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 ARCHITECTVRE. Collected byHENRYWоттоn Knight, from the beft cAuthors. and Exam ples.

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## THE

## PREFACE.

nom Shall not neede (like the moft part of Writers) to celea brate the Subiect wobich 1 deliwer. In that point $I$ am at eafe. For Architecture, can want no commendation, where there are Noble Men, or Noble mindes; I will therefore fpend this Preface, ratber about thofe, from whom I baue gatbered my knowledge: For I am but a gatberer and dippofer of other mens fiuffe, at my beft value.

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## The Preface.

Our principall Mafter is Vitruuius and $\int 0$ FT Sall often call bim; who bad tbis felicitie, that be wrote when the Roman Empire was neere the pitch; Or at leaft, when Auguitus ( wobo fa soured bis endeauours) bad fome meaning (if he woere not milta. Tacit lib.r. ken) to bound the Monarchie: Annal.

This I fay was bis good bappe; For in growing and enlarging times, Artes are commonly drownedin Action: But on the other fide, it was in trutb an vnhappineffe, to expreße bimelelfe fo ill,especially woriting (as be did) in a feafon of the ableft Pennes; And his obfcuritie bad tbis tirange fortune; That though be were

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were beft practifed, and beft followed by bis owne Countrymen; yet after the reuiving and repolifhing of good Literature, (robich the combuftions and tomults of the middle Age bad vnciuillized) be mas beft, or at least, firft onderstood by ftrangers: For of the Italians that tooke bim in band, Thofe that mere Gramarians feeme to baue wanted Mathematicall knowledge; and the Mathematicians perbaps wanted Gramer : till both were fufficiently conioyned, in Leon-Batifta Alberti the Florentine, whom $f$ repute the first learned Architect, beyond the Alpes; But bee fundied more indeede to make

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make bimfelfe an Author, then toilluftrate bis Mafter. Therefore among bis Commenters, $\mathcal{f}$ muft (for my priuate conceite) yeild the chiefe praife onto the French, in Philander; and tot the bigh Germans, in Gualterus Ri. uius: who, befdes bis notes, batb likerwife publifhed the moft elabo. - rate tranflation, that ltbinke is extant in any vulgar peecb of the world: though not mithout bemayling, now and then, fome de. fect of A rificiall tearmes in bis owne; as I must likemile; For if the Saxon, (our mother ronoue) did complaine; as iufly (ldoubt) in ibis point may the Daughter: Languages,forthe moft

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moft part in tearmes of Art and Erudition, retayning their origi. nall pouertie, and ratber growing rich and abundant, in complementall phrajes and fucb froth. Toucbing diuers moderne men that baue written out of meere practife, I hall give them their due, upon occafion.

And now, after tbis/bore Cenfure of others, I would faine fatiffie an Obiection or two, robich feeme to lie fomenobat beauily Dp . on my lelfe; It will be faid that I bandle an Art, no way futeable. eitber to $m y$ employments, or to $m y$ fortune. eind $\sqrt{0}$ I hall fand cbarged, botb with Intrum fion, and with Impertinency.

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To the Firft $f$ anfwere, that though by the euer acknowledged goodneße of my most deare and gracious Soveraigne; and by bis long indulgent toleration of my defects. I baue borne abroad fome part of bis ciuill fersice; yet when I came bome, and ros as againe refoluted into mine owne fimplicitie, f found it fitter formy Pen (at least in this firft publique aduenture) to deale zoith theefe plaine compilements, and tractable Materials; then woith the Laberynthes and Myfteries of Courts and States; And leffe prefumption for mee, who baue tong contemplated a famous Repablique, to rorite now of Archi. tecture ${ }_{\text {: }}$

## The Preface.

tecture; then it was anciently for *Hippodamus the Milefian, to *Arifot: 2 . rite lib.Polizi. write of Republiques, wobo was cap. 6. bimelfe but an Architect.

To the Second, I mult brinke ppmy houlders, as I bawe learn'd abroad, and confeffe indeed, that my fortune is very mable to exemplifie, and actuate mySpeculations in tbis Art, robichjet in trueth, made mee the rather ewen from my very difabilitie, take encouragement to bope, that my prefent Labour, poould find the more fauour with others, Ince it was undertaken for no mans fake, leffe then mine o wne. cAnd mith that cöfidence, I fel into thefe thougbts; Of mbich, there mere two wayes to

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## The $\mathrm{Pr}_{\mathrm{rfach}}$.

be delinered; The one Hiftorical, by defaription of the principall workes, perforned already in good part, by Giorgio Vaffari in the limes of Architects: The otber Logicall, by cafing the rules and cautions of this e Art, in. to fome comportable Methode: wbereof I baue made choice; not onely as the horteff and moft Elementall; but indeed as tbe foundeft. For though in practicall knowledges, euery complete example, may beare the credite of a rule; yet peraduëtura rules /hould precead, that we may by them, be made fit to iudge of examples: $T$ berefore to the purpofe; for I mill. preface nolonger.

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## THE ELEMENTS OF

 ARCHITECTVRE. The I.part.N Arcbitecture as in allother Operatiue Arts, the end muft direct the Operation.

## The end is to build well.

 Well building hath three Conditions. Commoditie, Firmenes, and Delight. A common duifion among the Deliuerers of this $A r t$, though I know notA how,

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 how, fome what mifplaced by Vitruuius himfelfe lib. I. cap. 3. whom I thatbe willinger to follow, as a Mafter of Proportion, then of Metbode.Now, For the attayning of thefe Intentions, wee may confider the whole Subiect, vnder two generall Heads.

## The Seate, and the Worke.

Therefore firft touching Scituations. The Precepts thereunto belonging, doc either concerne the Totall Po/iure, (as I may tearmit) or the placing of the Parts: wherof the firlt fort, howfouen vfually fet dovme by Architects as a piece of their Profe Sion: yet are in truth borrowed, from other Learnings: there being beetweene Arts and Sciences, as well as betweene Men, a kinde of good fellowfhip, and communication of their Principles.

For you fhall finde fome of them,to bemecrely $P b y / z c a l l$, touching the quality

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litie and temper of the dire: which being a perpetuall ambient, and ingredient, and the defects thereof, incorrigible in fingle Habitations (which I moft intend ) doth in thofe refpects, require the more exquifite caution; That it be not too groffe, nor too penetratiwe; Not fubiect to any foggy noyfomneffe,from Fenns or Marlbes neere adioyning; nor tơo Mineral exhalations, from the Soile it felfe. Not vndigefted, for want of Sumne; Not vnexercifed, for want of Winde: which were to liue (as it were) in a Lake, or flanding Poole of Aire, as Alberti the Florentin architect, doth ingenioully compare it.

Some doe rather feeme a little Afrological, as when they warne vs from Ylaces of malign Influence:where Earthquakes, Contagions, Prodigious Birtbs, or the like, are frequent without any euident caufe: whereof the Confideration is peraduenture not altogether A 2 vaine:

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## The Elemenis

vaine : Some are plainely Oeconomical; As that the Seate be well watered , and well fewelled, That it bee not of too ficepie and incommodious Acceßse to the trouble boh of friends and familie. That it lie not too farre, from fome nauigable River or Arme of the Sea, for more eafe of prouifion and fuch other Domeftique notes.

Some againe may bee faid to bee Optical: Such I meane as concerne the Properties of a well chofen Profpect: which I will call the Royaltie of Sight. For as there is a Lord/bip (as it were) of the Feete, wherein the Mafter doth much ioy when he walketh about the Line of his owne Poffesions: So there is a Lord/bip likewite of the Eye which being a raunging, and Imperious; and (I might fay) an rofurping Sence, can indure no narrow circum/cription; but mult be fedde, both with extent and varietie. Yet on the other fide, I finde vafte and indefinite viewes which drowne

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 drowne all apprebenfion of the vttermolt Obiects, condemned, bygood Authors, asifthereby fome part of the pleafure ( whereof we fpeake) did perifh. Latly, I remember a priuate Caution, which i know not well how tofort, valeffe I hould call it Political. By no meanes, to build too neere a great Neigbbour ; which were in truth ro bee as vnformately feated on the earth, as Mercurie is in the Heaucns, for the moft part, euer in combuftion, or obfcuritie, vinder brighter beames then his owne.From thefe feuerall Knowledges as I haue faid, and perhaps from fome o- ${ }^{*}$ Joannes ther doe Architects deriuc their Do $\begin{gathered}\text { Inftitit:Me- }\end{gathered}$ etrine about election of Sears: wherin dicia: :ibl.\% I haue not beene fo feuere, as a great ${ }^{\text {cap. } 2 .}$ Scholer of our time, who precifely rcftrayneth a perfect Scituation, ar lealt for the maine point of health, Ad locum contra quem Solvadios fuos fundit cum fub Ariete oritur, That is, in a woord hee

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## The Elements

would haue the firlt Jalutation of the Spring. But fuch Notes as thefe, wherefocuer we finde them ingraue orflight Authors, are to my conceite rather wilhes then Preceptrs; and in that qualitie, I will paffe them ouer. Yet I muft witball fay that in the feating of our felues (which as a kinde of Marriage to a Place) - Builders fhould bee as circumfect as Wooers; left when all is done that Doome befall vs, which our Mafter doth lay vpon Mitylene: A Torone in truth (faith hee) finely buile, but foolijhly planted. And fo much touching that, which I termed the $T_{\theta-}$ tall Pofture.

The next in Order is the placing of the Parts; About which (to leaue as little as I may in my prefent labour, vnto Fancie, which is wilde and irregular) I will propound a Rule of mine owne Collection, vpon which I fell in this maner. I had noted, thatall Arte was then in truelt perfection, when it might

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might bee reduced to fome naturall Principle. For what are the mof iudicious Artijans but the Mimiques of $\mathrm{Na}_{\mathrm{a}}$. tare? This led me to contemplate the Fabrique of ourowne Bodies, wherein the EHigh Architect of the world, had difplaied fuch skill, as did ftupifie, all humane reafon. There I found the Hart as the fountaine of Life placed about the Middle, for the more equall communication of the vitall fpirits. The Eyes feated aloft, that they might defrribe thegreater Circle within their view. The Armes proiected on each fide, for eale of reaching. Briefly (not to loofe our felues in this fweet feeculation) it plainely appeareth, as a Maxime dravne from the Diuine light; That the place of euery part, is to be determined by the $V f$ e.
So then, from naturall Aructare, to proceed to Arrificiall; and in the rudeft things, to preferue fome Image of the excellentef. Let all the principall chambers

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chambers of Delight, All Strdies and Libraries, be towards the Eaft : For the Morning is a friend to the Mufes. All Offices that require heat, as Kitchins, Stillatories, Stoues, roomes for Baking, Brewing, Wafbing, or the like, would be Meridionall. All that need a coole and frefh temper, as Cellers, Pantries, Butteries, Granaries, to the North. To the fame fidelikewife, all that are appointed for gentleMotion, as Galleries, efpee cially in warme Climes, or that otherwife require a fteadie and vnuariable light, as Pinacotbecia (faith Vitruuius) by which he intendeth, (if I maygueffe at his Greeke, as wee mult doe often euen at his Latibe) certaine Repogitovies for workes of rarity in Picture or orher Arts, by the Italians called $S_{t u}$ dioli, which at any other Quarter, where the courfe of the Sunne doth diuerfifie the Shadoses, would loofe much of their grace. And by this Rule hauing alwayes regarde to the

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Vfe, any other Part may bee fitly accommodated.

I mult here not omit to note that the Ancient Grecians, and the Romanes by their example in their buildings abroad, where the Seat was frec, did almoft Religioully fcituate the Front of their houfes, to wards the South; perhaps that the Mafters Eye, when hee came home, might not be dazeled, or that being illufirated, by the Sumne, it might yeeld the more gracefull Apeid; or fome fuch reafon. But from this, the Moderne Italians doe varie; wherof I fhall fpeake more in another place. Let thus much fuffice at the prefentfor the Pofition of the feuerall Members, wherein muft beehad as our Author doth often infinuate, and efpecially lib. 6.cap. ro: a fingular regard, to the nature of the Region: Euery Nation, being tyed aboueal Rules whatfoeuer, to a difcretion, of prouiding againft their owne Inconuenientes: And there-
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fore a good Parler in Agypt would perchance makea good Celler in England.

There now followeth the fecond Branch of the generall Section touching the Worke.

In the Worke, I will firft confider the principall parts, and afterwards the Accefforie, or Ornaments; And in the Principall, frift the Preparation of the Materials, and then the Difpofition, which is the Forme.

Now, concerning the Materiall part; Although furely, it cannot difgracean Arcbitect, which dorh fo well become a. Philofopher, to looke into the properties of Stone and-Wood: as that Firre Trees, Cypreffes, Cedars, and fuch other Aereall afpiring Plants, being by a kinde of naturall rigour (which in a Man I would call pride) inflexible downewards are thereby fitteft for Pofs or Pillars or fuch vprightvfe; that

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on the other fide, Oake, and the like true hartie Timber being ftrong in all pofitions, may bee better trulted in croffe and trauerfe worke, for Summers, or guirding and binding beames, as they tearmethem. And folikewife to oblerue of stone, that fome, are better within, and other to beare Weather: Nay, to defend lower cuen to examine. Sand and Lyme, and Clay (of all which things Vitruxius hath difcourfed, without any daintines, \& the molt of new Writers) I fay though the Speculatiue part of fuch knowledge be liberall: yet to redeeme this Profeflion, and my prefent paynes, from indignitic; I mult heere remember that to choofe and fort the materials, for cuery part of the Fabrique, is a Dutie more proper to a fecond $S$ uperintendent, ouer all the $\mathrm{V} \boldsymbol{n}$ der Artifans called (as I take it) byour Author, Offcinator lib.6.cap. 11. and ins that Place expreffely diltinguifhed, from the Architect, whofe glory doth

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 more confift, in the Defignement and Idea of the whole Worke, and his trueft ambition fhould be to make the Forme, which is the nobler Part (asit were) triumph ouer the Matter: whereof I cannot but mention by the way, a forreigne Paterne, namely the Church of Santa Giufina in Padona: In truth a found piece of good Art, where the Materials being but ordinarie ftone, without any garnifhment of fulpture, doe yet rauifh the Beholder, (and hee knowes not how) by a fecret Harmony in the Proportions. And this indeede is that end, at which in fome degree, we fhould ayme cuen in the priuateft workes : whereunto though I make hafte, yetlet me fiyft collect, a few of theleaft triuiall cautions, belonging to the Materiall Prouifion.Leon Batifa Alberti, is fo curious, asto wifh all the Timber, cut out of the fame Forreff,andal the Stone, out of the fame Quarrie.

Pbilibert

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- Pbilibert delOrme the French Architect goes yet fomewhat further, and would haue the Ljme made of the very fame Stone, which wee intend to imploy in the Worke; as belike imagining that they will fympathize and ioyne the better, by a kinde of Originall kindred. But fuch conceits as thefe feeme fomewhat too fine among this Rubbage, though I doe not produce them in fport. For furely the like agreements of nature, may haue oftentimes a difcreet application to Art. Alwayes it mult be confeffed, that to make Lyme without any great choyce of arefufe ftuffe, as we commonly do, is an Englifh error, of no fmall moment in our Buildings. Whereas the Italians at this day, and much more the Ancients did burne cheir firmeft fone, and euen fragments of Marble where it was copious, which in time became almoft Marble againe, or at leaft of indiffoluble duritie, as appeazech in the ftanding Thea

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 The Elementsters. I muft here not omit, while I am fpeaking of this part, a certann forme of Bricke defcribed by Daniele Barbaro Pa triarcb of Aquileia, in the largelt Edition of his Commentary vpon Vitruuius. The Figure triangular, euery fide a foot long, and fome inch and a halfe thicke, which hedoth commend vnto vs for many good conditions : As that they are more commodious in the management, of leffe expence, of fayrer fhow, adding much beautic \&ftrength to the Murall Angles, where they fall gracefully into an indented Worke:fo as I fhould wonder that wee haue not taken them into vfe, being propounded by a man of good authoritic in this knowledge; but that all Nations doe ftart at Nouelties, and are indeede maried to theirowne Moulds. Into this place mightaptly fall a doubt, which fome haue wel moued; whetherthe ancient Italians didburne their Bricke or no; which a paffage or two in Vitruaius hath

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hath left ambiguous. Surely where the Naturall heat is ftrong enough, to fupply the Artificiall, it were but a curious folly to multiply both Labour and Expence. And it is befides very probable, that thofe Materials with a kindely and temperate heate would prouefairer, fmoother, and leffe diftorted, then with a violent: Onely, they fuffer two exceptions. Firft, that by fuch a gentle drying much time will bee lolt which might otherwife bee employedin compiling. Next, That they wvill want a certaine fucking and foaking Thirfineffe, or a fiery appetite to drinke in the Lime, which mult knit the Fabrique. But this queftion may be confined to the South, where there is more Sunne and patience. I will therefore not hinder my courfe; with this incident fcruple, but clofe that part which I haue now in hand, about the Materialls, with a principall

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caution: That fufficient Stuffe and Money bee euer ready before we beginne: For when wee build now a piece, and then another by Fits, the Werke dries and finkes vnequally, whereby the Walles growve full of cbinques, and Crewices; Therefore fuch pawfings are well reprooued by Palladio, lib. I.cap. 1. and by all other. And fo hauing gleaned thefe few remembrances, touching the preparation of the Matter, I may now proceede to the $D$ ippofition thereof, which mult forme the Worke. In the Forme, as I did in the Seate, I will firft confider the generall Figuration, and then the feuerall Members.

Figuresare cither fimple or Mixed. The fimple be either Circular or Angular. And of Circular, either (Compleate, or Deficient, as Ouals, with which kindes I will bee contented, though the Diftribution might bee morecurious.

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Now the exact (ircle is in truth a Figure, which for our purpofe hath many fit and eminent properties; as finneffe, for Commodity and Receit, being the moft capable; fitneffe for ftrength and duration, being the moft vnited in his parts; Fitneffe for beaucie and delight, as imitating the celeftiall Orbes, and the vniuerfall Forme. And it feemes, befides, to haue the approbation of Nature, when fhee worketh by Instinct, which is her fecret Schoole : For birds doe build their neits Spherically: But notwithftanding thele Attributes, it is in truth a very vnprofitable Figure in priuate $F_{a}$ briques, as being of allother the moft chargeable, and much roome loft in the bending of the Walles, when it comes to bee diuided: befides an ill diftribution of light, except from the Center of the Roofe. So as anciently it was not vfual,faue in their Temples and Amphi-Theaters, which needed no C Cons.

Compartitions. The Ouals and other imperfect circular Formes, haue the fame exceptions, and leffe benefite of capacity: So as there remaynes tobec confidered in this generall furucy of Figures, the Angular, and the Mixed of both. Touching the Angular, it may perchance found fomewhat Itrangely, but it is a true obferuation, that this Avt doth neither loue many Angles nor few. For firft, the Triangle which hath the feweft fides and corners, is of all other the moft condemned, as being indeed both incapable and infirme (wherof the realon fhall be afterwards rendred) and likevvife virrefoluable into any other regular Forme then it felfe, in the inward $P$ artitions.

As for Figures of fiue, fix, feuen, or more Angles; They are furely fitter for Militar Architecture, where the Bulworks may be layed out at the Corners, and the fides ferue for Curtaines, then for बiuillyle; though I am not igno-

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rant of that famous Piece at Caprarola, belonging to the houfe of Farriefe, caft by Baroccio into the forme of a Pentagone, with a Circle infcribed, where the Architeca did ingenioully wreflle with diuers inconueniences in difpofing of the Lights, and in fauing the vacuities. But as defignes of fuch nature doe more ayme at Rarity, then Commoditie : fo for my part I had rather admire them, then commend them.

Thefe things confidered, we are both by the Precepts and by the PraCtife of the beft Builders, to refolue vpon Rectangular Squares, as a meane be tweene too fevv, and too many Angles; and through the equall inclination of the fides (which make the right Angle) ftronger then the Rbombe, or $L o$ fenge, or any other irregular Square. Butwhether the exact Quadrat, or the long Square bethe better, I finde not well determined, though in mine

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## The Elements

 owne conceit I mult preferre the latter; prouided that the Length doe not exceede the Latitude aboue one third part, which would diminifh the beauty of the $A \beta$ ect, as fhall appeare when I come to l peake of Symmetry and Proportion.Of mixed Figures, partly Circular, and partly Angular, I hall neede to fay nothing; becaufe hauing handled the fimple already, the mixed according to their compofition, doe participate of the fame refpects. Onely againft thefe, there is a proper Obiection, that they offend $\tau$ miformity: Whereof I an therefore opportunely induced to fay fomewhat, as farre as fhal concerne the outward APect, which is naw in Difcourfe.
In Architecture, chere may feem to be two oppofite affectations, Vniformitie and $V$ ariette, which yet will very well fuffer a good recócilement, as we may fecin the great Paterne of Nature, to which.

## of Architecture. 21

 whichI mult often refort: For furely there can be no Structare, more vniforme, then our Bodies in the whole Figuration: Each fide, agreeing with the other, both in the number, in the qualitie, andin the meafure of the Parts: And yet fome are round, as the Armes, fomeflat, as the Hands, fome prominent, and fome more retired: Soas vpon the Mater, wee fee that Diuerfitie doth not deftroy Vniformitie, and that the Limmes of a noble Fabrique, may bee correfpondent enough, though they be various; Prouided alwayes, that we doe not runne into certaine extrauagant Inuentions, whereof I fhall fpeake more largely, when I come to the parting and calting of the whole Worke. We ought likewile to auoyde Enormons heights of fixe or feuen Stories, as vell as irregular Formes; and the contrary fault of low-diftended Fronis, is as vnfeemely: Oragaine, when the Face of the Building, is natC 3 row22 The Elements
row and the Flank deepe; To all which extreames, fome particular Nations, or Towines, are fubiect, whofe Names may beciuilly fpared: And fo much for the generall Figuration, or $\mathcal{A}$ Spect of the Worke.
Now concerning the Parts in Seweraltie. All the parts of euery Fabrique, may be comprifed vonder fiue Heads, which Diuifion I receiue from Batiftas Alberti, to doe him right. And they be thefe.

The Foundation:
The Walles.
The Appertions or Ouertures. The Compartition. And the Couer. About all which I purpofe to gather the principall Cautions, and as Ipaffe along, I will touch alfo the naturall Reafons of Art, that my difcourfemay be the leffe Mechanical. , Firftthen concerning the Foundation, which requireth the exacteft care; For

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if that happen to dance, it will marre all the mirth in the Houfe: Therefore, thatwee may found our Habitation firmely, we muft firlt examine the Bed of Eartb (as I may tearme it,) vpon which we will Build; and then the vnderfillings, or Substruction, as the Auncients didcall it: For the former, we haue a generall precept in Vitruuius twice precifely repeated by him, as a point indeed of mayne confequence, firftlib. r. cap. 5 . And againe more firly lib. 3 .cap. 3 . in thefe words as Philander doth well correct the vulgar Copies.
Subfructionis Fundationes fodiantur (faith he) ) queant inueniri ad Jolidum, ©o infolido. By which words I conceiue him to commend vinto vs, notonely, a diligent, but euen a iealous examination what the Soile will beare: aduifing vs, not to reft vponany appearing Soliditite, vnleffecthe whole Mould through which weecut, haue likewife beene folid; But how deepe wee hould goe in
$V$ nderdig. ing, or Hol lowing of the Earth.

24 The Elements in this fearch, hee hath no where to my remembrance determined, as perhaps dependug more vpon Difcretion, then Regularitie, according to the weight of the Worke; yet Andrea Palladio hath fairely aduentured to reduce it into Rule: Allowing for that Ca uazione (as he callethit) a fixt part of the beight of the whole Fabrique, vnles the Cellers be vnder ground, in which cafe hee would haue vs, (as it fhould feeme ) to found fomewhat lower.

Some Italians doe prefcribe, that when they haue chofen the Floore, or Plot, and laid out the Limits of the Worke, wee fhould firft of all Digge Wels and Cefiernes, and other vnderconducts and conueiances, for the Suillage of the Houfe, whence may arife a double benefit, for both the Nature of the Mould or Soile, would thereby befafely fearched, and moreouer thofe open vents, will ferue to difcharge fuch Vapours, as hauing otherwife no iffue might

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might peraduenture Phake the Buildiag. This is enough for the naturall Grounding, which though it bee not a partof the folid Fabrique, yet here was the firteft place to handle it.

There followeth the Sublaruction, or Ground-worke of the wwhole Edifice, which muft fuftaine the Walles; and this is a kinde of Attifciall foundation, as the other was Natural. A bout which thefe are the chiefe Remembrances. Firft, that the bottome be precifely leuell, where the Italianstherefore commonly lay a platforme of good Bord; Then that thelowelt Ledge or Rom be meerely of Stone, and the broader the better, clofely layd without Morter, which is a generall caution for all parts in Building, that are contiguous to Bord or Timber, becaufe Lime amd Wood are infociable, andifany where vnfitconfiners, then moft efpecially in the Foundation. Thirdly, that the bredth of the Subftruction bee at leaft D double

26 The Elements
double to the infistent Wall; and more or leffe, as the weight of the Fabrique Thall require; for as I muft againe repeate, Difcretion may be freer then Art: Laftly, I finde in fome a curious precept, that the Materials below, be layd as they grevv in the Quarrie, fuppofing them belike to haue moft frength in their Naturall and Habituall Pofture. For as Philippe de l'Orme obferuech, the breaking or yeelding of a fone in this part, but the bredth of the backe of a knife, will makea Cleft of more then halfa foot in the Fabrique aloft, So important are Fundamentall errors. Among which notes I haue fayd nothing of podification, or Pyling of the Groundplot, commanded by Citruuius, when we build vpona moift or marfhy foile, becaufe that were an error in the firft choyce. And therefore all Seats that mult vfefuch prouifion below (as $V_{l}$ es nice for an eminent example) would perhaps xpongoodenquiry, befound

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 to haue beene at firft chofen by the counfell of Nece/sity.Now the Foundation being fearched, and the Subfruction layd, wee muft next feake of the Wals.

Wals areeitherentireand continuall, or intermitted; and the Intermi/sions be either Pillars or Pylaffers, for here I had rather handle them, then as fome others doe, among Orriaments.

The entire Muring is by Writers diuerly diftinguifhed: By fome, according to the quality of the Materials, as either Stone or Brick, \&c.where, bythe way, let me note, that to build Wals and greater Workes of Flint, whereof weee want not example in our Iland, \& particularly in the Prouince of Kent, was (as I conceiue)meerly vinknownto the Ancients, who obferuing in that Materiall, a kinde of Metalicall Nature, or at leaft a Eufibility, feeme to haue refolued it into nobler vec $;$ an Artnow veterly loft, or perchancekepr vp by a few Chy-
$\mathrm{D}_{2}$ micks.

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micks. Some againe doe not fo much confider the quality, as the $P_{0}$ fition of the fayd Materials: As when Bricke or fquaredftones are laid in their lengths wich fides and heads together, or their points conjoyned like a Netroorke for To Vitruuius doth call it reticulatum opus) offamiliar vfe (as it fhould feeme) in his Age, 'though afterwards growne out of requeft, euen perhaps for that fubtill feculatiou which hee himfelfetoucheth; becaufe fo layd, they are more apt in fwagging down, to pierce with their points, then in the jacent Pofture, and fo to creuice the Wall: But to leaue fuch cares to the meaner Artificers, the more effentiall are thefe.
That the Walles bee moft exactly perpendicular to the Ground-zoorke: for the right Angle (thereon depending) is the true caufe of all Stability; both in Artificiall and Naturall pofixions; A man likewife flanding firmeft,

## of A.Architecture. 29

 meft, when he ftands vprighteft. That the maffieft and heauiclt Materials bee the loweft, as fitter to beare, then to be borne. That the Workeas it rifech, diminifh in thickneffe proporcionally, for eale both of weight, and of expence. That certaine courles or Ledges of more ftrength then the reft, be interlayed like Bones, to fuftaine the Fabrique from totall ruine, if the vnder parts fhould decay. Laftly, that the Angles bee firmely bound, which are the Nerues of the whole Edifice, and therefore are commonly fortified by the Italians, euen in their Bricke buildings, on each fide of the corners, with well fquared flone, yeelding both ftrength and grace And fo much touching the entire or folid Wall.The intermiffions (as hath beene fayd) are either by Pillars, or Pylasters. Pillers which we may likewife call Columnes (for the word among Artifiw cers is almoft naturallized) I could $D_{3}$ diftin-

30 The Elements diftinguifh into Simple \& Compounded. But (to tread the beaten and plaineft way) there are fiue Orders of Pillers, according to their dignity and perf. ation, thus marfhalled:

The Tufan.
The Dorique.
The Ionique.
The Corintbian.
And the Compound Order, or as fome call it the Roman, others more generally the Italian.

In which fiue Orders I will firft confider their Communities, and then their Proprieties.

Their Communities (as farre as I obferue) are principally three. Firit, they are all Round; for though fome conceiue Columna Atticurges mer tioned by Vitruuius, lib.3.cap.30 to haue beene a〔quared Pillar, yet wee mult paffe itouer as irregular,neuer receiued among chefe Orders, no morethen certaine other licentious inuentions, of Wrea

## of eArchitedure.

 31 thed, and V med, and Figured Colummes, whichout Author himfelfe condemneth, being in his whole Booke a profeffed enemy to Fancies.Secondly, they are all Dimini/bed, or Contracted infenfibly, more or leffe, according to the proportion of their heights, from one third part of the whole Sbaft vpwards, which Pbilander doth prefcribe by his owne precife meafuring of the Ancieut remainders, as the molt gracefull Diminution. And here I muft take leaue to blame a praatice growne (I know not how) in certaine places too familiar, of making pillars Iwell in the middle, as if they were ficke of fome Tympany, or Dropfie, without any Authentique Parerne or Rule, to my knowledge, and vinfeemely to the very iudgement of fight. True it is that in Zitruxius, lib. 3. cap.2. wee finde thefe words, Dead. iectione, que adycitur in medijs Columnis, que apud Grecos :ruans appellatur, in ex.

32 The Elements tremo libro erit formatio eius; which paffage, feemeth to haue giuen fome countenance to this error. But of the promife there made, as of diuerfe other elfewhere, our Mafter hath fayled vs, either by flip of tuemory, or iniury of time, and fo wee are left in the darke. Alwayes fure I am, that befides the autthority of example which it wanteth, It is likewvife contrary to the Originall and Naturall Type, in Trees ${ }_{3}$ which at firft was imitated in Pillars, as Vitruuius himfelfe obferueth, lib. s. cap.I. For who cuer faw any Cyprefe, or Pine, (which are there alledged) fmall below and aboue, and tumerous in the middle, vnleffe it were fome difealed Plant, as Nature (chough otherwife the comlieft Miftreffe) hath now and then her deformities and IIregularities.

Thirdly, they haue all their $V$ nder. Jettings, or Pedijtals, in height a third part of the whole Columne, comprehending the Bafe and Capitall; and their

## of Architedure.

vpper Adiuncts, as Architraue, Firize, and Cornice, a fourth part of the fayd Pillar ; which rule of fingular vea and facility I find fetled by Iacobo Baroccio, and hold him a more credible Author, as a man that molt intended this piece, then any that vary from him in thofe Dimentions.

Thefe are their moft confiderable Communities and agreements.
Their Proprieties or Distinctions will beft appeare by fome reafonable defcription of them all, together with their Architraues, Frizes, and Cornices, as they are vfually handled.

Firtt therefore the Tufan is a plain, maflie, rurall Pillar, refembling fome fturdy well-limmed Labourer,homely clad, in which kinde of comparifons Vitruxuius himfelfe feemeth to take pleafure, lib. 4.cap. r. The length thereof fhall be fix Diameters, of the groffeft of the Pillar below. Of all proportions, in truth, the moft naturall; For our
34.

## The Elements

Author tells vs, lib. 3.cap. 1. that the foote of a man is the fixt part of his bodie in ordinary meafure, and Man himfelfe, according to the faying of Protagoras (which arifotle doth fome-

 type of all exact Symmetrie, which we haue had other occafion to toueh before: This Columne I haue by good warrant called Rurall, Vitru.cap.2.lib.3And therefore we need not confider his rank among the reft. The diftance or Intercolumniation (which word Artificers doe vfually borrow) may bee neere foure of his owne Diameters, becaufe the Materials commonly layd ouer this Pillar, were rather of wood then fone, through the lightneffe whereof the Architraue could not fuffer, though thinnely fupported, nor the Columne it felfe being fo fubitantiall. The Contration aloft hall be faccording to the moft receiued practice)

## of Architecture.

rice) one fourth part of his thickneffe below. To conclude, (for I intend only as much as thall ferue for a due Diftinguifhment, and not to delineate every petty member) the TuJCan is of all the rudelt Pillar, and his principall Character Simplicity.

- The Dorique Order is the graueft that hath beene receiued into ciuill vie, preferuing, in comparifon of thofe that follow, a more Mafculine ASpect, and litle trimmer then the TuJcan that went before, faue a fober garnifhment now and then of Lions beads in the Cornice, and of Triglyphs and Metopes alwayes in the Frize. Sometimes likewife, but rarely, chaneled, and a litile flight fculpoure about the Eyypotrachelion, or Necke vnder the Capitall. The length, feuen Diameters. His ranke or degree, is the loweft by all Congraity, as being more maflic then the other theee, and conequentyabler to lupport. The Intercolumniation, thrice as

$$
\mathrm{E}_{2} \text { much }
$$ Contraction aloft, one fift of the fame meafure. To difcerne him, will bee a peece rather of good Heraldry, then of Architecture: For he is beft knowne by his place, when he is in company, and by the peculiarornament of his Frize (before mentioned) when he is alone.

The Lonique Order doth reprefent a kinde of Feminine flenderneffe, yet faith ${ }^{2}$ itruuius, not like a light Houfewife, but in a decent dreffing, hath much of the Matrone. The length eight Diameters. In degree as in fubftantialneffe, next aboue the Dorique, fuftayning the third, and adorning the fecond Story. The Intercolumpiation two of his owne Diameters. The Contraction one fixt part. Beff knowne by his trimmings, for the bodie of this Columne is perpetually chaneled, like a thicke plighted Gowne. The Capitall dreffed on each fide, not much vnlike womens Wires, in a firall wreathing

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thing, which they call the Tonian Voluta. The Cornice indented. The Frize fwelling like a pillow; And therefore by Vitruuius, not vnelegantly tearmed Puluinata. Thefe are his beft Cbaracters.

The Corintbian, is a Columne, laciuioully decked like a Curtezane, and therein much participating ( as all Inuentions doe) of the place where they were firft borne: Corintbe hauing been without controuerfie one of the wantoneft Townes in the world. This Order is of nine Diameters. His degree, one Stage aboue the Ionique, and alwaies the higheft of the fimple Orders. The Intercolumniation two of his Diameters, and a fourth part more, which is of all other the comelieft diftance. The Contraction one feuenth Part. In the Cornice both Dentelli and Modiglioni. The Frize,adorned with all kinds our Artiof Figures and various Compartments them Teeth. at Pleafurc. The Capitall, cutinto the and Car. E 3 bait tonzeso

## 38 Tbe Elements

beautifulleft leafe, that Nature doth yeeld, which furely next the Aconitim Pardalianchics (reiected perchance as an ominous Plant ) is the Acantbus or Branca Vrfina though Vieruuiss doe impute the choice thercof vanto Chance, and wee mult be contented to belceue him : In fhort, As Plaineneffe did Charactarizethe Tu/can, fo muft Delicacie and Varietie the Co. rintbian Pillar, befides the height of his Ranke.

The laft is the Compounded Order: His neme being a briefe of his Nature. For this Pillar is nothing in effect, but a Medlie, or an Amafle of all the precedent Ornaments, making a new kinde, by Realch, and chough the molt richly tricked, yet the pooreft in this, that he is a borrower ofall his Beautie. His lengch, ( that he may haue fomewhat of his owne) fhalbe of ten Diameters. His degree Ahould, no doubr, bee the highelt by reafons before yeelded.

But

## of Architecture.

But fevv Palaces Auncient or Moderne exceede the third of the Ciuill Orders. The Intercollmniation, but a Diameter and an halfe; or alvwayes fomewhat leffe then two. The Contraction of this Pillar muft be one eight Part leffe aboue then belowe. To know him will be eafie by the verie mixture of his Ornaments, and Cloathing.

And fo much touching the fiue $O r$ ders of Columnes, which I will conclude with two or three, not impertinent Cautions:

Firft, that where more of thefe Or $^{r}$ ders then one, fhalbe fet in feuerall Stories or Contignations, there mult bee an exquifite care, to place the Columnes precifely, one ouer another, that f , the folid may anfwere to the folid, and the racuities to the racuities, as well for: Beautie, as Atrength of the Fabriqu: And by this Caution the Confequence is plaine, that when wee (peake of the Intercolumsiation or diffance, which is due

## 40 The Elements

due to each Order, we meane in a Dorique, lonicall, Corintbian Porch, or Cloifter, or the like of one Contignation, and not in Storied buildings.
Secondly, let the Columnes aboue be a forth part leffe then thofe below, faith restrunius, lib. 5. cap. i. A ftrange Precept, in my opinion, and fo flrange, that peraduenture it were more iutable, euen to his owne Principles, to makethem rather a fourch Part greater, For lib. 3. cap.2. where our Mafter handleth the Contractions of Pillars, wee haue an Optique Rule, that the higher they are, the lefferhould be alwayes their diminution aloft, becaufe the Eye it felfe, doth naturally contract all Obiectss more or leffe, according to the Difance ; which confideration, may, at firft fight, feeme to haucbeene forgotten in the Caution wee haue now giuen; but Zitrunius (the beft Interpreter of himfelfe) hath in the fame place of his fift Booke, wellacquitted

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 his memorie by thefe words: Columne fuperiores quarta parte minores, quam inferiores, fant consitituenda ; proptered quòd, operi fercndo ques funt inferiora, firmiora effe debent; preferring like a wife Mechanick, the naturall Reafon, before the Matbematicall, and fenfible conceits before abftracted. And yee lib.4.cap.4. he feemeth againe, to affect Subsiltie, allowing pillars the more they are chaneled, to bee themore flender; becaufe while our Eye (faith hee) doth as it were diftinctly meafure, theeminent and the hollowed Parts, the Totall Obiect appearech the bigger, and fo as much as thofe excauations, doe fubtract, is fupplied by a Fallacie of the Sight: Bur heremce thinks, our Mafter fhould likewife have rather confidered, the naturall Inconuenience; for though Pillars by chaneling, bee feemingly ingroffed to our Sight yet they are truely weakened in thers. feluoss; and therefore ought perchance bin F inin found reaton not to bee the more flender, but the more Corpulent, vileffe apparances preponder truths, but Contra Magifirum, non est dijputandum.

A third Caution fhalbe that all the proiected or lutting Parts (as they arc tearmed) bevery moderate, efpecially, the Cornices of the lower Orders, for whileft fome thinke to giue them, a beautifull and royall Arpect, by their largeneffe, they fometimes hinder borh the Light within, ( whereof I Thall fpeake more in due place) and likewife detract much from the viewe of the Front without, as well appeareth in one of the principall Fabriques at $V_{e_{-}}$ nice, namely the Palace, of the Duke Grimani on the Canal Grande, which by this magnificent errour, is fomewhat difgraced: I neede now fay no more concerning Columnes \& their Adiuncts, about which Architects make fucha noyfe intheir Bookes, as if the very tearmes of Arcbitraues, and Frizes, and

## of Architecturc. <br> 43

 and Cornices, and the like, were cnough to graduate a Malter of th is Art, yet let me before I paffe to other matter, preuent a familiar Obiection; It will perchance bec faid, that all this Doctrine touching the fiue Orders, were fitter for the Quarries of $A f i a$ which yeelded ${ }^{2} 27$ Columnes of 60 Foote high, to the Epbefan Temple, or for Numidia where Marbles abound ; then for the Spirits of England, who muft be contented with more ignoble Materials: To which I anfwere, that this neede not difcourage vs: For I haue often at Venice viewed with much pleafure, an Atrium Grachm (we may tranflate it an Anti porch, after the Greeke manner ) raifed by Andrea Palladio, vpon eight Columnes of the Compounded Order; The Bafes of Stone, without Pedijtals, The ןbafts or Bodies, of meere Brick; three foote and an halfe thicke in the Diameter below, and con. fequently thity fiue foote high, as$\mathrm{F}_{2}$ him.

44 The Elements bimfelfe hath defcribed them in his fecond Booke; Then which, mine Eye, hath neuer yer beheld any Colimnes, more ftately of Stone or Marble; For the Bricks, hauing firft beene formed in a Circular Moult, and then cutbefore their burning into foure quarters of more, the fides afterwards ioyne fo clofely, and the points concenter fo exactly, that the Pillars appeare one entire Peece ; which fhort deffription, I could not omit, that thereby may appeare, how in truth wee want rather Art then ltuffe, to fatisfie our greateft Eancies.

After pillars, the next in my diftribution, are pylafters, mentioned by Fitrsuius, lib. s.cap. I. and fcant any whereelfe vinder the name of Paraflates, as Pbilander conceiueth, which Grammaticall point (though perchance not very cleere) I am contented to examine no farther. Alwayes, what we meane by the thing it felfe, is plaine enough

## of efrcbitecture. <br> 45

 enough in our owne vulgar, Touching which, 1 will briefly collect the mof confiderable notes.Pylafers, mult not bee too tall and flender, leaft they refémble Pillars, nor too D warfifb and groffe, leaft they imitate the Piles or Peeres of Bridges: Smoothneffe doth norfo naturally become them, as a Rufticke Superficies, for they ayme more at State \& Srength, then Elegancie. In priuate Buildings they ought not to be narrower, then one Third, nor broader then two parts of the whole Vacuity, betweene Pylafter and Pylaster; but to thofe that ftand at the Corners, may be allowed a little more Latitude by difcretion, for ftrength of the Angles: In Theaters and Ampbittheaters, and fuch weighty Workes, Palladio obferueth them, to haue beene as broad as the halfe, and now and then as the whole Taccuitie: Hee noterh likewife (and others confent with him) that their

$$
\mathrm{F}_{3} \quad \text { true }
$$

## The Elements

 true Proportion, hould bee an exact Square; But for leffening of expence, and inlarging of roome, they are com. monly narrower in Flanke, then in Front: Their principall Grace doth confift in halfe or whole pillars, ap* plied vnto them; in which cafe it is well noted by Authors, that the $\mathrm{Co}^{-}$ lumnes may bee allowed fomewhat aboue their ordinary length, becaufe they leane vinto fo good Supporters. And thus much fhall fufice touching pilafters, which is a cheape, \& a ftrong, and a noble kinde of Structure.Now becaule they are oftner, both for Beauty and Maiefty, found Arched, then otherwife; I am heere orderly led to fpeake of Arches, and vnder the fame head of Vaults: for an Arch is nothing indeed but a contracted Vault, and a Vault is but a dilated Arch: Therefore to $h$ andle this Piece bork compendioully, and fundamentally, I will refolue the whole bufineffe into a few Theoremes.

The-

## of eArchitecture.

## Theoreme 1 .

All folid Materials free from impediment, doe defcend perpendicularly downewards, becaule ponderofity is a naturall inclination to the Center of the World, and Nature performeth her motions by the fhortefl lines.

Tbeoreme 2.
Brickes moulded in their ordinary Rectangular forme, if they fhall be layd one by another in a leuell row, betweene any Supporters fuftayning the two ends, then all the pieces between, will neceffarily finke, euen by their owne naturall Grauity, and much more if they fuffer any depreffion by other waight aboue them, becaufe their fides being paralell, they haue roome to defcend perpendicularly, without impeachment, according to the former Theoreme; Therefore to make them ftand, wee mult either change their Posture, or their Figure, or both.

Tbe Elements Theorme 3.
If Brickes moulded, or Stones fquared Cuncatim (that is, Wedge wire, broaderaboue thenbelow) (hall belayd in a Ronn leuell, with their ends fupported, as in the precedent Tbeoreme, pointing all to one Center; then none of the pieces betweene can finke till the Supporters give way, becaule they wvant roome in that Figuration, to defcend perpendicularly. But this is yet a weake piece of Structure, becaufe the Supporters are fubiect to much impulfion, ef. pecially if the line be long; for which reafon this Forme is feldome vfed, but ouer Windowes, or narrowe Doores. Therfore to fortifie the Work as in this third Tbeoreme wee haue fuppofed the Figure of all the Materials different from thofe in the fecond: Solikewife wee muft now change the Pof fure, as will appeare in the Theoreme following.

Theoreme 4.
If the Naterials figured as before Wedge-

## of cArcbitedure. 49

 Wedge-wife, fhall not be difpofed leuelly, but in forme of fome Arch, or portion of a Circle, pointing all to the fame Center: In this cafe neither the pieces of the fayd Arch, can finke downewards, through want of roome to defcend* perpendicularly: Nor the Sup. By the fir ${ }^{\text {E }}$ porters or Butments (as they are tear-Theor. med) of the fayd Arcb can fuffer fo much violence, as in the precedent flat Pofture, for the roundneffe will alwayes make the Incumbent waight, raiher to reft vpon the Supporters, then to fhoue them; whence may be drawn an cuident Corolary; that the fafeft of all Arcbes is the Semicircular, and of all which $^{2}$ is Vaults the Hemißphere, though not ab- the fole folutcly exempted from fome naturallprerogatiue weakeneffe,* as Barnardino Baldi Abbot ofperpenof Guafalla, in his Commentary voll dicular of Guaftalla, in his Commentary vpon lizues and Arifoties Mechaniques, doth very well right Ans prooue; wherelet me note by the way, gles. that when any thing is Mathematically demonftrated weake, it is much moreG Mechan -

The Elements
Mechanically weake: Errors euer occurring more eafily in the management of Grofe Materials, then Lineall Defignes.

## Theoreme s.

As Semicircular Arches, or Hemifphericall Vaults, being raifed vpon the totall Diameter, bee of all other the roundeft, and conequently the fecureft, by the precedent Theoreme: So thofe are the gracefulleft, which keeping precifely the fame height, fhall yet bee diftended, one fourteenth part longer then the fayd entire Diameter; which addition of diftent will conferre much to their Beauty, and detract but littlefrom their Srength.

- This obferuation I finde in LeonBatifta Alberti; ' But the practice how to preferue the fame height, and yet diltend the Armes or ends of the Arch, is in Albert DurersGeometry, who taught the Italians many an excellent Line, of great vfe in this Art.

Vpon

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 51Vpon thefe fue Theoremes, all the skill of Arching and Vaulting is grounded: As for thofe Arches, which our Arcizans call of the third and fourth point; And the Tu/can writers diterzo, and di quarto acuto; becaufe they alwayes concurre in an acute Angle, and doe - Pring from diuifion of the Diameter, into three, foure, or more parts at pleafure; I fay, fuch as thefe, both for the naturall imbecility of the tharpe Angle it felfe, and likewife for their very Vncomelineffe, ought to bee exiled from judicious eyes, and left to their firlt inuentors, the Gothes or Lumbards, amongtt other Reliques of that barbarous Age.

Thus of my firlt Partition of the parts of euery Fabrique, into fue Heads, hauing gone through the two former, \& been incidently carried into this laft doctrine touching Arches and Caults. The next now in order are the Apertions; vnder which tearme I $\mathrm{G}_{2}$ doe

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## The Elements

doe comprehend Doores, Windowes, Staire-cajes, Cbimnies, or other Conducts: In fhort, all Inlets or Outlets; To which belong two generall Catttions.

Firft, That they bee as few in number, and as moderate in Dimenfion, as may poffibly confift with other due refpects: for in a word, all Openings are Weaknings.

Secondly, That they doe not approach too neere the Angles of the Wals; for it were indeed a molt effentiall Solecifme to weaken that part, which muft ftrengthen all the relt: $A$ precept well recorded, but ill practifed by the Italians themfelues, perticularly at Venice, where I haue obferued diuerfe Pergoli, or Meniana (as V truaius feemeth to call them, which are certaine ballifed out-ftandings to fatisfie curiofity of fight) very dangeroufly fer forth, vpon the very point it felfe, of the Murall Angle.

## of eArchitecture.

Now, Albeit I make hafte, to the cafting and comparting of the whole. Worke, (being indeede the very Deffnitiue Summe of this $\Delta x t$, to diftribute veffully and gracefully a well chofen Plot) yet I will firf vnder their feuerall Heads, collect briefly fome of the choifeff notes belonging to thefe partictlar Ouertures.

Of Doores and Windowes.
THefe In lets of Men and of Light, I couple together, becaufe I find their due Dimenfions, broughe vider one Rule, by Leone Alberti (a learned Searcher) who from the Schoole of Pytbai goras ( where it was a fundamentall Maxime, that the Images of all things are latent in Numbers) doth determine the comelieft Proportion, betweene breadths and heights; Reducing Symmetrie to symphonie, and the barmonie. of Sounde, to a kinde of barmonic in Sight, after this manner: The two G 3 principall

## 54 Ibe Elements

 principall Conjonances, thar mof rauilh the Eare,are by confent of all Nature, the fift; and the $O$ Elaue; whereof the fiftet rifecth radically, from the proportion, betweene two and three. The other from the double Interaalle, bctweene $O n e$ and $T$ woo, or betweenc $T_{w o}$ and Foure \&cc. Now if we fhall tranfport thefeproportions, from Audible to vifible Obiects; and apply them as they fhall fall fitteft ( the wature of the Place confidered) Namely in fome Windowes, and Doores, the Symmetrie of Tomo to Three, in their Breadth and Length; In others the double as aforefaid; There will indubitably refule from either, a gracefull and barsnonious contentment, to the Eye; Which fecculation though it may appearevnto vulgar Artizans, perhaps too fubtile;and toofublime, yer weemult rememberthat Vitruuius himfelfedoth determinemany things in his profefdon ; by Muffall grounds, and much commendeth
## of $x$ rebitecture.

commendeth in an Architeci, a Pbiloophical Spirit; that is, he would haue him (as I conceaue it ) to be to faperficiall, and floating Artificer; but a Diuer into Caules, and into the Mylteries of Propor. tion; Of the Ornaments, belonging both to Doores and Windotwes, Ithall fpeake in other place; But ler mee heere adde one obferuation; That our Mafer (as appeareth by diuers paffages, and parcicularly lib.6.cap.9.) feemes to haue beene an extreame Louer of Luminous Roomes; And indeede I mult confeffe that a Franke Light, can milbecome noe A Edifice whatfocuer, Temples onely excepted; which were anciently darke, as they arelikewife at this day in fome Proportion. Deuotion more requiring colleEted then defufed Spirits. Yet on the other fide we muft take heede to make a Houfe (though but for ciuill -fe alleyes, like Argus; which in Northerne Climes would be too could, In Soutberne, too hot And therefore the
matter
matter indeede importeth more then a merry comparifon. Befides, There isno part of Structure either more expencefull, then Windoxses; or more ruinous; not onely for that vulgar reafon, as being expofed to all violence of weather ; but becaufe confifting of fo different and vnfociable pieces, as Wood, ITon, Leade, and Glaffe, and thofe fmall and weake, they are eafily fhaken; I mult likewife remember one thing, (though it be but a Grammatical note) touching Doores. Some were Fores, \& Some were $V$ alue. Thofe (as the very word may feeme to import ) did open outswards, Thefe invards; And were commonly oftwo Leaues or Panes, (as we call them) thereby requiring indeed, a leffer (ircuit in their vnfoulding; Andtherefore much in vfe among Italians at this day; But I muft charge them with an Imperfection, for though they let in as well as the former, yet they keepe out worfe.

## of Arcbitecture.

TO make a compleate Stairecafe, is a curious peece of $\mathrm{Archi-}$ tecture : The vulgar Cautions are thefe.

That it haue a very liberall Ligbt, againft all Cafualtie of slitpes, and Falles.

That the fpace aboue the Head, bee large and Airy, which the Italians vfe to call $V_{n}$ bel-sfogolo, as it were good Ventilation, becaufe a man doth 1pend much breath in mounting.

That the Halfe-paces bee well diftributed, at competent diftances, for repofing on the way.

That to auoyd Encounters, and befides to gratifie the beholder, thewhole Staire-cafe haue no nigard Latitude, that is, for the principall Afeent, at leaft ten foot in Royal Buildings.

That the breadth of euery fingle Step or Staire bee neuer leffe then one haife a foot in their height or thickneffe; for our Legges doe labour more in Eleuation, then in Difention: There I fay are familiar remembrances, to which let meadde;

That the fteps bee layd where they joyne Con ron tantino di /carpa; we may tranflate it fomewhat loaping, that fo the foot may in a fort both afcend and defend together, which though obferued by few, is a fecret and delicate deception of the paines in mounting.

Laftly, to reduce this doctrine to fome Naturall, or at leaft Matbematicall ground, (our Maffer, as wefee, lib.g. cap.2.) borroweth thofe proportions, that make the fides of a Rectangular Triangle, which the Ancient Schoole did expreffe in loweft tearmes, by the numbers of 3.4 and 5 . That is, Three for the Perpendicular, from the Stairehead to the ground; Foure for the

## of Architecture.

Ground-line it felfe, or Recefsion from the wall; And Fiue for the whole Inclination or flopeneffe in the afcent, which proportion, faith he, will make Temperatas graduum librationes. Hitherto of Staire-cales which are direct: There are likewife Spirall, or Cockle ftaires, cither Circular, or Ouall, and fometimes running about a Pillar, fometimes vacant, wherein Palladio, (A man in this point of fingular felicity) was wont to diuide the Diameter, of the firft fort into three parts, yeelding one to the pillar, and two to the Steps; Of the fecond into foure, whereof he gaue two to the Staires, and two to the Vacus itie, which had all their light from a. boue, And this in exact Ouals, is a Mafter-piece.
Of Chimies.

IN the prefent bufineffe, Italians(who make very frugall fires, are perchance not the belt Counfellers.) Therefore $\mathrm{H}_{2}$ from

## 60 The Elcments

from them we may better learne, bo: h how to raife faire Mantels within the roomes, and how to difguife graceful. ly the fhafis of Chimnies abroad (as they vfe) in fundry formes (which I fhall handle in the latter part of my labour) and the rett I will extract fronis Pbilippe de lorme: In this part of his Worke more diligent, then in any other, or, to doehim right, then any man elfe.

Firft, hee obferueth very foberly, that who in the difpofition of any Building will confider the nature of the Region, and the IVindes that ordinarily blow, from this, or that Quarter; might fo caft the roomes, which thall moft need fire; that hee fhould little feare the incommodity of Smoake, and therefore hee thinkes, that inconuenience, for the moft part to proceede from fome inconfiderate beginning. Orif the errorlay not in the $\mathcal{D} i / p o f$ ition but in the Structure it felfe; then hee makes

## of Architecture.

makes a Logicall enquiry; That either the Winde is too much let in aboue, at the mouth of the Sbafte, or the Smoke ftifeled below; If none of thefe, Then there is a repulfion of the Fume, by fome higher Fill or Fabrique, that thall ouertoppe the Cbimney and worke the former effect : If likewife not this, Then he concludes, that the Roome which is infetted, mult bee neceffarily both litete and clofe, fo as the fmoke cannot iffuc by a naturall Principle, wanting a fueceffion and fupply of new Ayre.

Now, In thefe cales he fuggefteth diuers Artificiall remedies, of which I will allow one, a little Defcription, becaufe it fauourech of Philofopbie, and was touched by Vitruuius himfelfe, lib. I cap. 6. but by this man ingenioully applied to the prefent vie: Hee will haue vs prouide two hollow braffe Balles of reafonable capacitie, with little holes open in both,for reception of $\mathrm{H}_{3}$

Water,

## 62 The Elements

Water, when the Aire fhalbe firft fucked out; One of thefe wee mult place with the hole vpwards, vpon an yron Wire, that Chall trauerfe the Chimney, a little aboue the Mantell, at the ordinary height of the fharpeft heate or flames, whereof the water within being rarified, and by rarifaction refolued into Winde, will breake out, and fo forcevp the finoke, which otherwife might linger in the Tumnell, by the way, and oftentimes reuert ; With the other, (faith he) wee may fupply the place of the former, when it is exhaufted, or for a neede blow the Fire in the meane while; Which Inuention I haue interpofed for fome little intercainement of the Reader; I will conclude with a note from Palladio, who obferueth that the Ancients did warme their Roomes, with certaine fecret Pipes that came through the Walles, traniporting heate (as I conceiue it) to fundry parts of the Houfe, from one common

## of Arcbitecture.

63
common Furnace ; I am ready to baptize them Caliducts, as well as they are tearmed Venti-ducts, and Aque-ducls that conuey Winde and Water; which whether is were a cuftome or a delicacie, was furely both for thrift, and for vfe, far beyond the GermanStoues; And I hould preferre it likewife be. fore our ownefafhion, if the very fight of a fire, did not adde to the Roome a kinde of Reputation, ${ }^{*}$ as old F.Fomer doth aisumas jo mteach vs in a verfe, fufficient to prooue eize exeerre. that himfelfe was not blinde, as fome Hom. Epig. would laie to his charge.

Touching Conducts for the Suillage and other neceffities of the Houle, (which how bale foeuer in vfe, yet for healch of the Inhabitants, are as confiderable, and perhaps more then the reft) If finde in our Authors, this Counfell; That Art fhould imitate Nature ${ }_{3}$ in thofe ignoble conueyances; and feparate them from Sight, (where there wants a running Water) into the moft

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64 \text { The Elements }
$$ moft remote, and lowelt, and thickeft part of the Foundation : with fecrec vents paffing vp through the Walles like a Tunnell to the wilde Aire aloft: which all Italian Artizans commend for the dilcharge of noylome vapours, though elfe-where to my knowledge little practifed.

Thus hauing confidered the precedent Appertions, or Ouertures, in feueraltie according to their particular Requifites, I am now come to the cafting and Contexture of the whole Worke, comprehended vader the tearme of Compartition : Into which (being the mainelt piece ) I cannot enter without a few generall Precautions, as Ihaue donein orher Parts.
Firlt therefore, Let noman that in. tendeth to build, fetle his Fancie vpon a draught of the Worke in paper, how exactly focuer meafured, or neately fet offin per $\beta$ ective; And much leffe vpon a bare Plant thereof, as they call

## of Architecture.

 65 che Schiograpbia or Ground lines; without a Modell or Type of the whole Structure, and of euery parcell and Partition in Pa/bboordor Wood.Next that the laid Modell bee as plaine as may be, without colours or otherbeauafying, left the pleafure of the Eye preoccupate the Indgement; which aduife omited by the Italian Architects, I finde in Pbilippe de ${ }^{1}$ Orme, and therefore (though France bee not the Theater of belt Buildings) it did merit fome mention of his name.

Laftly, the bigger that this Type be, it is fill the better, not that I will perfwade a man to fuch an enormity, as that Modellmade by Antonio Labaco, of Saint Peters Church in Rome, containing 22 . foot in length, 16 . in breadth, and 13 . in heighth, and cofting 4184. crownes: The price in truch of a reafonable Chappell: Yet in a Fabrique of fome 40 . or so, thoufand pounds charge, I wifh $j 0$. pounds ai lealt layd
out before handinan exact Modell; for a little mifery in the premifes, may eafily breed fome abfurdity of greater charge, in the Conclufion.

Now, after thefe premonifhments, I will come to the Compartition it felfe; By which, the Authors of this Aut (as hath beene touched before) doe vnderfand, a grace full and rofefull diftribution, of the whole Ground plot both fur roomes of Office, and of Reception or Entertainement, as farre as the Capar city thereof, and the nature of the Counco trey will comport. Which circumflances in the prefent Subiect, are all of maine confideration, and might yeeld more difcourfe then an Elemental Rapfodie will permit. Therefore (to anatomize briefly this Definition) the Gracefulneffe (whereof wee fpeake) will confilt in double Analogis, or correfpondencie. Firft, betweeri the Parts and the $W$ bole, whereby a great Fabrique fhould haue great Partitions, great

Lights

## of eArcbitecture. 67

Lights, great Entrances, great Pillars or Pylafers; In fumme, all the Members great. The next betweene the Parts themfelues, not only, confidering their Breadtbs, and Lengtbs, as before, when wee Ipake of Doores and Windones, but here likevile enters a third refpect of Height, a point (I mult confefle) hardly reduceable to any generall precept. True it is, that the Ancients did determine the Longitude of all Roomes, which were longer then broade, by the double of their Latitude, Vitruuilus lii.6.cap. s. And the Heighth by the halfe of the breadth and length fummed together But when the Roome was precifely fquare, they made the Height half as muct more as the Latitude; which Dimenfions the moderne Architects haue taken leaue to varie vpon difcretion: Sometimes fquaring the Latitude, and then making the Dizgoniall or ouerthwart Line, from Angle to Angle, of the faid Square, the meafure of the

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12 \quad \text { Herghth }
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## The Elements

Heighth fometimes more, but feldome lower then the full breadth it felfe; which boldneffe of quitting the old Proportions, fome attribute firlt to Mi chael Angelo da Buonaroti, perchance vpon the credite he had before gotten, intwo other Arts.

The fecond point is Vlefulneffe, which will confilt in a fufficient Number of Roomes, of all forts, and in their apt Coberence, without difraction, without confuifon; fo as the beholder may not oncly call it, Vna Fabrica benraccol$t a$ : as Italians vfe to fpeake of well vnited Workes, but likewife that it may appeare ainie and piritous, and fit for the welcome of cheerefull Guefts; about which the principall difficultic will bee in contriuing the Lightes, and Staire-ca/es, whereof I will touch a Dote ortwo: For the firft, I obferue thar the ancient Arcbietects were at much eafe. For both the Greekes and Romanes (of whofe priuate dwellings.

## of eArcbitecture. <br> 69

Vitruuius hath left vs fome defcription) had commonly two Cloystered open Courts, one feruing for the Womens fide, and the orher for the Men : who yet perchance now adayes would take fo much feperation vnkindly. Howfoeuer, by this meanes, the reception of light, into the Bodie of the building, was very prompt, both from without and from within: which we mult now fupplie either by fome open Forme of the Fabrique, or among gracefill refuges, by Tarrafing any Storie, which is in danger of darkeneffe; or laftly, by perpendicular lights, from the Roofe: of all other the moft naturall, as thalbe fhewed anon. For the fecond dificultie : which is calfing of che Stayrecafes; That being in it felfe no hard point, but onely as they are incombrances of roome for other vfe:(which lights were not) I am therefore aptly. moued heere to Ipeake of them. And firft of Officcs.

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\text { I } 3 \text { I have }
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Ihauc inarked a willing neffe, in the Indian Arcifans, to deltribure the $K y$ clim, Pantrie, Bakeboufe, wà a/hing Roomes: and cuen the Butfic likewife, vader ground;next aboue the Foundation, and fometimes Leuel with the plaine, or Floore of the Cellar: rayfing the firt Afcent into the houfe Fifteene Foote or more for that Ende, which befides the benefit of remouing fuch Annojes out of fight, and the gayning of fo mucte more roome aboue, doth allo by eleuation of the Front, adde Maiefie to the vohole $\mathcal{A} / \mathrm{pect}$. And with fuch a difpofition of the principall Stayreca/e, which commonly doth deliuer vs, into the Plaine of the fecond Storie, there may bee wonders done, with a little roome, whereof I could alleadge braue Examplesabroad; and none more Artificiall, and Delicious, then a Houre built by Daniele Barbaro Patriarche of Aquileia before mentioned, among the memorable Commenters vpon Vitruxitss. But

## of A Architecture. 71

But the Deffinition ( aboue determined) doth call vs to fome confideration of our owne Countrie, where though all the other pettie Offices (before rehearfed ) may well enough beefo remote, yet by the naturall Horpitalitie of Eng. land, the Buttrie nult be more vifible; and wee neede perchance for our Raunges, a more facious and luminous $K$ itchin , then the forefaid Compartition will beare; witha more competent neereneffe likewife to the $D y$ ning Roome Or elfe befides other Intconueniences, perhapesfome of the Difhes may ftraggle by the way; Heere let me note a commpri defect, that wee haue of a very vfefull Roome, called by the Italians IlTinello; and familliar, nay almoft effentiall, in all their great Fa miles. It is a Place properly appointed, to conferue the meate that is taken from the Table, till the Waiters eate, which with vs by an olde falhion, is more vnfeemely ferby, in the meane while.

## 72

 The ElementsNow touching the diftribution of Lodging chambers; 1 mult here take leaue to reprooue a fafhion, which I know not how hath preuailed through Italie, though without ancient examples, as farre as I can perceiue by Vicruuius. The thing I meane, is, that they fo calt their partitions as when all Doors are open, a man may fee thifough the whole Hou/e; which doth neceffariely put an intollerable feruitude xpon all the Chambers faue the Inmott, where none can arriue, but through the reft; or elle the Walles muft be extreame thicke for fecret paffages And yet this alfo will not ferue the turne, without at leaft Three doores to cuery Roome: A thing moft infufferable, in cold \& windie Regions, and cuery where noc finall weakening to the whole Worke ; Therefure with vs that want no cooling, I cannot commend the direct oppofition of fuch Ouertures, being indeede meerely grounded

## of eArcbitecture.

grounded vpon the fond ambition of difplaying to a Strangerall our Furniture at one Sight, which therefore is moft maintained by them that meane to harbour but a few ; whereby they make onely aduantage of the vanitie, and feldome proue the Incomuenience. There is likewvife another defict (as abfurdities are feldome folitarie) which will neceffarily follow, vpon fuch aferuile difpofing of inward Chambers. That they mult bee forced to make as many common great Roomes, as there fhalbe feuerall Stories; which (befides that they are vfually darke, a point hardly auoided, running as they doe, through the middle of the whole Houfe) doc likewvife deuoure fo much Place, that thereby they want other Galleries, and Roomes of Retreate, which I haue often confidered among them ( I muft confeffe) wich no fmall wonder; for I obférue no Nation in the World, by Nature more priuate

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## 74 The Elements

 andreferued, then the Italian, andon the other fide, in no Habitations leffe priuacie : fo as there is a kinde of Conflict,betweene their D welling, and their Being: It might heere perchance bee expected, that I fhould at lealt defcribe (which others haue done in draughts and defignes) diuers Formes of Plants and Partitions, and varieties of Inuentions; But fpeculatiue Writers (as I am) are not bound, to comprife all particular Cafes, within the Latitude of the Subiect, which they handle; Generall Lights, and Directions, and pointings at fome faults, is fufficient: The relt mult be commitred to the fagacitic of the Architect, who will bee often put to
## Theltalians

 diuers ingenious Chifts, when hee is to wreftle wich fcarfitie of Ground. As fanza fometimes * to damme one Roome dannatas as when a Buttrie is caftundera aftayre(though of feeciall vfe) for the benefit and beautic of all the reft ; Another while,to make thole faireft, which are Cafe, or the moft in Sight, and to leaue theother like
## of eArcbitecture.

(like a cunning Painter) in fhadow, cum multis alys, which it were infinite to purfue. I will therefore clofe this Part touching Compartition, as cheerefully as I can with a fhort defcription of a Feafing or entertayning Roome, after the Egyptian manner, who feeme (at lealt till the time of Vitruuius $^{\text {) }}$ ) from the auncient Hebrewes and Phenicians (whence all knowledge did flow) to haue retayned, with other Sciences, in a high degree, alfo the Principles, and practife of this magnificent Art . For as farre as I may coniecture by our MaftersText, lib.6.cap.'s. (where as in many orher Places he hath tortured his $I n$ terpreters) there could no Forme, for fuch a Royall vfe, bee comparably imagined, like that of the forefaide $N a$ tion, which I fhall aduenture to explaine.
Let vs conceiuea Floore or Ared of goodly length, (For example, at leaft of 120 foote) with the breadth fome-

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\mathrm{K}_{2} \quad \text { what }
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76 The Elemenes what more chen the halfe of the Lono gitude, whereof the reafon halbe afterwards rendred. About the twolongef fides and Head of the faid Roome, thall runnean Order of iliars, which Palladiodoth fuppofe Corinthian (as I fee by his defigne ) fupplying that point out of Greece, becaule we know no Order, proper to $\AA g y p$. The fourth fide I wil leaue free for the Entrance: On the forefaid Pillars was laid an Architraue, which Vitruuius mentionerh alone: Palladio addes thereunto (and with reafon ) both Freeze and (ornice, out which went up a continued $W$ all, and therein, halfe or three quarter Pillars, anfwering direaly, to the Order below, but a fourth Part leffe, and betweene thefe halfe Colamres aboue, the whole Roome was windowed round about.

Now, from the lowvelt Pillars there was layd ouer a Contignation or Floore, bonne ypon the outward Wall, and the Head

## of Architecture. 77

 FHead of the Columnes with Tarrace and Pauement, Sub dio (faith our Mafter) and fo indeed hee mighofafely determine the mater in $\varepsilon$ gypt, where they feare no Clowds: Therefore Pallddio (wo leanech this Tarrace vncouered in themiddle, and badlifed about) did perchance conttrue him rightly, though therein difcording from others: Alwayes we malt vadertand a fufficient breadth of panement, lefe betweenthe open partand the Windowes, for fome delight of Spectutors, that might looke downe into the Roome: The Latitude I haue fuppofed contrary to fome former Pofitions, a little more then the halfe of the length; becaufe the Pilflars ftanding at a competent diftance from the outmoft Wall, will by interception of the Sight, fomewhat in appearance diminifh the breadth; In which cales, (as I hatue touched once or twice before) Difcretion may bee more licentious then Art. This is the $\mathrm{K}_{3}$ de-78 The Elements defcription of an Egyptian roome, for Feastes and other lollities. About the Walles whereof wee mult imagine entire Satues, placed below, and illuminated by the defcending Light, from the Tarrace; as likevife from the Win. dowes betweene the halfe $\mathcal{P}$ illars aboue: So as this Roome had abundant and aduantageous Light; and befides other garnilhng, mult needes receiue much State by the very heighth of the Roofe, that lay ouer two orders of Columnes: And fo hauing runne through the foure parts of my firlt generall Diuif $f_{\text {- }}$ on, namely, Foundation, Walles, Appertions, and Compartition; the Houfe may now haue leaue to put on his Hatte: hauing hitherto beene vncouered it felfe, and confequently vnfit to couer others. Which point though it be the laft of this Art in execution, yet it is alwayes in Intention the firft, For who would build but for Sbelter? Therefore obtayning both the Place, and the dig-

## of Architecture. 79

 dignity of a Finall caule, it hath beene diligently handled by diuerfe, but by none more learnedly then Bernardino Baldi Abbot of Guastalla (before cited vpon other occafion) who doth fundamentally, and Matbematically demonftrate the firmeft Knittings of the vpper Timbers, which make the Roofe. But it hath beene rather my Scope, in there $\varepsilon$ lements to fetch the ground of all,from Nature her felfe, which indeed is the fimpleft mother of Art. Therefore I will now onely deliuer a few of the propereft, and (as I may fay) of the naturaleft confiderations, that belong to this remayning Piece.There are two extremities to be auoyded in the Couer, or Roofe: That it be not too beauy, nor too light. The firlt, will fuffer a vulgar obiection of prefling too much the vider-worke. The other, contay neth a more fecret inconuenience, for the Couer is not onely a bare defence, but likewife a kinde
kutde of Biadorthigavine, to the whole Eabione, and wheretore would require fome rea onable weight. But of the two extreames, a Hoyfe Top-beause is therort, Next there muft bee a care of Equality, that the Edifice be not preffed on the one fide more then on the other, and here Palladio doth wifely (like a cautelous Artizan) that the inward Walles might beare fome good fhare in the burtien, and the outward be the leffe charged.

Thirdly, the Italians are very precife in giung the Couer a gracefull pendence or lopeneffe, diuiding the whole breadth into Nine parts; wherco fwo Thal ferue for the eleuation of the higheft Toppe or Ridge, from the lowett. But in this point the quality of the $R e_{-}$ gion is confiderable: For (asour riztrauius infinuateth) thofe Climes that feare the falling and lying of much Snow ought to prouidenoreraclining pentices: and Comelineffe multyeeld to Nece/sity.

There

## of Arcbitecture.

Thefe are the vefulleft Cautions which I finde in Autbors, touching the laft Head of our Diuifion, wherewith 1 will conclude the firft $\mathbb{P}$ art of my prefent Trauaile. The fecond remayneth, concerning Ornaments within, or wvithout the Fabrique: A Piece not fo dry as the mecre Contemplation of proportions. And therefore I hope therein, fomewhat to refrefh both the Reader, and my felfe.
$L$
$O E$

## 82

## $O F$

## THE ELEMENTS

 $O F$ ARCHITECTVRE. Tbe II. part.

Very Mans proper Manfon Houfe and Home, being the Theater of his Hoppitality, the Seate of Selfe-fruition, the Comfortableft part of his owne Life, the Noblest of his Sonnes Inberitance, a kinde of priuate Princedome; Nay, to the Poffeffors thereof, an Epitomic of the whole World: may well deferue by thefe $A t$ tributes, according to the degree of the Mafter, to be decently and delightfully adorned. For which ende, there are two Arts attending on Architecture, like two

## of eArchitecture.

 two of her principall Gentlewomen, to dreffe and trimme their Mifreffe; PI Ctrre \& Scvlptyre: Betwect whom, before I proceed any further,I wil venture to determine an ancient quarrell about their Precedency, with this $\mathcal{D} i$ Ainction; that in the garnifhing of $F_{a}$ briques, Sculpture no doubt mult haue the prebeminence, as being indecde of neerer affinity to Arbitecture it Celfe, and confequently the more naturall, and more futable Ornament. But on the other fide, (to confider thefe two Arts as I fhall doe Pbilooophically, and not Mechanichally) An excellent Piece of Painting, is to my iudgement the more admirable Obiect, becaufe it comes neere an Artificiall Miracle; to make diuerfe diftinct Emixences appeare vpon a Flat, by force of Shadowes, and yet the Sbadowes themfelues not to appeare: which I conceiue to be the vetermoft value and vertuc of a Painter, and to which very few hauc arriued in all Ages. I 2 In
## 84 The Elements

In thefe two Arts (as they are appliable to the Subiect which I handle) it thall bee fit firt to confider how to choofe them ; and next, how to disfore them. To guide vs in the choyce, wee haue a Rule fomewhere (I well remember) in Pliny, and it is a pretrie obferuation: That they doe mutually holpe to cenfure one another. For Picture is beft when it Itandeth off, as if it were carued; and Sculpture is beft when it appeareth fo tender, as if it were painted, I meane, when there is fuch a feeming foftneffe in the $L$ imbes, as if not a Cbifell had hewved them out of Stone, or other Materiall, but a Perifill had drawne and ftroaked them in Oyle, which the iudicious Poet tooke well to his Fancy.

Excudent aly pirantiamollius sera.
But this generalitic, is not fufficient to makea good cboofer, without a more particular contraction of his Iudgement. Therefore when a Piece of

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Art, is fer beforevs, let the firlt Caution be, nor to aske who made it, leaft the Fame of the Autbor doc Captiuate the Fancie of the Buyer. For, that excellent Men doe alwaies excellently, is a falfe Conclufion; whereupon I obferue among Italian Artizans three notable Pbrajes, which well decipher the de. grees of their Workes.

They will tell you, that a thing was done (ion diligenza, Consfudio, and Con Amore; The firft, is but a bare and ordinary diligence, The fecond, is alearned diligence; The third, is much more, euen a louing dilijence; They meane not with loue to the Befpeaker of the Worke, but with a loue and delight in the Worke it felfe, vpon fome fpeciall Fancie to this, or that Storie; And when ail thefe concurre ( perticularly thelaft) in an eminent Autbor, Then perchance Titiamus Fecit, or ippinus inve will ferue the Turne, without farther Ino quifition : Othervvife Artizans haue not L 3

78 The Elements oricly their growthes and Perfections, but likewvife the ir Vaines and Tymes.

The next Caution muft be ( to proceede Logically) that in Iudging of the Worke it felfe, wee bee not diltracted with too many things atonce; Therefore firft ( to beginne with Picture) we are to obferue whether it bee well draibne, ( or as more elegant Artizans tearme it) well Defign'd; Then whether it be well Coloured, which bee the two generall Heads; And each of them hath two principall Requifites; For in well $D_{e}$ figning, there muft bee Truth and Grace, In well Colouring, Force, and Affection; All other Praifes, are but Confequences of thefe.

Trutb (as we Metaphorically take is in this $\mathcal{A}(t)$ is a Iu/t and Naturall Proportion, in euery Part of the determined Figure. Grace is a certaine free dilpofation, in the whole Draught, anfwerable tothat vnaffected franknes of Fafhion, in a liuing Bodie, Man or Woman, which

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which doth animate Beautie where it is, and /upplie it, where it is not,
Force confifteth, in the Roundings \& Raijungs of the Worke,according as the Limbes doe more or leffe require it ; So as the Bebolder, hhall fie no /barpeneffe in the bordering Limes; As wwhen Taylors cut out a Sute, which Italians doe aptly tearme according to that comparifon, Contornii taglienti; Nor any flatneffe within the Bodie of the Figure, which how it is done, we mult fetch from a higher Difcipline; For the Opticques teachvs. That a plaine, will appeare prominent, and (as it were) emboffed, ifthe Parts farthelt from the Axeltree or middle Beame of the Eye, fhalbe the moft Jbadowed. Becaufe in all Darkneffe, there is a kinde of Deepeneffe, But as in the Arte of perfwafion, one of the moft Fundamentall Precepts is; the concealement of Arte, Soc here likewife, the Sight mult be fweetly deceaued, by an infenfible paffage, from brighter colours

The Elements
lours, to dimmer, which Italian Artizans calle the middle Tinctures; That is, Nor as the robites, and yolkes of Egges lic in the Shell, with vifible diftiaction; Bur as when they are beaten, and blended, in a $D i / b$ : which is the neereft comparifon, that I can fuddenly conceiue.

Lafly, Affection is the Liuely RepreSentment, of any pafion whatfocuer, as if the Figures ftood not vpona Cloth or Boorde, but as if they were acting vpona Stage; Andheere, I muft remember, in truth with much marueile, a note, which I haue receiued, from excellent Artizans, that though Gladneffe, and Griefe, be oppofites in Nature; yet they are fuch Neighbours and Confiners in Arte, that the lealt touch of a Penfili, will tranflate a Crying, into a Laugbing Face; which Instance, befides diuers other, doth often reduce vato my memorie, that Ingenious Speculation, of the Cardinal Culamus extant in his Workes, touching the Coincidence of ex-

## of Architecture.

## extremes. And thus much of the foure

 Requifites, and Perfections in Pieture. In Sculpture likevvife, the Two firft are abfolutely neceffarie; The third impertinent; For Solide Figures neede no eleviation, by force of Lights, or /badoves; Thercfore in rhe Roome of this, wee may put (as hath beene before touched) a kinde of Tenderne $\beta$ e, by the Italians tearmed Morbide zza, wherein the Chifjell, I mult confeffe, hath more glory then the Penfll; that being fo hard an Instrument, and working vpon fo vnpliant ftuffe, can yet leauc Strokes of fogentle appearance.The Fourth, which is the expreffing of Affection (as farre as it doth depend. vpon the AEtivity, and Gesture of the Figure ) is as proper to the Caruer, as to the Painter; though Colours, no doubr, haue there in the greatelt Power; whereupon, perchance, did firlt grow with vs the Fa/bion of colouring, euen Regall Statues, which I mult take leaue to call

## 20 The Elements

an Englifh Barbarime.
Now in thefe fower Requiftes already rehearfed, it is firange to note, that no Artizan, hauing euer beene blamed for exceffe in any of the three laft; onely Truth (which fhould feeme the moft Imocent) hath fuffered fome Obiecti. on, and all Ages, hate yeelded fome one or two Artificers, fo prodigionfly exquifite, that they haue beene reputed too Naturall, in their Draughts; which vill well appeare, by a famous Paffage in Quintilian, touching the CbaraEters of the ancient Artizans, falling now fo aptly into my memory, that I mult needes tranflate ir, as in truth it may well deferuc.

The Place which Iintend, is extant in the laft Cbapter faue one of his whole Worke a beginning thus in Latine.

Primiguorum guidem opera non vetultatis modogratia vifendafant clari pictores fuiffe dicuntur $r_{2}$ Polygnotus atque Aglao-
phonoc. The

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The whole Paßage, in Engli/b ftanderth thus:

$T$He firf Painters of name, whofe Workes bee confiderable for any thing more then ondy Antiquitie, are faid to hauc beene Polygnotus, and Aglaophon ; whole bareColourings (hee meanes I thinke in wobite and blacke) hath euen yer fomany followers, that thofe rude and firf Elements, as it were of that, which within a while, became an Arte, are preferred, before the greatelt Painters that haue beene extant after them, out of a certaine Competition (as I conceive it) in point of Iudgement. After thefe; Zuxes and Parafus not farre diftant in age, both about the time of the PeloponefianW Warre, (for in Xenophon wee hauca Dialogue betweene Parafus and Socrates) did adde much to this Ante. Of which the first is faid, to have inuented the due difpofition of Ligbts atad Shadewes; $\mathrm{M}_{2}$ The

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## The Elements

The fecond, to haue more fubtilly examined, the truth of Lines in the Draugbt; for Zenxes did make Limbes, bigger then the life; deeming his Figures, thereby the more Aately and Maieflicall ; \& therein (as fome thinke) imitating Homer, whom the floute/t forme dorh pleafe, cuen in Women. On the other fide, Parafius did exactly limit al the Proportions fo, as they call him the Laiv.giuer ; becaufe in the Images of the Gods and of Heroicall Perjonages, others haue followed his Paternes like a Decree; But Picture did molt flourifh, about the daies of Pbillip and cuen to the Succeffours of Alexander; yet by fundry babilities; for Protogenes, did excell in Diligence; Pamphilus and Melanthius in due Proportion, Antipbilus in a Franke Facilitie; Theon of Samos, in Arength of Fantafe and conceiuing of Pa/sions ; Apelles, in Inuention, and Grace, whereof hee doth himfelfe molt Yaunte; Eupbranor, deferues admiration,

## of Arcbitecture. tion, that being in other excellent $/$ iu-

 dies, a principall Man, he was likewife a wondrous Artizan, both in Painting and Sculpture. The like difference we may oblerue among the Statuaries; for the workes of Calon and Fgefas were fomewhat $\beta$ iffe, like the Tu/can manner; Thofe of Calamis not done with fo cold Atroakes; And Myron'more tender then the former; a diligent Decency in Polycletus abouc orhers, to whom though the highelt prayfe bee atrributed by the moft, yer left he fhould goe free from exception, fome thinke hee wanted folemneffe; for as hemay perchance be layd to haue added a comely dimenfon to hurnane fhape, fomerwhat: aboue the tuutb; fo on the other fide, hee feened not to hauefully expreffed the Maiefy of the Gods: Moreouer, hee is fayd not to have medled willingly with the grauer age, as not aduenturing beyond /miootb cheekes: But thefe vertues that were wanting in Po M 3 licletus,
## 94 The Elements

 lycleths, werc fupplied by Pbidias and Alemenes, yer Pbidias was a better Artizan in the reprefenting of Gods, then of Men; aad in his workes of Iuorie, beyoud all emulation, euen though hee had left nothing behinde him, but his Minerua at Atbens, or the Olympian Iupiter in Eis, whofe Beautie feemes to haue added fomewhat, euen to the receiued Religion; the Maieftie of the Worke, as is were equalling the Deity. To Truth, they affirme Lyfppus and Praxiteles, to haue made che neereft approash : for Demetrius is therein reprehended, as rather exceeding then deficient, hauing beene a greater aymer at Likenes, then at Loudines.This is that witty Cenfure of the ancient Artizans, which Quintilian hath left vs, where the laft Cbaractar of Demetrius doth require a little Philofopbicall cxamination; How an Artificer, whole end is the imitation of Na tare, can bee too naturall; which likewife

## of A.Arbitecture.

wife in our dayes was either the faulc; or (to fpeake more gently) the too much perfection of Albert Durer, and perhapsallo of Michael Angelo da Buos naroti, betweene whom I haue heard noted by an ingenious Autizan, a prety nice difference, that the German did too much expreffe that which wass; and the Italian; that which floon!d be: Which feuere obferuation of Nature, by the one in her commoneft, and by the other in her abfolute/: Formes, muit needs prodirce in both a kinde of Rigidity, and confequently more naturalueffe then gracefulneffe: This is the cleereft reafon, why fome cxact Symmetrifts haue been blamed, for being too true, as neere as I can deliuer my conceit. And fo much touching the choyce of Ficture and Sculpture: The next is, the application of both, to the beautifying of Fabriques.

Firt therefore touching Pifture, there dochoccurre a very pertinent doubr,

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doubt, which hath beene paffedouer toolightly, not onely by fome Men, butby fome $\mathrm{Nations}^{2}$ namely, whecher this Orrament can wel become the $O$ ste fide of boufes, wherin the Germanes haue made fo litete fcruple, that their belt Townes are the molt painted, as Augusta and Norembergh. To decermine this queftion in a word: It is true, that a Story well fer out with a good Hand, will euery where take I Iudicious eye: But yet withal it is as true, that various colours on the Out-walles of Buildings, haue alwayes in them more Delight then Dignity : Therfore I would there admit no Paintings but in Blacke and White, nor cuen in that kinde any $F_{i-}$. gures (if the roomebe capable) vnder Nine or Ten foot high, which will rec quire no ordinary Artizan; becaufe the faults are more vifble then in fmall Defignes. In vnfigured paintings the noblelt is, the imitation of Marbles, \& of Architecture it Eelfe, as Arches, Treezes, Columnes,

## of CArchitecture. <br> 97

columnes, and the like.
Now for the Infide, heere growes anorher doubt, whether Grotefca (as the I:alians) or Antique worke (as wee call it) (hould be receiued, againft the expreffe authoritic of Vitrauius himfelfe, lib. 7. cap.5. where Pictura (faith hee) Fit eius, quode eft, (ell potest effe, excluding by this feuere definition, all Figures compoled of different $N$ Natures or Sexes; fo as a Syrene or a Centaure had beene intolerable in his eye: But in this wee mult take leaue to depart from our Mafter, \& the rather becaule he fpake out of his owne profefsion, allowing Painters (who haue cuer bin as little limited as Poets) a leffe foope in their imaginations, euenthen the grauelt Pbilojophers, who fometimes doe ferue themfelues of Inflances, that haue no Exiffence in Nature; as wee fee in Platoes Amphisbona, \& Arifotles HircoCeruus. And (to fettle this point) what was indeede more common and famiN liar.

98 The Elcments liar among the Romanes themfelues, then the Picture and Statue of Terminus, euen one of their Deities? which yet if we well confider, is but a piece of Gro$t e f c a ;$ I am for thefe reaions vnwilling to impourrifh that Art, though I could wifh fuch medlie and motlie Defignes, confined onely to the Ornament of Freezes, and Borders, their propereft place. As for other Storied Workes. vpon Walles, I doubt our Clime bee too yeelding and moif, for fuch Garni/b. ment; therefore leauing it to the Dwel. lers difcretion, according to the qual ${ }^{-}$ tie of his Seat, I will onely adde a caution or two, about the difpofing of Pictures within.

Firft, that no Roome bee furnihhed with too many, which in truth were a Surfec of Ormament, vnleffe they bee Galleries, or fome peculiar Repofitory for Rarities of Art .

Next, that the beft Pieces be placed not where there is the leaft, but where there

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 there are the feweft lights; therefore not onely Roomes windowed on both ends, which we call through-lighted; but with two or moe Windowes on the fame fide, are enemies to this $\Delta v t$; and fure it is, that no Painting can be feene in full Perfection but (as all Nature is illuminated) by a fingle Light.Thirdly, that in the placing there be fome carealfo taken, how the Painter did fland in the Working, which an intelligent Eye, will eafily difcouer, and that Pofure is the moft naturall; fo as Italian pieces will appeare beft in a Roome where the Windowes are high; becaufe they are commonly made to a defcending Light, which of all other doth fet off mens Faces in their trueft Spirit.

Laftly, that they bee as properly befowed for their quality, as frely for their grace: that is, chearefull Paintings in Feafting and Banquetting Roomes; Grayer Stories in Galleries, Land-chips, and

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\mathrm{N}_{2} \text { Bofcage, }
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## The Elements

Bofege, and fuch wilde workes in open Tarraces, or in Summer boufes (as we call them) and the like.

And thus much of picture, which let mee cicfe with this Note; that though my former Difcourfe may ferue perchance for fome reafonable leading in the choyce of fuch delights; yet let no manh hope by fuch a $\beta$ peckila. tiue crudition, to difcerne the Maferly and Mysterious touches of Art, but an Artizan himfelfe; to whom therefore we mult leaue the prerogatiue, to cenfure the manner and handling, as hee himfelfe muft likewife leaue fome points, perchance of no leffe valueto others; as for example, whether the Story be rightly reprefented the Figures in true action, the Perfons futed to their feuerall qualities, the affections proper. and $\beta$ trong, and fuch like obleruations.

Now for Sculpture, I mutt likewife begin with a Controuerfe, as before (falling into this Place) or let mee rather

## of CArchitecture. <br> 10:

 ther call ir a very mecre Fancie, Itrangely taken by palladio, who hauing noted in an old Arch or two at $V$ crona, fome part of the Materials already cut in fine Formes, and fome ronpolifhed, doth conclude (according to his Logicke) vpon this particular, that the Anncients did leaue the outward Face, of their Marbles or Free.Stone, withour any Sculpture, till they were laid, and Cimented, in the bodic of the Building; For which likewife hee findeth a reafon (as many doe now and then very wittily, euen before the thing it felfe be true ) that the Materialls being left rough were more managable in the Mafons hand, then if ftiey had beene / mootb; And that fo the fides might bee laide together the more exactly; which Conceit, once taken hee feemes to haue farther imprinted, by marking in certane Storied Sculptures, of oulde time how precifely theparts and Lines of the Figures that paffe from one Stone102

## The Elements

to another, doe meete; which hee thinkes could hardly fall out fo right, (forgetting while hef peake of auncient things, the auncient Diligence) vnleffe they had beene cut, after the ioyning of the Materials, But all thefe Inducements, cannot counteruaile the fole $I n$ conuenience of /baking, and Difoynting the Commif Jures with fo many Strokes of the ( $\mathrm{h} i \mathrm{f}$ )ell, befides an Incommodious Working on Scaffolds; efpecially hauing no teftimonie, to confirme ir, that I haue yet feene among the records of Art ; Nay, it is indeede rather true, that they didfouare, and Carue, and Polijh, their Stone and MIarble Workes, cuen in the very Caue of the Quarrie, before it wvas hardened by open Aire; But (to leaue di(putation) I will fet downe a few Pofitiue notes, for the placing of Sculpture ; becaufe the chufing hath beene handled before.

That firft of all, ic bee not too gemerall and abundant, which would make

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\text { of Architecture. } 103
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a Houfe, looke like a Cabb:net, \& in this point, ssorall Philofophie which temperech Eancies, is the Superintendent of Art.

That efpecially, There bee a due moderation of this Ornament in the firlt approach ; where our Authors doe more commend, ( I meane about the Principall Entrance) A Dorique, then a Corintbian garnifhment; So as ifthe great Doore, be Arched, with forme braue Head, cut in fine Stone or Marble for the Keie of the Arch, and two Incumbent Figures gracefully leaning vpon it, towards one another, as if they meant to conferre ; I hould thinke this a fufficiententertainement, for the firf Reception, of any Iudicious Sight, which I could wifh feconded, with two grear ftanding Statues on each fide of a paued way that fhall leade vp into the Fabrique, So as the Bebolder at the firft entrance, may paffe his Eye betweene them.

That the Nices, if they containe Fi-

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gures of white Stone or Marble, bee not coloured in their Concanitie too blacke, For though Contraria iuxta fe pofita magis illucefcunt (by an olde Rule) yet it hath beene fubtilly, and indeede truely noted that our $S$ ggbt, is not well contented, with thofe fudden departments, from one extreame, to another, Therefore let them haue, rather a Duski/b Tincture, then an abfolute blacke.

That fine and delicate Sculptures, be helped with Neerenes, and Groffe with difance; which was well feene in the olde controuerfie, betweene Phidias and Alcmenes about the Statue of Venus: wherein the Firlt did hew difcretion, and fauelabour, becaufe the Worke was to bee viewed at good Height, which did drowne the fweete and diligent ftrokes of his Aduerfarie: A famous emulation of two principall Artizans, celebratedeuen by the Grecke Poets.

That in the placiag of ftanding Fi

## of Architecture. 105

gares aloft, wee mult fet them in a $P o$ flure fomevelat bowing forward; bebecaufe(faith our Matter, lib.3. . cap. 3 . out of a better $\operatorname{Art}$ then his owne) the roifuall beame of our eye, extended to the Head of the faid Figures, being longer then to the Foote, mult neceffarily make that part appeare farther; fo as to reduce it to an erect or vpright poStition, there mult be allowed a due aduantage of/tooping towards vs; which Albert Durer hath exactly taught, in his fore mentioned Geometry. . Our Vitruuius calleth this affection in the Eye, a refupination of the Figure : For which word (being in truth his owvinc, forought I know) wee are almoft as much beholding to him, as for the obferuation it felfe : And let thus much fummarily fuffice, touching the choice and vee of thefe adorning Arts. For to (peake of garnifhing the $\mathrm{Fa}_{\mathrm{a}}$ brique with a Row of erected Statues, about the Cornice of euery Contignation
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## 106 The Elements

 or Story, were difcourfe more proper for Achens or Rome, in the time of theirtrue greatneffe, when (as Plinie recordeth of his own Age) there were neere as many carued Images, as liuing Men; likea noble contention, euen in point of Fertility, betweene Art and Nature; which paffage doch not onely argue an infinite abundance, both of Artizans and Materials; but likewile of Magnificent and Majesticall defires, in euery common perfon of thofe times; more or leffe according to their Forsunes. And true it is indeed that the Marble Monuments \& Memories of well deferuing Men, wherewith the very high wayes were -frewed on each fide was not a bare and tranfitory entertainement of the $E y e$, or onely a gentle deception of Time, to the Trauailer: But had alfo a fecret and ftrong Infuence, cuen into the aduancement of the Monarchie, by continuall reprefentacion of vertuous examples; fo as in that
## of Arcbitecture. 107

that point $A R T$ became a piece of State.

Now as I haue before fubordinated PiEtwre, and Sculpture to Arcbitecture, as their Miftrefle; fo there are certaine inferiour $A_{\text {RTs }}$ likewife fubordinate to them : As vnder Picture, MoJaique;vnder Sculpture, Plastique ; which two, I onely nominate, as the fitteft to garnifh Fabriques.

Mo/aique is a kinde of Painting in fmall Pebbles, Cookkles and Sbells of fundry colours ; and of late dayes likewife with pieces of Glaffe, figured at pleafure; an Ornament in trueth, of much beauty, and long life, but of moft vfe in pauements and Floorings.

Plastique is not onely vnder Sculptare, but in deed very Sculpture it felfe: but with this difference ; that the Plafterer doth make his Figures by Addition, and the Caruer by Subfraction, whereupon Micbael Angelo was wont to fay fomewhat pleafancly: That Sculp. $\mathrm{O}_{2}$ ture
tare was nothing but $A$ purgation of $f$ uperfluities. For take awvay from a piece of wood, or fonc, all that is fuperfluous, and the remainder is the intended $\mathrm{Fi}_{\mathrm{i}}$ gure. Of this Plastique Art, the chiefe vfe with vs is in the gracefull fretting of roofes: but the Italians applie it, rothe manteling of Chimneys, with great Figures. A cheape piece of Magnifo cence, and as durable almoft within doores, as harder Forms in the weather. And here shough it bee alitle excurinon, I cannot paffe vinremembred a gaine, their manner of difguifing the haftes of Cbimneys in various fahions, whereof the nobleft is the Pyramidall: becing in trueth a piece of polite and ciuill difcretion, to conuert euen the conduits of foote and fmoake, into $\mathrm{O}_{\mathrm{r}}$. naments; whereof I haue hitherto fpoken as farre as may concerne the Bodie of the Building.
Now thereare Ornaments alfo without, as Gardens, Fountaines, Groues, Conferua.

## of Architecture. ion

servatories of rare Beads, Birds, and FoShes. Of which ignobler kind of Creamtres, Weeought not (Faith our greatelt *Matter among the Jones of Nature) * Arif.tib. $r$ childilbly to deflije the Contemplation; for cap. 5 . ie in all things that are naturall, there is ene part. Auras. fometbing, that is admirable. Of thee vern ruseaces externall delights, a word or two. Lenient tan

Firft, I mull note a certain contra- mace pos wis rietie between building and gardening: puameis infin For as Fabriques should bee regular, to Gardens Should bee irregular, or at leaft catt into a very wilde Regularities. To exemplifie my conceit; I have ferne a Garden ( for the manes perchance ins comparable) into which the firf Acceffe was a high walk like a Tarrace, from whence might bee taken a gene. rall view of the whole plot below; but rather in a delightfull confufion, then with any plane diftinction of the pieces. From this the Beholder defending many ftps, was afterwards conveyed againe, by feuerall mountings and ra-

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## 110 The Elements

lings, to various entertainements of his fent, and fight: which I fhall not neede to defrribe ( for that were poeticall) ler me onely note this, that eucry one of thefe diuerfities, was as if hee had beene Magically tranfported into a new Garden.
But though other Countreys have more benefite of Sunne then wee, and thereby more properly tyed to contemplate this delight; yet haue I feene in ourowne, adelicate and diligent $c u$ ${ }^{3}$ rioffitie, furely withour parallel among foreigne Nations : Namely, in the Garden of Sir Henry Fan/baw, at his feat in Ware-Parke, where I wel remember, hee did fo precifely examine the tin cefures, and feafons of his fowres, that in their fetting, the invoardeft of thofe which were to come vp at the fame time, hould be alwayes a little darker then the outmoft, and fo ferue them for a kinde of gentle phadow, like a piece not of Aature, but of Arte : which men-

## of CArcbitecture.

tion (incident to this place) I haue wvillingly made of his Name, for the deare friend/bip that was long betwveene vs: though I mult confeffe, with much wrong to his other reverues; which de* ferue a more folide memoriall, then among thefe vacant obleruations. So much of Gardens.
Fountaines are figured, or only plaine Water'd-workes: Of either of which, I will defrribe a matchleffe patterne.

The firlt, done by the famous hand of Michael Angelo da Buonaroti, in the figure of a fturdie rooman, wadbing and minding of linnen cloches; in which Acte, fhee mrings out the water that made the Fountaine; which was a gracefull and naturall conceit in the Artificer, implying this rule; That all defignes of this kind, Thould be proper.

The other doth merite fome larger expreffió; There went a long, ftraight, moffie walke of competent breadth, greene, and foft vinder foor, lifted on both

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both fides with an Aqueduct of white ftone, breaft-high, which had a hollow cbannell on the top, where rannea prety trickling ftreame; on the edge whereof, were couched very thicke all along, certaine fmall pipes of lead, in little holes ; fo neatly, that they could not be well perceiued, till by the turning of a cocke, they did fprout ouer interchangeably from fide to fide, aboue mans height, in forme of Arches, without any interfection or meeting aloft, becaufe the pipes were not exactly oppofite; fo as che Beholder, befides that, which was fluent in the Aque. ducts on borh hands in his view, did walke as it were, vnder a continuall bowre or Hemisphere of water, without any drop falling on him. An inuention for refrefhment, furely farre excelling all the Alexandrian delicacies, and $P$ neumatiques of Hero.

Groues, and artificiall deuices vnder ground, are of great expence, and little dignitie;

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 dignitie; which for my part I could wifh conuerted here into thofe Crypteris, whereof mention is made among the curious prouifions of Ticho Braghe the Danilb Ptolemie, as I may well call him : which were deepe concaues in gardens, where the farres might be obferued euen at noone. For (by the way)to thinke that the brightneffe of the Sunnes body aboue, doth drowne our difcerning of the leffer lights, is a popularerrour; the fole impediment being that luftre, which by reffection, doth fpread about vs, from the face of the Earth; fo as the caues before touched, may well conduce, not to a delicious, but to a learned pleafurc.In Auiaries of wire, to kecpe Birdes of all forts, the Italians (chough no waltfull Nation) doe in fome places befow valt expence; including great Icope of ground, varietic of bufhes, tries of good heighr, running waters, and fometimes a Stoue annexed, to conP temper

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temper the Aive in Wiinter. So as thofe Cbantereffes, vnleffe they be fuch as perhaps delight as much in their wing, as in theirvoice, may liue long, among fo good prouifions and roome, before they know that they are prifoners; reducing often to my memory, that con'ceit of the Romane Stoicke, who in comparifon of his ownefree contemplations, did thinke diuers great and fplendent fortunes of his time, little more then sommodious captiuities.
Concerning Ponds of pleafure neere the habitation; I will referre my felfe to a graue Author of our owne (though

- Diरngis cundsher. more illuftrious by his other* worke) namely Saríburienfis de Pijfinâ.

And here I will end the fecond part rouching Ornaments, both within, and without the Fabrique.
Nowas almolt all thofe, which have deliuered the Elements of Logicke, doe pfually conclude, with a Chapter touching Methode; fo $I$ am hecte feized with

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Roomes of the Fabrique, which fuddenly where it is taketh cuery Bebolder, by the fecret power of Proportion: wherein let mee onely note this, That though the leaft error or offence that can be committed againft figbt, is exceffe of height; yet that fault is no where of fmall importance, becaufe it is the greateft offence againft the Purfe.

Symmetria is the conueniencie that runneth betweene the Parts and the VV bole, whereof I haue formerly [poken.

Decor is the kecping of a due $\mathbb{R}_{l-}$ Jpect betweene the Inbabitant, and the Habitation. Whence Palladius did conclude, that the principall Entrance was neuer to be regulated by any certaine Dimenfons; but by the dignity of the Mafter; yet to exceede rather, in the more, then in the leffe, is a marke of Generofity, and may alwayes be excufed with fome noble Embleme, or Infcripti-

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on, as that of the Conte di Beuilacqua, o: uer his large Gate at $V$ erona, where perchance had beene committed a little Disproportion.

Patet Ianua: Cor magis.
And hecte likewife I muft remem ber our euer memorable Sir Pbilip Sidney, (whole VVit was in truth the very rule of Conigruity) who well knowing that Beftius (as hee had painted the State of his Minde) did rather want fome extraordinary Formes to entertaine his Fancie, then roome for Courtiers; was contented to place him in a Star-like Lodge; which otherwife in feuere Iudgement of Avt had beene an incommodious Figure.

Diffributio is that vefull Cajing of all Roomes for Office, Entertainement, or Pleafure, which I hauc handled before at more length, then any other Piece.

Thefe are the Foure Fleads which eueryman hould runine oucr, before

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 hee paffe any determinate Cenlure, vpon the Works that he fhal view, wherewith I will clofe this laft part, touching Ornaments. Againft which (mee thinkes) I heare an Obiection, ecuen from fome well-meaning man; That thefe delightfull Craftes, may be diuers wayes ill applied in a Land. I muft confeffe indeede, there may bee a La/ciuious, and there may belikewife a fuperfititious vfe, both of Picture and of Sculpture: To which poffibility of mifapplication, not onely thefe Semi-liberall Arts arefubiect; but cuen the highelt per. fections, and endoroments of Nature. As Beautie in a light woman, Eloquence in a mutinous Man, Refolution in an Affafinate, Prudent objervation of houres \& humours, in a corfupt Courtier, Sharpeneffe of wit and argument in a feducing Scholler; and the like. Nay, finally let mee aske, what $A_{R T}$ can be more pernicious, then cuen Religionitfelfe, if it Whfe be con-
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 uerted into an Inftrument of ART : Therefore, Ab abuti ad non roti, negablur coinfequentia.3) Thus hauing flitched in fome fort together, thefe Animaduerfions, touching Architecture, and the Ornaments thereof; I now feele that contemplatiuc fpirits are as refleffe as aEtiure; for doubting with my felfe, (as all weakeneffe is icalous ) that I may be thought to haue fent my poore ob: feruation abroad, about nothing but Stone and Timber, and fuch Rubbage; I am thercby led into an immodeltie of proclaiming apotherWorke, which I haue long deuoted to the fervice of my Countrey Namely, $A$ Pbilofophia call Sursey of Education, which is indeed, a fecond Building, or repairing of Na ture, and, as Innay tearme it, a kinde of Morall Architecturec; whereof fuch Notes as thaue taken in my foreigne
tranf-

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tranfurfions or abodes, I hope to vtter without publike offence, though fill with the freedome of a plaine Kentifh man. In the meane while I haue let thefe other Gleanings flie abroad, like the Bird out of the Arke, to difoouer what footing may bee, for that which fhall follow.

FINIS.

## Errata.

Pag.6.lin,8. for as, reade is. Pag.48. lix.2. for cuacatim, reade cuncatim. Pag.77. lin.6. for (wo, read (who. Pag.80. lim.9. for wifely, reade wifh. Pag. 88.1 lin. s9. omitted in the Margin the verfes following, touching the coincidence of extreame affections $;$ reprefented by Homer in the perfon of Hectors wife ;as Painters and Poets haue alwaies had a kind of congeniality.
$1 A 1$ A $\triangle$. $\}$.


 Shee rooke her fonne into her armés wee. pingly laughing.


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[^0]:    $K$ and

