right; it only has an identity when it is part of a whole — the mosaic — viewed from a distance. Mosaics are generally referred to as *opus tessellatum*, meaning a work made with tesserae, the small square pieces set out in vertical and horizontal lines. However, mosaic production became increasingly streamlined and this led to different shapes of tesserae and other ways of arranging them. In the *opus regulatum*, they have the same shape, but are arranged horizontally rather than vertically. The *opus vermiculatum*, follows the outline of the drawing. The *opus musivum* we have already mentioned consists of creating greater movement, rhythm and beauty. The tesserae were placed around the edges following the outline of the motif and filling in the whole background. This was the type of mosaic used to create murals and marked the transition from flooring to wall cladding. The design, form and size of the tesserae, or materials the mosaics were made of, were key and set trends according to the period they were produced in and the requirements of the time. The *opus segmentatum* is highly reminiscent of the disorderly arrangement of *trencadís* designs, whereas the *opus spicatum* found at the Sagrada Família is neat and ordered, like a herringbone motif.

Other industrial *modernista* techniques also called mosaic

The advertising of the day features other kinds of materials advertised as mosaics. Etymologically speaking, the word mosaic involved a “piece-by-piece” process and, this is why, on many occasions, ceramics, hydraulic and earthenware tiles with their geometric forms were called mosaic. Nevertheless, we believe that there was another intention. The word mosaic conjured up an image of classical techniques and an idea of quality, beauty and richness: virtues that were the undisputed objective of all modern decoration. This is why the word mosaic was often used and its appearance replicated by new industrial manufacturing processes.

The so-called hydraulic mosaics were specially made cement tiles used for interior floorings. The sizes varied from 15 × 15 cm to 20 × 20 cm. They were first manufactured in Catalonia in the late 19th century, and were made with three layers of cement. The upper layer was made of Portland cement, fine marble dust and coloured pigments. To obtain

the motifs, the manufacturers used metal plates to separate the colours. They were laid on floors, to make them look as if they were carpeted with a rug. This was achieved by arranging the tiles to form a solid central motif edged with a border. Many of the designs were produced by well-known *modernista* architects and draughtsmen. Butsems & Fradera, Escofet-Tejera y C^a and Orsola Solà y C^a were among the leading manufacturers who achieved great success with these kinds of tiles. Gaudí also used different designs in his projects. Paving stones with a motif in relief were also produced. They were made with a single layer of Portland cement, measuring 4cm thick. We can still see them on city pavements and, from the *modernista* period, at carriage and warehouse entrances. In 1907, Gaudí designed the hexagonal paving stone that can be seen on the pavement along Passeig de Gràcia. Manufactured by Escofet, it was originally designed for the Casa Batlló but was later used at La Pedrera due to the complexity of the design (Griset, 2015).

Earthenware mosaics were made from small, monochrome geometric pieces that were produced industrially and could be glazed at high temperatures. This meant that they were hard enough to be used for indoor flooring. They can be distinguished from the hydraulic tile because they always have geometric forms. They were manufactured by a number of companies, with Casa Nolla, in Meliana, Valencia, and Llevat, in Reus, Catalonia, being among the most important (Laumain, López, 2016). Gaudí used this material in the courtyard on the first floor of the Casa Batlló. The factory *Hijo de Jaime Pujol y Bausis* also produced this type of ceramics, but didn't achieve the success enjoyed by the former two, but we do know that its tiles were used by Josep M. Jujol in the Casa Planells (1924) in Barcelona. The house also has many tiled floors with their corresponding designs found at the AMEL. These hard-wearing tiles were sometimes broken up to create Roman-style *modernista* floors. Their colour palette made it possible to create designs in vivid colours beyond stone and marble.

Both techniques revealed a deliberate desire to be compared — in terms of quality and quantity — with classical mosaics. One such example is the J. Sas Villanueva house, which — as the advertisements described — features tiles that imitated Roman mosaics, and could be applied more quickly due to the industrial process used in their manufacture.

Trencadís was imitated by ceramics, through templates which replicated the shapes of the shards of tile, thereby recreating the impression of *trencadís* fragments.

Fragments and colours were a linking thread throughout the *modernista* period.



Barcelona. Casa Lleó Morera (1905), by Domènec i Montaner. Hydraulic-tile flooring in a room on the first floor, manufactured by Escofet. ↑



↑ Barcelona. Hydraulic paving stones (c. 1907) manufactured by Escofet. Designer unknown.



Park Güell

Ceramics and glass: colour on the Bald Mountain

“There is no doubt that the distance from which an object has to be viewed involves a composition appropriate to each project”

(Transcribed by Laura Mercader, “La distancia y el punto de vista”, in *Antoni Gaudí, escritos y documentos*, 2002)

Park Güell is Gaudí’s most ambitious project in terms of his increasing use of ceramics — and *trencadís* — in his architecture. This huge project in the natural landscape constantly breaks the boundaries between the creative act of the artist and architect, and the power of nature. It is important to remember that the dialogue between art and nature has been one of the great questions throughout the history of artistic creativity, a dialogue Gaudí resolves in a dramatic and exceptional fashion by increasing the tension between the two principles.

Timeline:	1900-1914
Developer:	Eusebi Güell i Bacigalupi
Location:	Carrer d’Olot. Barcelona
Type and use:	Residential development and park
Associates:	Josep M. Jujol i Gibert (1879-1949), Joan Rubió i Bellver (1870-1938), Francesc Berenguer i Mestres (1866-1914)
Ceramics:	Peris, Onda (stencil-painted ceramics and monochrome ceramics); Hijo de Jaime Pujol i Bausis, Esplugues de Llobregat (stencil-painted ceramics and monochrome ceramics and elements in relief); Sebastià Ribó, Barcelona; La Roqueta, Palma (the four different-sized discs that were placed on the façade of the Casa Batlló)
Glass:	Tallers Pelegrí (based on testimony by the builder Josep Bayó)
	UNESCO World Heritage Site (1984)

The undulating bench: a symphony of textures and colours

The bench-cum-balustrade around the vast esplanade, or artificial plaza, represents the most accomplished use of *trencadís* at Park Güell. One side of the plaza was dug out of the rock and half of it stands directly above the hypostyle hall. What was originally intended to provide a protective balustrade became the undulating bench. The decoration of this extraordinary feature was supervised by Josep M. Jujol from 1910 to 1914 (Duran, 2006; Freixa, Leniz, 2018). However, Jujol's contribution to creating the ceramic bench wasn't acknowledged until the 1970s (Flores, 1974).

The bench structure is made of prefabricated modules of flat brick, like the ones used in the Catalan-, or timbrel-vaulting technique. Each section of the bench is made up of two pieces — the seat and back — held together by an inner metal structure. The modules are concave and convex in shape and arranged in sections of four or eight modules to mimic the rhythmic pattern of the columns in the hypostyle hall below.

We must assume that the mosaic on the bench was done in situ once the modules had been put in place. According to Jujol's son (Josep M. Jujol junior, 1974), his father decorated the backs of each section first and worked on the seat afterwards, but as this is oral testimony, we must treat it with due caution.

Jujol's son also tells us that the architect, a builder and two labourers worked on the bench at the same time. The cartloads of ceramics were left in the middle of the plaza and the pieces chosen to make the necessary compositions. There is a logic behind this process: the work had to be done in situ to cut the costs of moving the pre-assembled sections and pieces to the site (Josep M. Jujol junior, 1974). This on-site workshop system was also adopted by the mosaicists who worked at the Palau de la Música Catalana and the Hospital de la Santa Creu i Sant Pau (Saliné, 2015). There is a curious anecdote about the breakage of pieces where fate may have played a role in the use of *trencadís*. Àngels López i Fusté, the daughter of the draughtsman Francisco López i Sarasa, told us that one

day a cart laden with ceramics arrived at the park, and a large quantity of tiles were broken. Eusebi Güell was there at the time and saw the mess, and the waste of money the breakages represented. He was so angry that he protested loudly, but Gaudí told him: "don't worry, this is going to be a work of art".

Unfortunately, we can't verify this information further, but, in any case, the comment leads us to assume that these fragments were going to be a work of art, or would, at least, help create one.



Park Güell, the largest repertoire of *trencadís* in Catalonia.

There is no doubt that the park contains the largest repertoire of *trencadís* by Gaudí. We mustn't be deceived by the fact that the designs don't seem to follow a geometric approach and appear merely to consist of deconstructing materials. There are extremely precise calculations behind these rounded forms: the chessboard motifs on the main staircase, the mould-cast tiles on the wall tops (like the small crenellations on top of the walls of the staircase and the gatehouse terraces, the panels on the outer walls...) and the half-round mouldings on the bench. Thus, chance is relegated to the breaking up of pieces and the decorative layout of the designs, created by the mosaicists themselves, from Josep M. Jujol to a labourer. However, what we see, above all, is a perfectly calculated geometry, although, in this case, it is hidden.

Gaudí didn't just purchase batches of reject ceramics and glass, although it is clear that he used low-cost industrial materials, as reported by a number of authors and studies performed by Barcelona City Council when it was drawing up the plans for the restoration project (Subias, 1999; 2006; Duran, 2006). In the case of Park Güell, as with many other projects, the ceramics were purchased from the usual suppliers, along with pieces made to order.

The vast repertoire of ceramic *trencadís* at the park can be divided into the following basic types which can create multiple combinations:

- Monochrome *trencadís* with occasional changes of hue.
- Monochrome *trencadís* embedded with other monochrome or multicoloured shapes and abstract designs.
- Multicoloured *trencadís* that breaks an object into one or more pieces and puts them back together to recreate the original design.
- Multicoloured *trencadís* that breaks an object into one or more pieces and puts them back together to recreate a different design.
- Multicoloured *trencadís* that is usually abstract and acts as a background to an element (design or figurative relief) it seeks to embellish.
- Multicoloured *trencadís* that includes everyday objects made with a variety of materials: an example of collage and *arte povera* before they were embraced by the avant-gardes.





And, by way of conclusion, the Sagrada Família (1883-1926)

**“Beauty is the splendour of Truth;
and splendour captivates everyone,
that is why art is universal”**

Antoni Gaudí (according to Marcià Codinach, *Manuscritos, artículos, conversaciones y dibujos*, 1982)

Gaudí’s masterpiece, the Sagrada Família, is a monument to his faith. His identification of the connection between truth and beauty formed the basis of his religious beliefs as an adult when he dedicated himself wholeheartedly to the Sagrada Família. The bell tower on the Nativity façade was the only part of the building Gaudí saw completed during his lifetime, but he had definite ideas about the colour scheme to be used throughout the church, as the model in his workshop showed. One of his last pupils, Cèsar Martinell, describes the meetings he had with the architect between 1915 and 1926, including visits from different groups. Surprisingly enough, he began these visits, on more than one occasion, in front of this model, to justify his argument that architecture should be multicoloured (Martinell, 1951). The model was made on a scale of 1:25, and exhibited in Paris in 1910, at the *Salon de la Société Nationale des Beaux-Arts*, as we mentioned at the beginning of the book. The model is now on display at the Sagrada Família museum having undergone thorough restoration. Jujol was entrusted with the task of bringing these colourful designs to life but, currently, the cypress tree above the door, with doves perching in its branches, is the only polychrome mosaic to have been completed. It remained unfinished at the time of Gaudí’s death, as can be seen in photographs from the period.

Timeline:	1883-1926
Developer:	Associació Espiritual de Devots de Sant Josep
Location:	Plaça de Gaudí. Barcelona
Type and use:	Church of atonement
Associates:	Francesc Berenguer i Mestres (1866-1914), Josep M. Jujol i Gibert (1879-1949), Josep Francesc Ràfols i Fontanals (1889-1965), Cèsar Martinell i Brunet (1888-1973), Joan Bergós i Massó (1894-1974), Francesc Folguera i Grassi (1891-1960), Josep Canaleta i Cuadras (1875-1950), Joan Rubió i Bellver (1870-1952). After Gaudí’s death: Domènec Sugrañes i Gras (1878-1938), Isidre Puig i Boada (1891-1987), Lluís Bonet i Garí (1893-1993)
	Nativity façade: UNESCO World Heritage Site (2005)



The *trencadís* jigsaw puzzle

A covering to be preserved or discarded?

Jaume Coll Conesa

Director of the Museo Nacional de Cerámica y de las Artes Suntuarias González Martí

Since its beginnings, architecture has sought to make colour an integral part of its projects. Colour has been one of its fundamental and most visible components, to such an extent that its loss has led to the social and symbolic aspects of this synthesis of the arts being seriously undermined by people's negative perception of it.

Modernista trencadís performs a very similar function to tiles. It brings form and colour to unusual fragmented designs that we could consider the first repurposing of a ceramic material. *Trencadís* is a kind of collage technique that uses objects in a different way to their intended purpose (Duran, 2006). It isn't recycling, it is reuse with a new visual formulation.

Here are some of the key characteristics of *trencadís*:

— It represents a distinctive creativity espoused by a specific philosophy of architecture arising within a particular social and historic context.

— The idea behind it stems from a concept of authorship. Alexandre Cirici pointed this out when he said that the mosaic collage on the bench at Park Güell made it a pictorial as well as an architectural work (Duran, 2006). Its distinctive application, case by case, is associated with two creative agents: the architect and the mosaicist. The former designs and supervises the work, which is conceived as a whole whose constituent parts contain his vision for the project and the guidelines he proposes; the latter brings the creative details to fruition.

— As it is part of the complexity of an architectural structure, it has two key dependencies:

- One the one hand, it is an intentional element that reflects the expressiveness of the project and its identity.
- And on the other, it is an element that supports the former, its preservation being intrinsic to the surface it is being applied to.

The subsidiarity of *trencadís* to the architectural project was already highlighted by Antoni González, at the panel discussion at the Esplugues Congress, as a key part of planning a building. This is because it plays a role in the building as a historic document, as an architectural object and as a symbolic object of significance to society, to such an extent that it may be more important than the architecture that underpins it (panel discussion, 2006).

The innovative use of ceramic, and, consequently *trencadís*, has had to carry the burden that has accompanied applied ceramics since its beginnings: the need to use cement to help it adhere. The problems associated with the different ways materials respond, and the different criteria and possible procedures for preservation, were already dealt with at the preliminary session of the ICCROM and Spanish Academy meeting in Rome which looked at the study and conservation of decorative ceramics used in architecture (Almagro et al., 2001). The mechanical stability of the building itself also plays a role in the surfaces used as its may be affected by damp, movement, etc. In the case of the ceramic elements, together with the interdependency of the technical and building elements, their continued use is related to other factors, such as the structural stability of the material according to its physical characteristics: its nature, its durability, toughness, or porosity (Vendrell, 2003).