

The Tessellation Project

In the early 1990s two Ohio State mathematics professors, Henry Glover and J. Philip Huneke, created designs for the slate floors in each of the seven elevator lobbies of The Ohio State University Mathematics Tower. The patterns depict tessellations of the plane, increasing in complexity as the floor numbers go up.

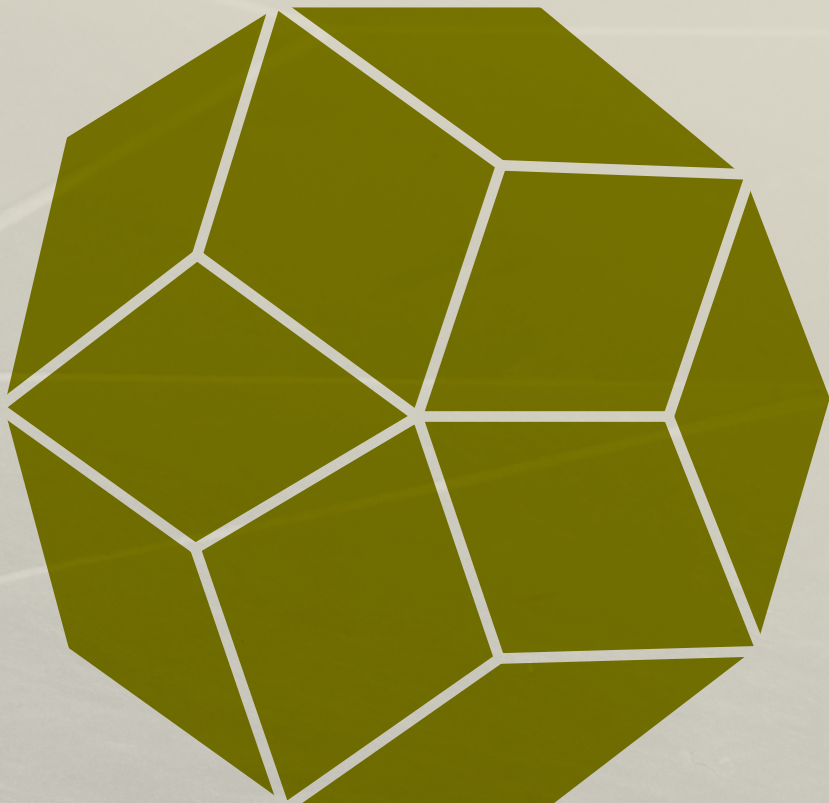
PENROSE RHOMBS

Fifth Floor

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It was long believed that an area could be filled with tiles of three, four, and six sides, but not five. In the early 1970s, Roger Penrose discovered that the plane could be tiled in an asymmetrical, non-repeating manner using just two shapes now known as Penrose tiles.

Each of those symmetrical tiles is the combination of two triangles found in the geometry of the pentagon. The ratio of the sides of the pentagon and the Penrose tiles are ϕ , 1 and $1/\phi$. When covering an area with Penrose tiles, the number of one tile required compared to the number of the other approaches ϕ (phi), the Golden Ratio.



About the Designers

Henry H. Glover joined the Ohio State mathematics faculty in 1968. With a diverse group of collaborators, he tackled problems in fixed-point theory, geometric group theory, and graph theory. In the early 1970s he used the newly developed tool of localization in topology to obtain interesting results about vector fields on manifolds. Glover died on May 31, 2011.

J. Philip Huneke was a member of the mathematics department for 35 years. Huneke solved concrete mathematical problems that required both insight and careful attention to detail. His best-known work (in collaboration with Glover) is the determination of the complete list of 103 graphs that are obstructions to embedding a graph in the projective plane. Huneke died on October 1, 2004.