

The Ancient Egyptian Metaphysical Architecture

Expanded Edition

Moustafa Gadalla
Maa Kheru (True of Voice)



Tehuti Research Foundation
International Head Office: Greensboro, NC, U.S.A.

The Ancient Egyptian Metaphysical Architecture

by MOUSTAFA GADALLA

Published by:
Tehuti Research Foundation
P.O. Box 39491
Greensboro, NC 27438, U.S.A.

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This book is a revised and enhanced edition of the originally titled book, "Egyptian Harmony: The Visual Music", copyright 2000 and 2003 by Moustafa Gadalla, that was first published in paperback in 2000, and in e-book format published in 2003. The name of this book was changed to better reflect the expanded content of the book.

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Publisher's Cataloging-in-Publication

Gadalla, Moustafa, 1944-
The Ancient Egyptian Metaphysical Architecture / Moustafa Gadalla.
— 1st ed.

p. cm.

Includes bibliographical references.

LCCN: 2016900020

ISBN-13(pdf): 978-1-931446-63-1

ISBN-13(e-book): 978-1-931446-62-4

ISBN-13(pbk.): 978-1-931446-61-7

1. Aesthetics, Egyptian. 2. Harmony (Aesthetics) 3. Architecture—Egypt—Aesthetics. Proportion (Art) 5. Egypt—Antiquities. 6. Egypt—Civilization—To 332 B.C. I. Title.

BH221.E2G26 2016

701.17'0932

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ABOUT THE AUTHOR

Moustafa Gadalla is an Egyptian-American independent Egyptologist who was born in Cairo, Egypt in 1944. He holds a Bachelor of Science degree in civil engineering from Cairo University.

Gadalla is the author of twenty-two published internationally acclaimed books about various aspects of the Ancient Egyptian history and civilization and its influences worldwide.

He is the Founder and Chairman of the Tehuti Research Foundation (<https://www.egypt-tehuti.org>)—an international, U.S.-based, nonprofit organization, dedicated to Ancient Egyptian studies. He is also the Founder and Head of the online Egyptian Mystical University (<https://www.EgyptianMysticalUniversity.org>).

From his early childhood, Gadalla pursued his Ancient Egyptian roots with passion, through continuous study and research. Since 1990, he has dedicated and concentrated all his time to researching and writing.

FORWARD BY PAUL JEFFELS

The Ancient Egyptians saw divine power and influence in all aspects of life. For them, the life force ran through everything in creation and every aspect of existence. Nothing was separate from the totally integrated, benevolent Universe.

The Ancient Egyptians understood that it is the task of mankind to be God's stewards, and every aspect of their culture was geared to doing just that to the best of their abilities. This concept was known as Ma'at, and was the central pillar of their understanding. The result was the longest lasting and most successful civilization that the world has ever seen – a civilization that is still influential, and still has many advanced secrets that modern people are trying to penetrate.

Everything that the Ancient Egyptians did was intended to reinforce and support their understanding of this perfect reality: music, writing, mathematics, law, lifestyle, agriculture, and of course, architecture.

Architecture has been described as 'frozen music', and just as music obeys strict mathematical rules, so Ancient Egyptian architecture observed mathematical rules that

enabled the building of sound structures, some of which still stand after thousands of years, and which contain symbolism that enables the mind to both consciously and subconsciously align with the higher energies of the Universe.

In this book, Moustafa Gadalla concentrates on the role of Ancient Egyptian architecture in linking the minds of the Egyptians to their environment and the higher energies in that environment. You will find in the book many examples of how this was done, and many examples of how beneficial this was for Ancient Egyptian culture.

In these modern times of discord and dissatisfaction with life, we would do well to look at Ancient Egyptian architecture and its role in society. We could certainly benefit from these methods today!

Paul Jeffels
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PREFACE

Everything that the Ancient Egyptians built/molded/sculptured was for the purpose of generating energies and/or to embody energies. And just like our electrical system that needs activation by turning on a switch, all Egyptian works also require/required activation by the right actions [sounds, gestures, etc.]. And while these 'stone' marvels appear static because they appear stationary, they are no different than [stationary] energy-generating units like our solar panels, that absorb solar energy from the sun and convert it to energy supplies for our earthly human needs.

This book reveals the Ancient Egyptian knowledge of harmonic proportion, sacred geometry, and number mysticism, as manifested in their texts, temples, tombs, art, etc., throughout their known history. It shows how the Egyptians designed their buildings to generate cosmic energy, and the mystical applications of numbers in Egyptian works. The book explains in detail the harmonic proportions of about 20 Ancient Egyptian buildings throughout their recorded history.

It is the aim of this book to provide such an exposition; one which, while based on sound scholarship, will present

the issues in language comprehensible to non-specialist readers. Technical terms have been kept to a minimum. These are explained, as non technically as possible, in the glossary. This Expanded Edition of the book is divided into three parts containing a total of 13 chapters, as well as 10 appendices, A through I.

Part I: Architectural Concepts—Function and Form consists of five chapters—1 through 5:

Chapter 1: *The Architectural Canon* will cover the deep-rooted Egyptian beliefs of ‘As above So below’ and its application to Egyptian art and architecture and the existence and adherence to a divine building code, as well as utilizing design and construction plans prior to as well as during the construction stages, which extended over several centuries for large projects.

Chapter 2: *The Metaphysical Structure of the Universe* will cover the realms of creation and its correspondence in Man as the image of all creation.

Chapter 3: *Visitation Sites of The Lower Heavenly Court* will cover the interactions between earthly living beings and the lower realms of the metaphysical cosmic structure, the significance of landscape architecture in such interactions, and the major types of visitation buildings (both burial and non-burial sites) to facilitate such interactions.

Chapter 4: *The Sealed Pharaohs’ Tombs* will cover the concept and role of the pharaohs which requires their tombs to be sealed and inaccessible for further communications

after their earthly existence, as well as giving samples of some pharaonic tombs.

Chapter 5: *Egyptian Temples of the Divine Forces* will cover the main function of Egyptian temples (being divine generation), the overall conceptual temple layout, the metaphysical funnel conduit design, the generative significance of jointing patterns, outer walls' physical/metaphysical protection, and the organic foundation roots of the Egyptian temple.

Part II: The Physical Manifestation of Metaphysical Concepts consists of five chapters, 6 through 11:

Chapter 6: *Architectural Constituent Forms of Metaphysical Functions* will cover the various architectural forms as manifestation of their corresponding functions [both physically and metaphysically] for “false doors”, recessed wall panels, columns and pillars, capitals of columns, porticoes, peristyles, colonnade formations at four different locations, obelisks, statuary images, various roof forms (flat, gable, corbelled, arch and vaulted), stylistic architectural details (architrave, cornice, and torus) and stylistic ornamentation and decoration such as starry ceilings, floral, geometric, figurative, or a combination of two or all three, guilloche (misnamed as the Tuscan border), chevron, and scroll patterns.

Chapter 7: *The Primary Geometrical Shapes/Forms* will cover the principles and application of sacred geometry of Divine Architecture, the Egyptian sacred cord [tool], a general layout of sample geometric shapes, the sacred circle as the archetype of Creation, squaring the circle, the

primary triangles, and the combined square-triangle 3-D pyramids.

Chapter 8: *The Generative Square Root Rectangles—“Irrational numbers”* will cover the generative root rectangles as the hypotenuse of right angle triangles, beginning with a square and generating square roots of 2, 3 and 5; the formation of cosmic solids; the generation of the Golden Proportion from the root five rectangle; the construction of whirling square spirals; and example applications of this form of dynamic design to four locations in Ancient Egyptian monuments.

Chapter 9: *The Arithmetic Generative Progression* will cover the role of numbers as generators of orderly growth and progression, the Summation Series and the Golden Proportion, and the Cosmic Proportion of the Human Figure.

Chapter 10: *Combined—Arithmetic and Graphic Harmonic Design of Egyptian Buildings* will cover combining both the arithmetic and graphic elements into a harmonic design of the parts and the whole of an Egyptian temple that includes: active axes, significant points, the telescopic triangles, and rectangular perimeters in both the horizontal and vertical planes.

Chapter 11: *Harmonic Analysis of Ancient Egyptian Works* will cover several examples from Ancient Egypt from all eras and throughout Egypt that show Egyptian applications of the design elements discussed in this book. Examples include temples, tombs, pyramids, shrines, capitals of columns, stelae, pylons, and doorways.

Part III: The Spirited Communications has two chapters—12 and 13:

Chapter 12: *The Animated Metaphysical Images on Walls* will cover the metaphysical significance of wall decorations as well as explanations of various depictions.

Chapter 13: *Human Activities* will cover the roles of humans in activating, maintaining, and participating in various rituals and festivities as well as deactivating the powers of the temple when temples and the whole of Egypt is under siege.

Appendices has ten appendices, A through J:

Appendix A: *General Plans of Sample Egyptian Temples* covers layout plans of several Egyptian temples, with a short description of each.

Appendix B: *Practical Mathematics in Ancient Egypt* refers to the four most recognized Ancient Egyptian “mathematical” papyri and the practical mathematical contents within such papyri.

Appendix C: *Fraction Mysticism* covers the reasons that, in Egypt, a fraction—any fraction—could only be a fraction of unity and Egyptian tables to deal with “complex” fractions which are similar to modern Logarithmic Tables.

Appendix D: *Intentional “Irregularities” In Egyptian Works* covers the religious reasons for what seems to be “irregularities” in the highly-executed Egyptian works.

Appendix E: *Monument Appropriations Reconsidered* clar-

ifies what appears to be monument appropriation by one pharaoh, of another.

Appendix F: *Sample Egyptian Sculpture Works* covers a very short list of recognizable Egyptian sculptures.

Appendix G: *Concrete Blocks Various Types* covers the advanced Egyptian knowledge of concrete mixes and application examples of such knowledge throughout Ancient Egypt.

Appendix H: *The Masonic Egyptian Roots* covers the Egyptian roots of the widespread secret fraternal society called 'Free and Accepted Masons' (popularly known as Freemasonry).

Appendix I: *Egyptian Influence on Modern Architecture* covers several worldwide examples of such influence.

Appendix J: *Types and Forms of Mortals' buildings* will cover types and forms of residential, private, communal and public buildings as associated with its earthly existence's function, as well as highlighting that mortals of all classes—including pharaohs and priestly staff—resided in mud-brick houses.

>>> It should be noted that the digital edition of this book as published in PDF and E-book formats have a substantial number of photographs that compliment the text materials throughout the book.

Moustafa Gadalla

STANDARDS AND TERMINOLOGY

1. The Ancient Egyptian word *neter* and its feminine form *netert* have been wrongly, and possibly intentionally, translated to 'god' and 'goddess' by almost all academicians. *Neteru* (plural of *neter/netert*) are the divine principles and functions of the One Supreme God.

2. You may find variations in writing the same Ancient Egyptian term, such as *Amen/Amon/Amun* or *Pir/Per*. This is because the vowels you see in translated Egyptian texts are only approximations of sounds which are used by Western Egyptologists to help them pronounce the Ancient Egyptian terms/words.

3. We will be using the most commonly recognized words for the English-speaking people that identify a *neter/netert* [god, goddess] or a pharaoh or a city, followed by other 'variations' of such a word/term.

It should be noted that the real names of the deities (gods, goddesses) were kept secret so as to guard the cosmic power of the deity. The *Neteru* were referred to by epithets that describe particular qualities, attributes and/or aspects of their roles. Such applies to all common terms such as *Isis, Osiris, Amun, Re, Horus, etc.*

4. When using the Latin calendar, we will use the following terms:

BCE – Before Common Era. Also noted in other references as BC.

CE – Common Era. Also noted in other references as AD.

5. The term Baladi will be used throughout this book to denote the present silent majority of Egyptians that adhere to the Ancient Egyptian traditions, with a thin exterior layer of Islam. The Christian population of Egypt is an ethnic minority that came as refugees from Judaea and Syria to the Ptolemaic/Roman-ruled Alexandria. Now, 2,000 years later, they are easily distinguishable in looks and mannerisms from the majority of native Egyptians. [See *Ancient Egyptian Culture Revealed* by Moustafa Gadalla, for detailed information.]

6. There were/are no Ancient Egyptian writings/texts that were categorized by the Egyptians themselves as “religious”, “funerary”, “sacred”, etc. Western academia gave the Ancient Egyptian texts arbitrary names, such as the “Book of This” and the “Book of That”, “divisions”, “utterances”, “spells”, etc. Western academia even decided that a certain “Book” had a “Theban version” or “this or that time period version”. After believing their own inventive creation, academia then accused the Ancient Egyptians of making mistakes and missing portions of their writings (?!!).

For ease of reference, we will mention the common but arbitrary Western academic categorization of Ancient

Egyptian texts, even though the Ancient Egyptians themselves never did.

7. To make it easier for the reader, we will give a “value” to a ratio/proportion between two integer numbers, even though it is not. We will also write angle measurements (in degrees, etc.) to make it easier for “modern education”, even though it is inferior to the principles of sacred geometry.

MAP OF ANCIENT EGYPT



Map of Ancient Egypt

PART I :
ARCHITECTURAL
CONCEPTS—FUNCTION
AND FORM

CHAPTER 1 : THE ARCHITECTURAL CANON

1.1 EGYPT: TEMPLE OF THE COSMOS

Herodotus, the Greek historian wrote in 500 BCE:

Now, let me talk more of Egypt for it has a lot of admirable things and what one sees there is superior to any other country.

The superior Ancient Egyptian monuments are the result of their deep belief and applications of the principal: 'As Above So Below'. This perpetual correlation—cosmic consciousness—was echoed in Asklepius III (25) of the *Hermetic Texts*:

...in Egypt all the operations of the powers which rule and work in heaven have been transferred to earth below...it should rather be said that the whole cosmos dwells in [Egypt] as in its sanctuary...

The scenes of daily activities found inside Egyptian monuments show a strong perpetual correlation between the Earth and heavens. The scenes provide graphical representation of all manner of activities: hunting, fishing, agriculture, law courts, and all kinds of arts and crafts.

Portraying these daily activities in the presence of the *neteru* (gods, goddesses) or with their assistance, signifies their cosmic correspondence.

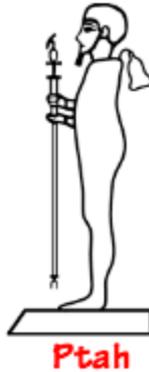
Therefore, we must forego viewing the Ancient Egyptian monuments as an interplay of forms against a vague historical, archaeological presentation. Instead, we must try to see it as the dwelling place of the cosmos; as the relationship between physical form and metaphysical function.

1.2 PTAH: THE DIVINE ARCHITECT

The Divine energy that manifests itself in the creation cycle is defined by its constituent energy aspects that were called *neteru* (gods, goddesses) by the Ancient Egyptians.

Creation is the sorting out (giving definition to/bringing order to) of all the chaos (the undifferentiated energy/matter and consciousness) of the primeval state. All of the Ancient Egyptian accounts of creation exhibited this with orderly, well-defined, clearly demarcated stages.

In Ancient Egypt, Ptah is/was the Cosmic Architect, the cosmic shaping force, the giver of form (*smith*). He is/was the patron of crafts, trades, and the arts. He is/was the coagulating, creative fire.



His job was to give form to the words of Re as spoken by Thoth, according to the Laws of balance and equilibrium (Ma-at). Therefore, Ptah sits enthroned or stands upon a pedestal in the form of the glyph for Ma-at (cosmic law, harmony, equilibrium). [Read more about the creation cycle and its operating energies in *Egyptian Cosmology: the Animated Universe* and *Egyptian Divinities: The All Who Are the One*; both by Moustafa Gadalla.]

1.3 SESHAT: PATRONESS OF BUILDERS

The knowledge manifestation of building activities was attributed to the netert (goddess) Seshat. Her role is well described by numerous titles that ascribe two types of activities to her. She is *the Enumerator: Lady of Writing(s)*, *Head of the House of the Divine Books*, and *Head of the House of Books (Archives)*.



The other aspect of Seshat (and closely related to it) is the one where she is described as the **Lady of Builders**.

Builders, artisans, sculptors, and painters were part of a team that adhered rigidly to the pre-ordained canons of proportion. Their positions can be compared with that of modern designers of printed circuitry or microprocessors, who are constrained within a technological framework of function that depends absolutely upon the laws of electronics.

The Ancient Egyptian knowledge that manifested itself in their monuments was prescribed into technical specifications that were kept in archives throughout the country.

1.4 THE BUILDING CODE

All Egyptian art and architecture, including representations of the human figure, followed a precise canon of proportion. Such a canon was also applied to Egyptian sculptures, friezes, and paintings, and they were carefully planned according to harmonic, geometric, and proportional laws. Plato attested to the remote age of the

Ancient Egyptian canon of proportion, and how the executed works of the Ancient Egyptians never changed in character or design over the previous 10,000 years, before his time (428-347 BCE):

“That the pictures and statues made ten thousand years ago, are in no one particular better or worse than what they now make.”

Taken in this limited sense, his remark indicates that the Egyptians were always bound by the same regulations, which ensured consistent application throughout its long history.

Plato’s statement is consistent with the evidence everywhere in Ancient Egypt, such as:

1. One process peculiar to Egyptian temples is growth by accretion, where successive kings often built additions to the same temple(s). A glance at some of these temples shows that the result is by no means in conflict with the laws of harmony. The added elements are interrelated and grow in scale (width and height) according to a certain rule of proportion, connecting them to the original building. A good example is to be found at the huge complex of the great Karnak Temple. Although it was built over a span of more than 1,500 years, and features 6 pylons, it is still an imposing and homogeneous achievement that produced a harmonious plan of buildings covering about 7,550 ft. (2,300 m) in perimeter.

It is obvious that the overall plan pre-existed and that it was known to those who executed it.

2. Archaeological findings show that these rules were put into writing on rolls of papyrus or leather and carefully kept in special archives in the great Egyptian temples. This is explicitly stated in a number of texts from various periods dealing exclusively with architecture and crafts, such as:

- a. A passage from the stele of King Neferhotep (5,000 years ago) at Abydos describes his plan to seek original information from the archives about the exact traditional form of the statue of Osiris:

The King spake to the nobles and companions, the scribes of hieroglyphs: "My heart hath desired to see the ancient writings of Atam; open ye for me for a great investigation; let the neter (god) know concerning his creation, and the neteru (gods/goddesses) concerning their fashioning, their offerings and their oblations... [let] me know the neter (god) in his form, that I may fashion him as he was formerly, when they made the [statues] in their council, in order to establish their monuments upon earth.

The Ancient Egyptian knowledge that manifested itself in their monuments was prescribed into technical specifications that were kept in archives throughout the country. These earliest Egyptian records indicate that the forms of the statues of neteru (gods/goddesses), as well as other artistic and architectural features, had the following characteristics:

- They were well-defined.

- The definitions were transmitted by means of written specifications.
- The specifications were kept in archives.
- The archives existed in all official institutions, such as law courts, public works, cadastres, as well as in temples.
- High officials, as well as Kings, had access to archives.
- The high officials were required to study and implement the specifications.

b. Amenhotep, son of Hapu, who was an outstanding scholar and the architect for Amenhotep III (1405-1367 BCE), describes his early education:

I was appointed to be an entry-level king's scribe; I was introduced into the divine book, I beheld the excellent things of Thoth; I was equipped with their knowledge; I opened all their [passages]; one took counsel with me on all their matters.

c. Queen Hatshepsut, building the temple on Luxor's (Thebes') West Bank, said:

... It was according to the ancient plan

Senmut, the renowned architect of Queen Hatshepsut, wrote:

I was a noble, to whom one harkened; moreover, I had access to all the writings of the nobles; there

was nothing that I did not know of that which had happened since the beginning.

This was not idle talk, for Senmut inscribed on his stele an archaic text that had been out of fashion for a long time. Some of the writings are described as being on leather rolls, such as the records at Karnak during the New Kingdom, or the rolls of the library of the temple at Edfu.

d. From texts inscribed in the crypts of the temple of Hathor at Dendera, we know that the temple was restored during the Ptolemaic Era, based on an ancient document:

The venerable foundation in Dendara was found in early writings, written on a leather roll in the time of the Servants of Horus, at Memphis, in a casket, at the time of the lord of the Two Lands... Pepi.

It is accordingly clear that the project of restoration during the Greco-Roman period was based on drawings dating back to Pepi's reign in the 6th Dynasty (2400 BCE), themselves claimed to be copies of pre-dynastic documents (before 3000 BCE).

1.5 DESIGN AND CONSTRUCTION PLANS

Earlier, we gave the example of the huge complex of the great Karnak Temple which was built over a span of more than 1,500 years, based on a master plan.

The basic features of architects' plans in Ancient Egypt were drawn on papyri. Only a few examples have sur-

vived. There are a number of architectural sketches that were executed on limestone fragments.

Ancient Egyptian records found from after the 5th Dynasty were set out upon a grid of squares (equivalent to our graph paper) that made it easier to determine the precise proportions. As such, the vertical (or horizontal) proportions can be read in terms of the number of squares (or fractions thereof) in the grid.

About 100 such grids are preserved; some dating from the Old Kingdom [2575–2150 BCE].

Egyptian architecture was like our modern concept of a design-built system. It was a practical application, and the architect was the master builder.

The basic features of architects' plans in Ancient Egypt were drawn on papyri. Only a few examples have survived.

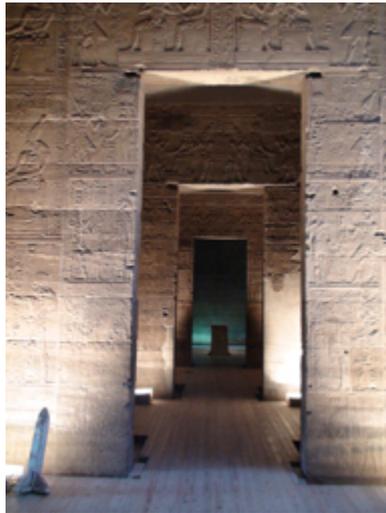
There are a number of architectural sketches that were executed on limestone fragments.

An axis or a series of axes were the beginning point(s) in such construction drawings.

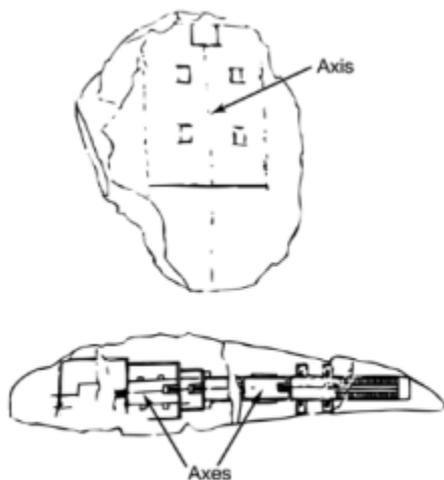
An axis is an imaginary and ideal line about which a moving body revolves. In geometry, an axis is equally imaginary—a line without thickness.

The Egyptian temple was regarded as an organic, living unity. It is in constant motion. Its intricate alignments and its multiple asymmetries make it oscillate about its axes.

This movement takes place within a rhythm given by the “module” or the particular coefficient of the thing or idea to be defined.



The axis line can be found in a few recovered architectural drawings or sketches on papyri and tablets from various periods. They were, presumably, workmen’s notations, and in spite of their practical purpose, they still feature the axis line drawn in the same conventional way as in modern drawings.



Two examples of axes defined on ancient Egyptian drawings.

In the buildings themselves, the axis is marked by an engraved line on the stones of the upper course of a foundation slab, such as the case at Luxor Temple.



Samples of such drawings and sketches are:

1. A papyrus that was found in Zoser's Pyramid Complex (3rd Dynasty) at Saqqara. The papyrus shows the definition of the curve of a roof by a sys-

tem of coordinates. The vertical lines are shown placed at equal distances from one another, and the numbers indicating their length from an unmarked horizontal level define the coordinates of a number of points on the curve.



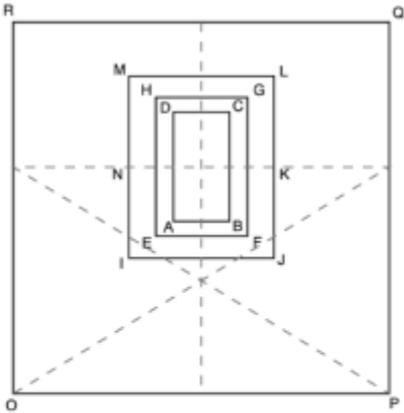
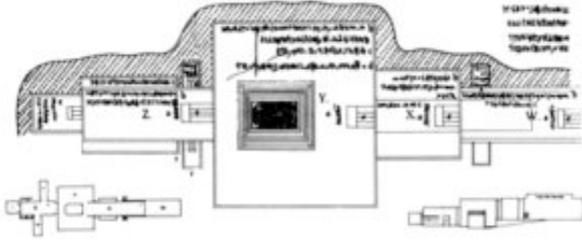
This is proof that the Egyptians had a very exact idea of graphic representation at least 5,000 years ago.

Here is a part of the finished product, as was found in Saqqara.



2. The papyrus in the Museum at Turin contains a projected design for the tomb of Ramses IV. There are differences in proportion between the design and

the tomb as we know it today which indicates that the design was created prior to the excavation of the tomb and confirms that it represents a project and not a survey.



Tomb of Ramses IV

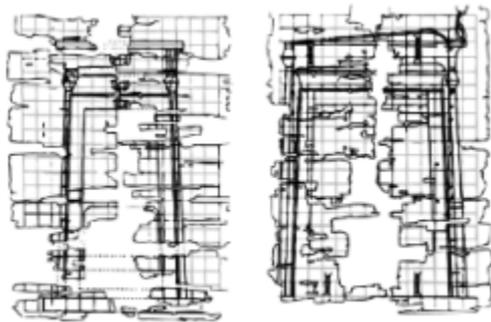
The plan shows, among other things, the contours of the excavation, indicated by double strokes. The dimensions of each room (length, width and height) are shown clearly. Details (such as doors) are

sketched on the plan in reduced elevation. It is quite likely that this general plan was complimented by more detailed working diagrams, which is also the case in present-day construction projects.

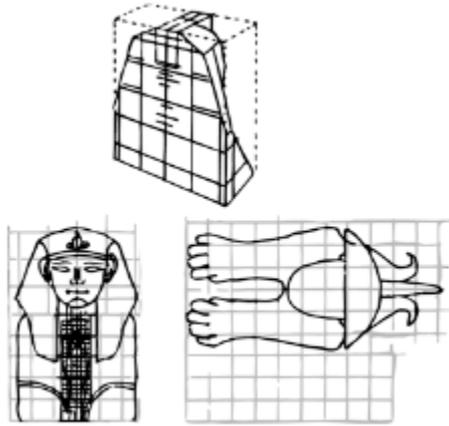
3. The recovered design plan for the tomb of King Ramses IV (1163–1156 BCE) in the Valley of Kings at Luxor (Thebes) is shown in a later chapter of this book.

4. A limestone fragment, more than 30" (76 cm) long. This project for the tomb of Ramses IX is very similar to that shown on the Turin Papyrus.

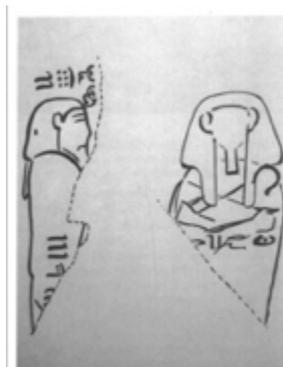
5. A papyrus with a grid, dating from the New Kingdom, shows a remarkable design for a shrine. It shows that the Egyptians knew how to represent an object from several angles. The two elevations reveal a number of interior features, as in a transparency, and also display the parts of sections. It shows how exact these designs could be.



**Front and side elevations of a wooden shrine,
drawn on squared papyrus.**



6. There are some drawings with squared grids of the front and side elevations of naoi, capitals, and statues identical to those used for drawings of figures and scenes. Squared grids were also used on walls or on blocks that were to be carved into statues. Human figures, animals, sphinxes, and even capitals and naoi were designed, copied, or enlarged from books of models by means of grids. Squaring on a grid was often used for wall decorations. Remains of such grids can still frequently be seen on the walls of tombs and temples.



Other examples of such design and construction plans will be described throughout the text of this book.