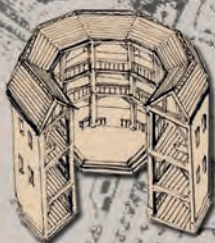


CONCEPT & CONJECTURE

THE INTRIGUING DESIGN OF
CHILHAM CASTLE
& ITS LONG-FORGOTTEN LINKS WITH
WILLIAM SHAKESPEARE



MICHAEL H. PETERS

st Gardens
369
2.652

G.P

499
284

373
604

374
1.750

251

114
Timber Yard
496
1.647

129

502
1.672

153
497
1.846
Well Ho.

Sch

B.M. 111-1

Shilham Castle

S.D.

494
610

493
8.466

Icehouse

503
1.351

49
-4



Michael H Peters FRICS
Retired Auctioneer & Surveyor
Volunteer Historian at Chilham Castle since 2003



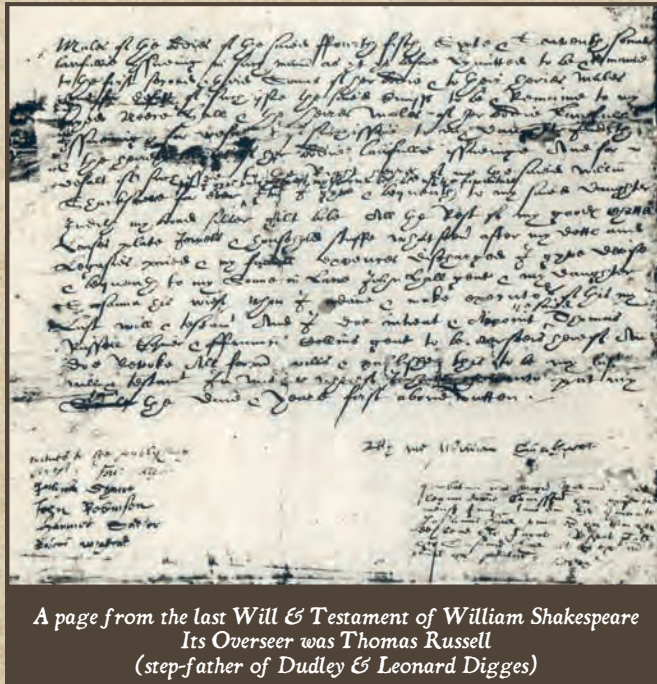
To the favourable Studious Ingenious Reader

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The author asserts the moral right
to be identified as the author of this work

*"Be sure, our Shakespeare,
thou canst never die"*

Leonard Digges 1588 -1635
(brother of Dudley Digges, builder of Chilham Castle)



A page from the last Will & Testament of William Shakespeare
Its Overseer was Thomas Russell
(step-father of Dudley & Leonard Digges)

*"two-footed moles & roads whom destiny & nature hath ordained to
crawl within the earth, & suck upon the muck"*

Thus did Thomas Digges (father of Dudley & Leonard, pioneering astronomer, surveyor & mathematician of international status) describe those who did not support his conclusions.

*"such men may not possibly by any vehement exhortation
be reduced or moved to taste or savour any whit of virtue, science,
or any such celestial influence"*

I hope that I can carry my readers through to my conclusions without any such "vehement exhortation"

Michael H Peters
February 2013

INTRODUCTION

A FORGOTTEN LINK RENEWED CENTURIES AFTER IT WAS FORGED

The house known as Chilham Castle was built between 1612 & 1616 by Sir Dudley Digges (1583-1639) a merchant adventurer, a Parliamentarian &, latterly, a senior Judge. Its unique design & alignment reflect his family background, steeped in mathematics & maybe more....

In 2003, soon after acquiring Chilham castle, Tessa & Stuart Wheeler invited me to begin a study of its history.

In 2012, after nearly a decade's study, a series of facts hit me, like thunderbolts, highlighting links between Dudley Digges & a family friend called William Shakespeare.

- Dudley's step-father, Thomas Russell, was overseer of Shakespeare's will.
- Dudley's brother Leonard wrote a Preface to the First Folio of Shakespeare's works.
- The wrecking of the "Sea Venture" on the shores of Bermuda in 1609 – a financial disaster for Sir Dudley Digges, one of the financiers of the voyage, is said (by some) to have inspired the plot for Shakespeare's "Tempest".
- Some links between Dudley Digges & Shakespeare centre on Robert Dudley, Earl of Leicester favourite of Queen Elizabeth & patron of a group of actors who performed at the Globe playhouse.
- Leicester's tutor was a mathematician, astronomer & astrologer to the Queen, Dr John Dee, sometimes called England's Nostradamus.
- Dr Dee's writings might have inspired the design of the prototype London Theatre at Shoreditch – a hollow-cored polygon, a possible progenitor of the Globe.
- Dr Dee was also tutor of Dudley's father Thomas Digges, one of Leicester's protégés.
- Leicester became godfather to Thomas's son, who was given the name Dudley – Leicester's family name.
- The first troupe of players to perform at the Globe were Lord Leicester's Men.
- They were followed by Shakespeare's troupe - the Lord Chamberlain's Men.

Another great name, linked with Chilham for centuries was Inigo Jones, who before emerging as "Architect Generall to the King" was impresario of theatrical productions for the royal court. Chilham's reputed connexion with this prestigious designer of playhouses & palaces has been cherished by successive owners of the castle, but, mysteriously, the links with Shakespeare have not.

We can only speculate or guess as to why this important aspect of Chilham's history has not been celebrated through the centuries. Perhaps it was suppressed following the abrupt closure of all England's theatres soon after Dudley Digges died.

For whatever reason, though documented & in the public domain, all this has been ignored at Chilham – until now.

Perhaps these facts, uncovered again precisely 400 years after the foundations were laid, provide some explanation for the shape of this fine, ancient house, which, like the playhouses of those days, is a hollow-cored polygon.

Michael H Peters
Sittingbourne
February 2013

CONTENTS

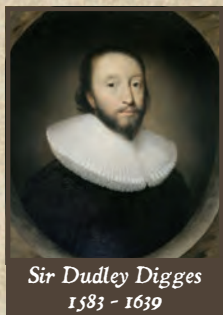
- SIR DUDLEY DIGGES — Before the house was built
- INTRODUCING THE BUILDING
- “THE RULE” — Mathematics in the family - & astronomy & Dr John Dee
- “THE COMPASSE” — orientation
- THE VIEWS OF SCHOLARS
- OTHER POLYGONS WITH HOLLOW CORES — Playhouses & Theatres
William Shakespeare & Inigo Jones
- CONCLUSION — Disparate facts & famous names came together & formed a chain leading to Chilham



Digges coat of arms

SIR DUDLEY DIGGES 1583 -1639

A brief prologue – the years before the house was built



Sir Dudley Digges
1583 - 1639

In his early years, before building his house at Chilham, Digges made his mark as a Parliamentarian & a pioneering, not to say buccaneering, entrepreneur pursuing merchant adventure to the limits of the known world. He also published several serious, but slim, books on subjects of the day that absorbed him.

Though his ancestry in Barham, east of Canterbury stretched back far into the Middle Ages, Dudley grew up in London, where, as recounted below, his father had been active in public life.

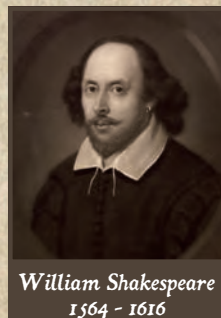
According to his father's wishes, young Dudley, orphaned at the age of 12, was to be "brought upin learning the mathematical sciences, military sciences and foreign languages". He was placed in the tutelage of George Abbot of Oxford (later archbishop of Canterbury) & then of Archbishop Whitgift who introduced him to Sir Robert Cecil, Secretary of State to Queen Elizabeth & her successor King James. The Cecils & the Digges were long-acquainted: at Theobald's the Cecil family home in Hertfordshire, Dudley's father, Thomas Digges, had compiled astronomical tables for William Cecil, Lord Burghley, Robert's father - see below.

PUBLISHING

In 1604 young Dudley, having been granted a BA at Oxford, published a book of which his late father had been part-author – joint-authorship may explain the absurdly long title: *Four Paradoxes or Politique Discourses concerning Military Discipline & of the Worthiness of Warre & Warriors*.

Other publications followed throughout his life (& posthumously) but it must be said that these learned publications made less impact on the literary scene than those of Dudley's brother Leonard, who wrote a well-known eulogy in the first folio of Shakespeare's plays & another, which appeared in a later publication after Leonard died. The Digges family were closely involved with Shakespeare's estate – Thomas Russell, the boys' step-father was an "overseer" of Shakespeare's will supervising the administration of Will's will. (an irresistible pun – sorry)

On 29th April 1607 Dudley became a knight of the realm (he was aged 24 – the new King James, from Scotland, was rather free with such honours).

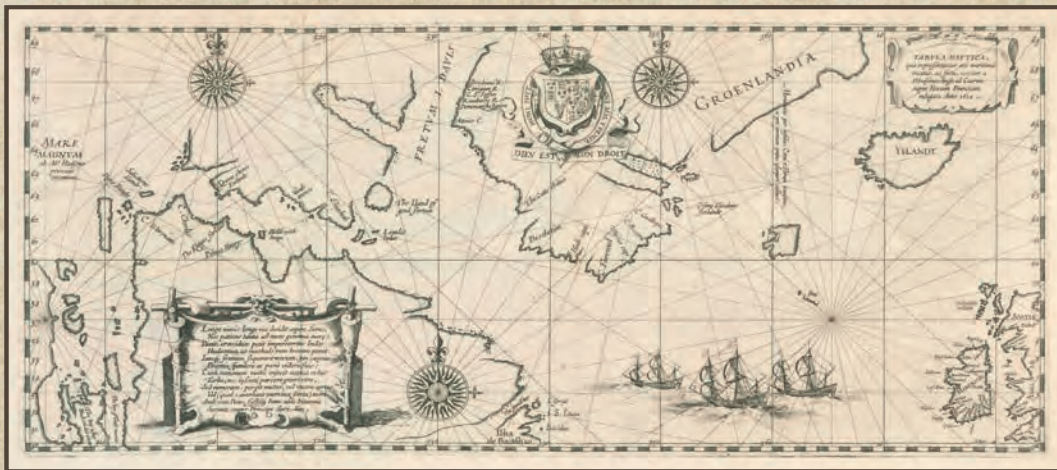


William Shakespeare
1564 - 1616

DISCOVERY & INTERNATIONAL COMMERCE

In the following year Dudley was appointed to the London Council of the American Colony of Virginia – of which in later years, for a brief spell, his son Edward became Governor. In 1609 Dudley joined the board of the Virginia Company.

In 1610 Digges helped to finance the last expedition of Henry Hudson to Canada in the 55 ton 'Discovery'. In their main objective to find a north-west passage to Asia, Hudson's four explorations failed, but they did 'discover' & re-name such features as Hudson's Bay & Hudson Strait, not forgetting Digges Sound, Cape Digges & Digges Island – or Diges Ilandt as it appears on the map overleaf.



This map dated 1612 by Hessel Gerritz (c1581-1632) accompanied the first printed record of Hudson's final voyage

The end of this expedition was horrific – the crew mutinied & abandoned Hudson, his young son & several others, some of them sick, in an open boat. Leaving them to certain death, the ship sailed back to England, under Robert Bylott as Master.

It tells us something of Sir Dudley's character that, after a short prison sentence, Bylott (honoured with the full authority of Sir Dudley & his two co-directors - stockholders in the brand-new North-West Passage Company) was sent back to Canada, repeatedly, on the same quest.

It is worth noting that at summer time, in our 21st century, four hundred years after Hudson's death, the North-West Passage is open, thanks to climate change.

In 1611, pursuing his passion geography & exploration, furthering the energetic expansion of England's global trade, Digges, still in his twenties, became a stock-holder of the East India Company & in 1614 (aged 31) was one of the candidates for the Governorship.



1611 Henry Hudson's last voyage imagined by Hon. John Collier 1881

THE PUBLICATIONS OF THIS REMARKABLE MAN INCLUDED:

- **1611 *Fata Mihi Totum Mea sunt Agitanda Per Orbem* (1611)**
An early history of travel & geography
- **1612 *Of the Circumference of the Earth***
A treatise of the North-East [ie North-West] Passage
- **1615 *The Defence of Trade***
A long commentary on the work of the East India Company whom unlike "idle Drone & greedy catterpillers" Digges regards as "laborious bees, they clothe and feed the poor, and give the willing man employment" pp 2-3 "This is still the endeavour of that famous fellowship" Every stock-holder should "look at private profit only, and employ his stock for swifter, and for surer, and perhaps more gain"

PUBLIC LIFE

Book-writing, coupled with his important commercial interests was not enough to fill Digges's life; on 16th April 1610 he took some of his dynamism into Parliament – he was sworn in as Member of the brand-new constituency of Tewkesbury – a place far from home, but he was recommended by no less than Robert Cecil, Earl of Salisbury.

Here too Digges's exceptional energy stood out: we are told that, on his second day in the House of Commons, Digges was appointed to a Parliamentary committee – the first of 17 such appointments in his first session. His powerful connexions – Cecil & co – will have helped, but clearly young Digges was a remarkable performer. Further detail is set out by Alan Davidson & Paul Hunneyball in their article upon Digges, part of the wonderfully detailed *History of Parliament: the House of Commons 1604-1629* (ed. Andrew Thrush & the late John P Ferris).

Incidentally, Digges's Parliamentary career contrasts strongly with that of his wife's brother-in-law Sir John Cutts (c1581-1646) husband of Anne Kempe, Mary Digges's sister (& one-time part owner of Chilham). During his long service as Member for Cambridgeshire in 7 of the 9 parliaments between 1604 & 1640, Cutts was notable only for his inconspicuous service; as Davidson & Hunneyball put it (op.cit) his lengthy parliamentary career was "*distinguished only by the fact that, like his father before him, he never addressed the House.*"

His interest in the world beyond England's narrow confines led Dudley to aspire to ambassadorial rank – enhanced status offering new opportunities for global trade & exploration. Noting his nature, connexions & concerns we should not be surprised that Dudley's attention focussed only on substantial trading nations – Spain, the Dutch Republic & Venice.

In 1611 Digges was in the running to be ambassador at the Spanish court in Brussels; hoping no doubt that the Spaniards had forgotten his father's involvement with the Dutch rebels 30 years before (see page 24). A greater impediment seems to have been Dudley's own preoccupations. According to John Chamberlain (1553-1628) whose letters are a rich source for historians, the appointment might come about only "*if this new discovery of the North-West Passage (wherein he is a great undertaker) will give him leave to think of anything else, for it possesseth him wholly.*"

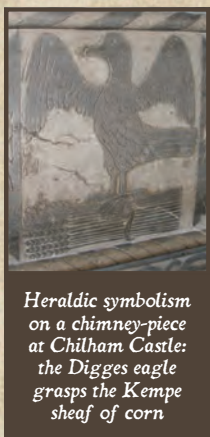
The appointment eluded him but, a couple of years later, Digges was angling for a posting to the Spaniards' enemies – the Dutch who, from their redoubt in the northern Netherlands (the United Provinces, as they were known) were at war with the Spanish, fighting for independence from Hapsburg rule. Here too Digges was disappointed. Undaunted, he had a shot at Venice – again without success, but a couple of years later, Digges was finally honoured with an "*Ambassad*" to Moscow.



Mikhail Fyodorovich Romanov (1596 – 1645) first tsar of the Romanov dynasty, to whom Sir Dudley Digges led an "*Ambassad*" in 1618 with an entourage that included John Tradescant. The great plantsman was engaged in the gardens beside Sir Dudley's newly-completed house at Chilham. Following the king's command, Digges was conveying (on behalf of himself and others) a loan of £20,000. Immediately upon his return Digges was confined in the Tower of London, another story for another place.

Whether Digges would have been a good ambassador, we cannot be sure. According to the Reverend Joseph Mead, another contemporary, "*Sir Dudley, they say, never lacks speech*" - a trait which more than once got him into trouble. Quoting again from John Chamberlain, who seems to have known him well, Digges's talkative ways often landed him "in the sand". Sir Henry Montagu, Earl of Manchester (ca. 1563-1642) referred rather more kindly to Digges's "*volubility and elegance of speech*" though Digges himself admits to "*an imperfection of speaking fast*" just like his father! – see page 22

The Moscow trip is well-documented; in its immediate aftermath, & on other "*unsettling*" occasions during his long & varied life, it will have suited Dudley Digges to exercise his skills as a fast talker!



Heraldic symbolism on a chimney-piece at Chilham Castle: the Digges eagle grasps the Kempe sheaf of corn

ACQUIRING CHILHAM

In 1605 before acquiring any great prominence, young Digges had married a neighbour with “expectations” - Mary, eldest of four daughters, co-heirs of Thomas Kempe. The Kempes had been in the Stour valley for some three centuries at Olantigh, near Wye, a few miles from Chilham & not far from Digges Place, the bridegroom’s ancestral home, at Barham, near Canterbury.

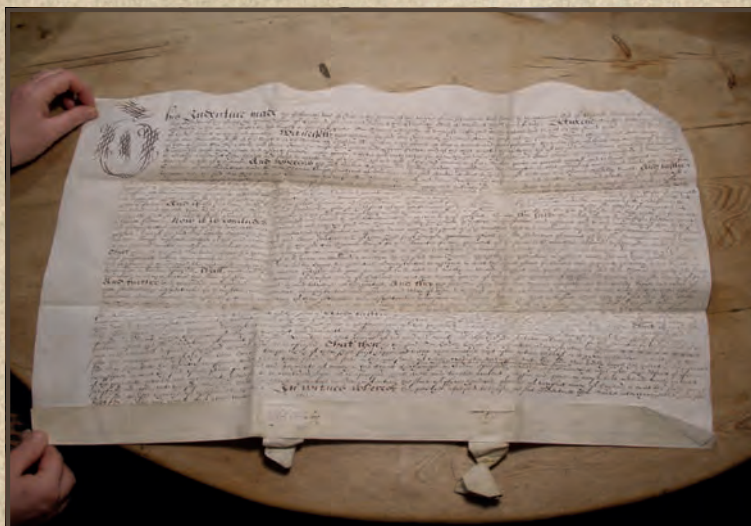
In more than one sense, this was a good marriage. Dudley & Mary produced eight sons & three daughters, a feat which would surely tax any relationship & there are no grounds to suggest that, in Sir Dudley’s eyes, Mary’s main attraction was her status & wealth – her potential entitlement to a share of her father’s estate. That said, in 1604 in his first publication, with that over-long title (*Four Paradoxes...etc etc see page 6*) young Dudley told the world that his wife provided “his best means of livelihood” In another less explicit acknowledgement, a dozen years later, Dudley ensured that, over the main entrance of their new house, Mary’s name was carved alongside his own an unusual feature on a 17th century house.

In 1607, on the death of his father-in-law, Digges inherited, in his wife’s name, a quarter share of the Kempe estate, including Chilham – the laws of England (& Wales) in those days did not expect women to hold property in their own right.

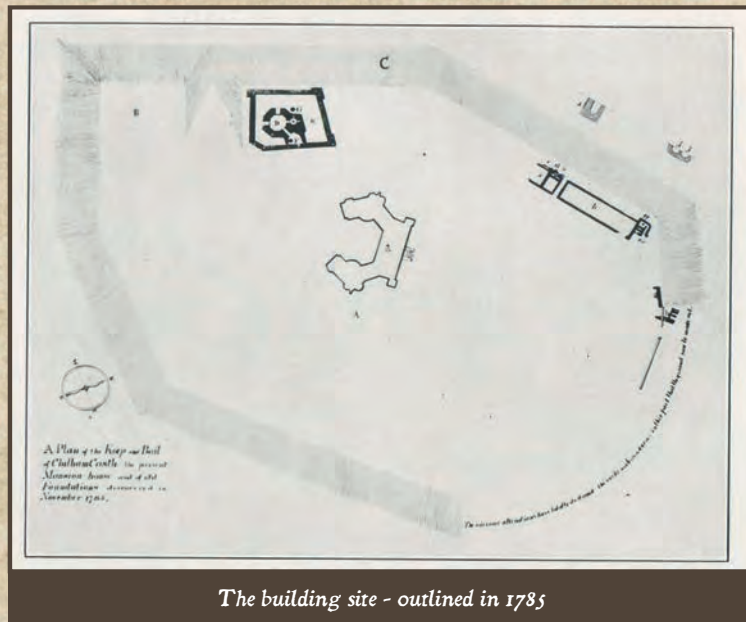
We may imagine that, in the process of touring the entire inheritance of which he was part-owner, Sir Dudley visited the ancient castle keep standing alone on its prominent bluff overlooking the Stour valley, & realised that this site, cleared of its ruins, could make a magnificent location for a new house; from the top of the keep, the valley can be overseen for miles in both directions.

Five full years after becoming joint owner, but before the extrication of the Chilham estate from the clutches of his in-laws was completed, Digges set about building, on the site of the old castle bailey, a grand house with Renaissance features in the latest fashion.

Though, as explained later, the surrounding landscape was laid out to a particular design, Digges chose to preserve the adjacent stone keep, which at that time was just over 400 years old, a little older than his house is today.



16th June 1613 Sir Dudley agrees to pay his in-laws £500 per annum from the estate at Chilham where he was building his new house.



The project manager — master carpenter might have been the term used in those days - was a Mr Smith. We know this from the Chilham parish records - two of his workforce were buried in the churchyard.



During these years, probably for ready access to the building operations, Dudley & Mary spent time at Leeds Castle, near Maidstone, the ancestral home of Ann Digges, Dudley's mother (née St Leger)

Having given this outline of preceding events, let us turn our attention to the design:

INTRODUCING THE BUILDING



The unique design combines mediaeval tradition, classical fashion, sensitivity to the site & the mathematics in the blood of the outstanding young man who had it built...& maybe more...

The best-known features of the mansion completed by young Sir Dudley Digges in 1616 are its location, its outside appearance & its highly unusual shape.

The location is easily explained; the bailey of the original castle, sited for good military reasons on a ridge overlooking the valley of the Stour, offered an ideal site for a fine house with wonderful views.



Chilham in 1741 — pictured by Samuel & Nathaniel Buck



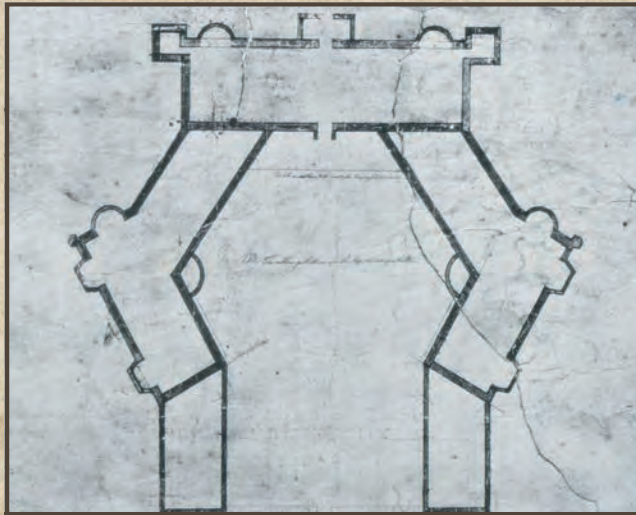
The style of the exterior was fashionable in England at the time with a symmetrical front, a tower at each corner & a central porch with an oriel window; similar houses sprang up in many places. Flanking the porch on both main floors were flat windows, each flanked by twin double-storey bow windows (removed in 1776). Another matching pair of bow windows fronted each of the main side wings at whose outer corners were decorative hexagonal buttresses made of white stone capped with slim finials – hexagonal buttresses on a hexagonal house. In the 18th century the landscape vista contrived by James Colebrooke, (owner 1724-52) was anchored to one of those buttresses; both were removed in 1863, by which time Colebrooke’s landscaping had disappeared. I have more to say about this in other publications.

The accommodation layout followed immemorial precedent – the hall, with its screened vestibule, had entrances to front & back. At each end of the hall were stairs, stores & subordinate entrances; beyond the grand staircase at the high end were two private rooms &, beyond the staircase at the lower end were the kitchen & the servants’ hall. That much was normal.

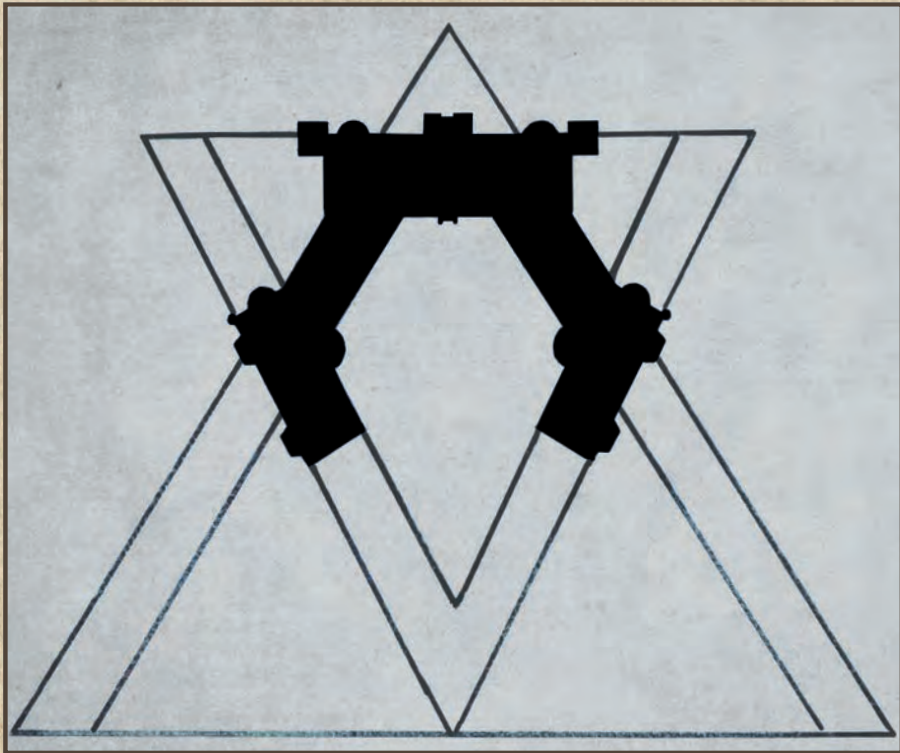
Chilham’s distinction is its adaptation of the norm: though the entrance faces the village, the private wing is bent round to face the incomparable view - an early instance in England of important rooms deliberately facing the sunshine. Access to the private wing was from the foot of the main staircase, through a curved corridor on the courtyard side known as the “circular gallery.” For symmetry, the kitchen wing was also bent back, facing north-west. In the angle of the kitchen wing, matching the south wing’s “circular gallery”, was another curved room in which was the butler’s pantry (to use its later name).

Adding Renaissance symmetry to the mediaeval plan, Digges equalised the space either side of the front entrance by inserting, between the kitchen wing & the north end of the hall, a small parlour or book room, probably for his own private use. This north-facing room was graced by one of the large bow windows, to capture some sunlight in the mornings. A matching bow at the far end of the castle’s front gave extra light to the “high” end of the hall. The upper storeys of these twin bows gave light to the bedrooms above.

The resultant plan is not an E shape, nor an H like several other great houses of the time; viewed from above, Chilham castle forms an angular letter C for Chilham - a polygonal horseshoe on which several geometrical shapes can be imposed – a hexagon with one side missing, based upon two equilateral triangles – an exercise in geometry.



The oldest plan of the house - as far as we know, the extensions on the ends of the wings were never built.



Let us now examine the background to this interest in mathematics - the source is not hard to find.....

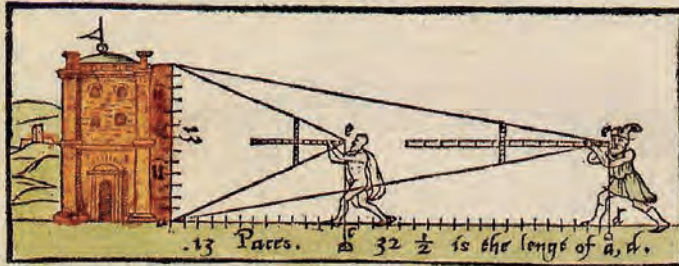
“THE RULE”

Sir Dudley's father & grandfather, Thomas & Leonard Digges, produced some of the earliest & most erudite writings in our language on mathematics - & astronomy.

A BOKE NAMED TECTONICON

briefely shewynge the exacte measuryng, and speedy reckonyng all maner Lande, squared Tymber, Stone, Steaples, Wyllers, Globes. &c. Further, declaringe the perfecte makinge and large use of the Carpenters Kuler, conteynynge a Quadrant Geometricall: comprehending also the rare use of the Squire. And in the ende a little treatise adioyned, openinge the composition and aplyancie of an Instrument called the profitable Staffe. With other thinges pleasant & necessary, most conductible for Surveyers, Landmeters, Joyners, Carpenters, and Masons.

Published by Leonarde Digges Gentleman,
in the yere of our Lorde.
1556.



Imprinted at London by Iohn Daye, for Thomas Gemini: dwelling within the blacke Friers: who is there ready ready to make all the Instrumentes apperteyning to this booke.

Leonard Digges's masterpiece became the standard manual of its day for surveyors & other professionals & craftsmen.

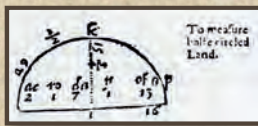
In the 100 years following its publication
Tectonicon ran to 13 editions – & one more in 1692.

Tectonicon is the leading entry in Eileen Harris's classic
British Architectural Books & Writers 1556-1785.

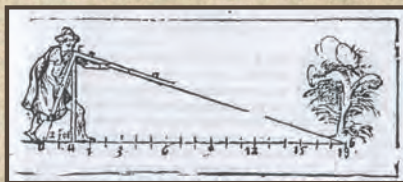
Selection of illustrations from *Tectonicon*

OCTAVVLE COMPUTATIONIS

The table consists of a grid of numbers, with a diagonal line running from the top-left to the bottom-right. The numbers are arranged in a way that suggests a multiplication or division table. The title is at the top, and there is a small note on the left side.

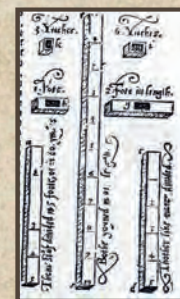


A smaller table with a grid of numbers, similar to the first table, but with a different layout of numbers.



A vertical table with columns of numbers, likely a conversion table or a list of values.

How to measure all manner
Triangled Land.



Leonard “Digges was one of the first vernacular authors on practical mathematics in England, helping to shape the movement’s early character and direction”.

He “not only inaugurated but defined the tradition of practical mathematics as it related to building and he provided a model for subsequent generations of mathematical practitioners”.

“Digges’s work has a special place in the literature of architecture”.

Anthony Gerbino & Stephen Johnston
Compass & Rule Architecture as Mathematical Practice in England 1500-1750 pp45-6

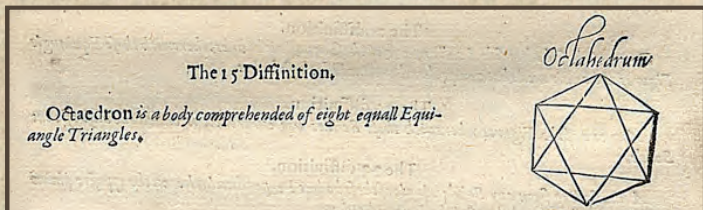
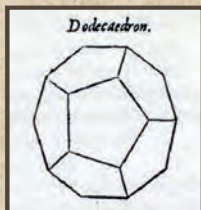
A GEOMETRICAL PRACTICAL
TREATIZE NAMED PANTOMETRIA,
divided into three Bookes, LONGIMETRA, PLANIMETRA, and
STEREOMETRIA, Containing rules manifolde for mensuration of all *Lines,*
Superficies and *Solides*, with sundrie strange conclusions both by Instrument and with-
out, and also by *Glasses* to set forth the true Description or exact *Platte* of an whole
Region. First published by *Thomas Digges* Esquire, and Dedicated to the Graue,
Wife, and Honourable, *Sir Nicholas Bacon* Knight, Lord Keeper of the great
Seale of England. With a Mathematicall discourse of the five regular
Platonic all *Solides*, and their *Metamorphosis* into other five com-
pound rare *Geometricall* *Bodies*, conteyning an hun-
dred newe *Theoremes* at least of his owne *In-*
vention, neuer mentioned before
by anye other *Geome-*
trician.

LATELY REVIEWED BY THE AUTHOR
himselfe, and augmented with sundrie *Additions*, *Diffini-*
tions, *Problemes* and rare *Theoremes*, to open the pal-
lage, and prepare away to the vnderstanding
of his Treatize of *Marriall Pyrotechnie*
and great *Artillerie*, hereafter to
be published.



AT LONDON
Printed by *Abell Jeffes*.
ANNO. 1591.

Leonard Digges's *Pantometria* (divided into 3 books, dealing respectively with the reckoning of heights & distances, areas, & volumes) was first published in 1571 (over a decade after the author's death) by Leonard's young son Thomas, who attached his own appendix — extending to 100 pages: *Mathematicall Discourse.....containing sundry theoretical & practical propositions.....including an advanced study of polyhedra*. This frontispiece is from a later edition.



from *A Mathematicall Discourse*
by Thomas Digges (1546 – 95)

of Geometricall Solides. 151

The fyrst question.

I haue a Dodecaedron, whose comprehending spheres diameter I know to be fixe, I demand his capacite superficiall and solide.

Considering the Dimetient of this solide is knowen vnto mee, I reaire vnto the tenth probleme, where I finde the Dodecaedrons side being to the comprehending Spheres Diameter $\sqrt{3} \cdot v. 450 + \sqrt{5} \cdot 12500$, conuerting therefore the limits or bounds of this proportion, I say thus $\sqrt{3} \cdot v. 450 + \sqrt{5} \cdot 12500$ euerteth to, wher yeeldeth 5, working by the rule of proportion, yee shall finde the fourth proportionall number $\sqrt{3} \cdot 10 \frac{1}{2} - \sqrt{5} \cdot 2 \frac{1}{2}$, so much is the side of the proponed Dodecaedron, which knowen I resort to the fifteenth Probleme, there an I willed to searche out the Semidiameter and line Diagonall of his basis, and the Axis or Semidimetient of his inscribed Sphere his Axis is $\sqrt{3} \cdot v. 2 \frac{1}{2} + \sqrt{5} \cdot 3 \frac{1}{2}$ his containing circles Semidimetient $\sqrt{3} \cdot v. 4 \frac{1}{2} - \sqrt{5} \cdot 7 \frac{1}{2}$, his basis line Diagonall is $\sqrt{3} \cdot 8 \frac{1}{2}$, so that by multiplication and diuision of the numbers according to the Precepts there giuen, I finde the Dodecaedrons superficies $\sqrt{3} \cdot v. 7812 \frac{1}{2} - \sqrt{5} \cdot 1220703 \frac{1}{2}$ and his crassitude $\sqrt{3} \cdot v. 1808 \frac{5}{2} + \sqrt{5} \cdot 654097 \frac{1}{2}$. In like manner if ye augment $12 \frac{1}{2} - \sqrt{5} \cdot 86 \frac{1}{2}$ the square of the Dodecaedrons rounde side, in $22 \frac{1}{2} + \sqrt{3} \cdot 40500$. Or $\sqrt{3} \cdot v. 4038 \frac{1}{2} + \sqrt{5} \cdot 4709502 \frac{1}{2}$ being the Cube of the same side, in $\sqrt{3} \cdot v. 25 \frac{1}{2} + \sqrt{5} \cdot 861 \frac{1}{2}$, for so are ye taught to doe by the rule of this Chapter, the first Product will bee the Dodecaedrons superficies, and the last his Crassitude, exactly agreeing with your former operations.

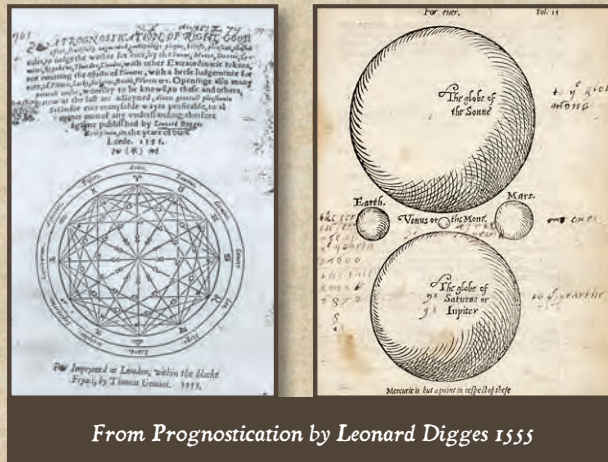
The 2 Question,

A Cube is proponed, whose Diameter is the Zenzike roote of 108. I would knowe the Superficiall and solide contents of such a Tetraedron as this Cubes contained sphere should circumscribe.

Because the Diameter of this Cube is giuen, I resort to the sixteenth Probleme, by the rules there prescribed, I finde the Axis 3, which doubled maketh 6, the Diameter of this Cubes contained sphere, and considering the Tetraedron, whose capacite is required, must be circumscribed of this sphere, I search out againe by the same Chapter this spheres inscribed Tetraedrons side, finding it the Zenzike roote of 24 yee may also thereby learne the Axis and containing Circles Semidiameter, and so consequently the capacities of this Tetraedron, whereof yee haue examples in the eleuenth Probleme: Or by the first rule of this Probleme if ye augment 24 the square of the Tetraedrons side by $\sqrt{3} \cdot 3$, there ariseth $\sqrt{3} \cdot 1728$ for his Superficies, and by multiplication of $\sqrt{3} \cdot 13824$ the Cube of this inscribed Tetraedrons side by $\sqrt{3} \cdot \frac{11}{2}$, there amounteth $\sqrt{3} \cdot 192$, so muche conclude the Tetraedrons Crassitude.

X The

BEYOND MATHEMATICS



From Prognostication by Leonard Digges 1555

In 1553 Leonard Digges published *A General Prognostication* including a perpetual calendar, some weather lore & astronomical information – not all of it correct. In 1554, after joining the rebellion of Sir Thomas Wyatt, a powerful Kentish landowner, Leonard narrowly escaped a traitor’s death. Despite the confiscation of his ancestral property in Kent, Digges was partially rehabilitated &, in 1555 & 1556, he published two new editions of his highly popular Almanack. Leonard died in 1559. As well as serving in Parliament, the military & civil engineering, Thomas Digges, following his father’s path, went on to lead our nation in the study of the heavens, introducing England to the solar system.



Leonard’s geo-centric plan (1556) in which the sun goes round the earth published in the reign of Queen Mary Tudor when it was dangerous to promulgate some aspects of scientific truth.



Thomas’s more accurate version (1576) – a solar system produced 20 years later - under Queen Elizabeth I when scientific truth could be disseminated with safety.

Reaching out, far beyond the cosmology of the ancients, whose theory of celestial spheres housing the fixed stars & the planets was unchallenged even by Copernicus & Kepler, it was Thomas Digges who first propounded the “dark sky paradox” & the notion of an infinite number of stars within an infinite universe, beginning to put into perspective, for the first time in history, humanity’s location on this insignificant planet.

Orphaned at the age of 13, Thomas grew up immersed in mathematics & astronomy under the tutelage of his late father's scientific confrère & colleague, the famous Dr John Dee.

In his prime, John Dee's reputation as a polymath — one of England's foremost pioneers in the fields of mathematics, geography & astronomy gave him international status. Sadly that high regard has been damaged — perhaps beyond repair — by his concentration upon astrology, fortune-telling, angels & other aspects of the occult. In Tudor England such studies were widely accepted & even more widely feared. John Dee attracted dangerous opprobrium from the Roman Catholic Queen Mary & warm, though surreptitious, endorsement from her Protestant half-sister Queen Elizabeth. Elizabeth & her favourite Robert Dudley, Earl of Leicester, held Dee in such high regard that he was instructed to select a felicitous date for the coronation — by consulting his auguries ! Given the general approval of the subsequent reign of "Good Queen Bess" astrologers might claim that Dee must have given sound advice.



Dr John Dee
1527 - 1608/9

John Dee's great library at Mortlake (catalogued in 1583) comprised over 4,000 volumes, many of them salvaged from England's monasteries, dissolved not long before. It is said to have been the greatest of its kind in England & probably unsurpassed in Europe. (Francis R Johnson *Astronomical Thought in Renaissance England* (1937) p138) Four centuries later it is Dee's occult writings which are remembered; his major work in science & architecture is almost forgotten. Perhaps that says more about our 21st century society than about him.

In his Preface to Henry Billingsley's English translation of the works of Euclid (1570 edition) Dr Dee wrote extensively about the architectural studies of the classical Roman writer Vitruvius. Hence it is often suggested that Dee played a major role in England's introduction to the architecture of the Italian Renaissance — Europe's renewed familiarity with the classical Roman building style, which had been spreading gradually across the continent in the previous century.

England's first full-blooded exponent of this Renaissance style was one Inigo Jones, who introduced to our country the knowledge which he had gathered in Italy, the Renaissance birthplace. Jones's name crops up time & again in connexion with this house at Chilham; he appears again later in this account.

During the reign of King James from Scotland, the success enjoyed by Inigo Jones contrasted sharply with the decline of John Dee, whose reputation as a conjuring Magus was not in tune with the witch-hunting monarch. Twenty years earlier, back in the time of Queen Elizabeth I, Dee's unjustified reputation for "Popery" had fired a mob to attack the library at Mortlake. Having gradually restocked it, Dee, in his dotage, was reduced to selling it, book by book, to buy food. 20 months after King James had honoured young, thrusting Dudley Digges with a knighthood, Dee died aged 81 - in penury.



Back in happier days, probably it was Dee who had put Robert Dudley of Leicester in touch with his own disciple Thomas Digges. Digges's membership of that coterie was confirmed, when the Earl of Leicester agreed to become godfather of Thomas's first-born, who naturally was christened Dudley.



More than likely, young Thomas was influenced by the views of Vitruvius quoted by his mentor in the Euclid Preface: “An architect ought....to be.... well instructed in Geometrie,....furnished with Arithmetike,.....and have Astronomie, and the courses Coelestiall, in good knowledge.” “Geometrie, geueth to Architecture many helpes: and first teacheth the Vse of the Rule, and the Compasse: whereby (chieflie & easilie) the descriptions of Buildings, are despatched in Groundplats: and the directions of Squires, Leuells, and Lines.....And of Astronomie, is knowne ye East, West, South, & North. The fashion of the heauen, the Aequinox, the Solsticie, and the course of the sterres.”

In those days, it seems that architects had weightier preoccupations than Building Regulations & insulation.

In 1573, a couple of years after his publication of *Pantometria* (see above) Thomas Digges, still in his twenties, published another work with lasting value: *Alae Seu Scalae Mathematicae* – a study (much acclaimed at the time) of a supernova in the constellation Cassiopeia discovered in the previous year. Sadly this accomplishment has been largely eclipsed (deliberate choice of word here) by the Danish astronomer Tycho Brahe. Though Brahe was better-known, the experts tell us that Digges’s measurements were more accurate!

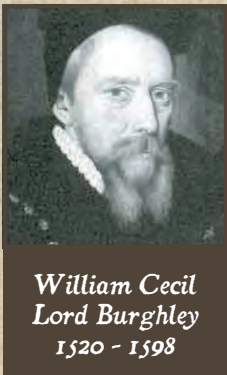
Brahe, whose plan appears here, was on good terms with Digges & Dee, whom he called “most noble, excellent and learned mathematicians” (Eva G R Taylor 1879-1966 *The Mathematical Practitioners of Tudor & Stuart England* (1954) (p170-71)



Tycho Brahe
1546-1601



Brahe’s plan of
Cassiopeia



William Cecil
Lord Burghley
1520 - 1598

By now, Digges himself could be described as a rising star – another deliberate pun, sorry; he had caught the attention of William Cecil, Lord Burghley, Lord High Treasurer to Queen Elizabeth. At Theobalds, Burghley’s great new house in Hertfordshire, was an “astronomical frame” or “celestial ceiling” with a mechanical sun for which Digges composed an explanatory text including tables to determine the position of stars in relation to the horizon, the meridian, the sun & the moon. In 1574 he designed for the great man a polyhedral sundial which could be “placed in some of your Lordship’s gardens, as aptly serving for uses diurnal, as that other frame for conclusions done by night”.



Theobalds in Hertfordshire



Copernicus

Though still in his twenties, Thomas Digges now felt able to confront what became the most important decision in his life: to publicise *De Revolutionibus orbium coelestium* by Nikolaj Kopernik (Nicholaus Copernicus), informing England's people that our earth is part of a solar system, in which the earth travels round the sun.

See charts on page 19.

Digges's study of Cassiopeia had toyed with Copernicus, but to overthrow the ancient geocentric concept, Digges was expounding a geometric one & his *Mathematicall Discourse* contained in his own words "*things somewhat passing the reach and capacity of the common sort*".

For the widest possible readership the obvious vehicle was a new edition of his father's mass-circulation Almanack – the 16th century equivalent of our present-day tabloid press. In an appendix entitled *A perfit description of the Cælestiall Orbes* he offered his own paraphrased translation of Copernicus. Even so, as a precaution against cynicism (or worse) his sub-title "*according to the most auncient doctrine of the Pythagorians etc*" emphasised that he was merely passing on the wisdom of classical Greece. His father had done the same with the rather ill-clad figure in the centre of the *Tectonicon* frontispiece, see page 14.

Twenty years previously, Leonard Digges would have been well aware of the discoveries & revelations of Copernicus, which (almost literally) had turned his astronomical world upside down. Yet, inhibited, terrified perhaps, by the potential power of the state & of the church of Rome, reimposed in England by Queen Mary Tudor, Leonard, a convicted rebel, played safe – his Almanack charts perpetuated the Ptolomaic fantasy of the ancients – showing the sun going round the earth, see page 19.

In Italy, in the next century, revelations challenging such a belief brought down upon the head of Galileo the full weight of the restrictions (& terror) which the Roman Catholic church could impose.

Thomas was in a more fortunate situation; secure in the establishment of the Protestant England of Queen Elizabeth, he felt free & able to take this momentous step forward. Apparently the authorities caused him no bother – perhaps he had prior authorisation.

As noted already on page 19, Thomas Digges - undoubtedly one of England's leading astronomers is credited also with being the first to postulate an infinite universe with an infinite number of stars & to conceive the Dark Night Sky Paradox. Please don't expect me to explain that – harking back to a previous paragraph on this page, like others of "*the common sort*" such matters are far beyond my "*reach & capacity*"!

In *Elizabethan & Jacobean Studies* (1959) p37 one contributor Francis R Johnson rated Thomas Digges, rather than his father, as "*the foremost scientific and mathematical writer of Elizabethan England*". Incidentally Mr Johnson also gives some interesting information on printing costs "*.....the industry which then was barely a century old*".

It is sad that, with the passage of time, much of the good work of Thomas & Leonard Digges, including the invention of the telescope & the concept of the infinite universe, has been forgotten, attributed mistakenly to others, or in some cases, hi-jacked by them.

Simultaneously with his advances in astronomy & mathematics, Thomas Digges played his part in public life; his Parliamentary career was certainly not without interest. In 1572 aged 26 (between publishing *Pantometria* & his paper on the supernova) he was elected as Member of Parliament for Wallingford, (of which his patron Robert Dudley was High Steward) &, after a dozen years, he became Member for Southampton. Thomas was an active Parliamentarian, though with a somewhat lower profile than his son; perhaps his academic preoccupations took much of his time. Even so, we learn from P W Hasler in *History of Parliament: the House of Commons 1604-1629* that, like his son, as mentioned above, Thomas was prone to "*speak fast*". Doubtless harbouring bitter memories of his father's sufferings under the Roman Catholic Queen Mary, Thomas in 1584/5 was bellowing his disapproval of 'anti-Christian Jesuits' & their '*devilish disciples*' whom he regarded as '*hellhounds cladding themselves with the glorious name of Jesus and such wretched souls as they bewitch with their wicked doctrine*'.....'*fully persuaded her Majesty's life is the only impediment to their desired unholy Roman kingdom here, and so long as that hope remaineth, her sacred person is in*

marvellous danger' 'against persons so persuaded no peril of death, no horror of punishment or torments can prevail. They desire the one, they triumph in the other'.

Strong stuff, with more than one echo of 21st century England.

Meanwhile, acknowledging his interests in East Kent, Digges had been elected a Commissioner for Dover Harbour & then its surveyor, giving his architectural skills full scope in a major redevelopment scheme.

An 18th century copy of Thomas Digges's own initial survey dated 1581 bearing his coat of arms



The finished work - Dover harbour in 1583-4 – the year of Dudley's birth



From
Pantometria
1571

“THE COMPASSE”



Pantometria - the Fyrft Booke – Longimetria
Leonard Digges 1520 - 1559 published by his son Thomas in 1571

At first sight, the orientation of the building at Chilham – its position & aspects – seem to relate quite simply to the local landscape.

- The front block, with its ceremonial rooms, faces the village square – the traditional point of entry to the mediaeval castle, which was demolished (all but the keep) more than a generation before Dudley Digges appeared.
- On one side, the private accommodation is bathed in sunlight & faces the view – one of our county’s finest – clear across the valley of the Stour, green fields & woodland, with scarcely a chimney in sight.
- From within the central courtyard, the view at the back stretches across the park; the wings frame midwinter sunsets, in line with a now depleted & truncated avenue of chestnut trees far away across the park dating back probably to Sir Dudley’s time.
- Flanking that view, heading towards the house from the south, is another avenue of ancient sweet-chestnuts.

This much is obvious to a casual observer. There the matter might rest – the house faces the village & someone planted a couple of avenues of trees which might signify (or commemorate) the so-called Pilgrims Way stretching across the park from time immemorial.



However, following long and careful study of the site (& its maps & other records) I have noted other features of the landscape.

The vista from the west avenue in the park leads to

- the door in the central courtyard of the house
- the front entrance door
- the original avenue of lime trees at the front (felled in 1776, recreated 1816-7, destroyed 1987)
- the original entrance from the village square (slightly to the east of the present one)
- the Saxon yew tree in the churchyard (destroyed in 1987)



The second avenue of sweet chestnuts, approaching the house more closely, has three parts. The Debois Landscape Survey Group of Cirencester (Chilham Castle 2003) has dated them respectively to the 17th 18th & 19th centuries. The later sections drift slightly westwards, but a line along the oldest section runs straight towards the centre point in the courtyard of the house, where it intersects the other axis described above. Beyond the point of intersection, this second axis passes directly through the turret at the north corner of the house.





Extract from the Ordnance Survey Plan - Britain's first – Chilham, surveyed in 1789



Incidentally, around 1860 Emily Wildman painted this second avenue showing, in line with the ancient axis, between the house & the original 17th century chestnuts, some young trees which must have been planted when her father, James Beckford Wildman was the owner. They were removed long ago as the following 1907 Ordnance Survey plan makes clear.



Location of the Saxon Yew

Ordnance Survey 1907

Discussion points now arise:

- The intersection of these two long axes at this precise central spot might, might be deliberate.
- The alignment of the former axis having been established by observation, what might be the basis of the latter one, aligned along the surviving avenue of huge old trees ?
- On the ground it can be seen that the avenue runs along the edge of a bank where the ground falls away to the East. In recent years the experts' report from the Debois Group (see page 26) suggested that there are two viewing platforms alongside the avenue; one "may have been the site for a seat or for a tent" whilst from the other "there is a fine vista along the valley to Canterbury where the tower of the Cathedral can still be clearly seen".

This offers no explanation for the axis continuing through the north turret of the house.

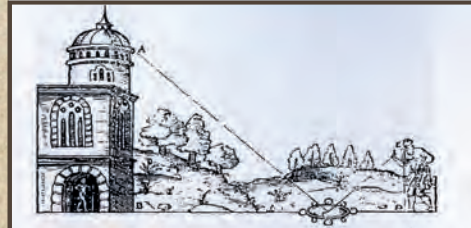
Whether or not this alignment was deliberate, we can but guess.



*William Watts 1785:
the east turret, transposed,
to show how the north
turret might have appeared
from the avenue before the
Victorian extension hid it.*

From the south avenue, the finial on the top of that turret would have been visible above the roof of the house — for nearly 250 years until that view was blocked by the Victorians’ extension of the south wing.

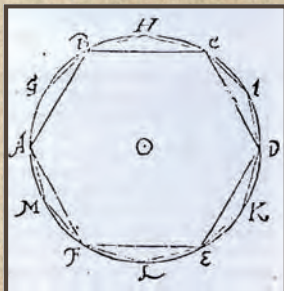
There could be countless possible explanations for these axes & alignments (perhaps even celestial ones) but, for the time-being at least, I shall leave the debate there.



*from Pantometria by Leonard Digges (1520-59)
published by his son Thomas 1571*

The design of the house at Chilham Castle is a medley of factors. In that period of major architectural transition, 400 years ago, the style of the house might have been predicted — but not its shape, nor its particular orientation.

The building’s unique geometry & its location at the intersection of two axes might be attributed to its builder’s background. If your father & grandfather had written & published 3 monumental maths books — if your father, following tutelage under John Dee, had written at length on what the historian & mathematician Stephen Johnston, in a treatise on Thomas Digges, describes as “several hundred theorems on the properties, dimensions & interrelations of the 5 regular (Platonic) polyhedra, and an investigation of 5 “transformed” bodies — semi-regular (Archimedean) solids generated by the metamorphosis of each of the Platonic solids”, you too might favour a house with a highly unusual shape especially if you had plenty of cash, a blank site, & no planning restrictions to bother you.



*from Thomas Digges’s
Certain Geometricall
Problemes of great use 1571*



The central courtyard at Chilham

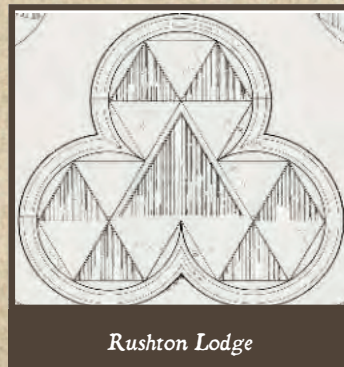
SOME SCHOLARS OF ARCHITECTURAL HISTORY

Let us, at this point, touch on the work of some professional scholars who have examined the building & written about it.

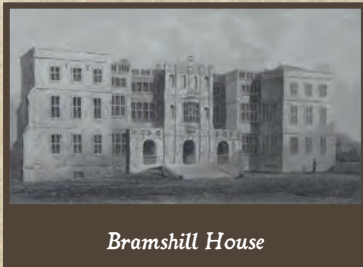
Arthur T Bolton (1864-1945) Curator of Sir John Soane's Museum & grandson of James Beckford Wildman — owner of the castle 1816-1861 — published an article in *Country Life* (27th July 1912) &, in the same year, a book *Chilham Castle Canterbury Kent*, dedicated to the memory of his mother, the artist Emily Wildman who grew up there. In pages 31-5 of the book, Bolton's plans illustrate that axes through the principal wings (not the intermediate wings with staircases) delineate "an equilateral triangle enclosing a circle, and consequently a hexagon". He describes the plan as "much more complex than the triangle of Longford Castle, or the symbolic trinity of Rushton Lodge, or the geometrical fancies of John Hoyle's book." I believe that here Mr Bolton made a slight slip, meaning to refer to John Thorpe (c1565-1655) not John Hoyle. After mentioning Caprarola, the pentagonal palace with a hollow core, built in the 16th century north of Rome for the Farnese family & Sir Dudley's mathematical background, Bolton says "It may have been easy, therefore, to interest the builder of Chilham in such [sic] a unique plan".



Longford Castle



Rushton Lodge



Bramshill House

Three buildings attributed to John Thorpe, who was active in Dudley Digges's lifetime.

Some experts (particularly in the 19th century) have credited him with the design at Chilham.

Sadly the historical record offers very little certainty about his his life & work.

Bolton's suggestion that Chilham may have been "a tactful revision of the famous frontispiece of Bramshill" is itself an exercise in courtesy — a careful comment on that rather chunky building.

Back at Chilham, feeling less charitable towards those who altered his grandfather's home, Bolton does not hide his disapproval of the "extraordinary liberties taken by Mr David Brandon in his delusive restoration" made in the 1860s for Charles Hardy. "It was an evil time for such work" "It is impossible to condemn too strongly the restorationists of the Gothic revival who tampered with historic buildings after such a fashion".

Bolton is kinder to Inigo Jones "The memory of Inigo Jones is likely to remain linked with this unique example of a Jacobean house. The association is more interesting to Chilham than important in the career of the great architect.....in his own country he rose above the pedantry of the Jacobean age. There is however a gap in his development to be filled up, and a perennial interest attaches to the first essays of genius" I like to think that these words of Arthur Bolton's from 100 years ago add some flavour to what I have written below.

A dozen or so years later, Christopher Hussey (1899-1970) in *Country Life* (24th May 1924) seemingly under pressure from the weekly deadlines governing that publication, let slip a few errors: he confused Dudley's father with his eldest son Thomas (who bore the same name) & misinterpreted the original plan of the house. Thomas Heron, he said, was born at Newcastle-on-Trent (meaning Newark). Those errors apart, he went on: "There is perhaps some connection between the cast of mind prevalent in the Digges family and the geometrical form of their house. It is designed by somebody who was a master of his craft.....In Walpole's time [presumably Horace Walpole 1717-1797] there was a tradition that the design was the work of Inigo Jones.....it would be a unique example of Jones's work in the vernacular domestic style". "Chilham has a unity of conception and a regularity of plan ahead of anything that Thorpe or the Smithsons [Robert (1535-1614) & his son John (1588-1634)] ever contemplated. The management of the front and right and left wings, the axes of which give the direction for the sides of an equilateral triangle,.....contrives that, from every point of view, a regular but complete elevation is presented. There is no mere bending of a uniform façade into five folds. The front is long and dignified....." etc etc "Even the chimney stacks in this complicated plan each play a vital part in the design, which, in view of the internal difficulties [an interesting word for Mr Hussey to choose!] is an amazing feat, and alone indicates a practised hand..... Thus Chilham is a very much closer-knit composition than any of the geometrical buildings of the sixteenth or seventeenth century;" Here Hussey "lifts" almost verbatim, from the article in *Country Life* a dozen years earlier, Bolton's words about Longford castle, Rushton Lodge & John Thorpe. This he does without any acknowledgement.

Like Bolton, Hussey was no fan of David Brandon, whose "worst offences" in Hussey's eyes, make him "the sinister figure of Chilham's latter-day history" Though Hussey considers Brandon's service wing to be "admirably unobtrusive. It had been well if his other alterations had been equally so".

In our own time Mark Girouard's *Elizabethan Architecture - Its Rise & Fall 1540-1640* (2009) pp248-9 states (with apparent certainty) that the ruined 14th century Wardour Castle in Wiltshire has a ground plan on which Chilham is based, but with the hexagon intact – no gap at the back. "Wardour could have been known to [Digges] through possible contacts with Thomas Arundell, who was living there in 1618, and who like Digges, had interests in the East".

The gap at the back, making the building "defensively useless" Mr Girouard suggests "could be an expansion of the sentiment expressed in the inscription over the door" Its significance "would seem to be that Digges put his trust in God, not in earthly fortifications" Dudley "as the son and grandson of the mathematicians & scientists Leonard and Thomas Digges is likely to have learnt drawing skills" After mentioning Longford he says that Chilham's "symbolic significance, if any, is much less obvious".

Different views had been expressed a few years earlier by Nicholas Cooper, with whom I recall discussing the shape and orientation. Subsequently, in *The Jacobean House* (2006) pp118-122 he wrote:

- "Many of the meanings in Jacobean houses are more or less veiled. [but] ..more meanings of Chilham castle are in its shape and they are made perfectly clear".
- "the battlements, the irregular plan and the angle towers had a symbolic meaning suggested by a mediaeval tower that stands close by".
- "clear symbolism, its builder's mathematical background, and its location are enough to explain the house's unusual form".
- Linking this, as we all do, with "family background" & "family tradition" & the "horseshoe" shape, Mr Cooper adds that "other inspirations for Chilham's odd plan" might be the mathematics of Thomas & Leonard Digges, & engineering & astronomy.
- Caprarola, Longford Castle & Tresham's triangular Lodge at Rushton are given their usual airing &, confident that his readers are in tune with him, Mr Cooper declares "Chilham itself is typical of the fascination of the Jacobean age with symbols and conceits".
- "What is more obvious" he continues "requires no theory: the relationship of the house to the landscape" The avenue leading "away from the house...may perhaps have originally related to some formal, geometrical landscaping scheme that would have been characteristic of the period, but of which all other traces have been lost".
- Towards the end of his account he writes "This polygonal, partially enclosed space must have been among the most striking of Jacobean architectural experiences, besides linking house and gardens in a highly original and satisfying way".

At least we can all agree with that.

OTHER POLYGONS WITH HOLLOW CORES

PLAYHOUSES & THEATRES

WILLIAM SHAKESPEARE & INIGO JONES

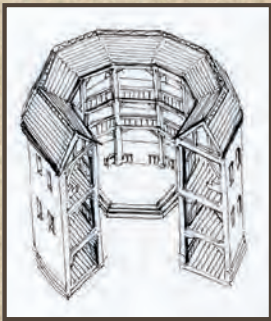
If there is another polygonal house in England with more than 4 sides & a hollow core, it seems to have escaped the notice of the scholars who have written about Chilham – apart from Marc Girouard who mentions Wardour castle – see previous page.

Four centuries ago, when this house was designed & built, there were several in London - not houses to live in, but mostly playhouses – open-air theatres where plays written by Shakespeare, Marlowe & others were performed.

Since the disappearance of those hollow-cored, polygon theatres, we might wonder who might have noticed their resemblance to this house at Chilham, built in Shakespeare's time.

Mark Girouard (op. cit.) makes no such connexion. On pages 247-9 he devotes space to the London playhouses: *“another group of circular-cum-polygonal buildings”* of whose appearance the remaining evidence is *“famously inadequate & inconsistent”* Pointing out that the external walls of those, which he lists, were *“circular, hexagonal or octagonal”* he says that *“their auditoria were all circular”*. Though his study of *Elizabethan Architecture* extends to 1640, Mr Girouard does not mention the next generation of theatres with polygonal interiors – see below. *“There is little reason to doubt that”* they *“were built as conscious imitations or recreations of Roman theatres.”* with *“every probability that”* those *“who commissioned them.....had access to Vitruvius”* They *“contained cosmological allusions.....waiting to be penetrated by the initiated”* Thus far we are ad idem.

Then abruptly, in the next paragraph, we are whisked off to Chilham, without any link whatever (but with a slight slip on the completion date).



To my eyes, the basic similarity is striking – offering another possible explanation for the unique shape of this house, though, instead of a stage for play-acting, Chilham offers a framed view over the great park, (blocked off for half the lifetime of the house by Mr Wildman's holm oak, which was removed in February 2013).

We now approach another potent facet of this account – Mr William Shakespeare, whose associations with the Digges family also seem to have escaped general notice at Chilham, perhaps because of family discretion in the 17th century when performing players were not universally approved – not exactly “top drawer”.

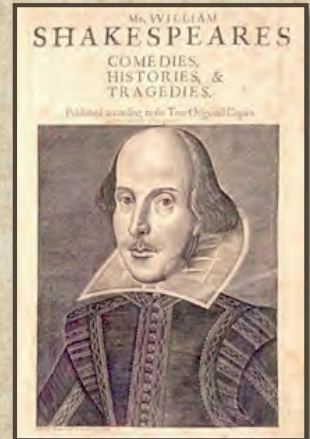
In the introduction to this account I have mentioned the most obvious links with the Bard:

Dudley’s step-father, Thomas Russell, was overseer (in modern parlance, a kind of senior executor) of Shakespeare’s will.

Shakespeare owned 12.5% of the Globe Theatre. Another part-owner was John Heminge, a publisher of the First Folio of Shakespeare’s plays, for which Dudley’s brother, Leonard Digges composed a preface &, some years later, a second eulogy for a later edition.

The Digges & Heminge families were neighbours in the parish of St Mary Aldermanbury in the city of London.

There is a widespread belief (which, so far, I have been unable to substantiate) that Heminge was one of the witnesses to the wedding of Dudley Digges & Mary Kempe.



A theory, developed by Leslie Hotson I, *William Shakespeare (1937)* suggests that the wrecking off Bermuda of the vessel known as “Sea Venture” in which Dudley Digges had a substantial financial interest, may have provided the basis for the island shipwreck in Shakespeare’s last & greatest play *The Tempest*. Hotson speculates that Digges might have told Shakespeare himself – on November 22nd 1610, when in Stratford formalising with his stepfather an agreement about money. Whether or not Digges met his stepfather’s friend on that occasion, we do know that written accounts of the wreck by several writers were published at the time, giving Shakespeare plenty of material.

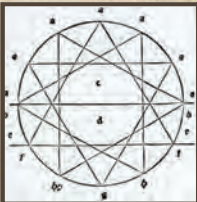


It is said by some (& denied vehemently by others) that the materials for the Globe came in part from the Theatre at Shoreditch, built by James Burbage, a carpenter-turned-actor. The story of this building & its connexions with our main theme, surely justify a short diversion. The Shoreditch Theatre was built for “Lord Leicester’s Men” - a band of players whom James Burbage led, under the protection of Earl Robert Dudley, patron of Thomas Digges & John Dee. Some say that Burbage gave Shakespeare his first stage opportunity.

Previous playhouses had hollow cores, open to the sky like the inn-yards, from which they derived, but no previous English playhouse had a polygonal shape &, since Roman times, none had been called “Theatre”.

This new shape & its classical Graeco-Roman name became the norm. Under the influence of the Renaissance on all the arts in England, playhouses became theatres & players became actors, though in normal parlance the word “drama” was reserved for a particular form of stage-play.

Just over two thousand years ago, Marcus Vitruvius Pollio, the civil & military engineer & writer (known generally as Vitruvius) writing in his masterpiece *De Architectura* ranged across the realms of science & technology covering many subjects including arithmetic, astronomy, chronometry, geometry, music, hydraulic, mechanical, military & pneumatic engineering, petrology (stones not motor fuel !) volcanology &.....stagecraft. Quite a range!



Vitruvius's
Diagrammatic
Plan for a theatre

The name of Vitruvius brings us back to our main theme, because of the general acceptance that the work of Vitruvius was promulgated in England by Dr John Dee. Hence it is thought that Dee had a direct influence on the design of Burbage's Theatre & some go so far as to suggest that Dee designed the place, though no record to support this seems to have come to light. In the absence of proof, no theory as to the Theatre's origins is accepted universally within academia, but, in the realm of Elizabethan & Jacobean theatres, precious little is. Solid evidence in this field is very scarce & so disagreement is rife. I mention it only because of its link with Chilham's story – Dr Dee & Dudley's father were close at the time when the Shoreditch theatre was under construction.

Soon after James Burbage's death, according to several learned accounts, following a dispute with the landlord of the Shoreditch site, his sons Richard & Cuthbert made arrangements with a carpenter-builder, Peter Street to dismantle the structure hurriedly during the Christmas break in 1598 when the landlord of the site was away from London. The materials (it is said by some writers) were taken across the Thames to be built into the new theatre which the Burbage brothers called the Globe.

This chapter of England's history is permeated with uncertainty & dispute; scholars & experts argue fiercely about basic facts such as the size & shape of the buildings – the number of sides to the polygons - & much else.

In *The Globe Restored* (1953) C Walter Hodges (1909-2004) bemoans the lack of certainty "*in a soil so rich, and, moreover, so fertilised by great artists*" To solve the problem he imagines a trip back to Bankside 400 years ago. This illustrator of children's story books paints a delightful word picture of scholars from several centuries gathered in the Globe "*very early in the morning, just in the gloom of dawn....the galleries are crowded ! There they sit in silent rows all around the railings, rustling their note-books and pencils, cleaning and adjusting their spectacles. Some wearing eighteenth-century periwigs, some in Victorian high collars, some in nylon shirts and American neckties, some from their graves and some from their beds and some from their seats of learning, all with their books of research around them, and all waiting patiently for it to grow a little lighter.*" Were he writing today, Mr Hodges might have omitted the reference to "neckties" & mentioned laptops, electronic tablets & the like.



Sadly the academic debate is not always conducted in such quiet calm. In some quarters the scrapping is nearly as ferocious as that other form of "entertainment" in the hollow-cored playhouses on Bankside long ago where hunting dogs were set upon bulls & bears.

Genteel folk should keep well away !

One of the numerous areas of persistent disagreement is the widespread theory about the orientation of the hollow-core playhouses in relation to the sun.



Some claim a mystical, cosmic significance, others, more down to earth, say that this was to ensure that the best seats were always shaded.

Another group, including archaeologists, discount the notion entirely.

Maybe here, among London's playhouses & theatres of those days, lies the key to the Inigo Jones mystery: that persistent, undocumented tradition harboured at Chilham for generations, attributing the design of the house to Digges's fellow courtier, Inigo Jones.

At the start of his career, Jones, like James Burbage, was a "joyner" - perhaps they both studied Leonard Digges's *Tectonicon* - a standard manual for that craft. By 1603 in the records of the Earl of Rutland (whose ancestor, by the way, had sold Chilham to King Henry VIII) Jones was described as a "picture maker" - whatever that may be.

This great architect had a theatrical dimension too.



Inigo Jones 1613 - when Chilham was under construction



Inigo Jones's design for "Masque of Augures" by Ben Jonson

When the new house at Chilham was at the design stage, Jones was still in the early stages of his career, much involved with theatrical design; his masques, created for the Royal Court from 1605 onwards, were making him famous. He became England's leading architect "Surveyor of His Majesty's Works" & "Architect Generall to the King" only after the idiosyncratic structure at Chilham was complete.

Buildings, attributed more readily to the Jones pen - the Queen's House at Greenwich in 1616, (exactly contemporary with Chilham) the Banqueting House at Whitehall in 1619 & others, bear no resemblance to the Chilham polygon, but Jones's octagonal design for the Cock-Pit Theatre, a dozen years or so after Chilham, is not entirely dissimilar.



The oldest plan of Chilham long attributed to Inigo Jones

"the Cockpit Galleries, Boxes, all are full"
from the preface by Leonard Digges,
Dudley's brother, in the 1640 edition of
Shakespeare's Poems



Jones's design for the Cockpit Theatre in-Court, Whitehall 1629

Significantly, Jones & Digges employed the same stone-mason - the suitably-named Nicholas Stone. He worked on more than one project with Jones, & was engaged by Dudley Digges to design & build the Digges family mausoleum at Chilham church. There is a printed record of that contract at Sir John Soane's Museum in London.

CONCLUSION

LAST AUTUMN, SOME DISPARATE FACTS & SOME FAMOUS NAMES CAME TOGETHER
& FORMED A CHAIN IN MY MIND LEADING TO CHILHAM

We end where we began: the house at Chilham built by Sir Dudley Digges is a hollow-cored polygon.

When it was under construction, there were several other hollow-cored polygons - in London - places of entertainment. One of them was part-owned by a close friend of the Digges family & some others were designed by a famous architect whose name has been associated with Chilham Castle for centuries.

But why has this theatrical connexion not been noticed before or why has it been ignored?

In scholarly studies of the design of this house at Chilham, the same people & the same places are mentioned time & again, but no firm explanation for the unique shape has emerged – no conclusion has ever been reached by any scholarly opinion – none that we have seen.

Since, in the corridors of academia, dispute is so widespread, perhaps, working with scant evidence, a little guesswork might be permissible.....

At first, young Sir Dudley will have enjoyed his architectural scherzo, an unconventional product of youthful exuberance, but, with developing ambition & pride, he was less likely to have trumpeted any likeness between his grand house & places, which in those days, were widely regarded as disreputable *“a shew place of all beastly & filthy matters”* (John Stockwood, a Puritan zealot, preaching at St Paul’s in 1578).

Then just 3 years after Sir Dudley’s death, Oliver Cromwell banned theatres altogether. Ever thereafter, despite the re-opening of London’s theatres under King Charles II, we might imagine that Dudley’s heirs, anxious to keep clear of the “ill-favoured” playhouse lifestyle of Nell Gwyn & her like, must have suppressed every hint of connexion.

Later generations of the family evidently preferred to foster a supposed association with Inigo Jones though (unlike the connexion with Shakespeare) no firm documentary link with England’s great architect, designer of palaces for the King & Queen, seems to have survived. Even then, the architectural name-dropping was selective - Jones’s theatrical activity was kept under wraps.

By the 1720s, when the Colebrookes took over from Sir Dudley’s cash-strapped great-grandson, all this seems to have been buried & forgotten. Colebrooke’s main preoccupation here seems to have been the grounds rather than the house; I have written about that elsewhere.

Whether or not there is any significant connexion between these disparate facts, I’ll leave others to imagine, guess & speculate.

In the absence of hard evidence, that is all we can do.

© Michael H Peters
February 2013



Claes Visscher; London, South Bank of the Thames, circa 1600



Dome Street



CHILHAM



*30th June 2012 - the author addressing a family group
descendants of J B Wildman, owner of the castle 1816-1861
photograph by one of the family
© Hester Blewitt of "Reflective Eye" Birmingham*



There is perhaps no one thing, which the most Polite part of Mankind
have more universally agreed in, than the Value they have ever set upon
the Remains of distant Times.

Nor amongst the Severall kinds of those Antiquitys,
are there any so much regarded, as those of Buildings

Sir John Vanbrugh (1664 – 1725)