

INTRODUCTION

E.1. AN ACCOUNT OF THE SUBJECT

- E.1.1. What are intermediate spaces?
- E.1.2. A surprise in architecture
- E.1.3. Why an environmental point of view?

E.2. INITIAL HYPOTHESIS

- E.2.1. A doubt about comfort

E.3. AIMS

- E.3.1. ... work to play with
- E.3.2. Structure of the study

E.1 AN ACCOUNT OF THE SUBJECT

E.1.1. What are intermediate spaces?

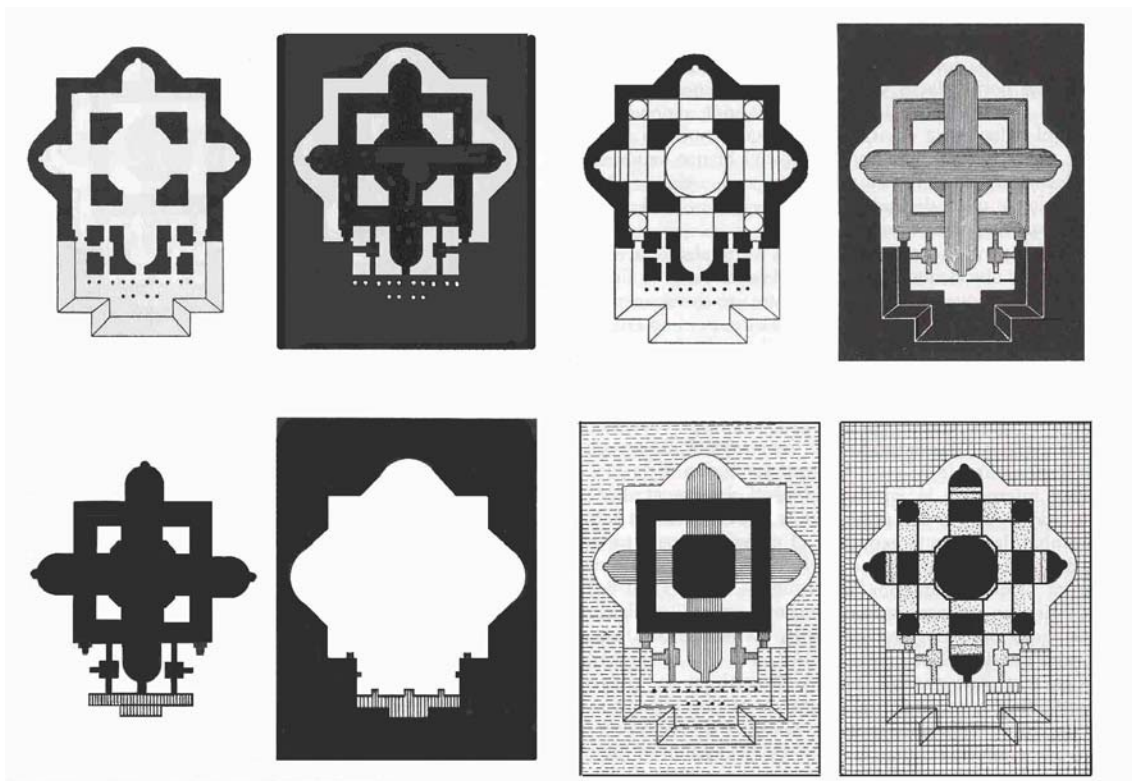
Architecture is frequently less clear, neat and rational than theoreticians would have us believe. There are spaces in architecture that cannot be classified as either internal or external and whose existence cannot be explained in terms of any precise or specific use. We find these spaces throughout the history of architecture: they are always situated between the architectural space that we define as interior and the exterior world, between the interior atmosphere and the exterior atmosphere, and they prevent us from ever fully defining the limits between inside and out.

Their existence is enduring, both in terms of time and across cultures. Even today they are still there before us, in their mocking insolence, taunting us because of the fact that they are hard for us to appreciate because we do not know enough about them.

They are adaptable spaces, which makes them playful or stately, domestic or public, agreeable or distressing, well-proportioned or disorderly. Even so, we want them because they are rather like ourselves—because we, ourselves, are them. We domesticate them for a specific role and then they catch us unawares because they can do things that we have not taught them.

In our activities as human beings, we try hard to analyse, classify and control our environment, but there are moments when this is not easy because we, too, are the environment and we are unable to look at the world from both inside and outside at once. This, too, is what intermediate spaces do: they look at interior architectural space and the exterior world and are simultaneously part of both.

If we were to represent the inner and outer environments in the same way that public and private spaces are represented—as a positive-negative image where the white surfaces represent the building and the black surfaces the exterior space—we would have to envisage some grey areas since we cannot clearly define whether they belong to the internal or external environment. These grey areas that keep appearing as a blurring of the line that separates black and white are intermediate spaces.



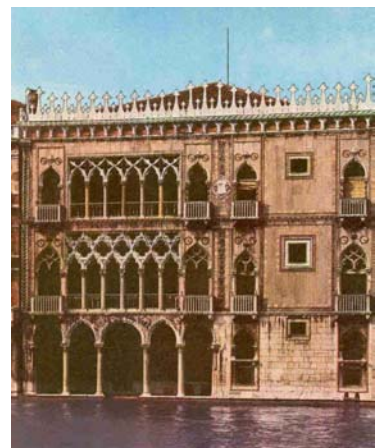
*Basilica de Sant Pere del Vaticà.
Anàlisi de l'espai proposada per Bruno Zevi a "Saber ver la arquitectura"*

E.1.2. A surprise in architecture

While these spaces may not have any specific use, they are required to fulfil a function of transition between the external area and the internal, constructed environment. Yet, even if they only had this function—which is complex in itself—we would find them constantly and repeatedly in the same places, both in architectural projects and in different parts of the world.

The surprise they have for us is that we find them in such a diverse array of places, in overall terms. They appear in the architecture of primitive civilisations and, today, in our own homes and the neighbour's as well; in the baroque and modern movements; in the single-family home and public buildings; in humid and dry climates; in simple dwellings and palaces; in the developed and developing worlds.

In the internal expression of architecture and in their external appearance, it is these spaces that best reveal how buildings' users wish them to be contemplated. Since they are at once public and private spaces, they enable the user's individuality to be expressed but without privacy losing its control. This, then, is how they become what we might call *representative spaces*, both of their architecture and their inhabitants.



To demonstrate the richness of these spaces and the values associated with them, both environmental and symbolic, this study proposes a closer look at their function in architecture.

E.1.3. Why an environmental point of view?

This study aims to analyse the characteristics of these intermediate spaces in an attempt to understand what it is that makes them such a positive element in architecture as a whole and so efficient in terms of user comfort.

Though an analysis of this type can be carried out from very different points of view—historical, construction, formal or functional—this study proposes that one consider intermediate space from a mainly environmental point of view, accepting from the outset that this is nothing more than a partial view of the reality of architecture and that its other aspects should also be dealt with in greater depth.

However, even though the authors' take on these spaces is based on understanding **these spaces' physical environment** and the **sensation of comfort their users perceive**, the intention here is not to analyse the "energy environment" in total abstraction from the architectural context because, generally speaking, it would seem that isolating individual architectural components would risk divesting them of sense.



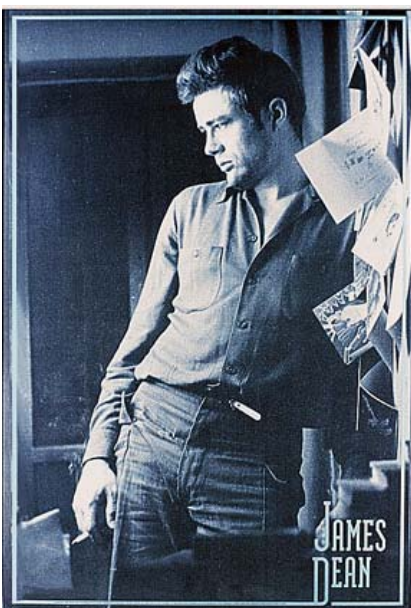
E.2. INITIAL HYPOTHESIS

E.2.1. A doubt about comfort

Since the very earliest times, human beings have sought refuge from the elements and, if they could not find it, they constructed it. This fact, among all the possible analyses one might make in pinpointing the birth of the art of building, is, perhaps, “one” origin of architecture: protection against the climate, animals and other people. A preliminary understanding of the question of comfort generally starts with this fact and, while it may seem very simple, the moment one attempts to establish limits or values, the exercise becomes complicated.

What does *comfort* really mean in reference to the constructed environments and how might this comfort be quantified? What makes a space comfortable? The constructed environment is made up of material and energy and therefore requires comfort in terms of both dimensions and energy. However, this study is mainly focussed on the domain of energy.

The most important question is this: where does comfort, so sought-after, fit into the hierarchy of our preferences?

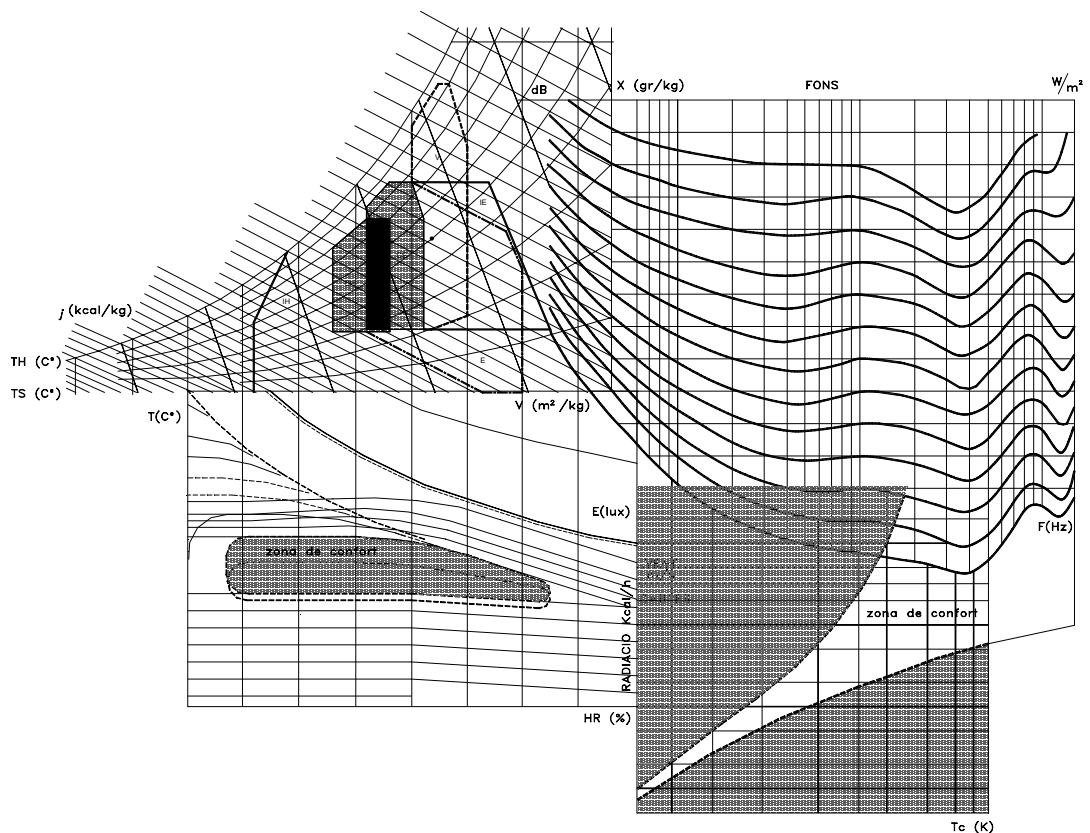


(“This frankly uncomfortable design is of such beauty and is so erotic in men and women that it has become a symbol that demolishes borders, political regimes and social classes, even invading the rural world. This has happened because humanity aspires more to beauty or sex or religion—supposing that they are not the same thing—than to what is comfortable, although hardly anyone is willing to recognise it.”)¹

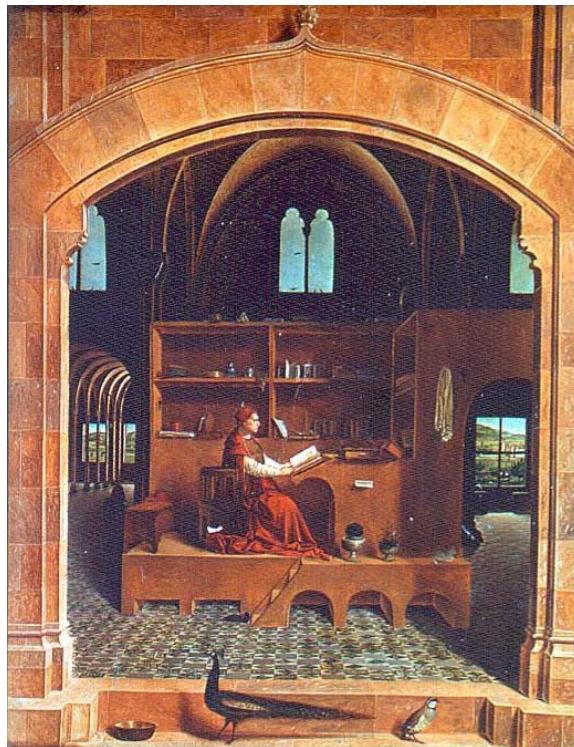
¹ Oscar Tusquets. *Más que discutible*. 1994. (p.124-125), referring to jeans.

Such questions constitute a major part of the milieu that this work aims to investigate or, at least, condition to a large degree assertions that are made about the matter.

Though the concept of comfort in architecture is a much-studied subject, it is one that has produced scant results. The existence of so many factors that influence one's appreciation of architectural space makes its study difficult. The simultaneity in time and space of different types and quantities of energies makes it very hard to study the matter in any integrated way, which would be the most appropriate for architecture. There are tables with values and graphs with zones of light, heat, acoustic and other kinds of comfort, all of which posit how people will be comfortable if—of course—each of these aspects is approached independently.



One must ask to what point it is possible to make the concept of comfort objective, as it is either so much under the sway of subjective influences or lacking in useful units of measurement. (*"What is comfort? ... The simplest answer would be that which confines itself to human physiology... But that would not explain why, although the human body has not changed ... our idea is different from that of a hundred years ago ... If comfort were subjective, one might expect a greater diversity of attitudes on the matter; yet, the opposite is true because in any specific historical epoch, there has always been demonstrable consensus ..."*)²



Antonello da Messina. St Jerome in his study. National Gallery of London

Rybczynski states, and the idea seems reasonable, that while comfort is a subjective concept it is also an objective fact. The most interesting point in all of this is that both assertions seem to be true at once, which leads us to think that comfort may be both subjective and objective without there being any contradiction in the statement.

² Witold Rybczynski. *La casa. Historia de una idea*. 1986. (p.227-228)

The human being is complex and human comfort zones only take into account partial aspects of some of the many parameters that affect comfort (light, noise level, air temperature, etc.), without considering other conditioning factors that are not easy to assess but that are as real as, or more real than, the measurable ones, such as, cultural, social or psychological determinants.

In intermediate spaces, we discover that users are perfectly happy with certain combinations of conditions that, taken singly, would be clearly outside established comfort zones. In contrast, in more clearly-defined interior spaces, the very same users demand conditions that, if analysed according to classical parameters, would seem far superior to existing conditions that they accept in intermediate spaces.

These reflections on comfort give rise to the initial hypothesis of this study, which proposes that it seems that intermediate spaces positively influence people's perceptions of environmental comfort in architecture, but how?

E.3. AIMS

E.3.1. ...work to play with

We propose a subject that is interesting and also a lot of fun, which makes it even more interesting. The aim is to give intermediate spaces a feeling of being living and changing spaces that have a distinct, but good-natured, personality; and we shall try to see them as more than volumes to be analysed. Though this would make them more comparable or measurable, that point of view would not have much to do with the activity taking place in the space.

Activities occurring in these spaces tend to have a special human dimension, although this is not to say that the space must be limited perforce to the small scale that is usually associated with things at a more human level. The image of power that balconies can give emblematic and singular buildings is hardly domestic or comfortable, yet what is more human than the thirst for power? The image of the exchange of thoughts or goods that is conveyed by a portico (*stoa*) or a market is neither intimate nor individual, but what is more human than the mercantile facet of man?

The aim of this study is to discover and identify the mechanisms by which intermediate spaces intervene—in a way that is so frequently positive—in the final perception of environmental comfort in architectural spaces.

This insistent survival seems to suggest that it is worth knowing how to voluntarily create these intermediate spaces; though they may be useless and superfluous, they have given, and I believe they will continue to give, sublime and whimsical touches to architecture.

In order to achieve these aims, the study proposes the following:

To identify and characterise intermediate spaces, either in terms of their language or their individual forms.

To identify the environmental phenomena that influence architecture and that are themselves affected by the presence of intermediate spaces.

To evaluate the effect of intermediate spaces in each of these environmental actions.

To offer design recommendations that would address the existence of particular intermediate spaces in reference to the environmental conditions that constitute the setting of the project.

To identify the mechanisms of intermediate space that generate this favourable effect on the end comfort of users.

E.3.2. Structure of the study

The study begins with an analysis of the presence of intermediate spaces in time and space³ (Ch. 1), and continues on to address the difficult task of classifying what is, in essence, unclassifiable⁴ (Ch. 2) At this point, a study is made of their functions in architecture, including and highlighting their environmental functions⁵ (Ch. 3). Next, an analysis of what really influences perceptions of comfort and of what parameters and factors of comfort might be influenced by intermediate spaces⁶ (Ch. 4) will enable us to draw some conclusions.

The **first chapter** aims to consider and analyse the constant presence of intermediate spaces in time and space. Their presence has influenced, and continues to influence, the formal, environmental, functional and technical language of architecture: they constitute a real factor when it comes to seeking a strict rationalisations, which could even lead us to think that these spaces do not have any place in the scheme of things.

The **second chapter** offers a list of different kinds of intermediate spaces so as to be able to state *what they are* and which of them we are discussing. Given the variety of the intermediate spaces one finds and the multiple denominations they are given, it is proposed that the list should be limited to the more representative among them, with a new definition that we shall validate after this point in the study. Once the most meaningful spaces have been delimited and selected, the work will proceed to possible systems of classification and ordering so as to be able to establish *what they are like*.

In the **third chapter**, an analysis will be made of the functions of intermediate spaces in architecture as a whole. Their functions as joining and binding elements in the project will be identified, in their function of representing the different levels of relations that are established between

³ Chapter 1: Where are Intermediate Spaces?

⁴ Chapter 2: What are Intermediate Spaces and What are they Like?

⁵ Chapter 3: What do Intermediate Spaces do?

⁶ Chapter 4: Comfort in the Architecture in Intermediate Spaces

people and, finally, special emphasis will be given to their environmental functions with respect to different environmental phenomena.

The **fourth chapter** will deal with the initial doubts about comfort in an attempt to determine what exactly influences perceptions of environmental comfort in architecture, by analysing which parameters and factors of comfort might be influenced by intermediate space, and how.

A number of annexes, each with its own *raison d'être* as a limited inquiry into some or other branch of knowledge, will be included as a complement to the general argument that unfolds in the series of chapters described to this point.

Annex 1 presents a linguistic analysis of the words that are used to describe intermediate spaces. This analysis will be based on words in Catalan, Spanish and English.

Annex 2 provides a summary of computer simulations, created with different calculation programmes, of a specific number of intermediate spaces. The simulations were made before work started on Chapter 3—which classifies spaces—but the four spaces that result from the formal analysis in this chapter coincide with the most significant spaces that were selected at the very beginning for making the simulations.

Annex 3 presents analyses of the measurements that were carried out in a real intermediate space over a period of more than one year. The possibility of installing a system for recording data on temperature and light in the balcony area of the office of a group of architects in number 346 Carrer Aragó in Barcelona and with a south-easterly orientation, permitted a much more precise analysis than is typical for such spaces.

Finally, there is a **bibliography** of the works consulted for this study.

I would venture that all the people who have ever worked with me in my research team, and all the studies we have published, can be seen reflected in at some point or another in this study; and that throughout it all I have tried to keep true to the main principle of the group: to have fun playing intellectual games.