

Merging dance with Architecture

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Fig 1.1 DANCING BUILDING



Fig 1.2 ADAGIO DANCE FORM

Delving into building designs stylized from various kinds of dance forms.

GEHRY'S DESIGN CONCEPT FOR DANCING BUILDING

- The Dancing Building was designed featuring two curved towers in dancing position.
- First idea was to have a building with two different parts in dialogue, like static and dynamic, like plus and minus.
- In Prague, "they designed old buildings with implied towers" and it was also noted that many buildings had

a decorative "cap" or "hat" on the top. There was also a distinct texture which the buildings exhibited due to the colored plaster which was often used. Gehry took these ideas to create the concept for this Building.

- A decision was made to project the windows out, as if "they were hanging like a picture on a wall" to create more of a textural quality. For the same rea-



Fig 1.3 GEHRY'S INITIAL SKETCHES - STAGE 1



Fig 1.4 GEHRY'S INITIAL SKETCHES - STAGE 2

son wavy cornice lines were created in the plaster facade.

TURNING TORSO BY SANTIAGO CALATRAVA

- The high rise building's unique design consists of cuboids twisting towards the waterfront and the surroundings.
- "There was a wish to get something exceptional," Calatrava said after accepting a prize from local authorities. "I also wanted to deliver something technically unique."
- It is based on one of his sculptures

which was **inspired by the human form in motion.**

- **The entire building turns 90°** as it climbs upwards over nine blocks or cubes, each of which consists of five floors. This very impressive structure contains 54 storeys and reaches a dizzying **height of 190 meters**. Office facilities have been installed in the first two cubes and, from the third cube up, 150 apartments totaling 15,000 m² are available. As the building increases in height, the wall thickness of the circular core tapers from a maximum 2 m in the ground plan to 40 cm at the top.

- When I think of **dance** and **architecture** one of the first things that come to my mind is the view of a rotating spin top. Watching it spinning seems to me being a magnificent **dance**. Through our imagination it reveals the quality of a **dance**. This is an example of nature with technology. The structure is fluid and flexible and also firm. The structure resembles the Ballet movement "Foutte" in which the Dancer rotates like a spin top.
- Unlike most skyscrapers, which are designed to look immobile no

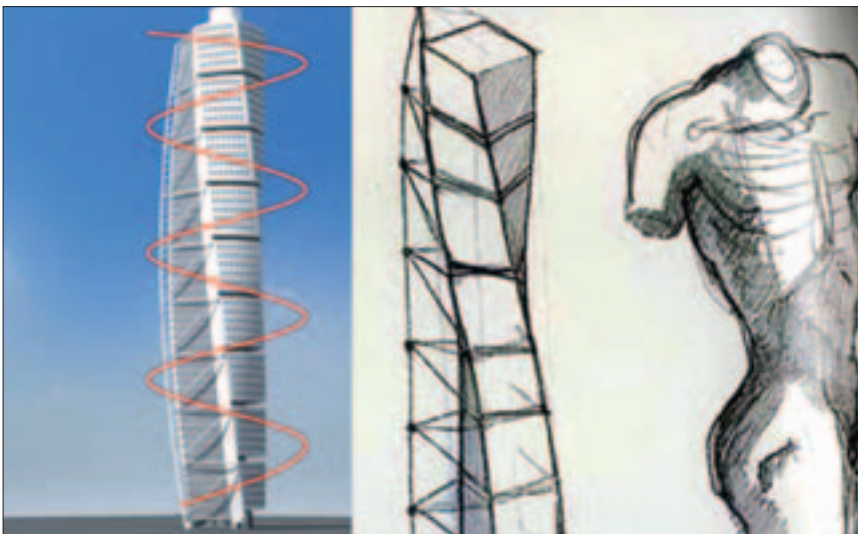


Fig 1.5 TURNING TORSO



Fig 1.6 FOUTTE

matter how much they may sway in the wind; this tower looks strangely kinetic - as if it is going to move horizontally.

SANTIAGO CALATRAVA'S TENERIFE AUDITORIUM

- **The auditorium** is located in Santa Cruz, the capital of Tenerife (Canary Islands, Spain). This building rises from the ocean as a symbol of 21st century Tenerife, where culture and art are a fortunate addition to the attractive climate and nature that characterize this island.

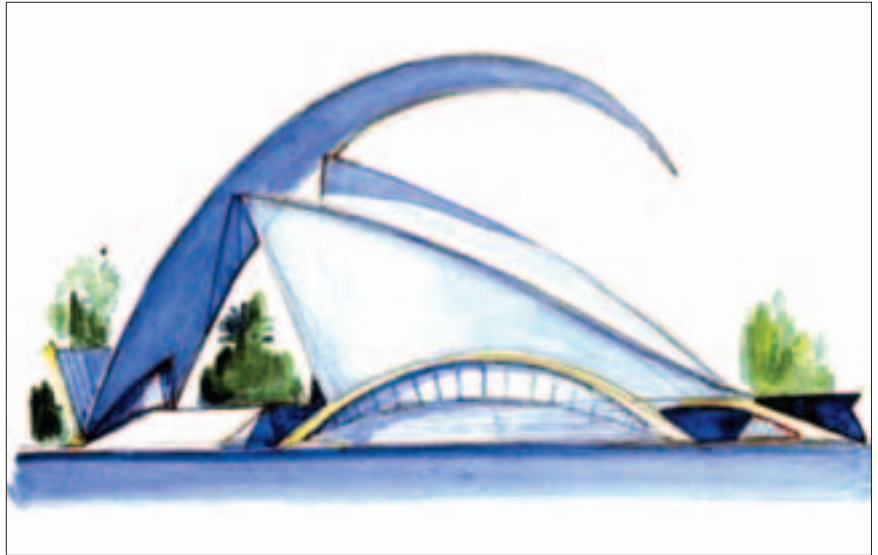


Fig 1.7 INITIAL SKETCH



Fig 1.8 TENERIFE AUDITORIUM

- The auditorium connects the city to the ocean and creates a significant urban landmark.
- The all-concrete building is characterized by the dramatic sweep of its roof. Rising off the base like a crashing wave, the roof soars to a height of 58 meters over the main auditorium before curving downward and narrowing to a point.
- The building's plinth forms a public plaza covering the site and allows for changes in grade between the different levels of the adjacent roads.
- The viewer's attention is called by the great wing that emerges from the back of the building, and sharpens until it finishes in a point, covering the whole building in its longitudinal direction. This wing is giving structure a kinetic motion visually. It resembles the ballet position **Ballon**.

SANTIAGO CALATRAVA'S DESIGN CONCEPT

- Calatrava used his sculptural background as inspiration for this monumental building.



Fig 1.9 BALLON



Fig 1.10 MOUNT TEIDA

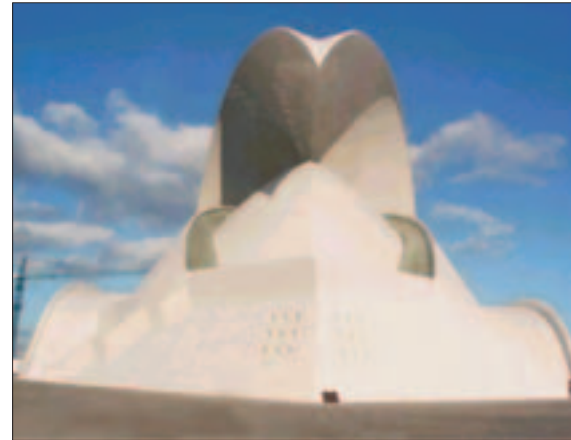


Fig 1.11 WING Fig.4.3.7 SECTION



Fig 1.12 ANOTHER VIEW OF AUDITORIUM

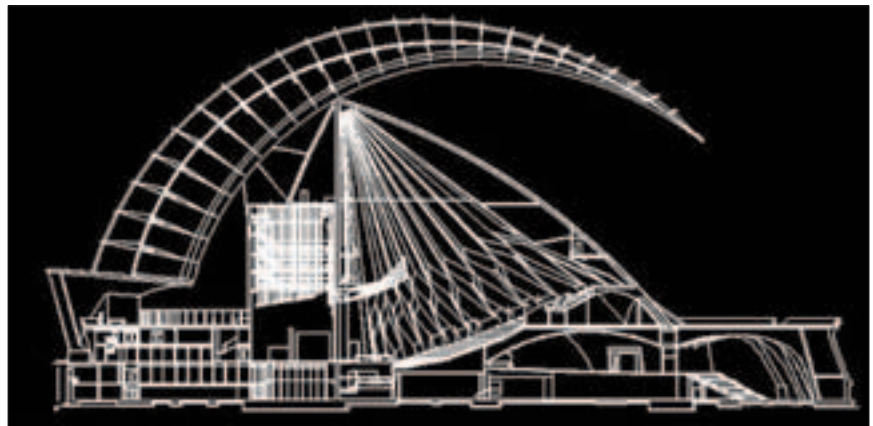


Fig 1.13 WING Fig.4.3.7 SECTION

- Santiago Calatrava states that he got the idea for the dome from Mount Teide, the volcano and largest mountain in the islands.
- Calatrava has compared this element to a wave, shell, and a seabird's wing. This is similar to his other works which are inspired by natural, organic forms.
- The canopy raised protection from rain and sun to the rest of the structure.
- The canopy has brought up a lot of questions about whether it is really needed, since it shows "no practical purpose other than purely structural".
- But when making a monumental building is it really necessary for every

piece to have a purpose other than giving an overall dramatic effect. Or can the building be thought of as an "echo (to) his sculptural tendency to embody movement, elasticity, and human and organic form".

- The structure of the building is made of predominately reinforced concrete. There are some pre-stressed members used as well. Very few metal pieces were used in construction, for instance the mullions in the large window areas.
- The plaza area is made of a dark stone to contrast with the exterior of the building which is a white concrete made from the local sands of the region.

- Embedded in the concrete is trencadis, broken white ceramic tiles. These pieces reflect the light especially moonlight causing the building to shimmer, similar to the water that is close to the building.

PERFORMING ART CENTRE BY ZAHA HADID

- The performing art centre designed by Zaha Hadid is a 62 meter high building proposed to house five theatres – a music hall, concert hall, opera house, drama theatre and a flexible theatre with a combined seating capacity for 6,300. The centre may also house an Academy of Performing Arts.

- This design has tremendous kinetic movement.
- It is reflecting the ballet movement attitude.

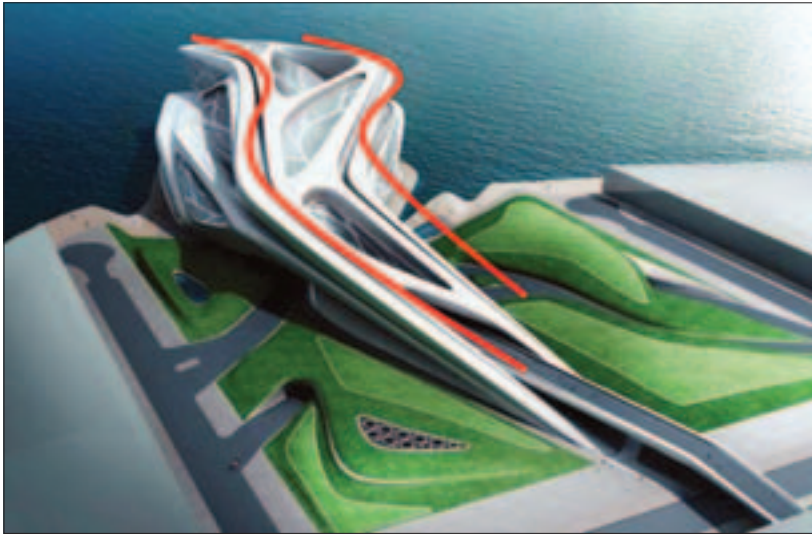


Fig 1.14 PERFORMING ART CENTRE



Fig 1.15 ATTITUDE

- Her concept emerged from the biological analogy of branches, fruits, veins, leaves transforming into the building components.
- When I compare it with dance I could see a swift dance movement in it which gives us a feel of it being mobile.



Fig 1.16 ZAHA'S CONCEPT

SANTIAGO CALATRAVA'S MONTJUÏC TOWER

- The Montjuïc Tower is a 136 m high and could be read as a piece of sculpture. This is a telecommunication tower built in the heart of Olympic site to carry coverage of all the games.



Fig 1.17 MODEL

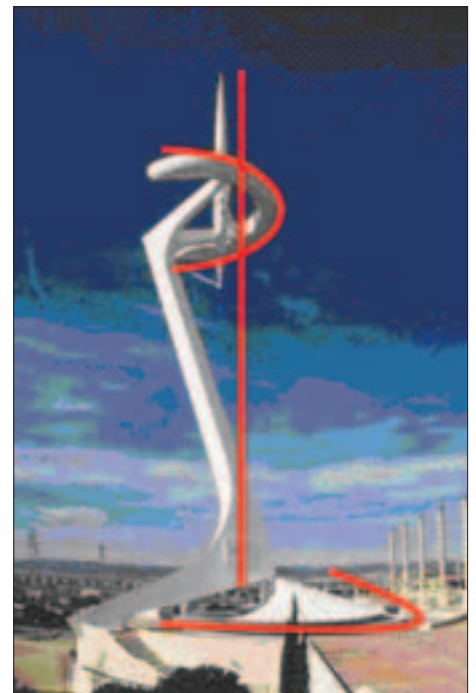


Fig 1.18 MONTJUÏC TOWER



Fig 1.19 LIFT IN BALLET DANCE

- The overall form of the tower is based on a Calatrava sketch of a kneeling figure making an offering. The shadow of the central needle on the circular platform act as a sundial.
- The tower can be read as a lift in ballet and gives a feel of rotation although it is static.
- Calatrava designed it as a sculpture having a poetic expression.
- The tower is broader at the base to support the structure and similarly in the lift also the dancer being lifted is supported with the broader base.

GALERIE DES MACHINES BY DUTERT

Completed in – 1889

Status - Demolished (1909)

Location - 7th Arrondissement, Paris, France



Fig 1.20 BALLET DANCE



Fig 1.21 MONTJUÏC TOWER

- This is a Lankmark building designed to be seen from all over Barcelona to symbolize the power of the Olympic Games coming to Catalonia.

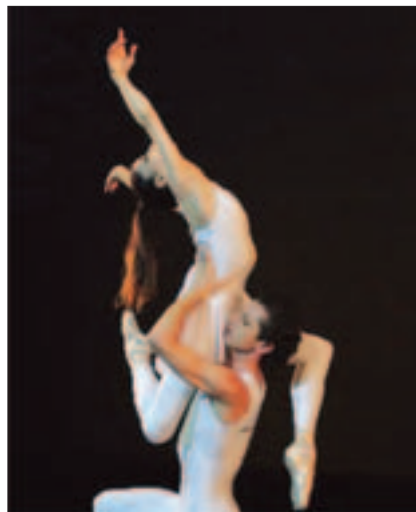


Fig 1.22 LIFT IN BALLET



Fig 1.23 EN POINT

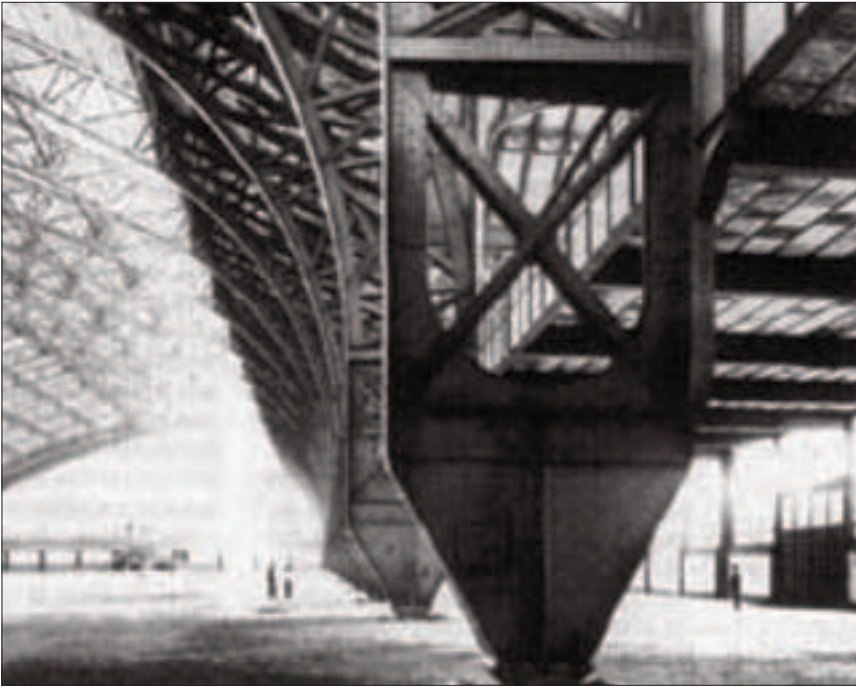


Fig 1.24 BASE OF THREE-HINGED ARCH

- Galerie was designed by the architect Dutert with the aid of the engineers Contamin, Pierron and Charton. Built in regular bays this long span, three-pinned, trussed Portal Frame, this innovative design was a clear progenitor of many steel industrial and exhibition buildings of the twentieth century.
- Its skeleton composed of twenty trusses is 420m in Length. Each arched truss is made up of two segments. A pin unites them at a pivotal point high above the centre line of the hall. Moving downward, the trusses become increasingly attenuated until they appear scarcely to touch the ground: moving upward they spread and gain weight and power.

DESIGN CONCEPT OF DUTERT

- The concept has emerged from the ballet position En Pointe in which the dancer balances on very tips of her toes. Similarly we can see that the complete load of the trusses seem to be balanced

on one point as shown in Fig 1.24.

- The usual proportions seem to be exactly reversed. These triply articulated arches disturb the conventional straight feeling with regard to the rational relations of support and load. Elongated and immensely drawn out cantilevers, the trusses embody movement in all their parts.
- A new sort of movement penetrating space as achieved in Borromini's Cupolas is recreated here.
- Here construction was moving unconsciously towards aesthetic feelings which did not find their equivalents in art and architecture until decades later.

CONCLUSION

- This study could potentially be implied for the structures which demand such kinetic movement visually in their form like dance academies, music academies, auditoriums and other art related buildings.
- This seminar has helps one in looking at architecture with a different perspective.

REFERENCES

BOOKS

- Terzedis Kotas, *Expressive Form* – A conceptual approach to conceptual design
- Giedion Sigfried, *Time Space and Architecture* – The growth of a new tradition, United States of America: Harvard University Press, January 1954

WEBSITES

- www.dgillan.screaming.net/stage/thframes.html Accessed on - January 14, 2009
- www.dgillan.screaming.net/stage/th-ballet3.html Accessed on - January 14, 2009
- www.archtheorie.de/data/file.php?iid=221&dl=1&inline=0&filename=On+Dancing+with+Architecture.pdf . Accessed on - January 14, 2009
- www.arcspace.com/architects/calatrava/Tenerife/ . Last update – April 26, 2004 Accessed on – January 14, 2009
- www.arcspace.com/architects/calatrava/torso2/torso2.html . Last update – Septmber 05, 2005 Accessed on – January 15, 2009
- www.e-architect.co.uk/barcelona/montjuic_communications_tower.htm. Accessed on - January 15, 2009
- http://daap.space4.daap.uc.edu/~larsongr/Larsonline/Gehry_files/Gehry-FrGin.pdf. Accessed on - January 15, 2009
- www.e-architect.co.uk/dubai/abu-dhabi_building.htm. Accessed on - January 16, 2009
- <http://urbanity2.blogsome.com/2008/03/01/performing-arts-centre-abu-dhabi-eau-zaha-hadid/>. Accessed on - January 16, 2009

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Photographs: Courtesy the Author.