

The Spanish School of Thin Tile Shells: Between Creativity and Pragmatism

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Abstract

This paper will highlight new research on the structural design and construction methods of shells in thin brick by Rafael Guastavino Jr. (1872-1950) and Eduardo Torroja (1899-1961). This paper builds on Billington's pioneering work on "the Spanish School" of shell building, and demonstrates the important role of thin tile vaulting in the work of Guastavino and Torroja. These shell designs are exemplified by their pragmatism in construction as well as their creative exploration of structural form.

Rafael Guastavino Jr. pioneered the possibilities for reinforcing the traditional tile vault beginning in the late 19th C and culminating in a patent of 1910. His dome for the Cathedral of St. John the Divine in 1909 remains one of the largest tile vaulted structures ever built. His works became well known in Spain and influenced other shell designers.

Eduardo Torroja employed tile vaulting as permanent formwork for four major projects between 1926 and 1952. These projects demonstrate the evolution of Torroja's design approaches, as well as his recognition of the versatility and intelligence of a vernacular Spanish construction system.

References

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