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**27 March 2024**



sit vis vobiscum

# **System Engineer Essentials**

## ***3. Systems Engineering the Great Pyramid of Khufu***

Learning from the past? Perhaps...

**F**urther back in history, we find human ventures that bear the hallmarks of “holistic synthesis.” Could such ventures have been *de facto* creations of Systems Engineering, in effect if not in name? Undoubtedly, the most iconic venture of its time was the Great Pyramid of Giza, today the only extant Wonder of the Ancient World.

First, in accordance with the Systems Approach, some context and domain knowledge for Ancient Egypt, the Old Kingdom. Up until the time of King Khufu (2589-2566BCE), the religion of the royal families followed a stellar mythology and cult, with Osiris as the god of the Underworld/Afterlife, etc.. Each king was considered to be a living god-Horus, with the responsibility of looking after his people,

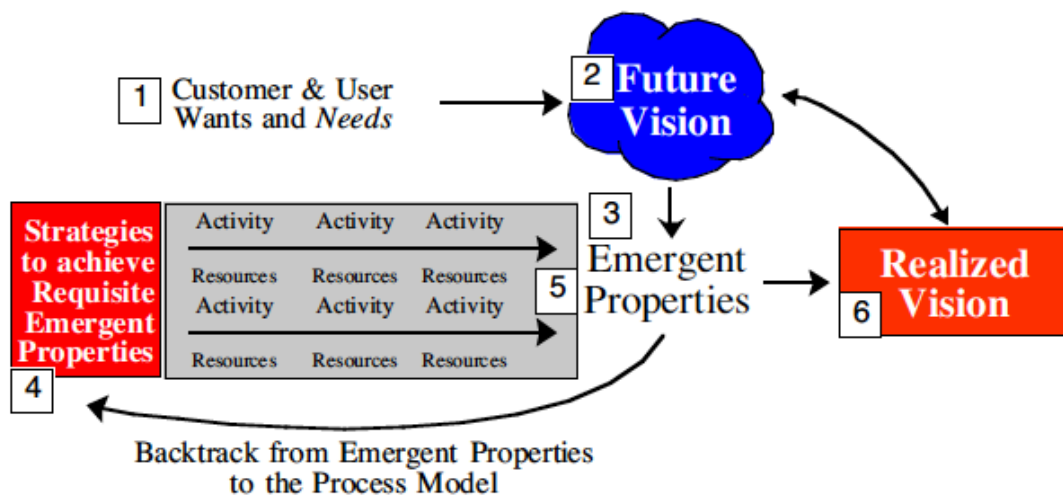
of maintaining Ma'at (the uniquely Egyptian concept of cosmic harmony), and of ensuring the annual Inundation of the Nile, upon which the civilization that was KMT, Egypt, depended.

However, at the time of Khufu's reign, there was an impending paradigm shift from stellar to a solar cult, with the Sun-god Re as supreme. This is evident in the change to subsequent King's names, which had Re added to them: Khafre, Djedefre, Menkaure, etc. So Khufu was the last King of the stellar cult, which will become evident in the design of his pyramid complex, which is replete with *heka*, magic...largely in the form of protective numerical relationships. Protective? Perhaps against Re? Against intruders, robbers? Who knows...

**R**eduction had not been conceived back in the 3<sup>rd</sup> millennium BC. That would have to wait for René Descartes in the first half of the 17<sup>th</sup> Century, AD: his reductive/decomposition approach would eventually become the basis of modern engineering methods. So, *Hemunu*, the Royal Architect of the Great Pyramid, who had already been involved in building many pyramids, was unlikely to have employed reduction, but would instead have relied on the only approach available to him—*holistic synthesis*.

The figure shows a simple outline of the overall systems approach and systems methodology that *Hemunu* would most probably have used—couched in modern terms, of course. It is simple, but powerful, and would have taken some 6 steps as shown.

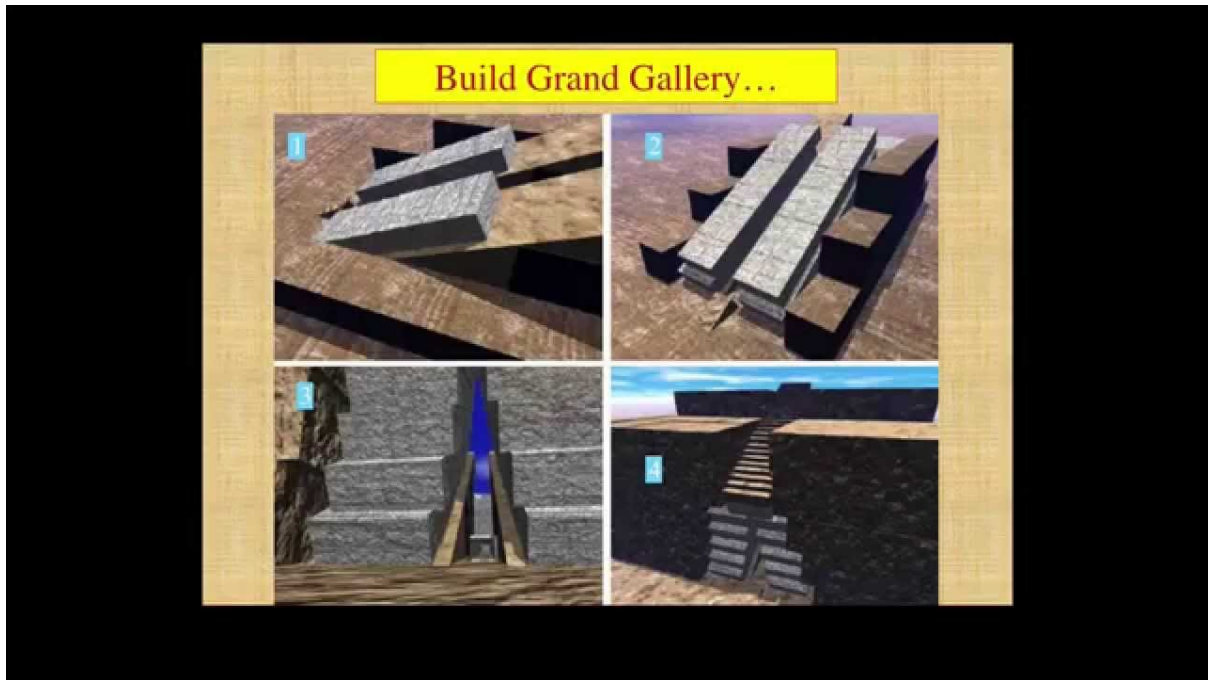
## *Ancient Egyptian Systems Engineering Methodology?*



**The Methodology is entirely synthesis, with no reduction throughout. The Architects of Akhet Khufu appear to have taken the Systems Approach, within their stellar context, making their Solution System compatible with the relevant mythological stellar environment...**

**Y**ou may see systems engineering—ancient Egyptian style—in the video, which shows much of the Operations Analysis and Functional Design (sic) that would have gone into the concept formulation, the *quite amazing systems design and construction* of the Pyramid complex.

This whole complex was seen, not as the large piles of stone we see today, but as *a living, breathing organism*, a “*psychic projector*” able to send the interred god-King’s *ka* (psyche) up to the heavens where he would negotiate with the other gods for a successful Inundation. And it was designed to operate for “millions of years.” The YouTube video takes a little less time (32 minutes)...and you might just be surprised.



I hope you enjoyed that as much as I did researching it. So much extravagant nonsense is talked about the building of the Great Pyramid.

However, it turns out that the purpose of *Akhet Khufu* was in keeping with the contemporary, but soon to be superseded, stellar culture, with annual ceremonies to “energize” the Great Pyramid and Khufu Osiris and so to ensure the annual Inundation in which Egypt depended, for all time... Which is surely as it should have been.

*Don Del*

*March 24*