
Submitted to *Annals of Earth*, August 8, 1993

The Electronic Rose Window

by

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Dedicated to: Father Louis Bertrand
Castel, 1688 - 1757.

Abstract. Previously we have described a project to build an electronic stained glass window in the South Transept of the Cathedral Church of Saint John the Divine in New York City, the largest Gothic Cathedral in the world. Here, we sketch the historical background and motivation of this project.

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1. *Introduction.* The idea for an electronic stained glass window for the Cathedral of Saint John the Divine emerged in a talk by William Irwin Thompson before the Lindisfarne Association at the Cathedral a few years ago. The story of this fantasy has been recounted elsewhere [1]. The materialization of an actual window, as originally imagined, would be part of the completion of the South Transept of the Cathedral, which is also just a dream at this point. It would be a large, circular collage of transparent computer screens, that is, an *electronic rose window*. Some possibilities for the computer graphic animations to be projected by the proposed window were demonstrated by a concert of visual mathematics and music in the Cathedral Church, entitled *Cathedral Dreams*, on October 17, 1992. This was part of another Lindisfarne Association meeting, during which we attempted to motivate the window project, in the context of the plan to complete the entire Cathedral, including the Cathedral Bioshelter and the South Transept, within the Green Cathedral concept. Here, based on that presentation to the Lindisfarne Fellows at the Cathedral, is the historical matrix for electronic stained glass in the rose window of the future.

2. *Early stained glass.* We are all familiar with stained glass windows, abundant in secular and religious buildings all over the world. Always uplifting, it seems natural that they should be a standard feature in places of worship, from caves to cathedrals. And yet, the manufacture of stained glass plates is sufficiently recent that we may trace the entire life of this phenomenon in a short space. Colored glass was known in ancient Egypt, and clear glass plate windows were used by the Romans since 100 AD [2]. By the year 400, the Christian churches of Constantinople were extensively decorated with small windows of colored glass, probably abstract mosaics [3]. These small, Byzantine, stained glass windows reached Ravenna by 540, where they appeared with painting added to the glass [4]. They arrived in England by the year 1000 [5]. But in Early Christian and Byzantine churches, windows were small and few, to preserve the maximum wall area for mosaic pictures [6]. The small, round, stained and painted glass windows of the Romanesque achieved the quality of jewels of light [7].

3. *Gothic cathedrals.* The name *Gothic* was coined in the sixteenth century by Giorgio Vasari as a perjorative for Medieval architecture. [8]. It denotes the style between Romanesque and Renaissance, characterized by pointed arches, extended door and window space, structural complexity, immense size, and (especially in northern Europe) by large stained glass windows and sculptured doorways. As the style evolved, door and window sizes grew, and the masonry was reduced to webs of ribs, pillars and arches. The early exemplars in the north of France were the churches of Saint-Denis (1144), Chartres (1150), Laon (1160), Paris Notre Dame (1163), Reims (1211), and Amiens (1220). All are graced by spectacular stained glass windows, some of circular form, the inspiring *rose windows*. The Gothic cathedrals of Chartres, Reims, and Amiens are regarded as the classic examples of High Gothic architecture extant today. Indeed, the stained glass of Chartres provides our best knowledge of the Gothic stained glass art,

with 152 original windows still intact [9]. The main period of creation of the Chartres windows began with the cathedral reconstruction of 1194. The three great rose windows were made around 1200, and most of the 160 windows were completed by 1240 [10].

Chartres is also important for the link it provides between the prehistoric Goddess tradition, antique Neoplatonic philosophy, and Gothic Christianity. This link is significant for the special appeal of the Gothic tradition to the spiritual revival, and the Green movement, today. The structural revolution of the Gothic cathedral, with its supporting webs and ribs relieving the walls of their compressive function, enabled the spectacular expansion of glass which dominates these buildings from the interior perspective. The illuminationist motive for the expensive decorations in these transparent walls may be traced back to Dionysius, Boethius, and Saint Augustine [11]. The aspect of the luminescent scenes from within was slowly animated by the constantly changing light without [12].

4. Rose windows. Perhaps it is appropriate that the rose window tradition began at the Abbey of Saint-Denis. For Saint-Denis, the patron saint of France, is none other than Dionysius the Areopagite, the author of the Early Christian *Celestial Hierarchy*, which first described the Illuminationist doctrine of the nine choirs of angels, and inspired Saint Augustine [13]. In any case it was there, in 1144, that Abbé Suger envisioned the first Gothic building, illumined by enormous, jewel-like, stained glass windows. By 1200, his inspiration had spread to numerous churches around Paris. The giant rose windows appeared along the way, and a trinity of them adorned each of the three early large cathedrals of Chartres, Reims, and Amiens. At Chartres, in particular, the three rose windows, facing north, south, and west, were devoted to the past, the present, and the future, respectively. Thus, the whole of human history was stretched over the plan of the building. The north (past) symbolizes the Old Testament, the south (present) the New Testament, and the west (future) the Last Judgment and the New Jerusalem. Also, Christ appears at the center of each rose: as the child in the north, resurrected in the south, and in judgment in the west. The integrity of the entire stained glass environment at Chartres was based on the *Logos* of Philo Judeus and the Gospel of Saint John, embodying geometry, number, and light. All this sacred art, divine geometry, and Pythagorean philosophy was characteristic of the School of Chartres, which flourished at that time (a century after Bernard de Silvestris) under John of Salisbury and Chancellor Thierry. [14].

5. The Cathedral of Saint John the Divine. Originally conceived in the Romanesque style a century ago, and now the largest Gothic cathedral (and second largest church) in the world, this Anglican cathedral church is about two-thirds complete. The nave, oriented on an east-west axis, is complete and functions as a church. Its massive stonework is pierced by many splendid stained glass windows, including a magnificent rose window over the west entrance. Absent are the north and south transepts, along with their rose windows. Thus, among the plans for the completion of the building in the next century are the construction of two more great rose windows. Following the scheme of the School of Chartres, to the existing west rose (the future) would be added a north rose (the past) and a south rose (the present). The past and present, during the construction of the rose windows of Chartres (1200) were the Old and New Testaments, respectively.

Today, they might be Christianity and Environmentalism. In any case, the rose window to be constructed at the end of the north transept may be a traditional, static, stained glass window. But, we propose, the rose window for the end of the south transept, to represent the present, must be capable of animation, renewal, and environmental representation. For these reasons and many others, we have therefore envisioned electronic stained glass for this particular window.

6. Conclusion. In weighing the merits and costs of electronic stained glass in a religious setting, we must keep in mind that it already exists and is extensively used at sports events and rock concerts. The main cost of an electronic window (more for construction than materials) is not significantly more than that of a traditional window of stained glass. The merit, as in the case of the Gothic Renaissance stimulated by the School of Chartres, might be the inspiration of a major paradigm shift. Indeed, this is the destiny of the Cathedral of Saint John the Divine.

Acknowledgements. It is a pleasure to acknowledge the support of the Lindisfarne Association and the Cathedral of Saint John the Divine for their support, inspiration, and friendship over the years: material, emotional, and spiritual.

Notes.

- [1] See (Abraham, to appear) .
- [2] See p. 7 of (Brisac, 1986) .
- [3] See p. 7 of (Brown, 1991) .
- [4] See p. 7 of (Brisac, 1986) , and p. 8 of (Brown, 1991) .
- [5] See p. 25 of (Eden, 1913) .
- [6] See p. 87 of (Yarwood, 1974)
- [7] See p. 13 of (Brisac, 1986)
- [8] See p. 200 of (Yarwood, 1974)
- [9] See (Jantzen, 1957) , esp. p. 157.
- [10] See p. 33 of (Brisac, 1986) .
- [11] See p. 13 of (Brisac, 1986) .
- [12] See p. 8 of (Brown, 1991) .
- [13] For the role of St. Denis in the Gothic cathedrals, see p. 8 of (Male, 1913) .
- [14] See pp. 7-15 of (Cowan, 1979) .

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