



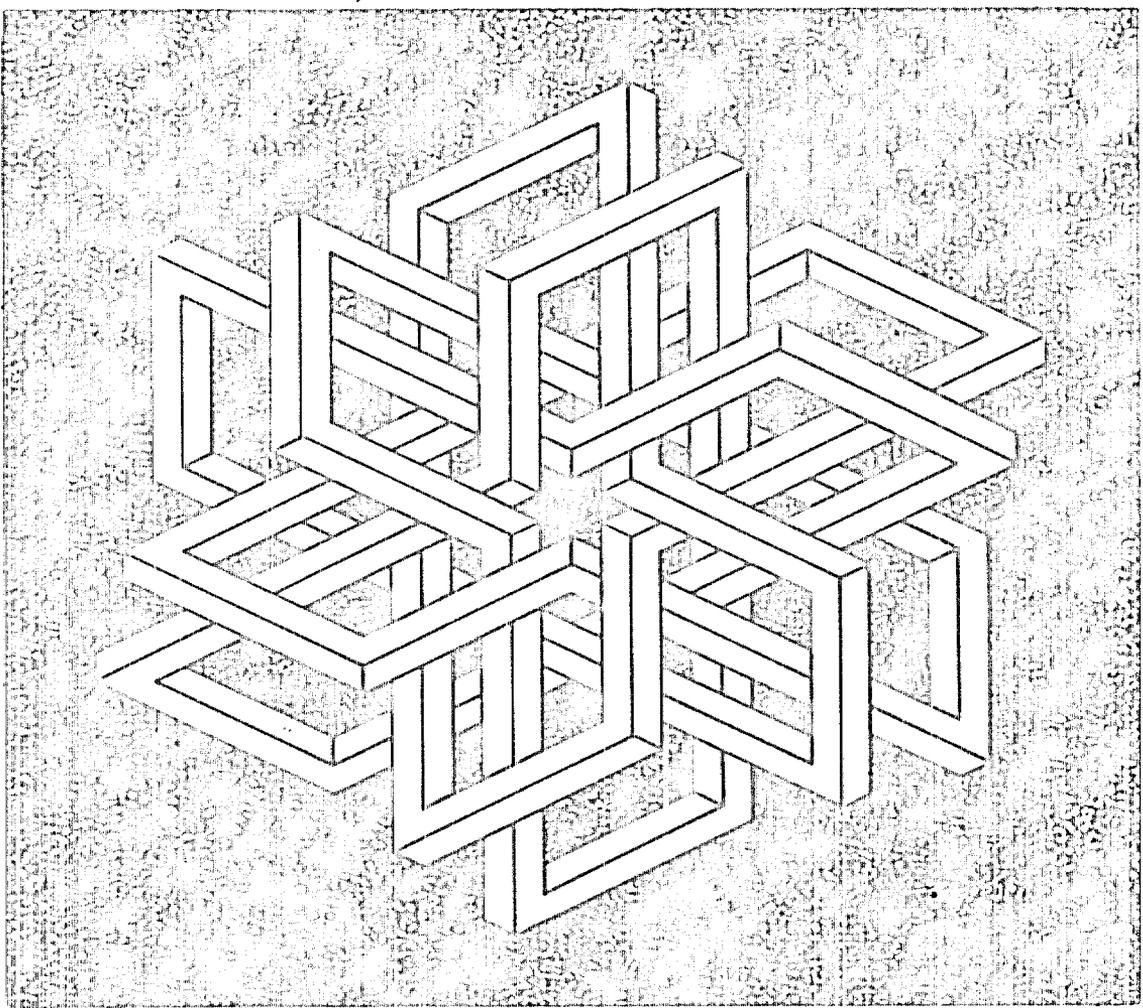
Symmetry: Culture and Science

SYMPOSIUM
Symmetry of Patterns

The Quarterly of the
International Society for the
Interdisciplinary Study of Symmetry
(ISIS-Symmetry)

Editors:
György Darvas and Dénes Nagy

Volume 3, Number 1, 1992



A QUASICRYSTAL FOR DENMARK'S COAST

Tony Robbin
423 Broome St.
New York, N. Y, 10013, USA

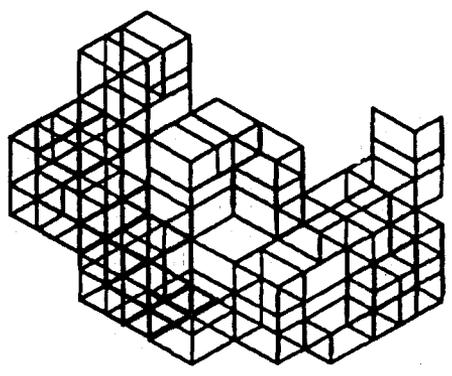
The first true quasicrystal structure will be built in the summer of 1992 at COAST(The Center for Art, Science, and Technology at the Danish Technical University).

Quasicrystals are non-repeating patterns and thus an apparent paradox: we usually think of patterns as composed of regularly repeating elements. In quasicrystals there is regularity: all the nodes, edge lengths, and two dimensional shapes are identical, all the joints are in rows, and only two similar three dimensional shapes make up the entire structure. Yet the pattern is non-repeating and consequently counter-intuitive and intriguing.

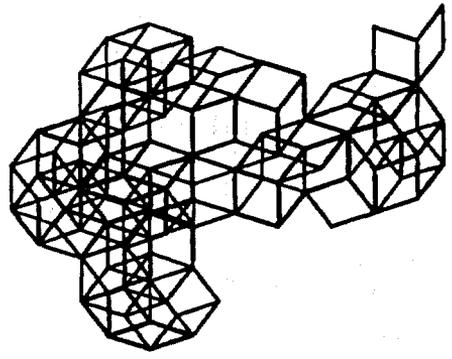
The quasicrystal geometry algorithm was discovered only ten years ago. Computers are essential in the creation of quasicrystal patterns and computer models reveal the potential of quasicrystals for visual fascination.

In one view a quasicrystal structure appears to be made up of cubic elements, and would cast a cubic shadow. In another view, the object appears to be a five-pointed star pattern, and would cast such a shadow. Amazingly, in a third view it appears to be made up of triangles, hexagons, and other forms with three-fold symmetry. Quasicrystal sculptures and architecture pieces are exquisitely and magically responsive to both changes in light and the viewers movement. Quasicrystals geometry is truly a modern mathematics, a geometry of flux, rich ambiguity and subtle order, and the spaces it generates powerfully embodies those contemporary qualities.

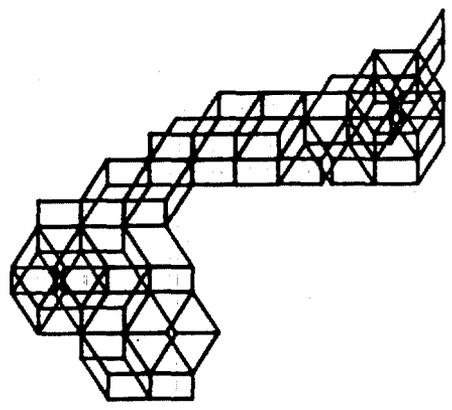
For COAST, the site is a North facing wall which will always be in shadow. Behind this wall, COAST's main permanent facility will be built, and in front of the wall is the main pedestrian and automotive street. With Erik Reitzel and Soren Koch, I decided that the quasicrystal structure should do four things: 1) It should reflect sunlight onto the stone wall - a moving display on the wall as the sun moves; 2) the structure should reveal its 5 3 2 symmetries as the viewer passes by on the road (see drawing); 3) light should be reflected down into the structure so that the structure glows against the dark wall - suggesting the energy and creativity going on behind the wall in the Coast facility; and 4) although we do not emphasize it, the structure would be safe to climb upon, providing a shortcut into the building.



northwest



north



east

THREE VIEWS OF COAST'S QUASICRYSTAL