The Globe and the Fortune -- a synthesis

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I HAVE recently read articles regarding Globe Playhouse remains and their significance[1]. I endorse John Orrell's line of argument, in which he defends a 20-sided polygon with 18° between radii. He has examined those remains of the Globe exposed to view and has arrived at a diameter of approximately 100ft, which concurs with his earlier study of prominent Globe dimensions[2].

I wish to relate Orrell's findings to information provided in the Fortune Playhouse building contract[3]. One piece of hard evidence we have always had is the fact that the Fortune Playhouse contract was to a very large extent based on the Globe's dimensions (though the Fortune was an 80ft square) and a 43ft stage width is specifically mentioned. Other pertinent dimensions are provided – the stage was 43 ft by 27.5ft[4].

I have always been curious about the possibility that the 43ft stage width for the Fortune might have originated with the Globe[5]. In my Ph.D. thesis I relate this stage width to a 24-sided polygon – the configuration adopted by John Orrell and The

1. S. Blatherwick and A. Gurr, with J. Orrell, 'Shakespeare's factory: archaeological evaluations on the site of the Globe Theatre at 1/15 Anchor Terrace, Southwark Bridge Road, Southwark' *Antiquity* 66 no. 251 (1992) 315-33.
2. J. Orrell *The Quest for Shakespeare's Globe* (1983).
3. See the main portion of the Fortune building contract in Yates *Theatre of the World* (1969) Appendix B, 198-200.
4. This depth due to the Fortune being 80ft across, with galleries of 12.5ft and a stage extending to the middle of the structure: 80ft/2 - 12.5ft = 27.5ft; see Parrott (ed.) *Shakespeare – Twenty-three Plays and the Sonnets* (1953) 32; C. Walter Hodges *The Globe Restored* (1953) Appendix F, 187-190.
5. See G. Cuyler *Shakespeare and Jung* (1985), Ph. D. thesis, The Shakespeare Institute, University of Birmingham, pp. 3-44, particularly pp. 21-3, and pp. 96-8 (figs. 12-15), and explanations of figures 12-15 on pp. 81-2.

(continued from p. 35)

grassland so near the centre of the Roman town, the owl pellet highlights the essentially rural aspect of the settlement. Although *Londinium* was at its most prosperous during the early 2nd century, the development was not so intense as to exclude a vole-friendly habitat, perhaps even within the urban boundary. As Fig. 1 shows, a hunting area with a 400m radius centred on the Basilica roost would be entirely within the later walled area.

Not only was a barn owl able to roost in an inner room of the great Basilica, but the pellet lay undisturbed for sufficient length of time for layers of silt to accumulate over it. This discovery neatly supports the excavators' contention that parts of the Basilica were unoccupied, and that the building programme was an intermittent and protracted one. The pellet suggests that the prestigious scheme which began in a fervour of optimism floundered when circumstances changed; might a suitable parallel for an owl in the Basilica be a Canary Wharf in Docklands?

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International Shakespeare Globe Centre prior to the most recent determination of a 20-sided polygon based on the observation of Globe Playhouse remains. Now I would like to relate the 43ft stage width to the 20-sided polygonal configuration.

I begin with John Orrell's premise that Peter Street, the builder of the Globe, might well have used a 3-rod line: this results in a radius of 49.5ft. Now there are two possible configurations of a 20-sided polygon: one has the horizontal diameter running through the jointure of bays, the other bisects at mid-bay. Pentagram's architect for The International Shakespeare Globe Centre, Theo Crosby, elects to have the horizontal diameter bisect at mid-bay. I have chosen to do the same, as it affects the positioning of the stage width which runs parallel to it and joins the interior gallery wall at mid-bay. This allows for a chord across four bays and three symmetrical openings onto the stage.

The dimension of the diameter which extends from the external jointure of bays to its opposite point on the other side of the polygon is 100ft,

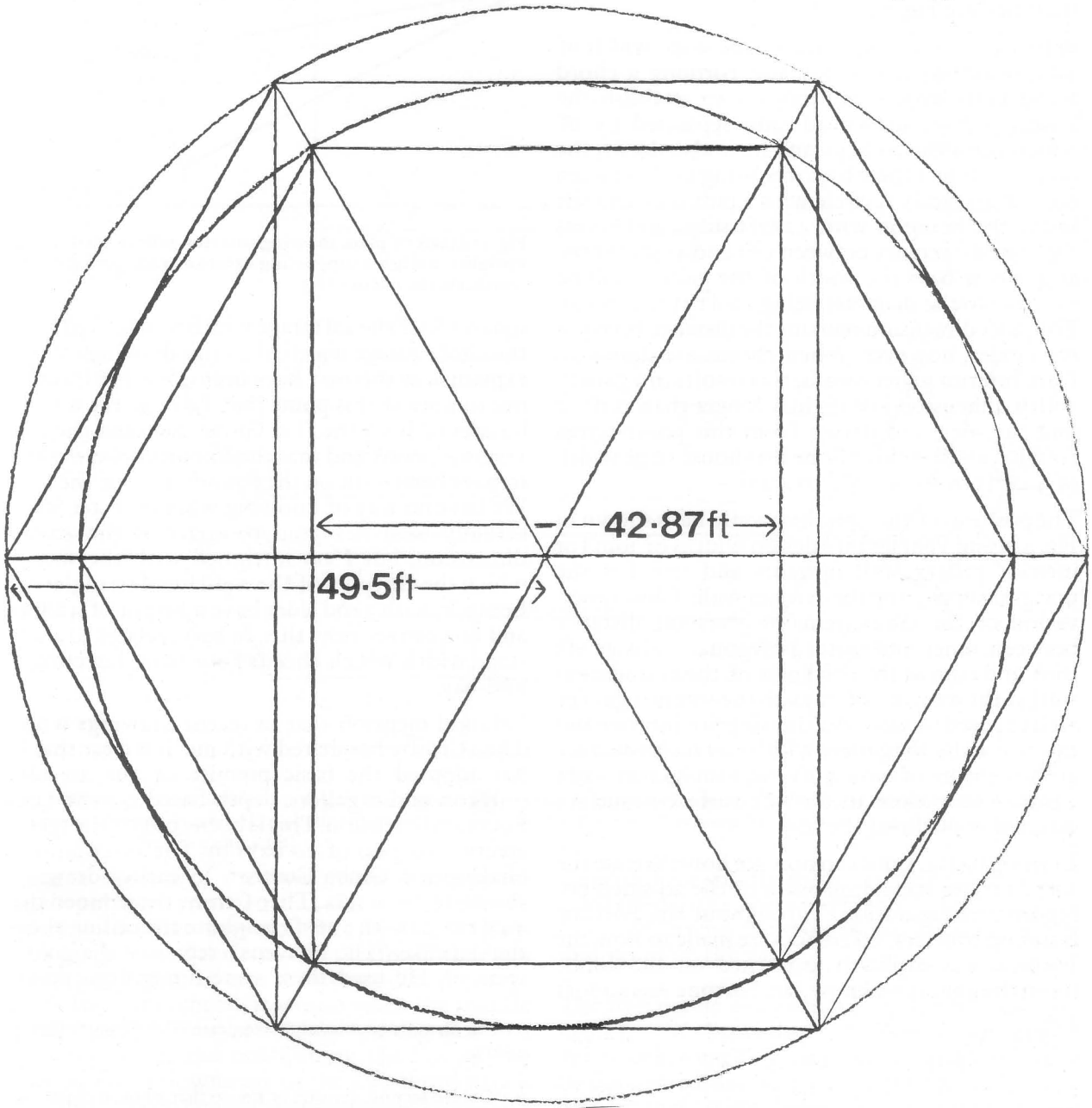

Fig. 1: circle of 3-rod (49.5ft) radius with inscribed hexagon. The inner circle has a radius of 42.87ft, giving rise to a smaller hexagon with sides of that dimension and a rectangle with the same width. (Scale: 1/16in = 1ft)

again in accordance with Orrell's finding[6] based on examination of Hollar's drawing of the Globe.

If a hexagon with 3-rod sides is placed within a circle with a 3-rod radius, there will be six equilateral triangles, each with an altitude of 42.87ft (49.5ft x sine 60°)[7]. Now if this 42.87ft altitude is used as a radius, a circle can be formed just inside the hexagon with 49.5ft sides. In this way, another smaller hexagon can be formed with sides of 42.87ft. This will result in a distance of 42.87ft between the altitudes of the hexagon's outermost equilateral triangles (see Fig. 1).

Before one can draw in the Globe stage width of 43ft, bisecting at mid-bay and forming a chord across four bays, it is necessary to establish the gallery. I have drawn 20 radii separated by 18° which form the 20 bays, and have also drawn the radii that bisect these bays (resulting in 9° between each of 40 radii). A circle with a radius of 37ft sits inside the hexagon with 42.87ft sides, and forms the 12.5ft difference between 37ft and 49.5ft. At the jointure of bays the width of the gallery will be 13ft, due to the diameter being 100ft at that point. The 12.5ft dimension remains the distance between the circles, however. When chords are drawn to form interior gallery walls, this results in a gallery width dimension just slightly longer than 12.5ft at mid-bay. A chord drawn from this point across four bays will yield a Globe Playhouse stage width of 42.87ft (rounded off to 43ft).

The position of the uprights would be as shown in Fig. 2, using Pentagram's design widths of 10in for interior gallery wall uprights and 12in for the uprights supporting the exterior walls. Close observation of the Globe remains gives the distance between inner and outer polygonal walls as 9ft 11in[8], and 0.5m as the thickness of the foundation wall at the jointure of bays of the interior gallery wall exposed to view. Accounting for interior and exterior walls, the gallery width surface-to-surface at the jointure of bays is 9ft 11in + 1m (39.37in) = 13ft 2.37in — very close to the 13ft surface-to-surface dimension outlined above.

Turning to Fig. 3, one can now see how to relate the 43ft Fortune stage dimension to the 20-sided polygonal configuration. Throughout the Fortune building contract, references are made to how the Fortune was explicitly patterned on the Globe (even though, as we know, the Fortune was an 80ft

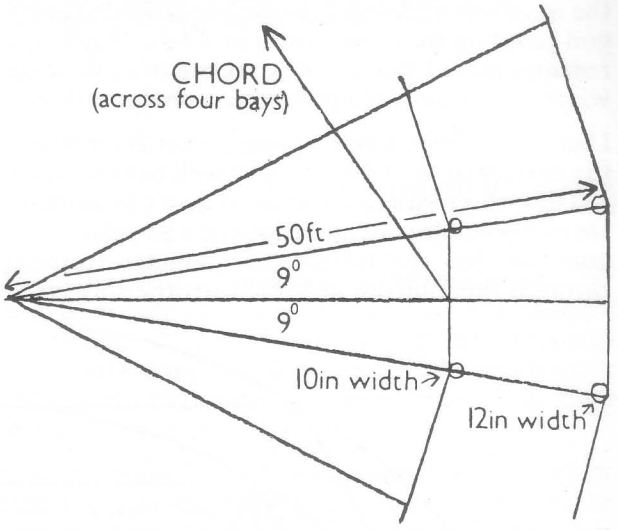

Fig. 2: detail of plan, showing interior gallery wall uprights, uprights supporting exterior walls, and gallery width. (Scale: 1/16in = 1ft)

square). So if the 43ft stage width was derived from the Globe's stage width, then this drawing seeks to explain how this may have been done. It is interesting to note at this point that Peter Street was the builder of both the first Globe (1599) and the first Fortune (1600), and that the second Globe was said to have been built on the foundations of the first. We have no way of knowing whether Peter Street actually used hexagons to arrive at the 42.87ft dimension, but I am intrigued with the way in which the altitudes of the equilateral triangles in a hexagon with 3-rod sides have a height of 42.87ft, and one can see how this, in turn, relates to a 43ft stage width which chords four bays, bisecting at mid-bay.

I should mention that in recent drawings which Theo Crosby has shared with me[9] it is clear that he has adopted the basic premise of the 20-sided polygon and a gallery depth based on the 12.5ft Fortune dimension. This is borne out by the recent erection of two of 20 bays by The International Shakespeare Globe Centre[10]. In earlier drawings shown to me in 1984, Theo Crosby determined that a 43ft stage with a 26.5ft height to the ceiling above the stage (i.e. "The Heavens") represented a golden section[11]. He used these same dimensions down-

6. Op cit fn 2.

7. *Op cit* fn 5, p. 22

8. *Op cit* fn 1.

9. Prepared for his October 1992 Pentagram seminar.

10. *Cue Sheet* International Shakespeare Globe Centre (Spring 1992) 1.

11. "Golden section: division of line so that whole is to one part as that part is to other part" *Concise Oxford Dictionary.*

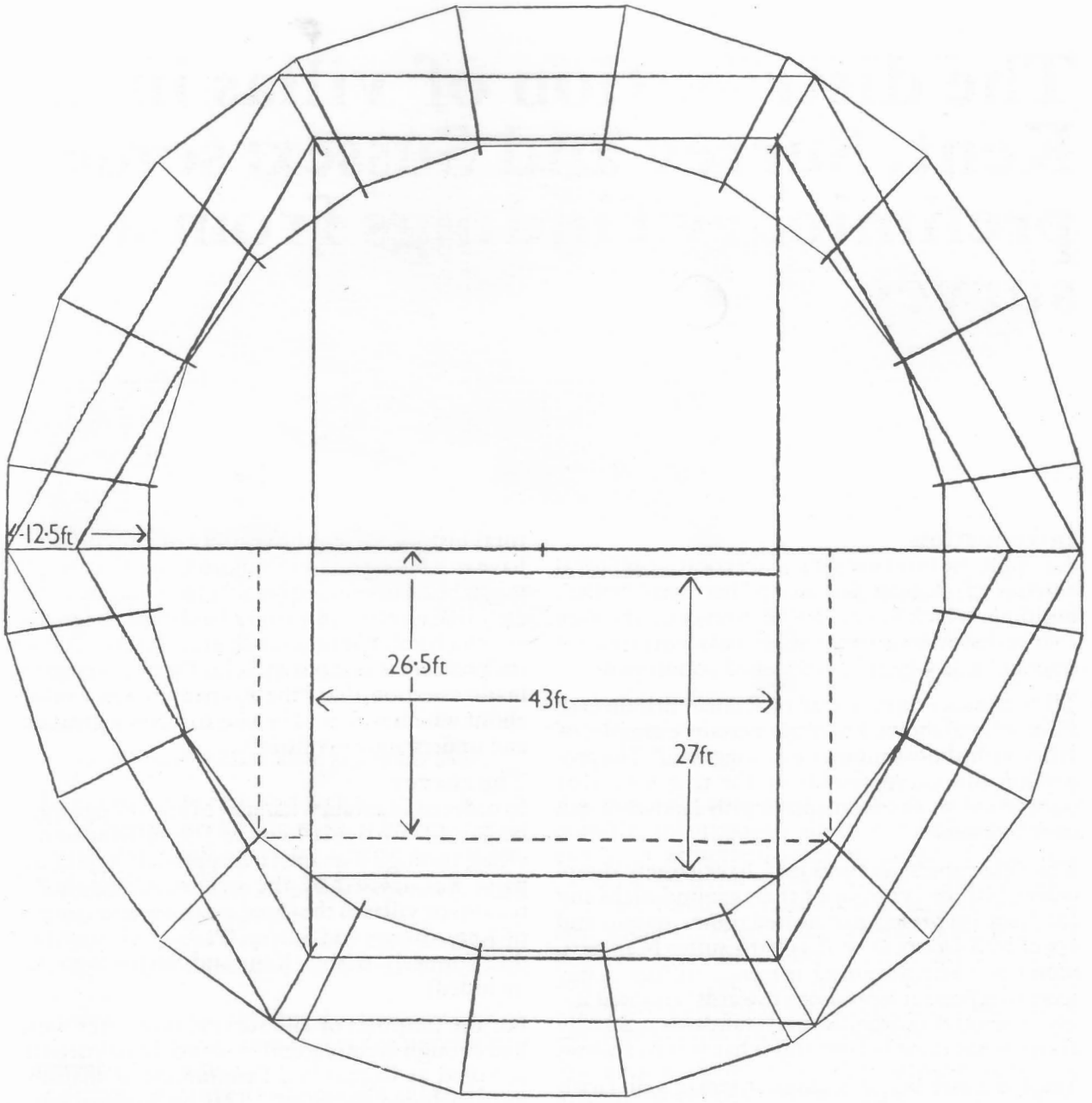

Fig. 3: Globe Theatre 20-sided polygon based generally on the Pentagram design configuration, in which the 100ft diameter polygon is related to pertinent measurements for the Fortune Playhouse's stage width (43ft) and gallery width (12.5ft). (Scale: 1/16in = 1ft)

stage of the line of the *frons scenae*. With the 20-sided polygon arrangement, one could draw a chord across five bays (jointure-of-bays to jointure-of-bays), and this could be the line of the *frons scenae* (see Fig. 3). If one then extended the stage 26.5ft from this chord, it would reach the middle of the "yard" – thus creating the "playing area" as a golden section, and establishing the line of the *frons scenae* 3ft downstage of the 43ft chord which has already been established, stretching from mid-bay to mid-bay across four bays. Alternatively, one could adhere strictly to the 43ft by 27.5ft dimensions cited in the Fortune Playhouse building contract and extend the stage to just 2ft short of the mid-point of the yard.

The irrefutable evidence for the Globe's stage dimensions lies beneath Anchor Terrace at present. With luck, some day the original Globe stage will be discovered, and may turn out to have the same 43ft by 27.5ft stage dimensions as those found in the building contract for the Fortune Playhouse.