A Projection

Aresh Pourkavoos

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$$Q = \frac{1}{2\sqrt{2+\varphi}} \begin{pmatrix} \varphi & \varphi & 1 & -1 & 0 & 0 \\ 1 & -1 & 0 & 0 & \varphi & \varphi \\ 0 & 0 & \varphi & \varphi & 1 & -1 \\ -1 & -1 & \varphi & -\varphi & 0 & 0 \\ \varphi & -\varphi & 0 & 0 & -1 & -1 \\ 0 & 0 & -1 & -1 & \varphi & -\varphi \end{pmatrix}$$

The 6×6 matrix above is orthonormal, meaning that it represents a rotation of 6-dimensional space. φ is the golden ratio $\frac{1+\sqrt{5}}{2}$, the positive solution to the equation $\varphi^2 = \varphi + 1$. I found this matrix while considering the cut-and-project method of generating aperiodic tilings, and I think it illustrates an element of this method that is often overlooked.