APPENDIX 1

Grace Crowley’s teaching notes
Combinations of Straight and Curved Lines

- Opposed Straight against Curved
- Opposed Curved against Straight
- Opposed Angled against Angle
- Related

Shapes
Varieties of Shapes

- Square
- Rectangle
- Triangle
- Oval
- Circle
Fig. 4. The Mean Proportion

Fig. 5. The Mean Proportion

Fig. 6. The Divine Proportion
Fig. 8. The Geometrical Progression

\[
\begin{align*}
A &= B + C \\
B &= C + D \\
C &= D + E \text{ and so on}
\end{align*}
\]

\[
\begin{align*}
E &= C - D \\
D &= B - C \\
C &= A - B \text{ and so on}
\end{align*}
\]
The divine proportion deals with incommensurable lengths and it cannot therefore be accurately expressed by simple numbers. If the relation is expressed arithmetically the terms would be approximately:


**Geometric Progression**

In a geometric progression each succeeding term is produced by multiplying the preceding one by a fixed quantity. A geometric proportion can be extended so as to form a geometric progression; in the case of the divine proportion each term is 1.618 times as large as the preceding term:

\[ \ldots 4 \times 1.618, 2 \times 1.618, 1 \times 1.618, 1 \times 1.618, 2.618, 2 \times 1.618 \ldots \]

The series can be continued indefinitely running upwards and downwards from 1, which stands for the length of the original sine. The progression founded on the divine proportion is distinguished from other geometric progressions by a quality which makes it a convenient scale of measurement for artistic purposes, each term being added to or subtracted from the sum of the two preceding terms so that the series can be continued by addition or subtraction when once the relation between two terms is established.
Fig. 9 is derived from Fig. 6 and contains a double geometric progression of lines, related in the divine proportion:

OA, OB, OC, OD, OE, OF, OG, OH... and

AB, BC, CD, DE, EF, FG, GH...

Each line bears the same proportion to its predecessor as the line following bears to it. The design is suggestive of the Fibonacci series and imitates spiral formations in nature, which are the result of continued proportional growth.*

* (T.A. Cook, The Lanes of Life)
A root V area is the same as a square with a whirl at each end.
The square on the hypotenuse of a right-angle triangle is equal to the sum of the squares on the other two sides.

If the hypotenuse be 10 feet, and the other two sides be 8 feet and 6 feet respectively, then the angle contained by the two shorter sides is a right angle.

To square the foundations of a building measure eight feet from the corner along one wall or side, then measure six feet from the same corner along the other side. Then draw inwards or outwards the extremities of the two sides until the line joining these extremities is ten feet. The angle at the corner will then be a right angle.