
PRESERVING SPACE: towards a new architectural conservation agenda

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Abstract

It is argued that there is a disjunction between conservation and modern architectural theories with regards to the concept of space. The argument is developed through a case study, the Casa de Detenção do Recife, a XIX Century listed penitentiary, whose restoration demonstrates how subtle spatial changes can alter building's properties. The paper concludes by proposing a new approach to architectural conservation, which would take space configuration as an object of conservation itself.

Space as an Object of Conservation

One of the major challenges facing conservation and restoration of built heritage is the need to make them socially useful, which requires, in general, its adaptation to new social and functional requirements, sometimes incompatible with its original space configuration. Adaptations include altering the network of space-to-space accessibility and visibility and/or removing and introducing partitions. However, if space is the fundamental and in dissociable architectural dimension which distinguishes it from other artistic expressions (Zevi, 1951) and gives material support to social attributes (Hillier & Hanson, 1984, Markus, 1993), then it should be considered in itself an object of conservation and restoration interest.

A detailed examination of fundamental documents of restoration theory (Brandi, 2004; Boito, 2003) and international conservation charters (Cury, 2000) reveals that the conservation discourse is not provided with a concept of space. Perhaps, the lack of a theoretical reasoning about the spatial dimension of architecture within the field of conservation resides in its affiliation with classical theories, as classical theoreticians considered architecture as an art of building, understood as proportion and structure (Collins, 1998). If this is true, a paradox is established (Amorim & Loureiro, 2005; Loureiro & Amorim

2005): as the concept of heritage evolved along the XX Century to incorporate artistic and cultural manifestations of distinct natures, it did not observe how certain cultural values are embedded in the space of architecture. In other words, while modern architectural theories take space as a protagonist of architecture (Forty, 2000), the architectural conservation theories take the construction itself (Viollet-Le-Duc, 1987, Brandi, 2004; Boito, 2003).

In fact, the concepts of heritage and conservation ideas are relatively new and have been systematized since the beginning of the XIX Century. It has also broadened to overcome the borders of the Western culture and to incorporate a diversity of cultural expressions, from the built form to the recent concept of intangible heritage. The built heritage, in particular the architectural and urban heritage, is centered in the typological – monuments and sites of exceptional value, and chronological dimensions (Choay, 2001), and has a memorability function: to be a testimony of a culture, a fact, etc.

The international charters establish the principles to be adopted and followed by conservation and restoration institutes around the globe. Conservation laws, listing procedures and restoration techniques, for example, take the charters as references. In the Brazilian context, for example, laws for safeguarding the built heritage highlights the formal and technical dimensions of monuments and urban sites, also reflecting the conservation theories (Boito 2003; Brandi, 2004). Therefore, structure and aspect (Brandi, 2004) could be restored and the interior remodeled, as if the spatial organization did not reveal the testimony of the past.

It is at the First International Congress of Architects and Technicians of Historic Monuments, in 1931, in Athens, that the principles for conservation and preservation are first systematized. The emphasis is in the protection of monuments, seen from the memorability point of view, as seen at the Athens Charter for the Restoration of Historic Monuments (1931). The document emphasizes the promotion of the inventory of ancient monuments, the development of heritage education based on the principle that 'preservation of monuments and works of art derives from the respect and attachment of the peoples themselves', an international cooperation, and general conservation and restoration principles, such as 'proposed restoration projects are to be subjected to knowledgeable criticism to prevent mistakes which will cause loss of character and historical values to the structures'. As observed, the charter does not make any reference to the spatial dimension of historical monuments, but emphasizes the conservation and restoration of their structures. The word space is not found in the first international charter, even though it was the focus of a profound modernist architectural debate at that time, when practicing architects and theoreticians discussed the concept and exploration of the spatial dimension of architecture.

In fact, a close look at the international conservation charters written after the publication of the Athens Charter would reveal that space is rarely referred, and never explicitly referred to as an object of conservation. Of all charters, space is referred to in only a few operative documents. For example, The International Charter for the Conservation and Restoration of Monuments and Sites – The Venice Charter, from 1964, states that:

The conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable but it must not change the lay-out or decoration of the building. It is within these limits only that modifications demanded by a change of function should be envisaged and may be permitted (The Venice Charter, 1964).

The Italy Restoration Charter, from 1972, also recommends avoiding significant changes in the interior space sequence. But the Charter for the Conservation of Historic Towns and Urban Areas, known as The Washington Charter, from 1987, is more explicit, but still vague: 'When it is necessary to construct new buildings or adapt existing ones, the existing spatial layout should be respected, especially in terms of scale and lot size' (The Washington Charter, 1987).

It seems relevant that the concept of space is rarely referred to in the context of the conservation theory and the operative international charters. Nevertheless, the concept of space is relatively new within the architectural discourse. Collins (1998) suggests that the word space was introduced to the architectural discourse only in the middle of the XVIII century, but without denoting three-dimensionality, a meaning that will acquire in the following century, with the use of the German word "raum". Furthermore, that the word space, as used within the context of modern architecture, has its origins in the writings of the art historian Henrich Wölfflin.

Adrian Forty (2000) suggests that the word space did not exist in the vocabulary of architecture until 1890 and its introduction is related to the development of modernism, keeping since its origin certain ambiguity in its meaning: as a physical dimension or a mind set, as an apparatus we use to understand the world. Also refers to the origin of the term as of German origin (raum) that original sense incorporates both meanings. Thereafter, the term space becomes consolidated within two lines of thought. One is related to the German architect and theoretician Gottfried Semper who developed a philosophy based theory of architecture that looks for the genesis of architecture without referring to the construction of orders, as seen in the classical tradition, but arguing that the first architectural impulse was to enclose space and that the material components of architecture are secondary to this enclosure (Forty, 257). In this sense, space becomes the protagonist of architecture. The other is based on Kant's 'Critique of pure reason', from 1781, which understands that space is not an empirical concept, derived from an exterior self experience, but that space exists priorly in our minds as pure intuition, where all objects should be determined. Therefore, it is only from the human point of view that we could talk about space (Forty, 257).

These lines of thought founded the whole modernist experience, as observed in the works of practicing architects whose works are profoundly spatial, as Berlage, Loos, Wright, Schindler and Le Corbusier, but also in their theoretical discourse and in the writings of historians of modern architecture such as Gideon (1978) and Zevi (1951). The word space and the idea of space as protagonist of architecture is so pervasive in the XX Century architectural discourse that is with surprise that it did not spread out to contaminate the conservation discourse. The evident answer is that conservation and architectural theories are based on distinct paradigms, and it is imperative to state a new conservation paradigm, which would be permeated by the concept of space, for the sake of the preservation of our heritage.

In this sense, the charters do not incorporate Hillier's laws of the architectural object (Hillier, 1989) that propose that human societies order their spatial milieu to construct a spatial culture, understood as distinct manners of ordering space to produce and reproduce the principles of ordering social relations. Space is, therefore, used to generate, as well as, to restrict social encounters, according to the involved forms of social reproduction. In both circumstances, space is seen as an integral part of the social morphology, and not only a function of the principles of social reproduction (Hillier, 1989). Given

that space configuration is a constituent part of a spatial culture; it should be seen as part of our cultural heritage.

Revealing Conflicts: A Case Study

To demonstrate this important theoretical disjunction between the modern theories of architecture and conservation theories, the Casa de Detenção do Recife, a XIX Century panoptic carceral institution recently restored and adapted to house an arts and crafts commercial center, is taken as a paradigmatic case study. The study reveals building's inner spatial configuration and attests its monumental status, but argues that its recognized heritage value is also due to its spatial structure, just as originally conceived (Amorim & Loureiro, 2005; Loureiro & Amorim, 2005). Changes in its use should, therefore, have taken its peculiar spatial logic into consideration, in order to guarantee that changes in its use should be coherent with its potentialities and limitations, as there is a limited capacity for a building to answer satisfactorily to new demands different from the purposes for what it was originally conceived, as well as to avoid altering the monument subject of conservation.

The case study deals with two important theoretical questions: (a) If maintained the original characteristics of the building, what objective knowledge is necessary to be formulated in order to deal consciously with the compatibilities and incompatibilities that are inherent to attempts to shelter a new use? (b) Which changes could be considered as alterations of the built heritage, therefore incompatible with the principles of architectural conservation?

The Casa de Detenção do Recife

The Casa de Detenção do Recife was designed in 1850 by José Mamede Alves Ferreira, a Brazilian engineer graduated at the École des Pont et Chaussées, in Paris (Costa, 1985). Mamede's proposal was based on the New Jersey State Penitentiary, by John Haviland (Sousa, 2000), who proposed a simplification of the panoptic system of surveillance, elaborated by Jeremy Bentham, in the XVIII century (Foucault, 2005; Bentham, 2000; Markus, 1993). Sousa (1999) highlights the avant-garde spirit of the engineer's proposal, pointing out that it was very similar to the contemporary prisons that were being used in England (1840), France (1842), Germany (1844) and Belgium (1846), and points out that only in 1877 Madrid built its prison based on a similar principle.

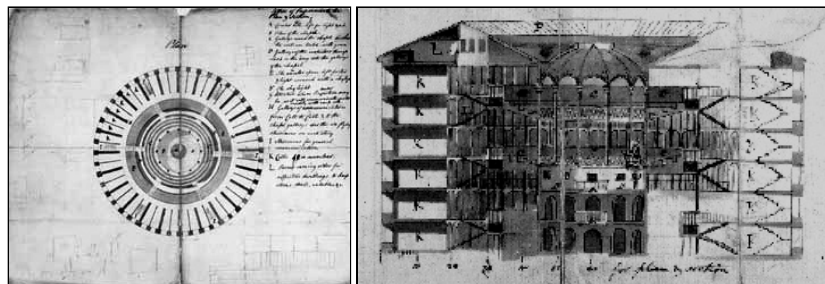
Bentham's panoptic system (Figs. 1 and 2) was based on the principle of universal and permanent surveillance as an instrument to generate prisoner's continuous reflection, but also to maximize control with a reduced number of inspection officials, due to the circular form adopted by the device. Haviland, however, changed the circular geometry of Bentham's panopticon to adopt a pavilion plan with radial distribution, convergent to a central watch tower, the inspector's platform (Fig. 3). The radial type, although convergent with the same surveillance ideal, moves the object of control: from the individual prison cell to the collective central corridors of the each wing.

Figure 1:

Bentham's panopticon: Plan (source: <http://www.fluctuat.net/blog/IMG/jpg/panopticon.jpg>)

Figure 2:

Bentham's panopticon: section (source: <http://www.ucl.ac.uk/Library/special-coll/bentham.shtml#top>)



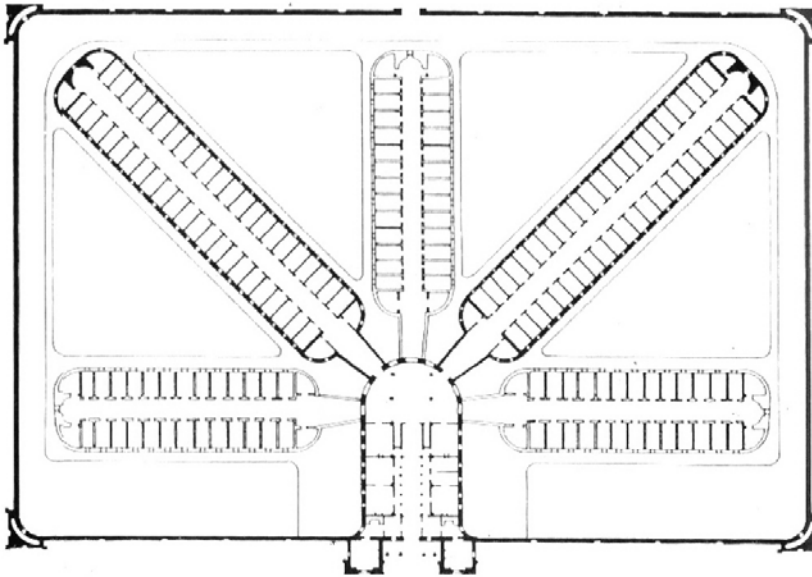


Figure 3:

Haviland's New Jersey State Penitentiary (source: Sousa, 2000)

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Probably more economical than Bentham's device, the solution given by Haviland was, perhaps, more feasible to solve Ferreira's design problem. His final solution aggregates three cell wings with three storeys high convergent to a control center, to which a two storey high administrative wing is also connected. Ferreira distributed the cells along a central corridor, but at the upper levels the access to each flank is through two separate walkways separated by a central void, guaranteeing the necessary transparency within each wing and the central watch tower (Figs. 4 and 5). Therefore, how to evaluate questions such as flows, movement and access in the buildings? How is it possible to advance beyond plan/project and reach the simulation target aiming at promoting or restraining movement?



Figure 4:

The Casa de Detenção do Recife: exterior view (source: Fundaj)

In the 1970s, the Casa de Detenção was considered obsolete and inadequate due to the levels of urbanity in its surroundings. The prison was transferred to a new structure at the outskirts of Recife, and the historical building, at the time already considered a State's heritage, was adapted to house an arts and crafts market: the Casa da Cultura (Culture's House). The building was restored to its original features, apart from the polemical demolition of the prison walls and a few modifications in its space structure. The old cells were adapted to shops, but none of the old bars was removed. The cells located at the center of each wing were transformed into restrooms, and the ones

Figure 5:

The Casa de Detenção do Recife: interior view (source: Museu da Cidade do Recife)



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located close to the control tower were fit to house lifts of small capacity.

The history of architecture has shown us that distinct cultures in different historical periods have systematically used a certain space organization to trade, which is commonly referred to as the market type. With few variations, this type is based on two rules: to maximize merchandise exhibition, to conceive shallow integrated cores to maximize co-presence and co-awareness. There are but a few properties shared by the radial prison and the market type, and this incompatibility can be noticed in the way the new use was implemented and has been developed through the last three decades:

(a) Difficulty to visualize the interior of the cells/shops: As a consequence, the ground floor was invaded by products and salespersons as usually seen in public markets and street shops. The original spatial structure reveals its ability to be adjusted to the new use to a certain degree, possible by the permeability to the urban surroundings, only one step deep from the ground level alley, where the commercial activity finds the favorable scenery for its manifestation.

(b) Difficulty to access the upper levels: The circulation system conceived for the movement of guards and the controlled prisoners is inadequate to the circulation of users of the market, mainly because it denies the ideal conditions of comfort and safety.

(c) As a consequence, the spatial segregation of the upper levels and the homogeneity of the commercialized products (a management problem), the number of visitors of the upper levels is quite reduced. The lifts do not seem to be enough to implement these sales.

(d) Finally, the central watch tower, a key space in the original panopticon, lost its function, even though is commonly used as a meeting point, yet to be fully explored as such.

Therefore, with the substitution of the punitive-prison system - based on criminals' isolation in segregated spaces permanently watched through the surveillance corridors and the internal and external watch towers, for a public and interactive system - based on the permanent interaction between two categories of people, the resident salespersons and the visitors, the morphology of the building stopped exercising the function for which it had been thoroughly planned. The main change is felt in the form the spatial device handles the two categories of users. In the original scheme, the visitors prisoners were trade system, the visitor occupies the shallowest spaces.

Figure 6:

Panoramic lift, photograph by Luiz Amorim



For the past twenty years the economical viability of the market has been questioned and the plans for adding significant changes to allow a better access to the upper floors were discussed. Finally, a new proposal was developed, in 2003, by the State's heritage department: panoramic lifts were inserted at the center of each wing, interconnecting the three levels of cells/shops (Figs. 6). The old lifts were removed and their spaces were occupied by new shops. Needless to say that inserting the lifts motivated a passionate debate amongst conservators, traders and the general public. The central point of discussion was the inadequacy of the steel and glass tower disturbing buildings ambiance and contrasting with the original features of the neoclassical monument. Little was said about the effects on the originality of the spatial structure, but on one thing they had to agree and accept: the sales rates of the upper levels increased. The reasons for that and the relevance of the latter lifts and the panoramic ones as devices of spatial alteration are discussed next.

Describing Spatial Properties

Syntactic descriptions are taken both for the Ferreira's design and the current situation, observing axial, convex and visibility dimensions. The detailed analysis of the first restoration proposal is not discussed for the sake of the argument, as seen below. The axial dimension was only considered at the ground level, with the interest to know how the building is connected to the exterior, or how it propitiates relations directly based on the street-building movement. The processing tools used for the analysis were JASS (KTH-ANYTHING, 2000), for the convex analysis and justified graphs construction; and Mindwalk (MEDEIROS, 2004), for the axial analysis.

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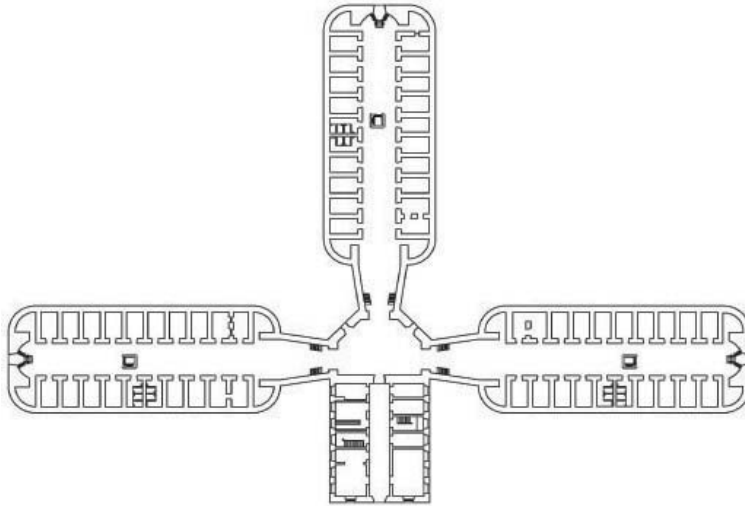


Figure 7:

Casa da Cultura: ground floor (source: Fundarpe)

Figure 8:

Casa da Cultura: first floor (source: Fundarpe)

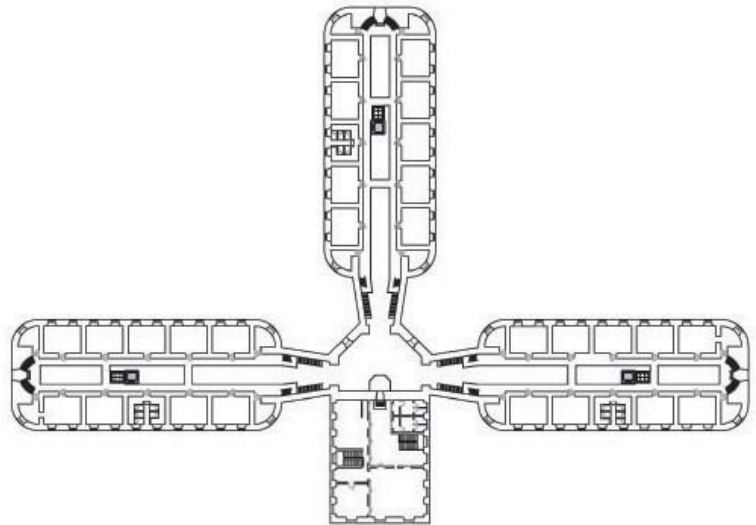
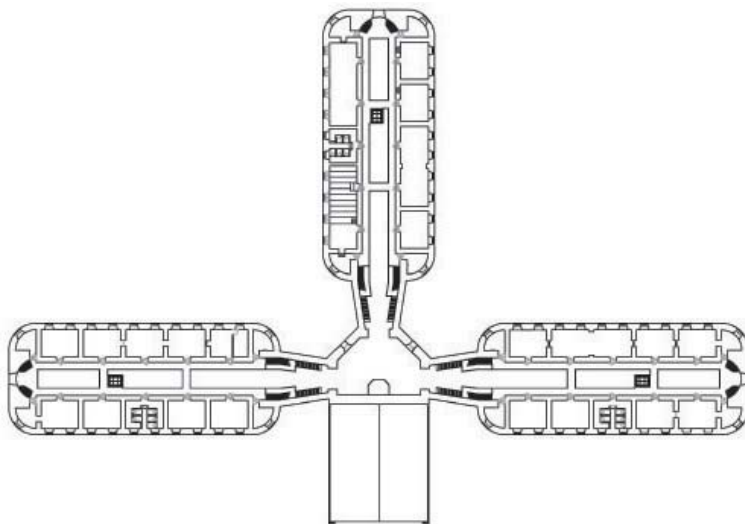


Figure 9:

Casa da Cultura: second floor (source: Fundarpe)



The Casa de Detenção do Recife

The axial map of the ground floor is composed of fifty-one lines (Fig. 10). The most integrated lines, as expected, cross the wings and connect all cells and the entrance to the enclosed patios. The system is shallow and intelligible (Graph 1).

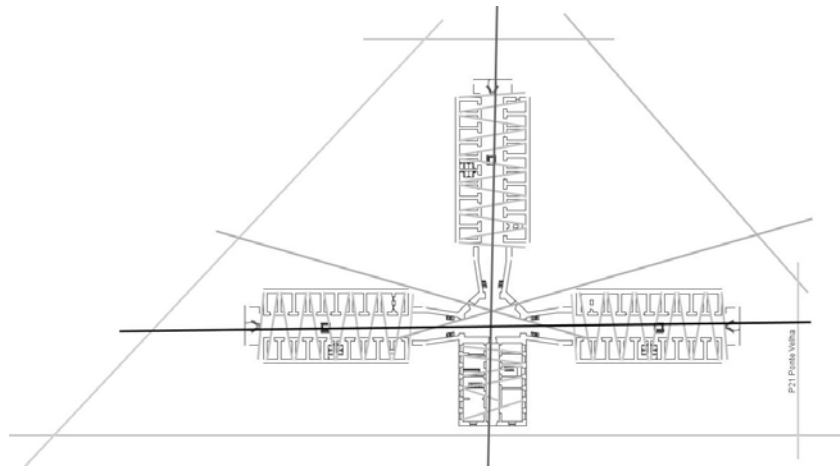
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Figure 10:

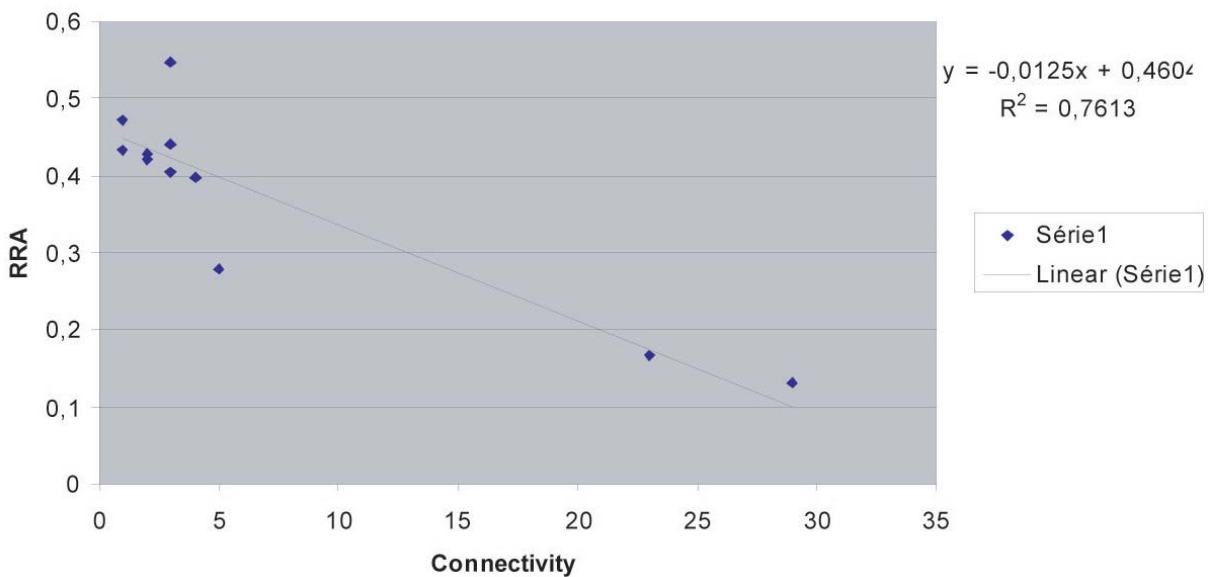
Axial Map of the Casa de Detenção's ground floor

Graph 1:

Intelligibility graph of Casa de Detenção

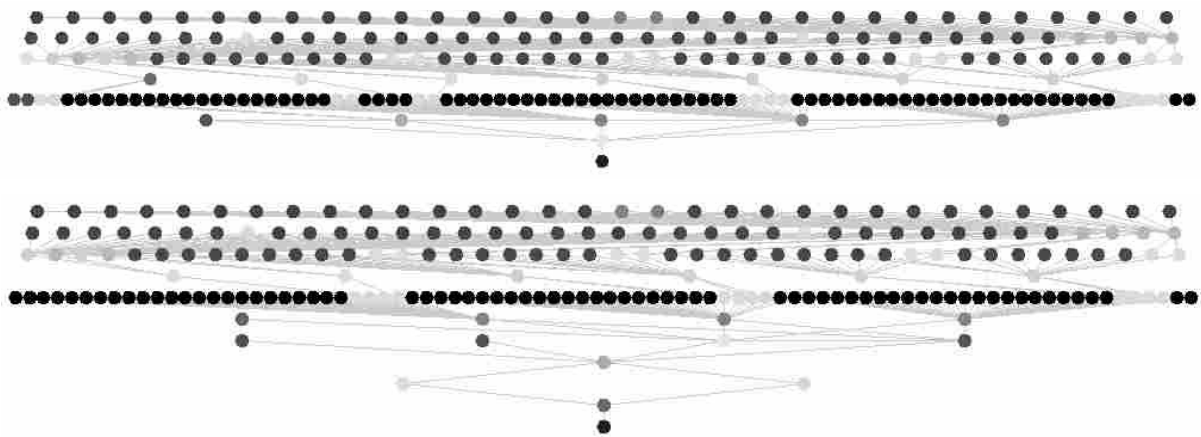


Intelligibility



The convex analysis, as seen in the justified graphs (Figure 6), reveals a regular distribution of cells by levels, isolated by staircases and walkways (light gray dots). The ground floor level houses the shallower cells (black dots) as neither of these transitional spaces mediate their connection to central corridor. The most integrated spaces are the patio and the watch tower, followed by the ground level corridor, and the most segregated ones are the top floor cells. The justified graphs (Figure 11 and 12) show that the whole complex is deeper when considered in relation to the watch tower, than in relationship to the street.

An opposite configuration is revealed when the visual connections are analyzed (Figure 13 and 14). In fact, in relation to visibility, the whole system is shallower and more integrated. The surveillance tower is the most integrated space. The corridors of the ground floor, the central



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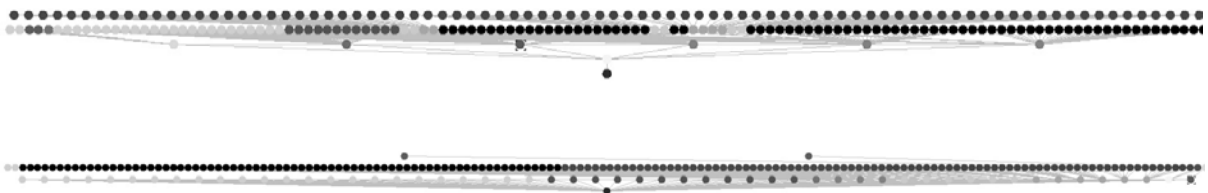
body and the patio also present integration values higher than the average values. The most segregated spaces are the top level cells and the street, characterizing the internal surveillance principles and the need to isolate the interns from the social life. It is relevant to highlight that there is not a direct visual contact between the watch tower and the cells, subverting, as discussed above, the original panopticon scheme. The configuration properties of the watch tower synthesizes the device: deep and segregated to isolate and safeguard prison guards, and visually shallow and integrated to guarantee interns' control.

Figure 11:

Accessibility graph of the Casa de Detenção: Justified from the street

Figure 12:

Accessibility graph of the Casa de Detenção: Justified from the watch tower



In sum, the building type that the Brazilian penitentiary is in debt to be characterized by Hillier and Hanson (1984) as a reversed building, which visitors are found at the deepest spaces and inhabitants at the shallowest ones.

Figure 13:

Visibility graph of the Casa de Detenção: Justified from the street

The Casa da Cultura de Pernambuco

The axial and convex analysis considers the introduction of the panoramic lifts, of the 2003 intervention, but does not consider it in the visual analysis, as its transparency does not interfere in the general spatial perception.

Figure 14:

Visibility graph of the Casa de Detenção: Justified from the watch tower

The effect of the panoramic lifts is the increase of axial lines to 65, as it acts as a barrier to movement (Figure 15). The shallowest line becomes the East-West line that connects one of the cell wings to the administrative wing, at West. The lines become smaller and more segregated, on average. As a consequence, the intelligibility level falls, but not significantly (Graph 2).

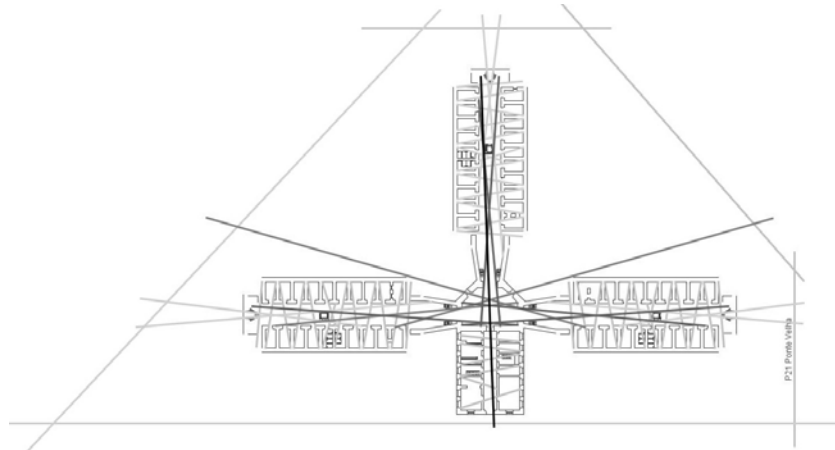
The lifts introduce a direct connection between the corridor of the ground floor and the upper level walkways, therefore acting as a depth reducing device. However, this reduction only happens at the fourth level (when justified from the street) and at the seventh level (when justified from the tower). The depth of the transitional spaces of the first and second pavements is reduced by one level, turning the upper cells shallower and reducing the total depth of the wings and the whole system (Fig. 16 and 17). The patio and the watch tower of the building become the most integrated spaces. The integration values for the first and second pavements' cells become more similar.

Figure 15:

Axial Map of the Casa da Culturas's ground floor

Graph 2:

Intelligibility graph of Casa da Cultura



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Intelligibility

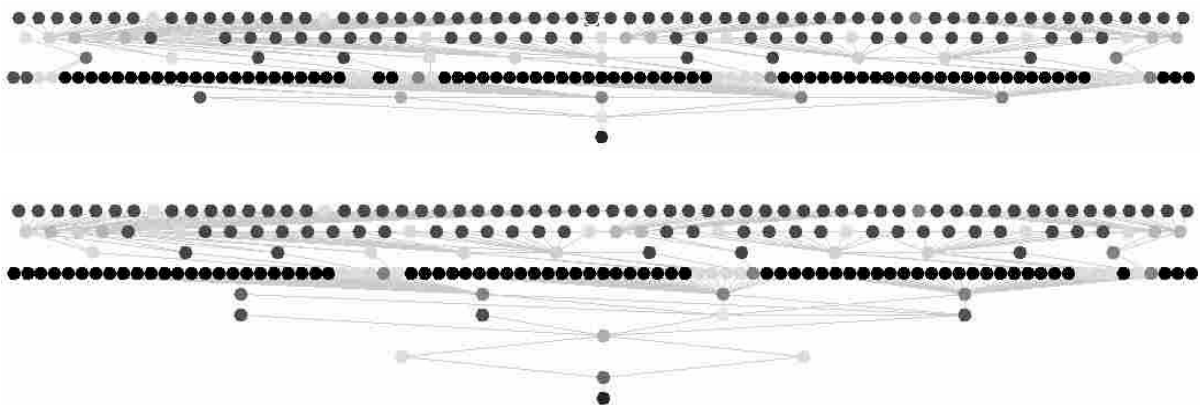
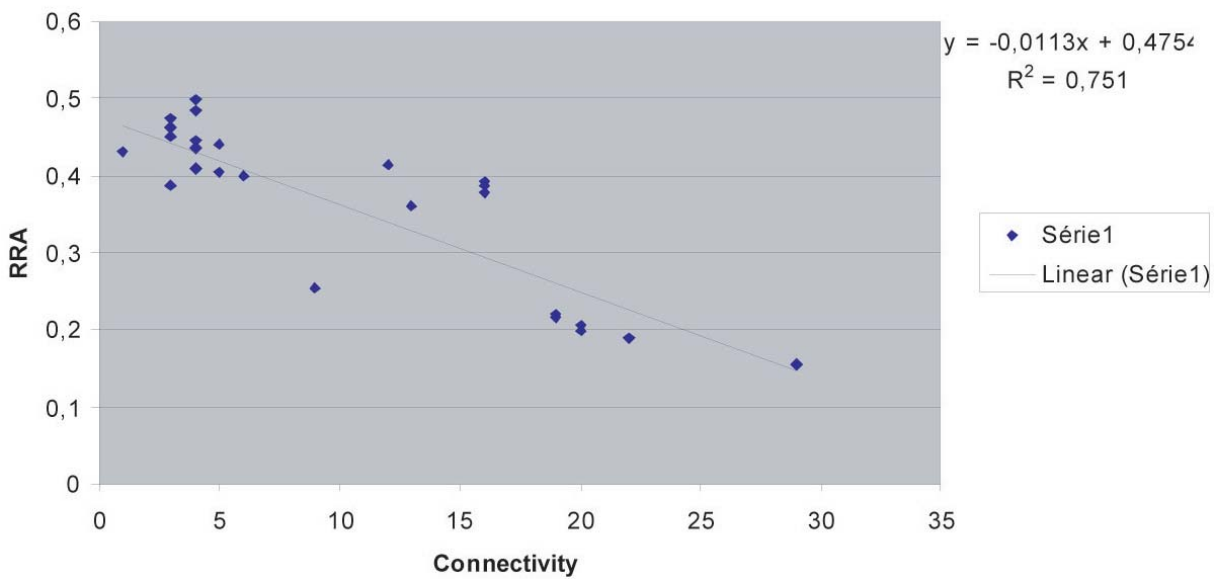


Figure 16:

Accessibility graph of the Casa da Cultura: Justified from the street

Figure 17:

Accessibility graph of the Casa da Cultura: Justified from the watch tower

From a Surveillance Device to a Vending Machine

The spatial structure of the Casa de Detenção de Pernambuco reveals the following properties: (a) in relation to the accessibility, the spaces of the ground level are the shallowest of the system, and the transitional spaces are fundamental for distribution and control; (b) with regards to visibility, the central watch tower is the focal point of the visual system, however deep it may be to be accessed, characterizing the profile of a space for a safe and general

surveillance; and (c) as the building is not circular, differently from the panopticon, but radial, its geometry reduces the surveillance effect of the inspection device, but partially favored its adaptation to the new use.

When assuming the function of an arts and crafts market, the visual control exercised by the surveillance tower becomes obsolete, as it is not necessary to guarantee the efficiency of the trade business, neither the segregation of the cells and the movement control in its interior. Actually, the demand of the new use is exactly opposite to the prison: to maximize co-awareness and co-presence, to receive visitors in the shallowest spaces, to offer open and full access to the public space and to exhibit the products to maximize trading opportunities.

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However, certain properties of the detention house were quite relevant to support the retail demands. For example, the long axial lines connected to the adjacent urban system and densely constituted by cells/shops are ideal for the commercial activity as this spatial structure maximizes the interface between visitors and sellers. In the renovated system, the watch tower, the core of the crossing axes, becomes the convergence center and movement distributor.

On the other hand, the deep upper level walkways and cells are incompatible with the demands of a successful trading market. Under such circumstance, the panoramic lifts seems to be an effective resource, working as a depth minimizer, even though the upper levels will never acquire the same efficiency verified at the ground floor. In fact, the depth minimizer device has a disturbing effect on the ground level as it increases the number of axial lines, contributing to reduce the intelligibility of the system. The efficient crossing axis scheme also dislocates the integration core from the North-South axis to the East-West one and reinforces the centrality of the axial lines that connect the watch tower to the patio. Its effect is to reinforce convex integration and to reduce axial integration. In other words, by fragmenting global axes, the lifts reinforce local centrality – the watch tower and its neighbor spaces.

The effect of the introduction of panoramic lifts seems to be deeper and fundamental for the inversion of the re-formation type, a reversed building (Hillier & Hanson, 1984) to an exchange building (Markus, 1993). The effect is seen in two levels. Firstly, when reducing the upper levels depth, turning the whole system shallower with regards to visitors' experience. Secondly, when turning the vertical access an important component in the integrated experience of purchase and collective leisure - in the contemporary context, exhibitionism and voyeurism are part of the daily urban experience. In this sense, the transparent towers located at the center of each pavilion redefined the global radial scheme in two ways: (a) restating a new centrality in each pavilion, reducing the controlling role of the global watch tower; (b) by creating a new panoptic circularity based on the idea of mutual appreciation and symmetry, distinct of the Bentham's visual asymmetry. The new watchtowers are transparent to guarantee that things and people, as well as, people and people, are framed in a new occupation logic: to see and be seen. As the system becomes shallower, visitors can exhibit themselves in the same sense that sellers expose their products, cell after cell. Moreover, while fragmenting moving experience and reducing the panopticon effect, it increases local visual interaction.

In sum, the spatial alterations demanded by the new use is so pervasive to invert a reversed building (Hillier & Hanson, 1984), moving visitors from the deepest to the shallowest spaces, and transforming a building for re-formation (Markus, 1993), a building type conceived to classify and to relate people to people into a

building for exchange that aims to associate people to things. In addition, the spatial device that operated this profound transformation was the panoramic lift, naturally supported by the opening of prison gates and the demolition of exterior walls. What becomes clear is that to overcome the incompatibilities between buildings' spatial structure and the demanding new function, modifications of structural order were necessary, what turns debatable the pertinence of the use to an architectural heritage, subject of conservation interest.

Towards a New Conservation Paradigm

This case study reveals the evident conflict within conservation practices, which is of theoretical nature. Conservators were concerned with the originality of the tectonic and stylistic aspects of the old detention, which were restored according to the recommendations of the international conservation charters and practices, but were not concerned with the profound changes to its space configuration. One may argue that the subtlety of the space alteration is not at the glance of non-initiated in morphological studies, but the relevance of the alterations and the silence on the matter reveals the absence of a proper theoretical approach to the problem of conservation of the spatial dimension of architecture, as discussed previously.

The Casa de Detenção case is relevant and paradigmatic because it demonstrates how pervasive a singular alteration may be to a space typology. However, more relevant historical buildings, part of national and world heritage, have been significantly altered with the support of conservators, as their eyes do not perceive how relevant the space network is as it reveals profound socio-cultural properties, and constructs the basis for the daily social interaction and built environment appreciation: ethics and aesthetics dimensions.

Overcoming theoretical boundaries requires the creation of new paradigms. The socio-spatial paradigm can support the necessary advances that conservation theories should assume to deal with the deeper architectural structures, or else, our built heritage will be seen and understood solely as a testimony of its tectonic dimension.

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