Appendix E: Re-evaluating the Khafre Valley Temple as a Megalithic Dock; Limitations of Ritual-Centric Interpretations

E.1 Critique of Conventional Mortuary Interpretations

Traditional Egyptological perspectives view the Khafre Valley Temple (KVT) primarily as a mortuary or ceremonial site, attributed to its proximity to the Sphinx and adjacent funerary structures[1]. Yet, these interpretations often overlook the engineering, hydrological, and logistical challenges of transporting 150-tonne granite blocks from Aswan[2]. To date, no detailed structural analysis has systematically assessed the KVT's potential as a docking platform[3]. Despite its conventional label as a T-shaped ritual hall, the KVT's recessed U-shaped basin—characterised by flanking granite walls and a sunken courtyard—offers functional advantages for unloading large megaliths[4]. This study's engineering simulations affirm stability for blocks up to 50 tonnes[5]. In contrast to Old Kingdom ports like Wadi al-Jarf, which depended on inclined ramps for terrestrial access, the KVT's recessed design suggests a tailored hydraulic solution for direct fluvial unloading[6].

E.2 Topographical and Geomorphological Context

Nestled in the Giza Plateau's lowest eastern depression, the KVT borders a palaeochannel traced through satellite imagery, digital elevation models (DEMs), and hydrological reconstructions[7]. During the mid-Holocene highstand (~4400 BCE), this site likely experienced sustained or seasonal flooding, positioning it ideally for barge-based logistics[8].

E.3 Structural Configuration and Load-Bearing Characteristics

The KVT's foundation comprises over 100 Aswan red granite blocks, each weighing up to 150 tonnes[9], anchored directly into bedrock. This layout delivers exceptional compressive strength and lateral stability—attributes more aligned with high-load unloading than a solely symbolic function[10].

E.4 Functional Transition and Adaptive Reuse

Archaeological evidence, including bread moulds and altar fragments found in the courtyard[11], points to a later ceremonial phase after the temple's hydraulic utility diminished post-3500 BCE due to Nile regression[12]. Similar shifts to ritual use are observed at Dahshur and Lisht, where functional spaces were repurposed[13].

E.5 Testable Predictions for Future Investigation

Geoarchaeological surveys of the KVT's eastern basin may reveal sediment layers from prolonged inundation, tool wear from megalith handling, or quay anchor points[14]. Such discoveries would provide empirical backing for the docking hypothesis, linking predictive models with archaeological evidence[15].

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