

WHY THE COURTYARDS OF HISTORICAL PALACES SHOULD NOT BE ROOFED IN

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1. Introduction

Whether as a means of conservation, or as a solution allowing certain functions to take place without the inconvenience of inclement weather, there is a growing trend to cover the courtyards of historical palaces and other great buildings. The idea is not new. It goes back to the nineteenth century, when technical achievements and industrial materials were brought into play for a wide range of buildings, generally utilitarian, such as factories, railway stations, or markets, even approaching the scale of a whole town with the construction of arcades and shopping galleries. Thereafter, glass roofs, perhaps unthinkingly, began to be adopted in other, less prosaic types of building. An example was the work done by Félix Duban in 1863 on the courtyard of the *Palais des Études* of the *École des Beaux-Arts* in Paris, an eclectic building by Duban himself, with a view to finding space for casts and sculptures to be brought from the Louvre. Another is the magnificent Natural History Museum of the University of Oxford, constructed in 1885 by Sir Thomas Newenham Deane and Benjamin Woodward, although its daring mix of metal structures in gothic style and skylights did not escape criticism from John Ruskin.

Against this background, glass roofs eventually came to be installed over truly historic courtyards, such as the *Schlüterhof*, the main yard of what is today the *Deutsches Historisches Museum* in Berlin. In 1877 Kaiser Wilhelm I decided to make a museum out of the *Zeughaus*, an arsenal in Baroque style, and instructed the architect Friedrich Hitzig to cover the courtyard. More than a century later, this first roof was replaced, and evoked, by the present-day canopy, the work of Ieoh Ming Pei (2003).

Currently, among many other edifices, a number of great museums have called on famous architects when applying this solution, making it more popular and prestigious on a world scale (Figure 1). This has been done at the Louvre (in the *Cour Marly* and *Cour Puget* yard by Ieoh Ming Pei and Michel Macary, 1993), at the British Museum (the Great Court by Foster and Partners, 2000) and at the Prado in Madrid (the *Claustro de los Jerónimos* (Hieronymite Cloister) by Rafael Moneo (2007)). Society would seem to have received these positively, with newspaper headlines as eloquent as "Art's Shining Future" [1] referring to the roofing of the Calderwood Courtyard at the Harvard Art Museums in Boston designed by the architect Renzo Piano in 2014; "Culture occupies another

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space” [2] with regard to the roof of the Saldañuela Palace built by José Manuel Barrio Eguíluz and Alberto Sainz de Aja del Moral in 2017; or “The dome is already crowning the Ducal Palace” [3] describing the work done on the Palacio Ducal de Medinaceli in Soria by Xavier Vitoria Ágreda in 2014. These three courtyards are also the property of cultural institutions (Harvard University, the Caja de Burgos Foundation and the Casa Ducal de Medinaceli, Town Council of Medinaceli and DEARTE Foundation, respectively), which would appear to provide backing for the approach taken in these interventions.



Figure 1. Puget Courtyard (Louvre Museum, Paris, France). Source: Javier Pérez Gil.

Indeed, it is quite unusual to find any profound criticism of this sort of work regarding the courtyards of great historical buildings. One of the few instances was the project for roofing over the courtyard of the Tosio Martinengo art gallery in Brescia, located in the *Palazzo Martinengo da Barco*. This was approved in 2019 by the city authorities and, as was noted by Councillor Fabrizio Benzoni, was supposed to follow “*uno stile che è stato più volte usato in grandi musei del Nord Europa*”¹ [4]. Nevertheless, the project was halted at the last moment by the heritage conservation authorities because insufficient justificatory detail had been provided of the impact of the technical solutions proposed on pre-existing structures, and the matter ended up in the courts with a harsh confrontation

between the *Soprintendenza* and the *Comune* in 2022. This suspension of the project, at least temporarily, joins the ranks of others, such as that affecting the courtyard of the Palazzo Viani Dugnani in Verbania, promoted by the town council in 2001.

The fact that something is accepted or barely questioned does not necessarily mean it is a good thing, let alone needful, at least in general terms. More than that, from the point of view of architectural theory, it may be asked whether such interventions harm the essence of the architecture of the patios and courtyards affected or their authenticity as heritage.

2. Courtyards as spaces open to the sky

Since Roman times, patios and courtyards have been an element present in western domestic architecture, whether noble or popular. In the seventh century, Isidore of Seville sought the etymology of the Latin word *atrium* used to designate such spaces in the term *ater* [5] meaning “dark” or “black”. This was partly because in early times the hearth had been located there, leading to blackening with soot, and partly because in any case Roman atriums were certainly dark, an outcome of the small size of the *compluvium*, the opening through which light entered.

According to this explanation, the Roman atrium had its likely ancestor in Etruscan huts, whose openings allowing smoke to exit could be seen as the precursor of Roman *compluvia* [6]. The scholar from Seville was thus basing his etymology on the hybrid function performed by the atrium in early Roman houses, with the more prosaic needs of a dwelling merging with the symbolism that was gradually acquired as it became part of its representative layout.

A number of modern languages have derived their words for this concept from terms other than *atrium*, but nevertheless are unanimous in defining it as being an unroofed space. This occurs with terms based on the late Latin *curtis*. An example is the French *cour*, defined variously as an “*espace découvert, entouré de murs et/ou de bâtiments, faisant partie d'une habitation, d'un édifice administratif, scolaire, etc., qui souvent s'ordonne autour d'elle*” [7], or as an “*espace découvert entouré de bâtiments ou de murs*”³ [8]. English has *courtyard*, described as “an area without a roof surrounded by the walls of a building” [9] whereas the Italian *cortile* is a “*porzione di area scoperta comprime il corpo del tessuto di un edificio ed è destinata a dare aria e luce ad un ambiente interno, al passaggio delle persone, o ad altre funzioni*”⁴ [10]. The same is true of Spanish *patio* and Portuguese *pátio*, which is defined as “*espacio cerrado con paredes o galerías, que en las casas y otros edificios se suele dejar al descubierto*”⁵ [11].

In view of this essential characteristic ascribed to courtyards, the question arises as to whether or not this is a condition *sine qua non* for recognizing a space as such.

3. Functions of courtyards

Antón Capitel [12] defined a courtyard as a systematic, versatile archetype, able to cope with a wide range of different uses, shapes, sizes, styles and characteristics. It is, indeed, an architectural element that at times gives its form to the whole, and is always complex, an outcome of its multifunctional and symbolic nature. Its functions or uses determine its shape and constitute its definition. If attention is concentrated on the case of historical courtyards, especially those of Renaissance palaces, and on their heritage

aspect, half a dozen essential functions may be identified, depending directly upon the unroofed condition of courtyards. These must inevitably be suppressed or curtailed if they are covered. This being so, it puts into question the whole concept of a courtyard.

3.1. Light

One of the principal functions of courtyards is to provide light for the inner rooms that open onto them. This benefit becomes especially clear when there are limitations for the building due to siting, size of the plot or functional needs (such as thermal insulation or defence), which sometimes require outside openings to be small or even omitted. In such cases, a simple light-well may be the sole entry point for natural light for the rooms placed around it. For this reason, modern interventions to roofs over courtyards normally use glazed solutions that supposedly keep this entrance for natural light. However, it may be asked whether this is truly so.

With an eye to improving the energy efficiency in an area that becomes an enclosed or interior space, the glass used is normally a low emissivity (“Low-E”) one or an enhanced thermal insulation material. If they are kept clean, such types nowadays offer very high light transmission, but it never reaches 100% of the total. That is not all. Such spaces are negatively affected by the presence of frames and supports for the glass, which generate zones of shadow and reduce the overall surface upon which light falls (Figure 2). Moreover, it should not be forgotten that in people’s experiences of such spaces, light as an agent affecting perceptions, is tightly linked to other factors like temperature, ventilation and noise, all these being modified by a roof. In 2019 a study by the École Polytechnique Fédérale in Lausanne [13] demonstrated that differing levels of natural light influenced the perception of temperature among users of a space. The conclusion was that there is a significant psychological feature changing the perception of warmth as a function of the amount of natural illumination.



Figure 2. Courtyard of the Velada Palace (Ávila, Spain). Source: Javier Pérez Gil.

3.2. Ventilation and temperature

As well as light, an open courtyard offers ventilation for the rooms surrounding it. This comprises both the removal of stale air, smoke or fumes from interior areas, and the constant flow of fresh air in the room of the courtyard. In both instances, adding a roof eliminates or radically transforms this function, and the same is true of temperature. It is eliminated, in particular, when the purpose of the roof is specifically to control the temperature or achieve energy efficiency. It is radically transformed when the presence of a canopy has the consequence of requiring activation of other mechanisms for ventilation, heating and cooling (Figure 3).



Figure 3. Courtyard of the Episcopal Palace of Teruel (Spain). Source: Rodrigo Almonacid.

When ventilation is deficient, covered courtyards face hitherto unsuspected problems, such as overheating or condensation, the results often outweighing the expected advantages. When the courtyard is provided with a ventilation system, the problems of installing it, and the noise arising from running it, are matched by the difference in outcomes. Even the most modern double-flow systems, which go beyond mere extraction to control the condition of the air being renewed, through filtration, and temperature and humidity regulation, still create a different atmosphere. It may perhaps be more comfortable, but it is still artificial.

It should not be forgotten that architects over the centuries were already aware of the drawbacks of open courtyards and tried to find remedies of various sorts. In cities with cold climates, it is common to find a division into one or more bays running across them, depending on their orientation. If one of these is enclosed, it is the southern bay oriented towards the north; when only one is left open, it is the opposite bay; and when there is a side fitted with a wall, this is the southern part, so it concentrates the sun's warmth. Some courtyards were also surrounded by glazed openings. However, in all these cases, little would remain of the original solutions if a roof were to be added. Once again, they would become useless and illogical. Their function and sense would be stripped from them, abolishing any authenticity as architectural elements.

3.3. Rain

A further consequence of the upper opening in a courtyard is the problem of rain. The atrium of a Roman *domus* was specifically intended to have as one of its main functions the gathering of rainwater into the pool or *impluvium* via the *compluvium* or opening. Many later architectures, not just domestic, but also others such as defensive structures, were provided with cisterns or tanks for a similar purpose. Moreover, in the absence of water, it would not be feasible to understand other types of courtyards such as the cloisters of monasteries and nunneries. These were seen as microcosms for spiritual withdrawal, as a *hortus conclusus* (enclosed garden), representing Paradise itself with its four rivers, so cloisters required the physical presence of water or some metaphoric reference to it. It was in the galleries and corridors of cloisters that the *mandatum* or ritual washing of feet was performed, and at the door of the refectory there stood a sink for cleansing hands before entering to eat, an action as practical as it was ritualistic. This purifying presence of water is also to be seen in other similar spaces, for instance in mosques, where the *sebil* presides over the *sahn*⁶.

It is true that one of the intentions of modern roofing in of such spaces is to protect them from rain; not just the open area, but also the corridors and galleries around it, which can become wet if the raindrops do not fall perpendicularly to the ground. However, excluding rain also excludes the courtyard itself. More than that, in Rome, with the exception of so-called testudinate atriums (of which more later), even the displuviate atrium, which had its four roof sections sloping towards the outside, was left open to the sky. In this last instance, water was not gathered, but there was greater protection against heat and cold, since the opening or *compluvium* was higher off the ground. For this reason, Vitruvius recommended this form for winter dining rooms [14].

There is no need to roof over the opening to prevent water from getting into the corridors or galleries. There are traditional solutions, ranging from enclosing these features to installing drainage systems. Nonetheless, the first approach brings with it some drawbacks, since such a vertical closing in is not so different from a horizontal closure on the roof of the courtyard. First of all, especially in refurbishment works, there is a drastic alteration in the appearance and composition of the galleries. Openings are darkened, the play of light is weakened, and the whole rhythm of elements is thrown into disorder. An extreme example of this is provided by the courtyard of the *Saboye Gallery* of the Royal Palace in Valladolid, with all its bays fully enclosed and the original columns and their capitals embedded into walls with little rhyme or reason, let alone art.

Secondly, and equally serious, is the fact that enclosing structures superposed upon an original design convert what were originally conceived as exterior elements into interior ones. This can go so far as to suppress the function, or even the existence, of original balustrades or low walls dividing off the principal open space. This is what happened in the main courtyard of the Royal Palace in Valladolid mentioned above, whose galleries were closed off for the greater part of the twentieth century with glazing and partitions. The stone capstones or sills of the balustrades bear various boards for playing *Qirkat* or *alquerque*, a forerunner of draughts, cut into them by former residents wishing to while away a weary hour or two. However, when the galleries were enclosed, these very significant testimonies of daily life in the palace were hidden.

Thus, the drawbacks of open courtyards should perhaps be accepted as no more than minor inconveniences, somehow tolerable in the upkeep of a historical building. In return, by maintaining the original design of the open courtyards, their architectural authenticity is preserved. Transforming some of their most typical features – such as

wells, cisterns, gargoyles or paving – into merely decorative elements makes them appear awkwardly ridiculous and useless (Figure 4).



Figure 4. Courtyard of the Palazzo Barbaran da Porto (Vicenza, Italy). Source: Javier Pérez Gil.

Let us imagine that at some point the oculus of the Pantheon in Rome is glazed over. In view of the precedents, this cannot be ruled out. Almost all architectural journals would be likely to enthusiastically praise such a solution for being capable of retrofitting the artistic item to modern forms of expression. The interior would be protected from rain and the intervention would almost certainly be explained as an act of preventive conservation. In this way, there would be considerable savings on maintenance and tourists would not get wet when it rains, so they would enjoy their visit more. However, this would no longer be the Pantheon. The *cella*, or inner space, would be bereft of its symbolism through the loss of its opening to the sky; the temple would be stripped of its soul. The structural complexities of the dome would cease to make sense. Nobody would understand the reason for the slope of the floor and the system of drainage channels, because after two millennia of sterling service they would, at a stroke, completely lose their purpose.

Does this mean, then, that the deterioration caused by exposure to the open air should be accepted, albeit with resignation? The stance taken here is that indeed it should. The façades opening onto a courtyard are not inner walls, but outer. This implies that they will be exposed to inclement weather, even if less so than walls facing the street. All historical buildings have had to undergo periodic maintenance and treatment of their courtyards. International declarations going back as far as the Athens Charter of 1931 (General Principle V) have advocated keeping sculptures, paintings or decorative elements in their original location. This was later seen in the Kraków Charter of 2000 as an “integrated part of the built heritage” [15] and their removal should be avoided except when “this is the sole means of ensuring their preservation”. The same criterion should be applied to the façades of courtyards, which have no need to be covered with an artificial canopy, as if they were items in a museum display case.

3.4. Routes

Another main function of courtyards, since they are spaces onto which a range of rooms open, is communication or the provision of routes. More than this, as noted by Gonzalo Díaz [16] in respect of some architecture of the Modernist Movement, in the wider meaning of certain projects there are courtyards that more than anything else are a system of composition, a method of introducing order and regularity into a building.

Courtyards have a double impact when it comes to regulating internal routes through a piece of architecture. On the one hand, being open spaces that are frequently central, they allow a range of access options. On the other, especially when they have galleries with porticos, they shape routes through the layout of their various elements. This may involve the siting of exits towards rooms or staircases, the position of columns or pillars acting as visual closures, or through the possibility of movements under cover along galleries when there are adverse weather conditions.

Furthermore, it should not be forgotten that historical courtyards are almost always incorporated into noble or prestigious buildings, forming pathways that are highly involved in protocol or symbolism. This was already so in ancient Roman patrician houses, the layout or *dispositio* of which was governed by the daily ritual of the *salutatio* or formal greeting. The atrium, acting as an intermediate zone between the entrance hall, known as the *vestibulum*, or *fauces*, and the *tablinum*, a reception room or office opening off the atrium (which might in turn lead to a second courtyard with a peristyle or colonnade), thus counted as an essential space for transition, as made plain by the fact it was open to the sky. However, it was also a waiting area. In view of this purpose, its walls were adorned with bright paintings, mosaics, sculpted *puteales*⁷ or *imagines majorum*, the images of ancestors of the family, all of these being works with a clear propaganda purpose [17].

More or less the same may be said about mediaeval and Renaissance palaces and great houses, in which the main courtyard lay between the principal entrance, with its hallway, and the main staircase going up to the *piano nobile*, the “noble floor” that was the prime area in the building. The courtyard once again had a strong representational and symbolic importance, which was always open to the view of any visitor. Thus, the artwork incorporated into its architecture, often included sophisticated features which illustrated the values held by the owners. One instance is Palazzo Vecchio in Florence, which has an accumulation of several successive strata of iconography, some overlaying others. Among its variegated decorations, several different messages are conveyed, such as the emblems of the churches and guilds of the city, or the series of views of Austrian towns, painted in honour of Joanna of Austria on the occasion of her marriage to Francesco de’ Medici in 1565.

However, a fully covered courtyard renders certain atmospheric conditions identical both in the central area and in its perimetral corridors, so that routes cease to have any intuitive meaning. The logic of moving under shelter when there is rain, or in the shade when the sun is hot, made these corridors a practically obligatory path to follow. This factor no longer exists when it is possible to cut across the courtyard diagonally and more directly, because a divergence from the designated movement inside the courtyard essentially creates the freedom to move in any direction, possibly changing the way in which artistic repertoires and elements are recognized and contemplated. For instance, the set of effigies of the kings of Spain in the courtyard of the *Palacio de los Dueñas* in Medina del Campo has to be read in a fixed order, and the same is true of many monastery cloisters.

Even so, this is not all. The consequences of roofing in go beyond the courtyard and extend to other spaces (Figure 5). The hallway, previously similar to the ancient Roman *fauces*, ceases to be a transit path between two spaces open to the sky and becomes a vestibule penetrating into an interior. Without undergoing the slightest modification itself, its function and authenticity is radically altered.

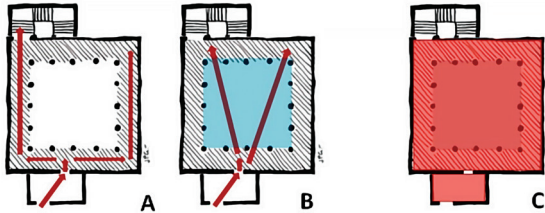


Figure 5. Internal routes through a palace with either unroofed (A) or roofed (B) courtyard, and spatial integration of the entrance hall and the courtyard when the latter is roofed (C) (Source: Javier Pérez Gil).

3.5. Acoustics

When courtyards are roofed over, there is also a change in their acoustics. This may be the result of excluding external sounds, of echoing caused by the roof, or of new sources of noise, such as extractor fans or air conditioning. This is of particular importance because sound quality has a fundamental role in the perception of spaces. As Dell Upton noted [18], it should be kept in mind that humans are simultaneously bodily beings and a part of the landscape, not observers from a distance (“the self is always a self-in-space”). They relate to their surroundings through all the senses, not just sight, and they aid them in the configuration of a given sensory landscape, in which they are then participants. Sound thus takes on considerable importance and as it is the transmission of vibrations through space, it is affected by architecture and its limits (Figure 6).

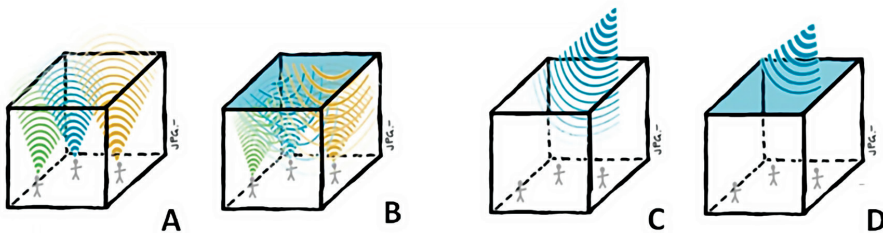


Figure 6. Acoustic performance in a courtyard: A) unroofed, considering noise from interior; B) roofed, with noise from interior; C) unroofed, with noise from exterior; D) roofed, with noise from exterior (Source: Javier Pérez Gil).

There are noisy courtyards, such as schoolyards, which cannot be imagined without the hubbub of children playing; courtyards in which the murmur of a fountain marks the rhythm of the daily life of a house; and even silent courtyards, such as monastic cloisters intended to provide a retreat from worldly bustle and a space for contemplation. However, in all of these, sound is a major feature that ought not to be impaired by enclosing space in a pod. This would modify conditions both within and without considerably. Passers-by would no longer be able to wonder what was causing the clamour

emerging from a courtyard. Cloistered nuns would cease to hear the constant hum of a busy city, contrasting with their own silence. Never again would their imagination strive to put a face to all these nameless sounds, just as the prisoners in Plato's cave strove to identify the flickering shadows projected onto their wall.

3.6. Work

Apart from their more representational aspects – intrinsic to the concept of a palace as a great house -, the courtyard can also host other activities since it really is the heart of these types of buildings. This potential quality, whether more prosaic or less ceremonial, was already present in the atriums and peristyles of Roman houses. It was also to be found in the palaces of the Early Modern Age, where the main courtyard had administrative and maintenance purposes. If a building had a second garden courtyard, similar to a Roman peristyle, it was generally for recreational use. Around it were found dining rooms, games rooms, fountains, benches and fragrant plants, which spoke of a sophisticated, private zone. In the largest palaces and great houses, it was common enough to find other courtyards or patios given over to entirely mundane activities, as was the case of kitchens, generally sited at the rear of such buildings to avoid smells and noise.

It was in the humblest dwellings, though, that this working aspect of a courtyard, or rather farmyard, was most evident. A good example is provided by the description offered over a century ago by Fernández Balbuena (1922) of a typical house on the high plateau in Ardoncino in the Province of Leon (Spain). From that description, the first point that emerges is that the inner yard of a farmhouse was multifunctional [19]. What is more, it becomes plain that the sun-room or the portico were the preferred places for carrying out certain tasks, because they had the best light or the greatest shelter. Once again, it can be seen that the functioning of a yard, its layout and its routes, is shaped by the circumstances imposed by its open-air nature. The same is true in more up-market courtyards, like monastic cloisters. The archetypal Benedictine model had already organized the principal activities of the community through specialization of its spaces, for instance, the chapter house, the refectory, the *cella* or chapel and the *mandatum* area. Furthermore, other purposes were assigned to spaces, going beyond symbolic and operational functions. Thus, the northerly corridor (*mandatum*) was the place chosen for the exercise of *lectio divina*⁸, besides other activities such as the laving of feet on Maundy Thursday and the Easter processions in which Cluniac monks made their way to the entrance of the chapel, for example.

However, all the sector-based division of labour in a courtyard, conditioned once again by the varying characteristics of its zones, would be blurred or even lost if a roof or canopy rendered the whole space homogeneous.

4. The testudinate atrium

In his *De lingua latina*, Varron states that the term *cavum aedium*⁹ is used to designate the partially roofed space enclosed by walls that was intended for common use by all those living in a dwelling [20]. Nonetheless, he states that this inner court was called *testudo* if it was not open to the sky because of its similarity to the shell of a tortoise, just like a general's tent in a military camp. Such a variant is also mentioned by Vitruvius when he lists the five types of atrium: Tuscan, Corinthian, Tetrastyle, Displuviante

and Testudinate, this latter covered by a vault [21]. This means that some atriums were completely roofed over in Antiquity. Nevertheless, it should be recalled that the testudinate form was not very popular and was built only in those cases in which the span of the opening was small. It was set in the centre of the house and was topped by a roof with four sloping sides. If there were attic rooms, this structure was supported with beams and trusses. For this reason, Fernández Vega [22] does not see it as reaching the status of a courtyard, answering more to the concept of a room offering access to others. Moreover, from the second century onwards, an interest in having more covered spaces led to the replacement of atriums by vestibules.

However, it is also true that in the course of history, certain atriums and open courtyards, especially those of larger sizes, did receive some form of cover or canopy. This was the case for the awnings or *vela* of the Romans, cloth hangings that gave shade or protected against inclement weather, the first using fine fabrics, the second waterproof materials, such as goatskin [23]. These coverings could reach extraordinary dimensions, as in the awnings of the Roman Colosseum or those of other amphitheatres and theatres. In Renaissance and Baroque great houses such canopies were rarely used, just like in the Governor's wing courtyard in the Royal Palace Real of Valladolid. One occasion was in June 1605, when the King and Queen visited the home of the Duke of Lerma, a play was to be performed in the courtyard; for the sake of that event, the opening was actually covered with an awning described as being very well made and giving good shade [24].

It may be asked whether such historical practices justify the roofing over of historical courtyards today. The answer should surely be no. Covering such open spaces using totally reversible materials might, at most, justify its use for a brief period – a temporary situation. In contrast, doing so in a permanent way would radically alter the values of a space which by definition should be open to the sky, as has been shown. The disadvantages of the uncovered patio are not only less burdensome than those of its roofing but are also part of its essence.

In recent decades, roofs have also been installed over open spaces of other sorts, with the same dubious results from a heritage viewpoint. There have even been cases of roofing over the parade grounds of a fair number of castles, which were originally intended to be clear open areas for horses to move around in and allow the gathering of troops. The same has happened to bullrings, whose layout is reminiscent of ancient Roman amphitheatres. From the 1980s onwards, some of these buildings have been roofed, with the aim of guaranteeing their use whatever the weather, or of permitting other activities to take place in them, such as concerts or sports events. Examples of this trend in Spain include the bullrings of Saragossa, Leganés, and León. Usually, these new roofs have been developed as retractable devices, thus useful for indoor or outdoor activities. This tendency has also been brought into play in brand-new bullrings, such as Illumbe in San Sebastian which was designed by the architect Diego Garteiz in 1998.

It should be asked whether this retains the true conception of such structures. It would appear obvious that it does not. In the first place, as soon as the audience is admitted to the central arena of a bullring or an amphitheatre, such edifices no longer perform their designed functions, since such areas were never intended for spectators, only for the spectacle. Even if their original purpose is respected, the historical model of bullring is distorted. On the one hand, the enormous structures required to support a retractable roof have to be based on the walls and distort the annular shape. On the other, the zoning into well-established areas with specific names, like *sol y sombra*¹⁰ loses any meaning. Bullrings are set out in such a way as to ensure that the box for

presiding dignitaries faces east, so it is protected from the sun during the late afternoon, when bullfights traditionally take place. As happened with Roman theatres and amphitheatres, the seating in a bullring is ranked according to its convenience and views. Neither the prices of the seats nor the experiences they offer are the same in all places. They may appear to be so but in reality, are not. Controls intended to homogenize the conditions in the whole space under a roof are incompatible with the authentic experiencing of the historical building. There may be more comfort, but the event is not the same. The difference between the two conceptions is as great as that between a car with a sunroof, a moonroof or a panoramic roof, and a convertible (Figure 7).



Figure 7. A) Courtyards of the Royal Palace of Valladolid (Spain); B) Ducal Palace of Lerma (Spain). Source: Javier Pérez Gil.

5. Conclusion

Courtyards are identified by the characteristics they possess deriving from being open-air spaces. Enclosing them under a roof, even if such interventions are attractive, reversible and limited, is never completely harmless. In addition, the situation is made worse if these actions are insensitive and directly invade the inner space with new supporting components, as occurs in instances such as the courtyards of the former University of Saint Catherine and the former Hospital of Saint Augustine (Figure 8), both situated at El Burgo de Osma in the Province of Soria (Spain).

Various standards and recommendations relating to built heritage advise that no alterations should be made to pre-existing structures and volumes. It is true that earlier documents like the *Venice Charter* of 1964 advocated bringing in changes necessitated by the evolution of uses and customs so that they could fulfil “some socially useful purpose”. Even so, stress was laid on not changing “the lay-out or decoration of the building” and that “no new construction, demolition or modification which would alter the relations of mass and colour must be allowed” [25]. More recent texts have gradually incorporated immaterial values and aspects as fundamentals in the present-day concept of cultural heritage. Hence, the *Charter on the Built Vernacular Heritage* (1999) recognizes that “The vernacular embraces not only the physical form and fabric of buildings, structures and spaces, but the ways in which they are used and understood, and the traditions and the intangible associations which attach to them” [26]. The *Charter of Krakow* (2000) holds that it is not enough

to preserve pre-existent structures, but that their authenticity and integrity should be maintained, “including internal spaces, furnishings and decoration according to their original appearance” [27].

Over the last couple of decades, growing interest in immaterial aspects has caused profound modifications to the way in which the heritage is envisaged. The *Convention for the Safeguarding the Intangible Cultural Heritage* (UNESCO, 2003) takes this to be “practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith” [28]. The material and the immaterial are thus indissolubly linked, the former being an expression of the latter. In courtyards, as has been seen, a roof may interfere with these variables (use, sounds, the zoning of spaces, and the like).



Figure 8. Courtyard of the ancient San Agustín Hospital (El Burgo de Osma, Spain). Source: Javier Pérez Gil.

In 2012 the *Fiesta de los Patios* (Courtyard Festival) of Cordoba was added to the UNESCO Lists of Intangible Cultural Heritage. More than the architectural worth of these places, what was acknowledged was specifically the way in which they were used. This would become unrecognizable if for some reason the decision were to be taken to roof them over. Their dimensions and volumes, and the presence of water and plants were designed as a function of the circumstances and context of Cordoba. If a brand-new roof were to be slapped on top of them, the traditions that are materialized in courtyard houses through music and acoustics (“murmuring water, birds chirping” [29]), aromas, food, and social encounters would no longer be comprehensible in the same way or might even become impossible.

The desire to control all variables is a very human impulse, and very architectural, as well. In one form or another it is to be found everywhere, even on a giant scale. The geodesic domes of the *Eden Project* in Cornwall designed by the architect Nicholas Grimshaw in 2001 are today's version of greenhouses, but now of the size of a park. They enclose immense natural biomes, thanks to their total control over conditions of humidity, light and temperature. These domes have sometimes been called "Bucky Balls", a modification of the slang term for fullerenes, carbon allotropes whose molecules have a rather similar shape, in honour of Richard Buckminster Fuller, who in 1960, in collaboration with Shoji Sadao, had proposed covering Manhattan with a geodesic bubble more than three kilometres in diameter. Something similar was imagined by Stephen King in his novel *Under the Dome* (2009), later adapted for television.

Nevertheless, interventions of this sort, when proposed for heritage items like the courtyards of great historical houses, should be exceptional and very thoroughly justified. When it is not a case of conservation imperatives, it should be extremely carefully weighed up whether any practical benefits are really worth the loss of, or damage to, the whole range of material and immaterial values listed. A mere search for some utilitarian comfort should not be allowed to override the worth and authenticity of architecture that offers such a great deal as it is, which, moreover, society has supposedly committed itself to safeguarding.

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Notes

¹ "A style that has repeatedly been used in major museums in northern Europe" (literal quotation translated by authors).

² "Open space surrounded by walls and/or buildings forming part of a dwelling, an administrative or school building, etcetera, these often being organized around it" (definition translated by authors).

³ "Open space surrounded by buildings or walls" (definition translated by authors).

⁴ "Section of open area comprised within the structure of a building and intended to admit light and air to an internal space, to permit the passage of people, or for other purposes" (definition translated by authors).

⁵ "Space enclosed by walls or galleries, which is usually left open to the sky in houses and other buildings" (definition translated by authors).

⁶ In a traditional mosque, the *sebil* is the main fountain available in the *sahn*, the courtyard placed outdoors preceding the prayer hall indoors.

⁷ Lidded breastworks or parapets around the mouth of a well or an access shaft to a cistern.

⁸ Readings from the Scriptures.

⁹ Hollow in a house, understood as a free space in the centre of the building, that may work as a court consequently.

¹⁰ Literally, "sun-and-shade", the two main areas in a bullring grandstand, only differentiated by the incidence of the sunlight.

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Summary

There is a trend to roof over the courtyards of historical palaces and similar great buildings with an eye to conservation or to expanding their range of functions. This tendency is being popularized by major architects and barely a voice is raised against it. However, from the viewpoint of theory and heritage, such actions are not to be recommended. In line with some international documents on cultural heritage, several architectural, perceptual and functional arguments show that, in order to preserve the cultural authenticity of courtyards, it would be advisable to avoid covering them.

A courtyard is by definition an open space. Covering it, even with an apparently harmless glazed roof, radically affects its architectural essence and how it is experienced. Hence, such projects should not be accepted in a generalized and uncritical manner. It is best for courtyards to be left as courtyards, not as rooms with skylights.

Riassunto

C'è una tendenza a coprire i cortili dei palazzi storici dei grandi edifici per ampliarne i volumi e dedicarli a nuove funzioni. Questa tendenza è stata praticata dai maggiori architetti e, a malapena, si leva una voce contro di essa. Tuttavia, dal punto di vista della teoria della conservazione del patrimonio, tali azioni non sono da raccomandare.

In linea con alcuni documenti normativi sui Beni Culturali, vengono mostrate diverse ragioni architettoniche, percettive e funzionali atte a dimostrare che, al fine di preservare l'autenticità culturale dei patii, sarebbe opportuno evitare di coprirli.

Un cortile è per definizione uno spazio aperto. Chiudendolo, anche con una copertura vetrata apparentemente innocua, si incide radicalmente sulla sua essenza architettonica e sul modo in cui viene vissuta. Pertanto, tali progetti non dovrebbero essere accettati in modo generalizzato e acritico. È meglio lasciare i cortili come cortili, non come stanze con lucernari.