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**Climatic Landscapes and Interior Weather:  
An Enquiry into Climate and Atmosphere  
in the Architecture of the Late Renaissance**

**Summary**

Contemporary architectural discourse in the era of the anthropocene is marked by an increasing awareness of the fragility of our climatic environment. Disciplinary responses are bifurcated: Some promote to solve problems by building sustainably, while others in an a-political, almost romantic turn inwards advocate for the construction of architectural atmospheres that stress the bodily experience of space.

My work aims for a richer stance towards architectural climate through a look back in history, and I propose the concepts of Climatic Landscape and Interior Weather to do this through a contemporary lens. The work is located in the Late Renaissance, a period at the cusp of what has later been termed the „Scientific Revolution“ when parallel regimes of climate knowledge were still interwoven, fed by sources from mythology, cosmology, ancient meteorology, agriculture, and natural history. By comparing three villas, all located in the Italian Veneto, I work on bringing out their architects' approaches towards intervening in the climatic landscape and creating dynamic interior weather. Villa Aeolia (1560) is a small pavillion with a unique air-conditioning system that connects the building to a cavernous landscape by a network of subterranean ventiducts. Its interior climate is pushed into our awareness by an indoor „fountain“ of wind. In Villa La Rotonda (around 1569), Andrea Palladio provides healthy climate conditions by a functional approach that was newly invigorated when his successor Vincenzo Scamozzi finished the building. Scamozzi himself explored questions of climate and atmosphere in La Rocca Pisana (1576) with surprising sophistication. While climate is firmly tied to *utilitas* in the architectural theory of the period, these buildings oscillate in their own distinct ways between function and aesthetics, climate and atmosphere.

My research is performed through braiding drawing and writing practices into one final composition. Informed by historical research, I produce visual objects that reflect on the buildings and their relationship to different regimes of climate knowledge. They are accompanied by a written „treatise“ on architecture and climate in the Renaissance.

## Paper

Climate and atmosphere have emerged as two key issues within the architectural discourse in the era of the anthropocene. There is an unsettling awareness about the impact of our human actions on the global climate; an urgency felt to radically change the relationship between us and the world we inhabit. Acting sustainably has become the ethical imperative for architects founded on the belief that saving the climate means saving ourselves. At the same time, another strand of spatially engaging climate is taking shape. In an a-political, almost romantic turn inwards architects advocate for „atmosphere“ as the new leitmotif for design. They conceive space by defining it through its climatic conditions and aim at creating spatial experiences through the body – sometimes individually, sometimes collectively.<sup>1</sup> Different flavors are attached to those stances. While the latter smacks of sweet surrender to a sensual experience, the former is a matter of life and death, demanding immediate action. Both come with feelings of uncertainty. Both push to the foreground what has been laying latent for long: the climatic space.<sup>2</sup>

My work contributes to this discourse with a stance that has been missing so far: a historical perspective. By studying architectural history through the climatic lens, I seek to explore ways of engaging with the challenges of the anthropocene that go beyond the strategies outlined above. The methods of research I have chosen for this work are drawing and writing. Both practices are informed by the study of historical drawings and documents and most importantly, the climate world of the buildings themselves.

I understand climate and atmosphere spatially and meteorologically. Climate is defined as an ecology of air, water and soil whose dynamics are governed by variations in temperature.<sup>3</sup> Atmospheres are the bodily awareness of specific climatic states.<sup>4</sup> The human body is the prism through which the atmosphere of a climatic space may become tangible and readable.

Climatic Landscape and Interior Weather will be the two concepts I offer as contribution to the current discourse. They have proven to be instrumental and generative over the course of my studies. Climatic Landscape builds on Denis Cosgrove's analysis of the

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1 See for example the work and writings by Philipp Rahm, Peter Zumthor and Jürgen Weidinger.

2 An assertion first made by Peter Sloterdijk and followed up by Bruno Latour. In his book *Terror from the Air* Sloterdijk claims that the awareness of climate and atmosphere – or put in his terms: the „explication of atmosphere“ – is a project of the 20th century. Bruno Latour extends the argument to today's climate change discourse: „Air, water, land, all of those were present before in the background: now they are [explicated] because we slowly come to realize that they might disappear – and we with them.“ Sloterdijk, Peter, Amy Patton, and Steve Corcoran. *Terror from the Air*. Semiotext(e) Foreign Agents Series. Los Angeles : Cambridge, Mass 2009. Latour, Bruno. „A Plea for the Earthly Sciences,“ keynote lecture at the annual meeting of the British Sociological Association (Apr. 2007),

3 In building my own definitions on climate and atmospheres, I am indebted to the recent work of Lydia Barnett, to Aristotle's ancient definition of the four elements as well as to modern physics.

4 I use a narrow definition of atmosphere, excluding Walter Benjamin's aura of the artwork, Hermann Schmitz's and Gernot Böhme's phenomenological approach or the geological concept as the earth's atmosphere. For more on definitions of atmosphere, see Griffero, Tonino. *Atmospheres: Aesthetics of Emotional Spaces*. Farnham Surrey, England ; Burlington, VT: Ashgate Pub, 2014.

Palladian landscape in which he shows that contrary to the impression one might get from Palladio's illustrations in the treatise (he did not draw the landscape), his works were firmly embedded within the agricultural landscape of the Veneto. The term Climatic Landscape allows me to push this work further by understanding climate in its visible and invisible entirety (a problem particularly when drawing).<sup>5</sup> Rather than thinking of a relationship between two entities – architecture and environment/landscape/climate – it has allowed me to work and draw along a climatic panorama which encompasses it all: air, air flow, water, natural and man-made landscape, and architectural space.

The second term, Interior Weather, has emerged while analyzing the different flavors of climate inside the buildings. It alludes to indoor climates that go beyond the familiar definition as constant comfort-providing (and thus latent) climatic conditions. Interior weather allows for a dynamic state that pushes the bodily experience of designed climatic conditions to the foreground, may it be in joyful or harmful ways.

The scope of the research has been narrowed to three villas built in the Italian Veneto region during the Late Renaissance: Villa Aeolia in Costozza, built in 1560 by its owner, Francesco Trento, Villa Almerico-Capra also called La Rotonda and arguably Andrea Palladio's most famous building, built around 1569 near Vicenza, and La Rocca Pisana near Lonigo, built in 1576 by Vincenzo Scamozzi.

A couple of thoughts on the choice of period, buildings and architects: The Late Renaissance is regarded as an era at the cusp of what we call today the Scientific Revolution, where parallel knowledge worlds existed and intersected, before the domination of the Scientific method pushed them to the background. Different climate regimes were fed, for example, by sources from cosmology, mythology, ancient meteorology, agriculture, and natural history. This polyphony of climate thinking offers a fertile ground for teasing out new ideas about engaging climate spatially.

The buildings are located in the Veneto, a temperate region of Italy which is well-known for its villa culture during the Renaissance. *Villeggiatura* propagated healthy country living in clean air with moderate exercise. On the villa estates architects enjoyed a greater freedom to design in concert with climate. Unlike in urban settings they were less restrained in choosing the most healthy location on the site in terms of moisture and air flow, orienting the building according to wind directions and the movement of the sun and laying out the floor plans after the seasons. Thus, studying villas should offer greater insights into their architects' awareness and design decisions on climate.

The Veneto in second half of the 16<sup>th</sup> century was also a place and time of wide-ranging and well-documented architectural activity, both in terms of practice and theory. Palladio's and Scamozzi's extensive work on public and private buildings was

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5 Cosgrove, Denis. *The Palladian Landscape: Geographical Change and Its Cultural Representations in Sixteenth-Century Italy*. Leicester: Leicester University Press, 1993.

accompanied by the publication of their theoretical writings, Palladio's *I Quattro Libri dell'Architettura*, and Scamozzi's *L'Idea dell'architettura Universale*. Considered today as crucial parts of the canon of Western architectural knowledge, the reception of these treatises has been mainly focussed on visual principles of design like symmetry, proportion and the proper use of the orders. However, on a more latent level they address questions of climate. Tracing these theoretical considerations in the built work is one goal of my work.

In terms of the buildings themselves, Villa Aeolia in Costozza is the most significant one for our purposes. Rather a small pavillion than a villa, it is part of a complex of six villas whose basements are connected to nearby caves by a vast system of subterranean ventiducts. This wide-spread air-conditioning system allows cool air from the caves to flow through ventiducts and stone grates in the basement floor upwards to the central halls. Both Palladio and Scamozzi mention the way the Costozza villas are embedded in the climatic landscape in their treatises.<sup>6</sup> So what could be more interesting than to explore whether, and if yes, how this knowledge is reflected in their own works? I chose *La Rotonda* and *La Rocca Pisana* as case studies since they feature similar floor grates for ventilation. The grates serve as markers indicating deliberate moves by the architects to modify the interior climate.<sup>7</sup>

Based on the case studies, my research is guided by the following questions: What is the relationship between climate, atmosphere and architecture in the Late Renaissance – and more narrowly, what does this relationship look like in the case studies? What does tracing the relationship between the architects' writings and their buildings convey about their personal stance on climate in architecture?

Having today's discourse on climate and atmosphere in mind, I also explore questions about the correlation between past and present climate approaches: What were architectural assumptions about human interactions with climate then? Were they thought of as responsive, moderating, interventionist? Were there instances that suggest an awareness of or even unease about the impact of human intervention? What did change of (interior) climate mean then? (In general, the era is interpreted to be one of optimistic belief in the human domination over nature paired with a fear of natural catastrophes which were believed to be retributions from a wrathful God.) And in regards to architectural atmospheres: Can the case studies be interpreted within the contemporary atmospherical framework? This would mean that the interventions were not purely intended to provide comfort, but also – or instead? – followed an aesthetic imperative.

Vernacular architecture has developed its distinct local responses to climate by lessons learned from observing the weather, seasons and climate. Architectural treatises stand on the shoulders of this vernacular knowledge when, for example, Vitruvius frames climate

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6 Book I, Ch. 27. Palladio, Andrea. *The Four Books on Architecture*. Cambridge, Mass: The MIT Press, 1997 and Book 3, Ch. 24. Scamozzi, Vincenzo. *L'idea della architettura universale*. Venetiis: Expensis auctoris: Per Giorgio Valentino 1615.

7 Palladio has used floor grates for ventilation purposes in several buildings like Villa Poiana in Poiana Maggiore, Villa Trissino a Meledo or Palazzo Barbarano in Vicenza.

in terms of healthy air movement, comfortable temperature, or seasonal changes.<sup>8</sup> Within his triad of *utilitas*, *firmitas* and *venustas*, Vitruvius locates the issue in *utilitas*, i.e. the functional and utilitarian considerations of architecture. Architects find proper responses to the climate, inhabitants come to an arrangement with it.

Francesco Trento, the owner-architect of Aeolia, positions himself outside of this tradition. Unlike the other villas in the complex which use the air-conditioning system purely for comfort purposes, in Aeolia, Trento elevates air to a material for aesthetic purposes and air flow to an experience for bodily consumption. Following the tradition of the water fountain as a pleasure feature in the Italian garden, Trento engineers an indoor fountain of air in the central hall whose overly strong air flow makes it the main attraction of the building. We experience its interior weather in all its force. Fitting frescoes and inscriptions amplify the effect as well as the building's name. Aeolia is named after Aeolus, the Keeper of the Winds in Greek mythology, who held them captive on the island Aeolia, indicating that the pavillon's sole purpose circles around taming and experiencing the winds .

Trento's focus on aesthetic experience – more sensually than visually – is acknowledged and praised by Palladio, but regardless, he does not follow Trento's example in the Rotonda.<sup>9</sup> He remains in the functional realm and embeds the building in the climatic landscape by situating it on a hill and orienting it properly to avoid harmful winds. His application of an ancient floor grate for ventilation seems half-hearted since the design of the grate is not well-suited for channelling enough air flow. The voids in the grate are simply too small. Palladio's aesthetic considerations are focussed on views, symmetry and proportions; interior climate resides in the background.

Scamozzi criticizes Aeolia's winds as too violent and harmful and offers an alternative approach in La Rocca Pisana.<sup>10</sup> In contrast to the focus on views in the Rotonda,<sup>11</sup> being in La Rocca Pisana becomes an inward experience. One feels the breeze and becomes aware of one's own body. Scamozzi designed the air flow by putting a big floor grate in the floor of the main hall, opening up the roof and adding four Serlianas on each side

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<sup>8</sup> Book I, Ch. 4, Book 6, Ch. 1 and 4. Vitruvius Pollio, and M. H Morgan. *Vitruvius: The Ten Books on Architecture*. New York: Dover Publications, 1960.

<sup>9</sup> Book I, Ch. 27. Palladio, Andrea. *The Four Books on Architecture*. Cambridge, Mass: The MIT Press, 1997.

<sup>10</sup> Book 3, Ch. 24. Scamozzi, Vincenzo. *L'idea della architettura universale*. Venetiis: Expensis auctoris: Per Giorgio Valentino 1615.

<sup>11</sup> Book II, Ch. 3.

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