The coating as a strategy of economic reactivation: The case of the historic center of Cuenca

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Abstract. The Historic Center of Cuenca is relevant for being the segment that originated the current city of Cuenca and, as a scenario that has been periodically coupled to the demanded economic activities; in recent years, the intervention carried out in several buildings has been executed with the purpose of rescuing the brick as a representative material of the city. As evidence, the present work registers 7 examples that, until the year 2022, have resorted to the elimination of the facade masonry cladding in order to leave brick as a visible material; based on this, 3 cases are prioritized and studied from implantation, context, architectural structure and the result of the intervention. The comparative analysis allows the identification of general characteristics and, subsequently, the hierarchy and quantification considering the state of the property, materiality, contextual influence and use; in a complementary way, the regulations and guidelines of current intervention are combined to design 3 types of protocols; 1) management, 2) technical execution and 3) control and maintenance, capable of rescuing the architectural identity of the city through the potentiation of brick. The results show that the interventions carried out are appropriate in the contemporary context, since they have generated a direct link with economic activities and aesthetically contribute to the urban image by adding values. In turn, the multi-parameter evaluation applied ratifies the previous results from the three case studies (95/100 case 1, 99/100 case 2 and 83/100 case 3). It is concluded that the interventions carried out are an alternative to enhance the economic use of the buildings in the CHC and could be repeated in others as a practice of economic reactivation, without ignoring that it may be subject to technical difficulties for the conservation of the brick.

1 Introduction

The spaces established as Historic Centres (CHs) encompass different definitions given based on their location, transcendence and historical and spatial evolution; they are significantly considered as "the most symbolic, appreciated and distinctive places of the cities" [1], giving distinction and relevance to the city to which they belong; The elements that make them up, historical monuments, architectural ensembles, urban landscape vestiges and symbolic buildings, are those that enhance the cultural and historical identity of the city that together

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with the collective memory, built by the inhabitants on the architectural history, turn the CHs into spaces of value and complexity. The CHs form one of the relevant parts of the Historic Urban Landscape (PUH) due to its surface, demographic entity or economic activity, and despite being a limited segment in its structure, the urban architecture, considered as a symbol that serves to define, differentiate and give personality to the cities [2].

In the case of Cuenca, the growth of the city and the relationship with the citizenship in the Historic Center of Cuenca (CHC) has evidenced a remarkable change in the heritage buildings, and, the socio-spatial aspects demand intervention and spatial, formal and technological coupling according to the new uses that arise. From this situation, the economic reactivation, derives in several spaces associated with the consolidation process of the CHC, conformed by several buildings that changed their use and aspect to generate an appropriate place for the development of social and productive activities, as exposed by [3]. Considering the above, the present research focuses on the interventions carried out on the facades that have suffered the elimination of the cladding leaving the brick as the main material, a practice that has spread in the world and in a derivative way, in the facades of buildings of the CHC; with the purpose of potentiating the economy in the area, since, this territorial segment is considered of architectural urban transcendence and is in constant adaptation to the uses demanded by the society.

The objective is to carry out an architectural study on the practice of removing brick masonry cladding as a tool for economic reactivation in the CHC, through case studies and, complementarily, the identification and discernment of factors that influence the intervention of a building in order to finally generate 4 protocols applicable in the different stages of intervention.

2 Antecedents

2.1 The historic center of Cuenca

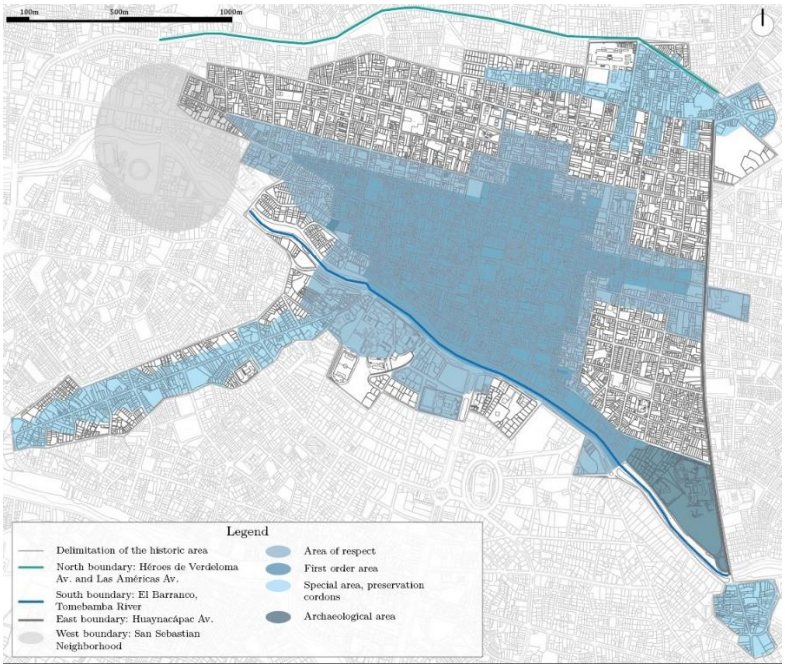

Fig. 1. Delimitation and conformation of the historic area of Cuenca.

In Cuenca, the CH is the urban area corresponding to the initial consolidation zone of the city, it covers a total area of 178.23 ha and includes 30.12 ha of special areas and 15.70 ha of archaeological spaces (Fig. 1) [4]. As stated by Álvarez and Serrano [5], physically, the CHC is located in the upper area of the city, the second alluvial terrace, and has two entrance and exit zones, to the east by San Blas and to the west by San Sebastián; architecturally, the study area contemplates several elements and constructive styles that contribute significantly to its conservation and to the result of the architectural urban landscape, besides being considered a scenario that allows palpating the culture and history of the city [6].

The CHC and its status as heritage began with the declaration of the city as State Cultural Heritage in 1982, a category resulting from the need to protect the assets that comprise it [7], 17 years later, on December 1, 1999, the CHC was recognized as World Cultural Heritage by UNESCO [4]. This process was the result of efforts made by local entities (INPC, Municipality of Cuenca, Curia, foundations, universities, architects association, financial entities and owners of CHC properties), whose purpose was to present UNESCO with a significant support for the declaration. The degree of importance attributed to the intervention and management of the CHs is a fundamental aspect that needs to be known at the community level prior to transformations or changes [8], considering that not only the administrative entities are responsible for the process of change but all those who inhabit the territory. In the architectural field, the assets are a response to community needs that are adjusted to their environment, which has made it possible to demonstrate internal and external transformations in buildings and their context [9].

As established in the Proposal for the Inscription of the Historic Center of Cuenca on the World Heritage List [10], the 2007 Cuenca Cantonal Development Plan includes variables focused on the built heritage and natural assets of the city. Consequently, the issue of the CHC and its Special Areas play an important role in the city's planning process:

- Preserving and enhancing the CHC as the most living and permanent cultural manifestation of the inhabitants.
- Integrating the conservation of the CHC within the General Land Use Plan of the Basin, which includes specific plans for equipment, roads, transportation, infrastructure and environmental management, and in the Regional Programs for tourism development, among others.

The 2010 Ordinance for the Management and Conservation of the Historic and Heritage Areas of the Cuenca contemplates the actions that can be developed in heritage properties, designating the architectural valuations as the main guideline for future interventions. In the case of the CHC, Asmal [11] considers the Committee for the Management of the Built Cultural Heritage of Cuenca Canton as the body responsible for decision making related to the built cultural heritage, made up of a political and technical body represented by socioeconomic agents involved in the management and which in turn cover three strategic sectors (Table 1).

Table 1. Strategic Sectors of CHC Management.

Public sector	Private sector	Community sector
INPC Municipal Government of Cuenca GAD's Parroquiales	Non-governmental organizations, companies private companies, organizations and groups cultural	Neighborhood governments, church institutions, cultural ecclesiastical institutions, cultural associations educational institutions, owners of heritage owners of the heritage buildings, national and foreign tourists, rural and foreign tourists, rural communities, associations of young people and senior citizens associations

With respect to economic activities, despite being consolidated towards the central zone of the CHC, a strategy has been proposed to locate public and private spaces for social and economic exchange in order to ensure that the CHC is an active space [12]. In addition, there are no current regulations that establish specific or restricted zones for the implementation of economic activities [8].

Finally, as mentioned by Rodas [13], the management of built heritage is governed by the INPC Regional 6 and the GAD Municipal del Cantón Cuenca through the Directorate of Historical and Heritage Areas and the Historical and Heritage Areas Commission, whose guidelines focus on:

- Identification of assets that make up the built heritage and the CHC.
- Preparation and updating of inventories.
- Research related to the state and conservation of built assets.
- Executable interventions with the purpose of safeguarding the existing assets.
- Technical advice subject to documentation and necessary authorizations.
- Oversight to ensure the protection and conservation of heritage assets.

2.2 Reactivation and Economic Development of CHC

The CHC is an area in which economic activity has increased considerably, so there is evidence of an architectural transformation according to its use; this process can alter the heritage values and attributes by extending into fully commercial segments such as mixed-use areas in which pre-existing homes or buildings were coupled to commerce [8]. Additionally, it is a scenario of economic activities of contradictory origin; on the one hand, one can find street vendors and artisans whose commercial activity represents the local culture and, on the other hand, buildings intervened with modern technologies and materials in which the form of commercialization corresponds to the global model [14].

Considering the above, the transformation of the CHC from a residential zone to a commercial zone is the historical response to the needs of its inhabitants in which social activities demanded by its users are linked. Caraballo [15] also argues that new uses of public space, mainly in historic areas, should be evaluated from a technical and social point of view; any assigned use should be related to its historical value and significance, and the uses to be implemented should be directly linked to the spatial background. In addition, the new uses of built heritage directly linked to economic activities arise as a novel idea whose purpose is economic growth; the purpose is to use buildings with historical value that are at rest or temporarily unused to execute administrative, cultural, educational or recreational activities that generate relations between the community and the site, an idea that for Borja and Muxí [16] is an important contribution to the city and urbanism considering:

- The revaluation of the place: the community demands a valuation of public space, urban environment, quality of life and the neighbourhood-city system.
- The demand for citizen democracy: the need for community concentration and participation in plans and projects linked to the recovery of the protagonism of local entities.
- The recreation of the citizen concept: the environment is considered a subject of urban policy as a means of intervention between the construction and management of the city.

Additionally, collective memory is an important aspect to consider citizen participation as a representation of memory that shape the idea of how the city is perceived from the community's point of view. Moreover, CHs are spaces that materialize the result of social processes such as the progressive abandonment of housing and the redefinition of public space as the context of local and global interest groups [8]. Consequently, it is notably evidenced that, in these areas, the buildings function as governmental and management

offices prioritizing the administrative use, a strategy that concludes being negative for the socio-spatial functioning, mobility and integrity of the building [15].

2.3 Brick as a Predominant Material in CHC

The historical evolution of cities generates the need to intervene in their buildings, adapting them to the new context and human activities they encompass; a current type of intervention is the change of appearance of a building by removing the surface layers of its facades, where a constructive setback is generated by leaving the materials exposed in their own appearance [17]. For their part, Rosas and Torres [18] expose the current relevance of the criterion of eliminating the historical plaster or coating that covered the base material in the elaboration of an architectural element; through the changes and reforms of the building throughout its historical evolution, leaving in evidence the most representative material of each architectural work and proposing an intervention and finishing proposal for a building.

Brick is considered a traditional material in the historical context of Cuenca, where there are examples built with brick in its structure and exposed brick on the facades; these buildings are even considered cultural, aesthetic, and architectural landmarks [19]. As stated by Pesántez and González [20], in the local constructive environment, mud, wood and straw buildings predominated, since, with the arrival of the Spaniards, materials such as lime, tile and brick were incorporated: that is to say, the use of brick did not significantly replace the pre-existing materiality, until when the Spanish and French architecture began to be replicated, generating transformations in the facades, consequently the structural and aesthetic conditions of the cities, especially in Cuenca, considered the orange city due to the chromatics contributed by the use of brick and tile.

The brick, being an element elaborated by a raw material is easy to obtain, having a moulding process through which various shapes and finishes can be obtained, at present, it went from being an element used only in masonry to be used as a basic tool to favour the aesthetics and finishes to the buildings thus giving the construction guild the facility to generate goods in which the particularity is found in the brick of the facades [21].

The coating, whether a simple material or an elaborate mixture, is a layer or covering used to protect or decorate a surface; its main function is to protect, increase resistance and ornament the facades, which consequently influences the image and aesthetics of the property, as Bermudez [22] states. In addition, the author considers that the coatings play an important role as they are a vestige that allows identifying interventions carried out in the work. In addition, Casado [23] mentions that rendering and plastering are fundamental elements of the coating process; rendering, being the first layer, has the objective of homogenizing and protecting the masonry, providing resistance, and serving as a support for the plaster. On the other hand, the plaster is the one that gives the definitive finish, it is composed of one or several layers that give the final finish and texture.

Echeverría and Malambo [24], consider that facades are a fundamental element of architectural design, since they are the part of a building that is perceived from the outside, and practically the basic resource to characterize and interpret the building. When dealing with facades of heritage buildings or constructions located in areas of special consideration, their history must be interpreted as a variable that defines their value and is the basis of their temporal evolution. Complementarily, its material and current state should be investigated [25], due to the aesthetics obtained by the variety of possible rigs to be used, the chromatics, finish and ease of handling of brick, it has given way to the current use of this material as a base in the construction process of masonry or in some cases to the visible resurgence of the material in existing buildings [26].

Casado [23] considers the building façade as a particular segment of the buildings that can be subject to two types of intervention; first the conservation of itself and a part of the existing

building if the state of the structure is adequate and guarantees the safety, maintenance and functionality of the building and second the conservation of itself and replacement or reconstruction of the interior part: when the structure and internal part of the building have a high level of deterioration or physical damage that does not allow it to be a safe and functional space for social use. According to the above, the present study specifically considers the façade and the interventions carried out on it; in relation to the above, in the CHC, two intervention techniques are evidenced, the first consists of the elimination of the cladding to leave the exposed brick, which is the one that is discussed in depth, and the second, which is an alternative that consists of the overlay of façade-type brick on the existing masonry, on the latter, although several cases have been identified, it is not analyzed in detail, since it is not the objective of the present work.

As stated by Monjó [27], the technique of eliminating the cladding to leave exposed brick contemplates the following process:

- Inspect the masonry to know if it is brick and what type of facing was used.
- Determine damages and conditions to identify pathologies and damages of the masonry to repair them if necessary.
- Carry out physical tests on segments of the masonry, by chipping and scraping the cladding to evaluate the behaviour and the result obtained.
- Delineate segments of masonry to remove the coating in sections.
- Removing the coating manually by chipping and scraping, using a combo, chisel and wire brush.
- Clean or remove impurities and elements that alter the masonry finish.
- Clean the surface of the brick masonry.

It is worth mentioning that this type of intervention is prone to present physical injuries as a consequence of leaving the material exposed, so it is recommended to inspect the state of the material frequently, as well as cleaning the masonry to avoid damage, this preventive measure is performed by brushing the masonry following the direction of orientation of the courses [28]. Additionally, as suggested by Díaz [26], there are water-repellent products that, when applied on the masonry, create a resistant film as a barrier to waterproof the material and thus protect it from harmful agents without altering its physical appearance or properties that the brick has as it is a porous surface material.

3 Methodology

The methodological development is based on architectural research and bibliographic review of sources that allow defining and analysing the factors that have demanded the intervention in CHC buildings, focused specifically on the architectural and economic aspects. Thus, the research is carried out in a qualitative sense, in which direct observation and documentation are fundamental instruments and methodological strategies.

In order to know how the buildings that have undergone a process of conservation and restoration contribute to the economic, social and cultural development of the city, a quantitative and qualitative analysis is carried out. Relevance is given to the economic aspects that, as stated by De la Torre [29], are a potential valuation guideline for an asset; this valuation arises from two approaches, the use value referring to the material value of the asset within the market and the non-use value, defined empirically and qualitatively through a visit and informative survey in situ.

The bibliographic review is executed as the starting point; by means of documentary research it is intended to generate a synthesis that serves as a guide to establish conclusions or discussions on the pre-existing [30]. Silamani and Guirao [31] conceptualize the integrative research methodology as a process that encompasses a broad approach to the field of study that includes empirical and theoretical literature to meet the objectives set and to

identify useful concepts to reconceptualize the vision of the current problem. The consideration and identification of current legal elements related to the preservation, intervention and maintenance in buildings in the CHC, considering important threats that affect the assets, especially the facades as its main constructive element [32]. Additionally, to complement the existing guidelines and parameters with aspects that strengthen and allow to have some control over the interventions.

After the on-site visit, the registration of specimens and the collection of general physical and qualitative data, the selection of cases is the starting point of the architectural analysis, which allows to know the building formally and functionally as a dynamic element of social interaction, with the purpose of executing activities that meet the needs.

For the evaluation of the intervention carried out, the hierarchization allows categorizing each case study according to its condition, materiality, contextual influence and use in order to interpret the degree of effectiveness resulting from the process. The objective is to quantify the case study as a result of the intervention carried out. The quantitative parameters are based on a Likert-type rating scale from 1 to 5, with 1 being very bad and 5 being very good (between 1 and 3 is considered a negative range and 4 and 5 a positive range). The parameters to be rated in detail are detailed below (Table 2):

Table 2. Case study hierarchical ranking parameters.

Condition of the property	**Materiality**	**Contextual influence**	**Use**
Masonry	Masonry	Contribution to the immediate context	Relationship of the building with the economic activities of the section.
Doors	Doors	Masonry	Relationship of the building with the economic dynamics of the area.
Windows	Windows	Doors	Contribution of the intervention to the reactivation of economic activity
Eaves/balconies	Eaves/balconies	Windows	Influence of the use given to the building for the transit of the users.
Ornaments	Ornaments	Eaves/balconies	Satisfaction of users with the use of the economic spaces of the building
		Ornaments	

According to the above, the interpretation is ranked as follows:

- Optimal intervention (80 to 100 points): the result allows the current state to be very good.
- Intervention to improve (50 to 80 points): the result maintains the building in a good state; however, it has aspects to improve.
- Subject to re-intervention (- 50 points): the result is inappropriate and requires a new intervention.

In turn, considering the analysis of the case studies and the guidelines set out in the referential documentation, intervention protocols applicable to CHC buildings are designed. These interventions are considered an alternative applied in buildings in which, by eliminating the masonry cladding of the facade and leaving the brick as the exposed material, it is a tool for the rehabilitation of the building as well as contributing to the dynamics of the current economic reactivation of the CHC; considering the above, 4 protocols are proposed; 1) management protocol, 2) technical protocol of execution, 3) control protocol and 4) maintenance protocol. These instruments are structured by aspects that guarantee an appropriate management, execution, control and maintenance of the intervention.

4 Development

4.1 Case studies

The visit to the study area was the basic activity to identify the existing specimens in which the facade cladding was removed to leave exposed brick, as a result 7 cases were identified (Fig. 2) until April 2022.

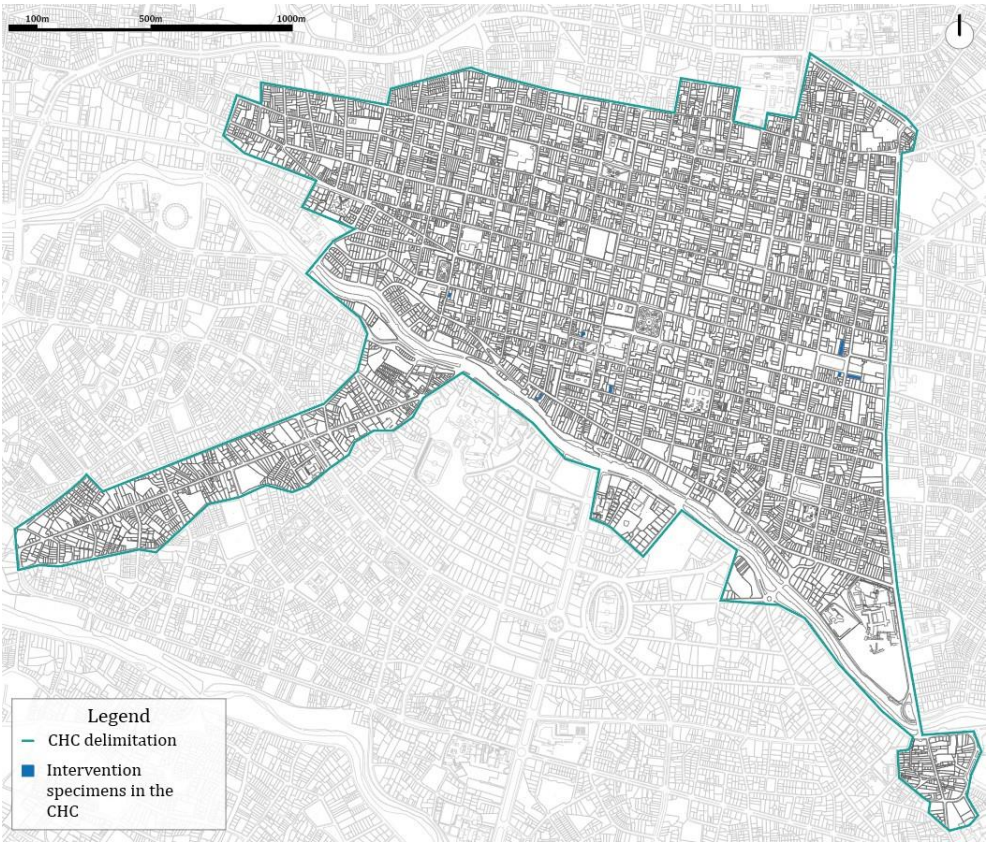

Fig. 2. Mapping of intervention specimens in the CHC.

A register of buildings was generated (Fig. 3), which were assigned a name and coding (C01, C02, C03, C04, C05, C06, C07, according to the application of observation sheets characterizes the buildings considering their current state, physical appearance and intervention; the information collected was used to select three case studies (C01, C03 and C05) that, due to the intervention carried out and accessibility, are potential architectural elements that can be analyzed in detail.

Fig. 3. CHC intervention specimens and selected case studies.

4.1.1 Case Study 1 (C01)

Called Casa de los Arcos (House of the Arches), it corresponds to a 3-story building with a single use. As for the intervention carried out, the masonry cladding was removed by chipping and scraping the cladding, leaving the exposed brick and rescuing the aesthetic value obtained by the use of arches and lintels of the structural porches, which are currently a characteristic of the building, but at the same time, used since colonial times in the city (Fig. 4).

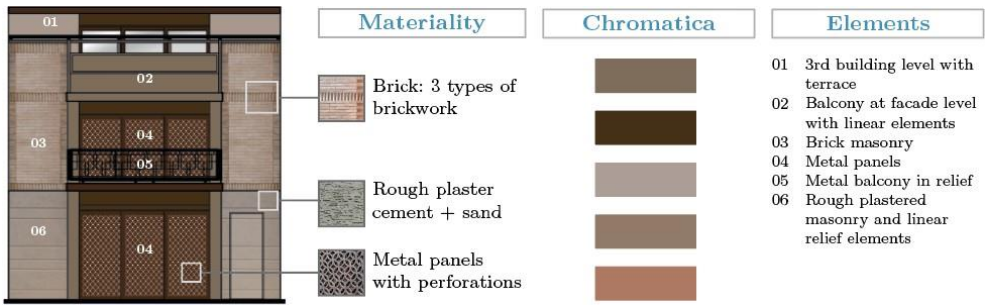

Fig. 4. Characteristics of facade case study C01.

The intervention carried out corresponds to a rehabilitation process in which the use and activities demanded by society (commerce, housing and work) were enhanced. The use and functionality comply with the idea of architectural and economic reactivation under which the intervention was planned, since it has commercial spaces (travel agency and offices) and living spaces (apartment). In addition, the intervention carried out can be considered appropriate since it has been shown to function properly, i.e., to satisfy the housing and economic needs of its users. It should also be noted that it reactivated an architectural element in a relevant historical area, thus generating dynamics in its context and expanding the existing ones. The name assigned to the building is due to the constructive typology of porches, which have been exposed by removing the masonry cladding, so it is elevated to a

symbolic condition representative of the city in the period of consolidation dating back to 1583 [33].

In turn, the section to which the building located on San Blas Street between Manuel Vega and Tomás Ordoñez belongs (Fig. 5), allows us to determine characteristics; it is made up of 10 buildings that vary between 1 and 3, implanted in a continuous manner without frontal retreat. As for complementary elements, there is no vegetation, the sidewalk is continuous and uniform, and the existing urban furniture is street lighting. In terms of use and occupation, the buildings are fully occupied, are privately owned and are used for housing and commerce. In terms of physical appearance, the section is in good condition; the existing materials are cement, stone, brick, wood, metal, porcelain tile, and the existing styles are vernacular and traditional. The colour scheme includes brown, grey, beige, green, orange and pale tones; the morphology of the buildings and their facades are linear with a medium level of use of ornaments.

Fig. 5. Case study section C01.

The score obtained in the hierarchical evaluation is 95 points, equivalent to an optimal intervention; physically it is in very good condition and functionally it satisfies the needs of the users; the aspects evaluated are detailed as follows:

- The condition of the property covers the masonry, doors, windows, eaves, balconies and ornaments which are in very good condition.
- The materiality of the masonry, doors, windows, eaves, balconies and ornaments is considered to be in very good condition and conservation.
- Regarding the contextual influence, the use is positive but does not respond to a necessary activity for the society but to a complementary activity, the aesthetics, functionality, constructive technique and typology of the building contribute positively to the immediate context.
- The use of the building has a good relationship with the economic activities of the section, with the economic dynamics of the area, with the economic reactivation with the transit of users and the defined economic spaces satisfy the users in a very good way.

4.1.2 Case Study 2 (C03)

The San Francisco House is a 4-story building intended for mixed use; the rehabilitation is total, however, pre- existing elements of the facade are maintained, in terms of materiality evidence brick as a result of the elimination of the coating by chopping and scraping the coating, masonry segments with coating and travertine, materials used in the building since its inception. The ornamental elements of the balconies and windows were restored to form part of the current facade. The façade presents material and chromatic contrast to generate a symmetrical element (Fig. 6).

Fig. 6. Characteristics of facade case study C03.

As for the context, the intervention carried out in the Plaza de San Francisco complements the idea of reactivating a commercial area, the presence of urban furniture (booths) are elements that significantly influence the visualization and appreciation of the building. According to the architectural distribution, the first floor is destined for a commercial space (pharmacy) and several housing units. The second floor is for retail or office use, and the third and fourth floors are for housing. The intervention is considered appropriate because it reactivates a building belonging to an area of high social affluence and contemplates large-scale commercial activities.

Considering the section to which C03 belongs (Fig. 7), on San Francisco Street, between General Torres and Padre Aguirre in front of San Francisco square, the building is included among 12 other buildings between 2 levels and 5 continuously implanted with a portal. The existing complementary elements are public lighting, a pedestrian access road and no vegetation. The dominant use is commerce and housing; the buildings are private and have a 90% occupancy rate. In terms of the physical aspect, the sod is in good condition, and the materials used are cement, stone, travertine, brick, wood, metal, and porcelain tile. The architectural styles found in the section are colonial, neoclassical, vernacular and traditional, with colours in shades of brown, grey, blue, beige, neutral and orange. Likewise, the morphology of the buildings is of mixed character (linear and organic) with a high ornamental level.

Fig. 7. Case study section C03.

The evaluation carried out by means of the hierarchical ranking is 99 points, equivalent to an optimal intervention since, physically it is in very good condition and functionally it satisfies the needs of the users considering:

- The condition of the property covers the masonry in good condition and doors, windows, eaves, balconies and ornaments in very good condition.
- The materiality and finish of the masonry, doors, windows, eaves, balconies and ornaments are in very good condition and conservation.
- The contextual influence, use, aesthetics, functionality, construction technique and typology of the building contribute positively to the immediate context.
- The use of the building has a very good relationship with the economic activities of the section, with the economic dynamics of the area, with the economic reactivation, with the transit of users and the defined economic spaces satisfy the users in a very good way.

4.1.3 Case Study 3 (C05)

Assigned as Casa Calle Larga, the building underwent a rehabilitation process; it consists of 4 levels and its use is mixed (commerce, public service spaces and housing). In terms of materiality, the intervention is partial, the pre-existing travertine is maintained and in segments of the facade the cladding was chopped and removed leaving the brick in sight; these materials complement each other generating a symmetrical general element in which the materials complement each other to contribute to the aesthetics. The current condition is considered fair since, despite looking like a relatively new building, the damage is highly visible deteriorating the façade (Fig. 8).

The condition of the building is similar to that of the buildings in the section, as it is a sequence of deteriorating buildings (in fair and poor condition). The building does not contribute to the urban image, since the saturation of urban furniture and advertising elements is evidence of disorder. The intervention carried out can be considered appropriate as it has reactivated a building that was in a deteriorated condition and includes commercial activities that respond to social needs.

When analysing the section where the building is located (Fig. 9), on Larga Street, in front of the 10 de Agosto Market, between Tarqui and General Torres Streets, it is composed of 15 buildings between 1 and 5, all the buildings are implemented in a continuous manner without frontal retreat, they are accessed by a continuous and uniform sidewalk, the complementary elements include public lighting and there is no vegetation. In terms of use and occupation, activities related to commerce and housing are carried out in privately owned and fully occupied buildings. The physical appearance of the section is characterized by being in good condition and contains materials such as cement, stone, travertine, brick, wood, metal and porcelain tile: the existing architectural styles are neoclassical, vernacular and traditional with a colour scheme that varies in shades of brown, beige, yellow, orange and ecru. The morphology of the buildings and constructive elements are linear with a medium level of ornamentation.

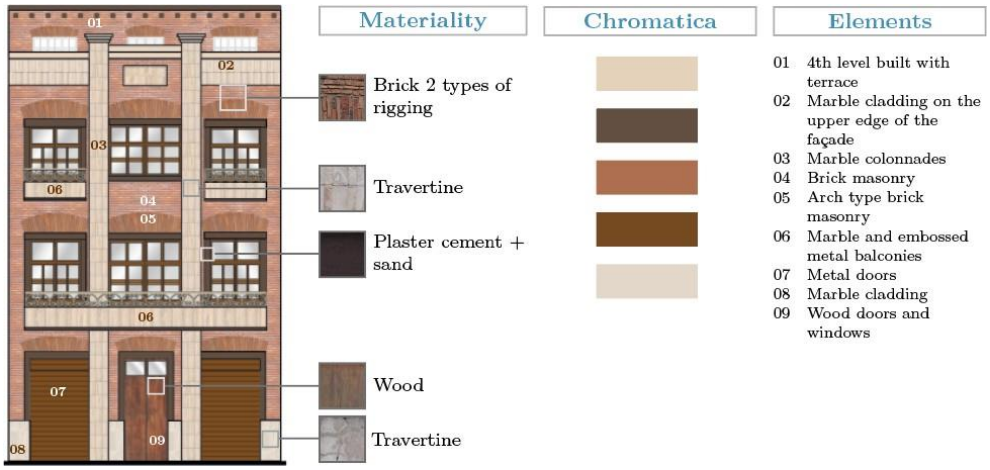

Fig. 8. Characteristics of facade case study C05.

Fig. 9. Case study section C05.

The evaluation made through the hierarchical ranking is 83 points equivalent to an optimal intervention, since physically it is in very good condition and functionally it satisfies the needs of the users; however, the score obtained is in the range that suggests that the building requires maintenance to prevent it from progressively degrading:

- The condition of the property includes masonry, doors and ornaments in fair condition, windows, eaves and balconies in good condition.
- The materiality and finish of the masonry, doors, windows, eaves, balconies and ornaments are in good condition.
- Regarding the contextual influence, the use, functionality and typology of the building contribute positively to the immediate context, the aesthetics and construction technique of the building contribute to the context, but due to the lack of maintenance and partial restoration of the materiality they have a good contribution.
- As for the use of the building, it has a very good relationship with the economic activities of the section, with the economic dynamics of the area, with the economic reactivation, with the transit of users and the defined economic spaces satisfy the users in a very good way.

5 Design protocol

The intervention protocols to be proposed focus specifically on CHC buildings that have the alternative of eliminating their façade cladding to leave brick as the exposed material, focusing on the reactivation of the space and the current economic dynamics of the study area and of the buildings that have already undergone this intervention process. To this end, considering the CHC intervention processes and guidelines, 4 types of protocol are proposed

according to the stages of the intervention (before, during and after): management, execution technician, control and maintenance (Table 3).

Table 3. Protocols and basic guidelines.

Before the intervention	During the intervention	After the intervention
Management Protocol: activities related to the intervention process	Technical implementation protocol: actions to be carried out during the intervention. Control protocol: inspection of the result of the intervention.	Maintenance Maintenance protocol: conservation conservation of the intervention

5.1 Management Protocol

It is designed with the purpose of evidencing and determining the considerable actions in the type of intervention to be carried out in the building in the previous phase, it is composed of:

- Objective: to establish the intervention activities to be carried out in the first instance, as a process prior to the execution of the intervention.
- Protocol description: defines the actions to be carried out prior to the intervention and prior to the permit application, when applying for execution permits and once the permits have been approved.
- Resources: specifies the human, administrative and/or regulatory resources involved.
- Product: covers the product or effects obtained by the proposed protocol.

5.2 Technical Implementation Protocol

It establishes the execution activities applicable during the intervention process considering the guidelines established in the current regulations and documentation, in addition to describing the intervention technique and its procedure. This protocol is composed of:

- Objective: to evidence and determine considerable actions regarding an intervention in which the façade cladding is removed from CHC buildings.
- Protocol description: defines the actions to be taken during the execution of the intervention and at the end of the intervention process.
- Intervention technique: applicable technique and procedure.
- Resources: specifies the human, administrative and/or regulatory resources involved in the protocols.
- Output: results obtained by the proposed protocol.

5.3 Control Protocol

It focuses on the inspection or domain, being a tool that ensures an intervention according to the basic guidelines and processes required during the intervention, the components are:

- Objective: to inspect the intervention carried out on the façade of the building and the interior space, if applicable, to verify compliance and correct execution of the intervention.
- Protocol description: defines the actions to be carried out upon completion of the intervention process and periodically (every 3 or 5 years).
- Favourable circumstances: it frames the positive and optimal components of the intervention that contribute to the building and context.
- Warning factors: determines the agents that generate damage or may deteriorate the state of the building.

- Corrective actions: includes action parameters to prevent deterioration of the building.
- Resources: specifies the human, administrative and/or regulatory resources involved in the protocols.
- Product: includes the product or effects obtained by the proposed protocol

5.4 Maintenance Protocol

This protocol focuses on the protection of the intervention carried out, in order to generate a series of executable actions with the purpose of maintaining the buildings in good condition and its use guarantees an appropriate use by the users, it is applied after the intervention and is composed by:

- Objective: to monitor the intervention carried out on the façade of the buildings to establish applicable improvement and conservation actions.
- Protocol description: defines the actions to be carried out upon completion of the intervention process and periodically (every 3 or 5 years).
- Corrective and conservation actions: includes action parameters to prevent deterioration of the building or misuse to keep the property in good condition.
- Resources: specifies the human, administrative and/or regulatory resources involved in the protocols.
- Product: includes the product or effects obtained by the proposed protocol

The objectivity of the protocols designed is based on compliance with the provisions of the Ordinance for the Management and Conservation of Historic and Heritage Areas of the canton of Cuenca and the Regulations for the use of colour and materials in buildings in the Historic Center; additionally, it is governed by the process for the approval of interventions in the CHC established by the Directorate of Historic and Heritage Areas. Furthermore, the protocols proposed support the processes established for the management and control of buildings in the CHC by the INPC, starting with registration, inventory and cataloguing as the basic process for understanding the buildings as elements that can be intervened to meet social needs.

6 Conclusions

Historical centres are interpreted as territorial segments of a symbolic nature with respect to the history, transcendence and evolution of cities; additionally, by containing relevant spaces and buildings, they have the capacity to evidence the process of architectural consolidation up to the present day and are therefore considered a vestige of collective memory. The dynamics of the formation of the CHs evidences a series of functional and social changes that are linked to the way of life of society; the uses and spaces that have been historically coupled have generated a series of historical vestiges that are interpreted in the variety of architectural styles and typologies that make them up. In the case of Cuenca, the CHC corresponds to the city that was initially consolidated and currently covers an area of 224.14 hectares. In order to enhance its potential, interventions have been proposed that include the public space and existing buildings as specific elements executed objectively to guarantee the interpretation, appropriation and continuity of the historical legacy. The existing buildings in the CHC were understood as spaces of morphological, functional and social transformation according to the demand of the inhabitants, and consequently, they are subject to processes of transformation, adaptation, growth and evolution; the main activity developed is the economic activity linked to commerce, tourism, finance and administration, which have directly influenced the

dynamics of change of use of the buildings and is also evident in the aesthetic change of the same, emphasizing the facades as they are the visible segment in the foreground.

As a starting point for the practical analytical process, 7 examples of existing interventions were registered until April 2022 and 3 cases were selected (C01, C03 and C05) to carry out the architectural study on the relationship between the elimination of the brick masonry cladding and economic activation: This process was carried out through on-site visits and the application of information sheets to collect relevant information on the case studies and their context. In addition, the application of surveys to focus groups was the instrument that allowed us to know the social perception of the intervention and its influence on the development of their economic activities.

In detail, understanding the intervention process and the current state of the buildings allowed understanding how the interior spaces and the architectural program have been coupled to generate spaces for economic use and the importance given to the aesthetics of the buildings through the intervention on the facades. The interpretation of the intervention of the case studies led to the conclusion that:

- Case study 1 (C01), went through a rehabilitation process in which the facade and interior were changed; when the facade was treated, the cladding was removed in segments where the brick was left as an exposed material. Regarding the use and the link with the economic activities, spaces were implemented for the operation of offices on 2 levels and the 'last level maintains a residential area. The intervention carried out in the building is appropriate as it shows a correct functioning, i.e., to satisfy the housing and economic needs of its users.
- Case study 2 (C03) corresponds to a building that was rehabilitated; however, existing ornamental elements were also restored on the façade and the masonry cladding was removed to leave exposed brick. In terms of use, commercial and residential spaces were adapted. The intervention is appropriate since it reactivates a building belonging to an area of high social affluence and contemplates large-scale commercial activities.
- The third case study (C05), rehabilitated its façade and its interior space mostly, regarding the masonry of the façade the cladding was removed leaving exposed brick as the predominant material, regarding the interior spaces have been intervened forming large commercial premises on the first level, offices and points of public attention on the second and third level, the 'last level has the appropriate spatial distribution for residential use however it has not been intervened. The intervention is appropriate as it has reactivated a building that was in deterioration and includes commercial activities that respond to social needs.

The hierarchical ranking of the case studies allowed assigning a score considering the condition of the property, materiality, contextual influence and use, C01 a score of 95/100, C02 99/100 and C05 83/100, being the third case the one that suggests monitoring and maintenance actions. The assigned values are equivalent to an optimal intervention since physically they are in good condition and functionally, they satisfy the needs of the users, they have also contributed to the urban image in a positive way and their intervention has been favorable for people to make use of them. Regarding the interventions carried out in the CHC to highlight the brick as a representative material, two techniques are identified: the first one, in which we went deeper; it consists of the elimination of the coating by chopping and brushing, and the second one, which consists of the over-positioning of facade type bricks on the existing masonry; the use of these intervention techniques highlight the idea of using the brick as a relevant material for the history and architectural tradition of Cuenca.

The design of four intervention protocols applicable in those case studies that have the alternative of eliminating the facade cladding to leave the exposed brick, focusing on the reactivation of the building and the economic dynamics, and for those who have already

carried out this intervention, as in the case studies of this work. Such protocols, are raised for the different stages covered by an intervention and according to the type of action required: the management protocol is applicable before the intervention, the technical protocols of execution and control are applicable during the intervention and the maintenance protocol is applicable after the intervention, that is, when the process has been concluded. They are described in detail:

- The management protocol, objectively, establishes intervention activities to be carried out in the first instance, as a process prior to the execution of the intervention, so it covers the diligence required to obtain permission to execute an intervention.
- The technical intervention protocol evidences and determines considerable actions regarding an intervention in which the facade cladding is removed in CHC buildings, in this section the procedure involved in the intervention was specified in a technical and detailed manner.
- The control protocol is executable to inspect the intervention performed on the facade of the building and the interior space if applicable, to verify compliance and proper execution of the intervention considering favourable circumstances, warning factors and corrective actions.
- The suggested maintenance protocol for the final phase proposes to monitor the intervention performed on the facade of the buildings to establish applicable improvement and conservation actions, thus being the tool that can be applied to the analyzed case studies.

Finally, the present work allowed relating the aesthetics of the buildings and the economic activities of the CHC, through the result obtained in the interventions carried out in the case studies as a strategy to generate spaces that satisfy social needs and in turn contribute to the urban image through the use of traditional materials of the city that meet the requirements established in local regulatory areas.

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