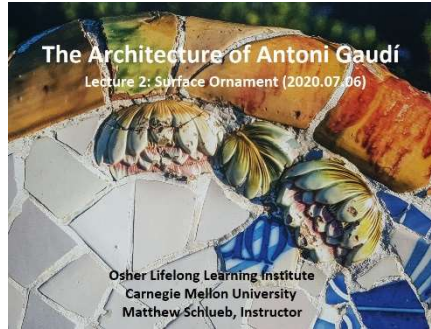


## Lecture 2 – Surface Ornament



**Welcome** to **The Architecture of Antoni Gaudí.**

### Housekeeping Items for New Students:

Questions > **Raise Hand & Chat questions to Erin (co-host).**

**5 to 10 minute break** & 10 to 15 minutes at end for **Q&A.**

#### 1x B&W

**Latrines Pavilion** (Mataró Workers Cooperative), Gaudí (1883)

Last week parabolic arc, rounding the form of Gaudí's structures.

He **loved rounded forms**, as much as **for the functional characteristics, as for the visual dynamics**, which was used to **bring the forms to life.**

#### 1x Color

Rounded top of Latrine, one of Gaudí's **first designed/built structures, a vaulted ceiling for functional use, allowing for ventilation of the air naturally**, re-used this method for future rooftop ventilators.

Decorated with testers (cuts) stepped in the doors and windows and with **applications of glazed ceramic tiles**, carried **through all of his work**, to the very end.

### **Leitmotif: Surface Ornament**

Today look at Gaudí's **handling of surface, various methods and materials** he develops over time in his work, another means **to bring the building to life**, to **animate the surface.**

**"Color is life."** (Gaudi, tour of Sagrada Familia in 1915) And, ceramic tile became a **durable material to apply color** to the exterior surface ornament of a building. **[Color and fragments a common thread throughout Modernista period.]**

## 1x Interior Door

**Casa Vicens**, Gaudí (1883-88)

[Francesc Berenguer i Mestres, first year student, becomes his assistant.]

Gaudí's early works employing **juxtapositions, collage, and parataxis** (short, simple applications). Eclecticism, not simply as a collection of styles, but as a **method to add energy, vitality, breathe life** into the composition, **living architecture**.

## 1x Page Illustration

In school, studied **The Grammar of Ornament**, Owen Jones (London, 1856): Arabian ornament of **intricate patterns of tracery, framed as plates by decorative borders**.

## 1x Mosaic Patterns

Studied ornamentation of **Alhambra** (Granada, Spain, renovated for royal palace in 13th century, Gaudí made casts in 1887 for Barcelona World Fair), influencing **Mudejar Art in Catalonia**.

## 1x Roman Mosaic Floor

As a child, exploring the **Poblet Monastery** (12th century Roman ruins), learned of **Roman mosaic, tiled panels laid on the floor** of the cloisters.

## 1x Vicens Mosaic Floor

In Casa Vicens he used this type of **mosaics on the floor, an ornament previously reserved for sacred buildings**, now used in a private residential setting. Gaudí using the **mystique & grandeur of mosaics to transfer essence of quality to the individual**.

## 1x Blue Room

Mudejar style décor with scallop corbelled ceiling.

## 1x dining room

Inside, **ivy climbing the walls**, reeds and ferns, **cherries clustering between rafters**,

## 1x bird

**papier-mâché birds** circling the fireplace **moving in the rising currents** of warm air,

## 1x

**window sashes emitting chirping birdsong** when opened, **metal spider web** on the porch fountain creating **rainbows of light reflecting off water flowing over** in fine layers, all efforts **to bring the house to life**.

### 1x exterior framed exposed stone

Outside, **Stone structure exposed for the first time as a finish material**, made the ornate exotic plate framed by brick. **Honest expression of the structure, no longer hidden behind plastered exterior skin.** Framed as Arabic plates.

“For an object **to be truly beautiful** its form must have **nothing superfluous about it**, except for the **conditions that make it useful**, bearing in mind the **material available** and the **purpose it must serve**, which give rise to its overall shape.”

### 1x brick/tile cornice

Development of **structure converted to ornamental expression**, courses of stone and tile create a vertical cadence, lifting the eye to the roofline, the sky.

In 1878, Gaudí wrote in his notebook a **response to a recent article** by Domènech, a **critique of eclecticism** in design, “**I propose to make a serious study of ornament.**”

### 1x historic corner pic

“The commitment must be not only to undertaking grand projects, but to making them **realizable, make projects economically feasible** and as a result embrace the **conditions of production of our time.**”

“**We neither can nor should look for the redemptive return of the mediaeval craftsman.**”

### 1x Front Elevation

In response to **criticism that ornament was no more than applied styles, eclectic mix** layered one on top of another, in **1881 Gaudí published a review of the Exhibition of Decorative Arts in Barcelona**, stating **“genuine quality is achieved not by an excess of means, but by the proper use of however few means may be available.”**

“It is not through the accumulation of labor (mediaeval craftsman) ...that **good products are made**, but by **giving the proper form to the appropriate use of the available means and materials.**”

What is this ‘available means’ Gaudí is speaking?

Gaudí was **living through the height of the Industrial Age**, working for Industrialist utilizing industrial machines and materials, so an **architecture with an honest expression of the times and ‘available means’** is an architecture of Industry, **Industrial material & methods.**

In Casa Vicens, rhythms are **organized with tiles**, as a unit of measure, **standardized by industrial manufacturing**, yet achieving a **rich effect of variety by the design** of their placement, the movement of color obtained **from a very small number of unique pieces**: a **French marigold** (designed by Gaudí to immortalize the flowers cleared for construction of the house) and **two standard plain white & green tiles**, in a **checkerboard pattern, adding visual intensity** to bring the surface to life. Industrially produced elements and radical reduction of the number of uniquely designed pieces (to just one), to achieve the greatest and most varied effects, the most **appropriate and economic exploitation of the resources offered by the industrial age of machine production**.

### 1x Door & Ventilator

The **design is adapted to its means** and its ends in such a way as to determine the execution and **render unnecessary the intervention of that great mythical craftsman**. The design and execution are **made so simple by the materials (industrial/discarded) and methods (industrial/broken)**, that **an apprentice could do** what was traditionally the work of a craftsman.

**In ornamentation, Gaudí sees the possibility of art and industry coming together. Something that both Wright and Corbusier sought in the Modern Movement.**

### 1x close up front wall

As a result of the **Industrial Revolution, new raw materials** (glass, steel, concrete) **and methods** (steam engines, electricity, mechanization), “the application of machines that **produce great quantities in a short time** has been the extraordinary **increase in the price of skilled labor**, linked to the **scarcity of high quality one-off products**.”

[A eulogy to the potential of industry: tile factories; metal foundries; painted glass; machines crushing limestone, then industrial kilns baking the dust, to produce hydrolyzed limes for Portland Cement (grinding clay mix clinker, adding gypsum).]

“Let us not spend fruitlessly on things that mean nothing, but rather **attend to the essentials, morally and materially**.” A mere apprentice, for all his limitations, can achieve exceptionally high quality if its exception is applied to actual material resources and economic possibilities.

[Craft utopia as an outdated illusion, the unique, one-off production by the old craftsman has become economically and socially unattainable.]

### 1x corner pic with railing

Casa Vicens **metal railing**, becoming **one of Gaudí's signatures**, repeated in many later works, made from a field of palmetto leaves, cast in iron, not traditionally modeled by a sculptor, but **cast from a mold of an actual palmetto leaf**, adding a **realism, referred to by sculptors as *ars infamis***, not an imitation of nature but merely a mold taken from nature, **by simple contact stealing nature's forms**. Then, **bolted** to a rectangular grid of **industrially milled angles**, at their joints a cast iron **fleuron of a marigold bud**. The traditional mediaevalist craft of metalsmithing reduced to the irregular **wrought iron spikes on top**, making footing tricky thereby **functionally keeping out intruders**. An eclectic mix of three forms of iron (cast, milled, wrought), **utilizing industry in ornament**.

### 1x railing

Gaudí knew limitations of his craftsmen, entrusted the **casting of palmetto leaf to sculptor Llorenç Matamala** (later casting figures on Nativity Façade).

He also was aware of these **skilled craftsmen finding less employment due to industrialization**: “Matamala has become an idler and less than active. What is **needed is the counterweight: method, method and method.**”

Casting the palmetto, realism of its deep concavities, with recesses between the separated points, **nuanced transparency mixed with the chiaroscuro effects** creates a **plasticity by the play of light**, bringing the composition to life as if a field of palmettos stirred by the wind. Most **striking result with minimal resources** offered by the **repetition of a serially produced industrial material**.

An architect of **structural logic and decorative logic, united as a singular logic in the surface ornament** of his buildings.

### 1x exterior

**El Capricho** (for Máximo Díaz de Quijano / Comillas) Gaudí (1883-85)

Whereas in Casa Vicens a verticality, here **rendered horizontally**.

### 3x sunflower

The custom marigold tile used in Casa Vicens, has become two custom tiles here, the head of a **sunflower** and its leaf, now **three-dimensional to increase the visual effect of bringing the ornamental surface to life**.

## 2x brick frame & mud tiles

**Finca Güell Dragon Gate & Horse Stables**, Gaudí (1884-87)

Arabesque plates framed by Catalan brickwork. Also used an ancient Catalan technique for the brick vaults, masterfully transitioning from a square footprint in the building for a horse lunging ring, to a parabolic dome with lantern. Immersed in the tenets of eclecticism, Gaudí reworks the principles of Moorish architecture, building brick walls with ceramic details in free-form compositions.

### 1x brick detail

Used **contrast of between exposed brick and colored ceramics** to develop his ideas of multicolored architecture.

### 1x gate

In Dragon Gate, by contrast to the palmetto railing, the lower gate made of a diagonal grille of industrial milled T bars attached to horizontal frame of H beams, with cast iron plates of roses in relief, welded in place not bolted.

### 1x springs

Here the focus is not the repetitive elements, but the one-off dragon, the most important sculpture of Gaudí's career. Again, assembled with an eclectic mix of found industrial components: springs, wire mesh, chains, bars, and sheet metal. Deliberate brutalism in the choice of materials, lending to the dragon's ferocity. Precursor to assemblage sculptural works by Gonzalez, Gargallo and Picasso.

### 1x head

This dragon a metaphor of the evils of industry, modernity, factories, city. Wealthy industrialists like Güell and Vicens escaping to the secluded countryside gardens, away from the noise and pollution of the industrial city, protected behind iron gates.

### 1x B&W rear

Dragon's shape and gesture infilling the triangular space created by the diagonal chain holding up the gate suspended out from a single post support. A free hanging chain, scribing a catenary curve formed by gravity, examine in fourth lecture.

### 1x mortar shards

Moorish tradition embedding small shards of ceramic into cement between bricks comes from the Hispano-Arabic tradition, giving a contrast between textures and colors. Adding color, energy, life into the ordinary, smallest of leftover spaces, that bind the structural elements, thereby enhancing the whole, ornamenting structure.

### 1x ventilators

Possible inspiration for the use of trencadís mosaics on the rooftop ventilator.

## **Parti: Trencadís Mosaics**

Traditional ceramic mosaics are cut into small, regular shapes, tesserae. Trencadís are broken tiles, resulting in irregular shapes.

Cladding a surface with broken pieces of ceramic, utilizing economy of otherwise unusable waste materials, which does not require the craftsman skills of traditional cut mosaics.

### 1x rooftop dome

In the Moorish style decorated rooftop lanterns resembling minarets, on the parabolic domes tapering to a point, trencadís mosaics are used for the first time, as infill between the standardized plain green tiles. The fragments are monochrome and fregalls (tiles marbled with splashes of color using wet esparto grass scourer pads, used for everyday skirting of kitchens and bathrooms).

### 2x rooftop & vitrified mosaics

**Palau Güell**, Gaudí (1885-88)

Spire above the central parabolic dome is made of discarded materials, vitrified sandstone from leftover materials inside lime kilns, broken up and applied to resemble trencadís mosaics.

### 2x ventilators tile & brick

Six of the chimney ventilators were made of unglazed bricks, on the maids' rooftop. Brick, the predominate and abundant building material, was used as cladding, laid as trencadís, geometric fragments creating a visual unity with the other elements.

**1x exterior**

**Bellesguard**, Gaudí (1900-09)

Adjacent to the ruins of the one-time residence of King Martin “the Human”, which Gaudí **preserves by diverting the course of the entrance way along a new viaduct.**

**2x dragon roof**

Made **mosaics of stone**, drawing from **local stones to keep costs down** and to **blend the structures into the landscape** (Pebbles gathered from river by women to obtain a small income). Gaudí used this **method from antiquity, opus lithostroton**, made of pebbles and rough stones, covering vertical surfaces to give the impression of a **living architecture in motion.**

**1x moulds**

Casting **stones in plaster half-molds** with cement, to create relief compositions, **cushion effect, adding dimensional texture, visually softening.**

**1x cross**

First use of **trencadís on Gaudí’s signature four-armed cross**, atop a 33 meter spire, now **given prominence, to be visible from great distances**, no longer relegated to the private rooftop spaces. Colored glass trencadís mosaics decorate the spiral four **stripes of Catalan flag**, the **royal crown** and **four-armed cross** (compass directions). Precursor to Park Güell gatehouse spire.

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

**1x bench**

**Ceramic bench (1902-04) precursor to Park Güell** serpentine bench.

**( 10 MINUTE BREAK )**

POLL: ???



## 2x viaducts

### **Park Güell Viaducts, Entry Stairs & Gatehouses** (1900-03)

Viaducts made of Catalan bóvedas tabicadis made of **rough-hewn stone**, resulting in whimsical trencadís mosaic shapes. Stones projecting down from the vaults, as if **water drops, rolling down flared capitals, spiraling down the inclined pillars**, sculpted form catching and **reflecting the light as flowing water, animating the surface, bringing to life.**

2x steps & pillow wall

1x serpent

Trencadís mosaics used to **clad irregular forms** of living creatures (stair serpent).

5x gatehouse

East facing gatehouse, with Catalan bóvedas tabicadis brick roofs covered in trencadís mosaics, was **porter's house topped with whimsical toadstool** (*amanita muscaria*, poisonous fly agaric), from **pieces household kitchen porcelain pottery.**

1x glass tile

### **Casa Batlló**, Antoni Gaudí (1904-06)

In the trencadís mosaics of Casa Batlló, Gaudí placed **importance on the joints**, the spaces between the tile pieces. He didn't view them as minor spaces that must remain minimal or hidden, rather a gap between each piece was permitted to **highlight the outlines, the irregular shapes** of the broken tiles.

2x glass circles & elevation

Gaudí instructed “**not to cut the ends** of the pieces off and to ensure that the glass **always ended in a point so it would interlock** with the other pieces.”

3x cross & dragon scales

Four-armed cross atop the bulbous dome of the turret, **developed cracks during the firing** (La Roqueta pottery in Palma), but Gaudí rescued it.

3x stair shaft

Stair hall made of **several shades of standard solid blue tiles**, given texture with a **single molded dimensional tile**. **Colors lightened as stair shaft descended** to draw the light into the lowest floors. Interior vertical **corners were softened** by same tiles cut into narrow strips (imported diamond tip saw from France), laid in facets.

The attic has louvered ventilators to control air flow for clothes drying under roof out of the rain. Leaving the **rooftop for recreational use for the first time**, used by residents on the block.

3x

New type of industrial flooring, **hydraulic cement tile** (layered Portland cement, fine marble dust and colored pigment), cheaper than marble, easier to work with than stoneware, easier to preserve than wood, therefore quite popular with the new bourgeois class, laid as square mosaic tiles.

Gaudí designed a **single hexagonal monochrome tile** (1907, manufactured by Escofet), divided into thirds with three marine motifs: ammonite, starfish and seaweed, based on the spiral, vortex forms. When laid together, made a richly **varied and homogeneous repeating pattern**, bringing the **floor vibrantly alive**, while able to **conform to the non-rectangular, irregular room shapes** of Casa Batlló and Casa Milà. Gaudí's skill reducing everything to a single component, able to adapt to every circumstance, achieving the greatest formal effects.

4:10

4x

**Park Güell Hypostyle hall ceiling panels** (1906-09)

Laborers asked to **bring broken pieces of china from home**, to provide a **memento of their contribution** to the project. **Elevate the working class, by elevating the things in their daily lives to works of art**. Redemption of sins, broken pieces, transformed into pure beauty, through an honest application and truth in expression.

3x

**Casa Milà**, Antoni Gaudí (1906-10)

Use of single color (shades of white), reinforcing expressive sinuous lines and reliefs, viewed **from a distance appear like sculpted forms rather than clad tiles**.

White is the most difficult color to fire, since ash and sand from the kiln often came into contact with the glaze during firing, resulting in **different shades of white**. Gaudí liked this technique, as he was so fond of **chance occurrences**. The nuance of shades used to **accentuate the spiraling contour lines** of the forms.

Several of the ventilators are **unclad, finished with cement, lime and tinted plaster**.

5x

**Colònia Güell Crypt Inclined Props & Vaults**, Gaudí (1908-11 & 1910-14)

Use of **waste materials**: burnt bricks, undressed stone, broken tiles, scavenged needles from dismantled old spinning machines in the colony's textile factory. Materials are installed unworked, untreated, a deliberate clumsiness, violent collage, leaning pillars, labyrinth of ribs in ceiling vaults, no longer the playful folly of Casa Vicens or El Capricho, Finca Güell's Dragon has become tragic, the Crypt in the **bowels of Hell**.

Many of the tiles were damaged during manufacturing, that could no longer be used. Slag left over from smelting was scavenged. Collected material from other projects underway at the time, carts of tiles brought from Park Güell.

A church made for a colony, **built by the community** of laborers, unskilled in the construction arts. Modeled after **Church of Santa Maria del Mar** in Barcelona, built in 14<sup>th</sup> century using funds and skills of the local congregation, in Gaudí's mind the **ideal public building/community partnership**.

Vaults made of triangular, unglazed terracotta tiles, cut from traditional Catalan flat bricks (**St. Andrew's X-shaped cross cuts** into four triangular pieces), resulting in regular symmetrical shapes laid in an ordered grid of great geometrical complexity.

Projecting window overhang forms cast in plaster half-molds, placing tiles inside with the indirect method.

Technique of **trencadís mosaics was applied to the entire project**, all the **materials steeped in their own unique essence drawn from their history**, becoming a part of the constructive and decorative context, **beyond surface ornament**. The materials simultaneously essential and the essence of the fortuitous work, as Gaudí described, "One should not seek out originality."

7x

**Manifesto: Park Güell Serpentine Bench**, Gaudí (1910-14)

Initially a protective balustrade, became an undulating bench, **place for community to gather, interact, provide social function** beyond safety function as a railing.

**Recesses collecting small groups, facing to encourage communication.**

To strengthen sense of community, as cooperative Mataró Workers Cooperative, as Colònia Güell, here trying to **a community of Industrialists for common good.**

When a cart full of ceramics arrived at the Park, with a large quantity of them **broken, Güell saw the mess and waste of money, protesting loudly.** Gaudí told him, “Don’t worry, this is going **to be a work of art.**” Large quantities of discarded ceramics were acquired, some from **tile manufacturers’ unsold stock**, others from **demolition sites.**

Designs for these **mosaics were devised in situ** as the broken tiles were applied, by many **anonymous helping hands**, resulting in a diversity of designs.

Once Gaudí visited Lluís Bru’s studio, a skilled specialist mosaicist. Gaudí commenting on trencadís mosaics for the Park Güell serpentine bench, said that the fragments should be applied **“by the handful, otherwise we’ll never be finished.”** As soon as Gaudí left, Bru said to his apprentices “Don’t take any notice of him, he doesn’t know how to do mosaics.” **Gaudí creating great works as unskilled laborer.**

Subsequently, when Gaudí went to the tile works (La Esperanza) to place an order for tiles glazed on both sides (used in the indirect method for mosaics, laying tiles into plaster half-molds to produce sculpted dimensional forms), they **escorted him off the premises, due to the unusual nature of his order.**

“I have exhausted many of those who have worked with me, in the constant endeavor of improving things. I have not given them my final seal of approval until I have convinced myself **I can improve them no further.**”

## **Sagrada Família Bell Tower Pinnacles**, Gaudí (1923-25)

[Connection between truth and beauty formed the basis of Gaudí's religious beliefs.]

Mosaics were **only to be used on the pinnacles of the spires**, made of the finest **Venetian glass** that had to be ordered and resulted in a four year delay. The trencadís mosaics had gone **from infill scraps on his earliest project** (Finca Güell) to the **highest form of surface ornament on his last work** (Sagrada Família pinnacles), always found at the highest point of his structures, reaching vertically for the sky.

“Look at that spire! Isn't it true that it looks as if it's connecting heaven with earth? This burst of mosaic is the first thing sailors will see as they approach Barcelona. It will give them a radiant welcome.”

**Q&A**