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Art Collections 2020
Design and Museum Design,
Digital Heritage, Historical Research,
Posters

Editors:
Francesco Valerio Collotti,
Giorgio Verdiani,
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1ˢᵗ ArCo – Art Collections

Cultural Heritage, Safety and Innovation

International Conference

Original dates: May 28ᵗʰ-30ᵗʰ 2020

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Università degli Studi di Firenze, Italy

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PROCEEDINGS SUMMARY

Art Collections 2020

Design and Museum Design Session

(ARCO 2020, DMD)

Art Collections 2020, Design and Museum Design Session (ARCO 2020, DMD)

Museography and Seismic Hazard: the design project of the Majolica Room, National Museum of Bargello, Florence

Giada Cerri

Dipartimento di Architettura, DiDA, University of Florence, via della Mattonaia 8, Florence 50121, Italy

Abstract

Our heritage is as outstanding as fragile. Although there is a shared awareness about the importance of preventing and protecting the built heritage against the seismic hazard, the same attitude rarely involves the contents. Unfortunately, some studies (Podany, 2017) observe that medium-low intensity tremors represent a risk to the movable heritage. All museums, especially those located in the seismic areas, face this issue. Museum collections need to be protected, stored, and exhibited. According to the object characteristics, there might be conservative and safety actions to adopt, but rarely, the setup is also anti-seismic. Once evaluated the vulnerability of objects and settings, what are the preventive measures against these possible damages? Focusing on museography, can museum display be both safe and coherent, according to updated exhibiting criteria? Can museography integrate with seismic preventions and museum policies? How can safety solutions and exhibit design be combined in existing setups or temporary exhibitions? Considering the ever-changing museum trends and needs how do exhibit design, safety, and economic sustainability combine? These questions have been raised inside the multidisciplinary research 'RESIMUS – Resilience Museums' of the Department of Architecture (DIDA) of the University of Florence. Within the research, we developed a method of analysis to grade the vulnerability of both museum collections and setups (Viti 2018). We worked out a synthetic system of classification of objects and exhibitions that allows a qualitative and comparative evaluation of: building, setup, and object. The so-called 'RESIMUS FORM' is the combination of more models, to name a few: Italian form evaluation of the seismic risk (NTC, 2008); "Liberatore form" (Liberatore, 2000); evaluation form *musei di qualità* (quality museums) of the *Regione Toscana* (2010). The form is a simple tool ready to be applied in any museum by any staff member. It takes into consideration the average dimension and the limited resources of most of the Italian museums. It is born to be an instrument of a survey, risk evaluation, and strategic planning. We tested it for the case study of the National Museum of Bargello in Florence. As second, the RESIMUS research foresaw the development of an anti-seismic museum exhibition. According to the 'learning by doing' approach, the design project is meant to be an instrument of research (Postiglione, 2012). The paper presents part of the on-going project about the re-design of two rooms of the Bargello. The contribution illustrates the study's steps, the results coming from the RESIMUS form, the methodologies applied, and the anti-seismic design proposition. It also presents the fundamental preparatory aspects preceding the designing step: the study of the museum references, the analysis of the case studies regarding the museum design solutions, and the technical examples (cases, pedestal, mount, etc.). It deals with the narration about the ceramics on show, the technologies, and the public's experience in the museum.

Keywords: Museography; Museum Collections; Museum Design; National Museum of Bargello; Safety; Seismic Hazard; Earthquakes

1. Introduction

Any moment the earth can shake, but we do not know when or where. We do know that our heritage is as outstanding as fragile. Although there is a shared awareness about the importance of preventing and protecting the built heritage against the seismic hazard, the same attitude rarely involves the contents. Despite some studies (Podany 2017) observed as medium-low intensity tremors representing an enormous risk to the movable heritage, rarely the museum setup is also anti-seismic.

What can museums do? The museums hold extensive outstanding collections composed of several objects (by materials, dimensions, techniques, etc.). Among thousands of pieces in a museum, how do we understand which are the most vulnerable ones? Moreover, among limitless setting configurations, which are the safest under the seismic point of view? Once confirmed the vulnerability ranking of objects and settings, what are the preventive measures against damages?

The museography is the art of displaying (Newhouse, 2015). According to updated exhibiting criteria, can museum display be both safe and coherent? Can museography integrate with seismic preventions and museum policies? How can safety solutions and exhibit design be combined in existing setups (historical museum rooms, musealized setups) or in temporary exhibitions? Considering the ever-changing museum trends, the publics' multiple necessities, the internal dynamics of the museum institutions, how do exhibit design, safety, and economic sustainability combine?

The paper attempts to answer some of these questions by presenting a work in progress research developed inside the RESIMUS group of the DIDA. The paper is organized according to two main parts, the first is an introduction to the general theme of seismic prevention and safety of the collections (sections 2 and 3), and the second (sections 4, 5, 6) presents the case study and the development of the applied research Flo-RESIMUS. Section 2 presents the general context of the museum's safety against earthquakes, stressing the lack of studies in the museography field. Section 3 sums up the state-of-the-art literature about anti-seismic set designs and introduces the RESIMUS research project and the RESIMUS form. The following section (4) presents the National Museum of Bargello's case study and the research's accomplished steps. The fifth introduces the developed museographical design, applying the theoretical reasonings to a case study: two rooms of the Bargello. The conclusive part sums up considerations and findings.

2. Safety and collections: a hard path

Museum collections need to be protected, stored, and exhibited. According to the object characteristics, there might be conservative actions to adopt (temperature, light, humidity) and safety measures to apply, for example, against vandalism, theft, or accidental damages. There is a vast literature about museum conservation guidelines issued by both National and International organizations. Such documents derive from working experiences, fieldwork, and emergency moments, like the ICOM guidelines of 2005, dedicated to Iraq's heritage protection and then codified to be universal (ICOM, 2005).

Comparing and studying these documents, they rarely request or suggest anti-seismic setups. There might be a prescription about the buildings (the box), as the Italian Technical Construction Regulation – *Norme Tecniche per le Costruzioni* (NTC, 2008). The latter prescribes a set of mandatory norms to public buildings, but, as far as we know, similar prescriptions do not exist for the movable heritage.

Unfortunately, the urgency of preventive measures against earthquakes arises only when, at the list, a medium shake affects an area. In several writings, Jerry Podany has emphasized the necessity of museums and cultural institutions' commitment to conserve and expose their collections. As he noticed, even medium-low intensity tremors might represent a colossal risk to the movable heritage and to people (Podany, 2017). Some museums have applied safety measures to their collections, but this has usually happened after a disaster.

Although a vast body of literature about the study of objects' behavior during an earthquake exists in the academic field (Viti, 2018), these texts usually investigate single outstanding objects. They focus on the technological anti-seismic problems and solutions, e.g., pendulum, anti-seismic base. Their limitation of these essential studies is being mono-thematic and dedicated to single objects only.

The J. Paul Getty Museum, Los Angeles, California, was the pioneer in this field – Podany was the Head of Antiquities Conservation of the museum from 1986 to 2016. The Getty started studying anti-seismic measures and building innovative setups in the 1980s (Agbabian, 1990). Since then, together with the Getty Research Center, they exported this approach in other seismic countries. The Getty staff immediately understood the complexity of such analysis and the need for consequent practical acts. Despite thirty years of work, there are still unsolved questions, and the necessity of spreading the culture of safety among museums and cultural institutions is more urgent than ever.

Fig. 1. Archaeological Museum and Museum of Arts and Craft in Zagreb after the earthquakes of March 22, 2020
(*MUO, Museum of Arts and Craft Zagreb*).

The application of preventive measures is the most efficient method to address damages and issues. Resilience has significant resonance in managing risk, but, although mainstream and on fashion, such an approach does not always find a concrete application in the cultural heritage field. The Sendai Framework for Disaster Risk Reduction 2015-2030 (Clarke et al. 2018) is a key document in risk management and recovery. Several other documents (ICOMOS 2015, HFA 2013) suggest planned actions for preventing and recovering cultural heritage, and several countries commit the application. The often-missing transition from purpose to practice emphasizes the complexity of the argument and the lack of a shared culture on cultural heritage prevention. The acknowledgment is part of the problem.

The lack of knowledge about what an institution can do, and the possible applicable measures imply concrete actions. Anti-seismic devices often limit the advanced technological solutions, like expensive engineering operations on singular objects or interventions on the entire buildings. Unfortunately, most museums and cultural institutions have a limited budget and the need to prioritize the expenses. They cannot afford expensive single solutions. It has been proved that even simple actions may be sufficient to prevent uncountable losses – with all due distinctions (Podany, 2017).

3. The Flo-RESIMUS project

In general, museums hold extensive outstanding collections composed of different typologies of objects (by materials, dimensions, techniques, etc.) that can be presented in limitless settings. Among thousands of different pieces in a museum, how do we understand the most vulnerable ones? Moreover, among unlimited setting configurations, which are the safest under the seismic point of view?

Some authors tried to answer these questions. As said, Agbabian and al. (1990) propose one synthetic classification model, based on the possible configuration of the exhibition design and the objects' position. The

classification structure has been resumed and boosted by Podany in its field test, while Liberatore (2000), Augusti and Ciampoli (1992), Ertürk and Sungay (2004) work on Agbabian similar classification to find a method to easily classified the level of fragility of the museum objects and settings. The proposed methodologies are too simplistic, limited to the single object analyses, or dedicated to the experts.

There is a necessity of developing an instrument that can be effectively and efficiently applied by not experts of the engineering field to obtain a quick seismic risk assessment, but, first, a shared awareness about the importance of seismic prevention for museum collections is needed.

Once evaluated the ranking of objects and settings' vulnerability, what are the preventive measures against damages? Museography is a complex discipline. It is the art of displaying and not a random shelf arrangement. According to updated exhibiting criteria, can museum display be both safe and coherent? Can museography integrate with seismic prevention and museum policies? How do safety solutions and exhibit design be combined in existing setups (historical museum rooms, musealized setups) or temporary exhibitions? Considering the ever-changing museum trends, the publics' multiple necessities, the museum institutions' internal dynamics, how do exhibit design, safety, and economic sustainability combine?

The project 'RESIMUS – Resilience Museums,' of the Department of Architecture (DIDA) of the University of Florence, tries to address these needs and answer these questions through theoretical and applied research.

On one side, RESIMUS is developing a method of analysis to grade the vulnerability of both museum collections and setups (Viti 2018). It proposes a synthetic system of classification of objects and exhibitions that allows a qualitative and comparative evaluation of building, setup, and object. The so-called 'RESIMUS FORM' (RF) is the combination of many models, to name a few: Italian form evaluation of the seismic risk (NTC 2008); Liberatore form (Liberatore 2000); evaluation form *musei di qualità* (quality museums) of the Tuscany Region (2010). Considering the average dimension and the limited resources of most of the Italian museums, it is plausible that such museums do not have specialized staff able to assess their collections' seismic safety level. The goal is to issue an effective and flexible instrument that can be easily used by any member of any staff of any museum. The RF can serve as an instrument for multiple purposes: survey, risk evaluation, and strategic planning. The outcomes are the rating of the objects' risks, the selected settings, and a general survey of that museum. The operation should provide useful information to the study of the resilience of the setting 'museum' of that city (Viti 2018). In general, all these actions should be part of the risk reduction plan (Sendai, 2015).

To this day, the RF is a demo of the analysis approach. It has been tested first at the National Museum of the Bargello (Mattoni and Tanganelli, 2018). Compared to other examples and references, the RF is a qualitative instrument of analysis, introduces new examination elements, and amplifies the inquiry context to the entire exhibition building. Such approach has two primary outcomes: 1) description of the museum setting's situation to a precise date – being useful to develop management risk and recovery plans; 2) through qualitative analysis, museographical description of the room settings.

The form is composed of three parts: 1) General report of the building and the museum context; 2) Room Form, a qualitative report of a chosen room of the museum; 3) Object form, a qualitative report of one object and its display kept in the already analyzed room (Room Form). The forms give, as a result, the level of vulnerability of the objects and their settings. The results from form 3 (Object form) rank the safest and the riskiest objects on show of one room. If grouped by rooms, the results determine the level of vulnerability of each analyzed room. Although such results come from an exterior survey, the upshots have the credit of emphasizing the collection's vulnerability and of making aware the museum of its current situation (Cerri and Collotti, 2019). For instance, speculating about the diffuse and correct application of the form by a consistent group of Florentine museums, the sum of the results would trace and rank the museums' vulnerability of the *Città Metropolitana di Firenze* (Florence Metropolitan City).

Other aspects of the research are the application of professional instruments and specific methodologies. There are two complementary pursued analyses: single in-depth analyses and museum design development. According to the RF results, the numerical analyses applied to significant artworks can be pursued, whether on the most vulnerable or the most significant object from the geometrical or masses perspective. The seismic analyses are based on the rigid block with Finite Element Method (FEM) procedures and are applied to 3D models acquired during 3D scanning campaigns (Viti, 2018). This phase might also comprehend mechanical tests on materials and replicas. The second aspect is the museographical study, realized by studying the

references and the existing museum settings (Cerri and Collotti, 2019). Once acquired the relevant information related to the seismic vulnerability, the museum, in collaboration with the RESIMUS team, might consider planning the design project of some settings or the redesign of selected rooms. The final design will combine anti-seismic solutions, museographical coherent design, and museum strategic addresses. According to the' learning by doing' approach, the design project is meant to be an instrument of research (Postiglione, 2012).

The project is the tool to address the issues we introduced in this section. The multidisciplinary project and the involvement of several branches of knowledge demonstrate that a successful design must benefit from the different professionals' contributions: curators, museographers, engineers, technicians, etc. The project RESIMUS introduces a methodology to explore the potentiality of the museum space. It combines safety analysis, recommendations, and solutions (anti-seismic devices). Also, it demonstrates that safety, aesthetics, and museum narrative can provide a concrete answer to urgent requests (safety of collections, limited budget, and adequate quality level of the exhibitions).

4. The Flo-RESIMUS project

4.1. The Bargello in a nutshell

The National Museum of Bargello is one of the most important Florentine museums. It is located in the city centre and dedicated to Medieval and Renaissance art. Usually, it is visited by more than 200 thousand people each year.

Fig. 2. Position and levels of the museum.

According to tradition, the Bargello Palace was designed around 1250 by Arnolfo di Cambio's master Lapo di Cambio (Paolozzi Strozzi, 2014). Through the years, the building underwent extensions and modifications. It was the headquarters and residence of the *Podestà* (chief magistrate) first, and prison then. In 1857, the jail was transferred to the *Murate* district, the palace was cleared and destined to become a museum. The building endured heavy transformations and restorations according to the then Neo-gothic fashion. On June 22, 1865, by royal decree, it was established as Italy's first National museum. The museum is now considered one of the most important statuary Italian museums. Michelangelo, Donatello, Cellini, Della Robbia's works are here, and it is well-known for its outstanding fine arts and coins collections. The scientific museum program (and the related distribution of the collections) went through some changes during the time due to both curatorial choices and extreme natural events, like the flood of 1966.

The building occupies an entire parcel and stands on Piazza San Firenze, via del Proconsolo, via Ghibellina,

and via dell'acqua. The current interior and exterior aspects derive from the nineteenth-century refurbishment that gave to the interiors the fake allure of the ideal original palace. Though the building end-use was a museum, the goal of the refurbishment project was to remind, as much as possible, an idealistic medieval setting.

The internal space develops around the central courtyard, and several addictions are easily recognizable. The vertical museum distribution has been obtained by modifying the portion of the east side of the building connecting the three floors of the museum (there is also another vertical connection serving the staff area). Despite some necessary uploads, the building has been almost unchanged since nowadays. The oldest unit contains the entrance (on via del Proconsolo) and the main, and larger, rooms of the museum: at the ground floor the so-called Michelangelo's Room, containing the Renaissance sculpture collection, and the Donatello's Room at the first floor, with the masterpieces created by Donatello and his contemporary colleagues. The courtyard is an exhibition space too. Big marble masterpieces are allocated here, while on its vertical surfaces, there are the stone emblems of the chief magistrates that had inhabited the palace. The other spaces on the ground floor are devoted to technical uses or temporary exhibitions. From the courtyard, one can access the first floor also through the monumental staircases, entering the Verone. This level hosts seven other exhibition rooms, including the palace chapel. On the second level, there are seven other rooms. The current museum organization (the museological program) follows thematic criteria, e.g., authors, materials, historical periods, etc. The visiting path is free, and the visitors have no suggestion in following a precise pathway. In 2015, the museum edited a special guide dedicated to the museum masterpieces, must-see suggestions to facilitate the visit (Paolozzi Strozzi 2015).

At the moment, the museum does not have external deposits. The collections, more than 10.000 pieces, are all kept in the same structure. Since 2014 (D.L. 106/2014), the museum is part of the group of museums called *Musei del Bargello* (Bargello's Museums). It includes: Medici's Chapels, *Orsanmichele*, *Casa Martelli*, *Palazzo Davanzati*. The director is currently Paola D'Agostino.

1.1. *The analysis*

In the next few years, the National Museum of Bargello is going to start a progressive refurbishment of several rooms of the museum. During the meetings about the RESIMUS project, we were asked to dedicate the research to the Majolica Room. To the completion of the research, we agreed to include in the project also the so-called Sala del Trecento (Fourteenth Century Room) because it can be considered as the antechamber of the Majolica room. Following the RESIMUS methodology, as a first step, we applied the RF. The outcomes show a general good situation from a safety point of view. The Majolica room, located on the first floor, has one access, two blind walls, and one with two windows. The exhibition system is constituted by a series of display cabinets (from the '70s), made of glass, mirror, and anodized aluminium, containing various ceramic objects, and five big ceramic tondos, hung to the walls. The Trecento Room is a passing-through room with no blind walls: three contain passages (doors), and the fourth has one window. Here, the collections are variably arranged in the space: on some shelves, hung on the walls, placed on historical pieces of furniture or on bases.
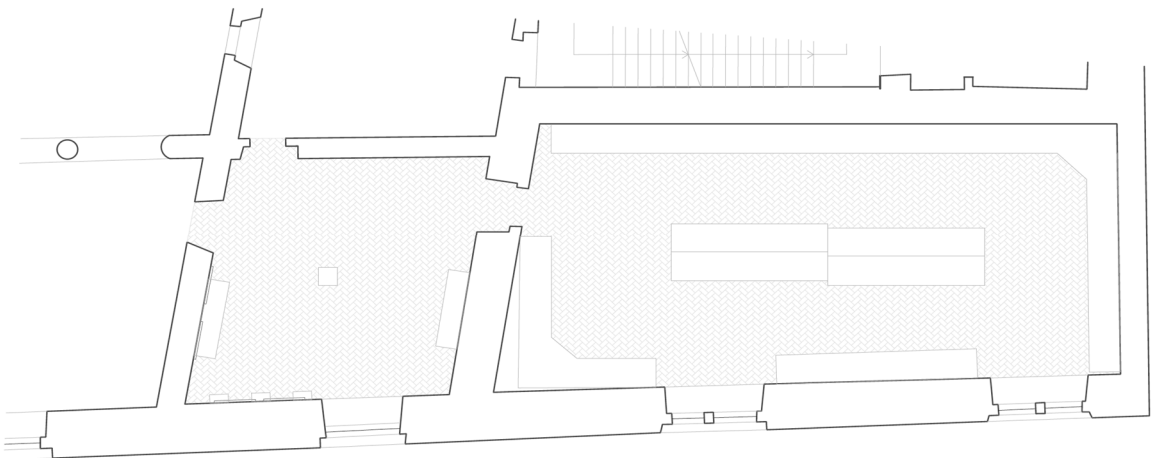

Fig. 3. Current organization of the rooms.

In the case of the Majolica Room, the analysis shows that the main criticality is about the furniture: the shapes (of the cabinet, in particular in the correspondence of the angles), the fixing (the cabinets are not anchored to walls or floor), the materials (the shelves are glass sheet placed on fours metal vertexes), and the interior organization (types of the pedestal, mounts, disposal). In the case of the Trecento Room, the vulnerability of the setting up and of objects are mainly linked to inadequate mounts or choice of the display solutions (simple hangs, fleet mounts, disputable shelves).

Fig.4. The *Trecento* room.

Observing the actual exhibition from an architectural design perspective, the Majolica Room presents a recurrent solution: a big cabinet with several shelves containing a high number of pieces. It refers to an encyclopaedic approach, exposing a lot of objects according to given criteria.

The current disposal dates back to the '80s, and the organization follows the chronological and geographic system. Such a path is not visibly marked for a non-expert visitor.

The *Trecento* Room has a less clear order and a most recent arrangement. This mixes sacral and secular objects, types of artifacts, furniture, sculptures, architectural fragments, frames. About the lighting, both rooms have well-calibrated artificial light. These rooms benefit from the natural one, but there is no shadowing system, and the risks are the dazzle effects.

Fig.5. The Majolica room.

The museum has no big communication spaces. Little stands held short general explications, while the captions are essential and placed near to the referred pieces. The Majolica's cabins along the walls have a mirror as a back. If, on the one hand, the mirror has the benefit of reflecting the back of the ceramics, from the other, it creates an odd combination of reflexes that might disturb the visitors.

The current structure, although with removable horizontal shelves, has a strict and rigid grid and does not allow different configurations. The mounts are made of different materials (metal or plastic) and have several shapes, some are customized for specific ceramics, and others are standard. These mounts hold open shapes, while basin and vases lean directly on the panes of glass.

2. **The design**

2.1. *Before the design: the references*

Besides the analysis, an important step is studying the references, a standard procedure in the designing process. The Flo-RESIMUS research compares and studies some museographical examples adopting anti-seismic devices or other compatible valid solutions.

Among many, the chosen cases are the Getty Museum, Los Angeles California USA, the Museo Chileno de arte precolombino, Santiago de Chile, Chile, and the Munda – *Museo Nazionale d'Abruzzo*, L'Aquila, Italy. Other well-known examples of settings and museums are not part of the study because of the inconsistency with this research's criteria. It is the case of new settings concern the arrangement of big objects only, such as Michelangelo's *Pietà Rondanini* at the *Castello Sforzesco*, Milan, Italy (Cerri & Collotti 2019) and the *Bronzi di Riace* at the MarRC – National Archeological Museum of Reggio Calabria, Reggio Calabria, Italy. The cases of the Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand and National Museum of Western Art, Tokyo, Japan, because the entire buildings are isolated.

About the exhibition of the ceramic objects, we made a comparison among different exhibit solutions. It helped us enduring several ways of exposing ceramics (and comparable objects) and understanding if and how the issues of safety are solved. The investigation pursues the different museographical approaches (arrangement of the objects, materials, light, arrangement of the communication part, graphics), the fashion in the exhibit design, the adopted technical solutions. The analysis confirms that there is an endless way of exposing and recurrent exhibit patterns and typologies of mounts.

2.2. *Request from the museum and the museographical analysis*

During the museum staff meetings, we discussed the pro and cons of the current situations, the curatorial program, the requests for new settings, and the future museum goals. The appointed curator, Marino Marini, underlined the inefficiency of the cases. He stresses that to open them, they need at least two people and that the dust, abundant in the centre of Florence, filters inside the cases. That implies a high-priced cost of the cleaning services.

Besides, he pointed out the general lack of storage spaces. Limited to the ceramics, he foresaw the possibility of placing some of them in a small internal deposit.

The elements pointed out by Marini align with our museographical survey. The showcases are inefficient from a maintenance and technical point of view. The combination of golden anodized steel, mirror, and glass might confuse and distract the visitors, creating reflexes, glares, stereoscopic effects. The embedded lighting system (neon light) is not cost-effective and does not enhance the objects. There are also ergonomic and accessibility issues. For example, the cases' dimension is such that exposing volume is not completely visible by everybody.

About the setting and the public reception, the room is dedicated to ceramics experts or enthusiastic. There are some introductory panels with few paragraphs about the room and the exposed collections. The labels are synthetic. The detailed information is in the guides on sale at the bookshop, located at the entrance. In the Majolica room, the linear and repetitive arrangement of the objects create a monotonous pattern. There are not calculated emphasis or selected objects catching the visitor's attention (e.g., the masterpieces, a kid's corner, the focus on unique objects). As said, the arrangement follows a chronological and geographical order, but the explanations are missing. It is also not immediately perceivable the route to carry out, clockwise or counter clockwise. The chronological sequence is not marked, as well as the geographic provenance (production place).

A general weakness of the museum is the lack of a digital database (online and offline). Recently, it started conversing its paper catalog into digital-only.

2.3.   *A working progress design solution*

The development of the design project considers several aspects, such as: RF results, safety measures to adopt, museum necessities, available anti-seismic technologies, and design analysis. The new setting does not subvert the current configuration. The design is respectful of the place, does not cover the neo-medieval refurbishment, and is not in contrast with the museum's general set up. Also, the exhibition design is not the protagonist of the rooms. It is instead the tool with which the objects are enhanced and showed to the public. The two rooms work together, as an introductory hall and as a theme room the second. Traditional exhibition and digital tools integrate into a constructive dialogue. The seismic safety devices are, let say, invisible, being an integral part of the exhibit solution. Two main parts compose the Trecento room. The area, closed to the window, accommodates the sculptures, the altarpieces, and the paintings. The passing way area hosts a slim display cabinet as an introduction to the next room. This host archaic ceramics from Tuscany (1300). The cases virtually continue in the Majolica room. The project for this room foresees a long and high showcase developing on the longer wall.
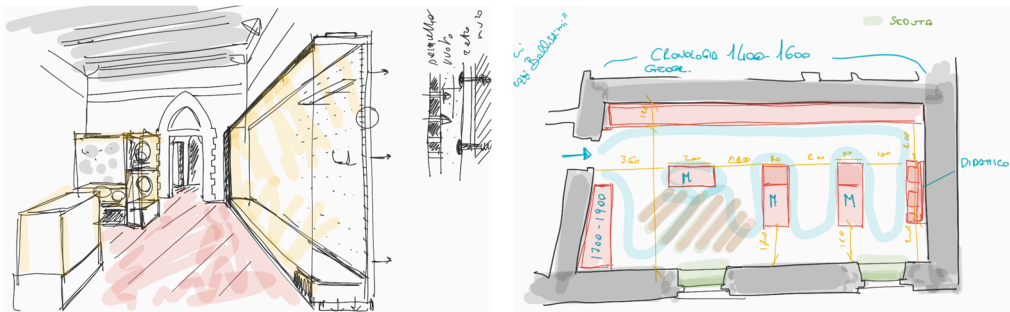
Fig. 6. Study sketches of the Majolica room.
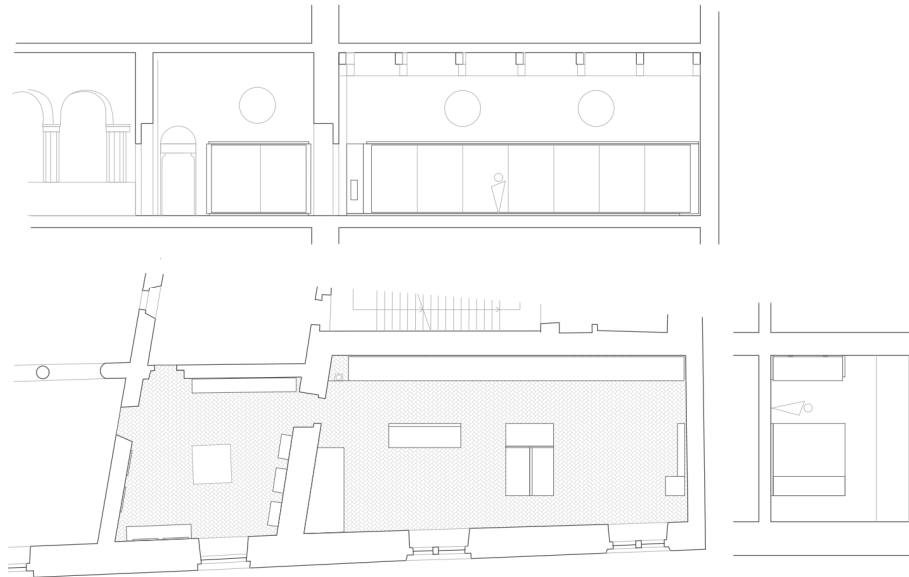
Fig. 7. Plan of the design proposal.

This part hosts part of the collections organized by year and origin. A multimedia wall, anchored at the bottom of the room, hosts some objects, digital screens, and traditional explanations. The multimedia is thought to those who do not know the ceramics' pre-industrial production or want to deepen their knowledge (production, forms, passages, decorations, colours). The window side hosts a bench containing movable seats. Three showcases hosting the Medici collection mark the centre. These cases are fixed to the walls and to the floor. Specific mounts

secure the pieces. The design proposes then two novelties plus one goal: first, a children's corners, this occasion might be the opportunity to experiment this thematic spot; second, the inclusion of the digital technology in the exhibition design, where digital technology is intended as a tool to deepen certain aspects, update the contents, propose a different curatorial interpretation, browse the collection. The goal is to make these rooms, and hopefully the whole museum, an exhibition for all.

2.4.   *The project in 5 keywords*

2.4.1 Technology

The showcases are taken from the Goppion catalogue. Goppion Technology is an Italian world leader company in the field of museum display technology. For the sake of the research, designing a new typology of the case would not have been a substantial contribution. Modifying existing models and testing specific mount solutions appear more meaningful to the goal of the research. The research has a real implication, meaning building new tailor-made showcases would have been insanely expensive and hardly realizable. In this case, the essential aspect is the anchor of the cases, to the floor, in the case of the freestanding element, to both wall and floor, in the case of those placed to the wall, and the mounts.

2.4.2 Mounts

The topic of the mounts is a strategic point. There are a series of different solutions allowing the safety of the objects. Depending on the kind of arrangement, vertical or horizontal surface, the solutions might variate. In this design project, the open forms (plates) and little objects are mostly shown hanging on the vertical surfaces to enlarge the exhibition space. Closed forms (vases and basins) are placed on horizontal surfaces or suspended using different mounts. The Getty experience teaches us that the mounts have to have specific safety forms. Such prevents the falling of the mount from the anchoring point or of the objects. Although similar, these ceramics have different shapes and details. To be safe, each of them needs its specific mounts.

The examples of the Victoria & Albert Museum, London, the Metropolitan Museum, New York City, and the Brooklyn Museum, New York City, show as these configurations allow a wide variety of presentations. These give us the opportunity of playing with the collection. To realize the cases, Goppion already has a compatible solution in its catalogue. The chosen model has a back that permits the allocations of mounts, shelves, and descriptive panels. Such a solution allows the free arrangements and modification of the pieces' configuration (CNR 2016).
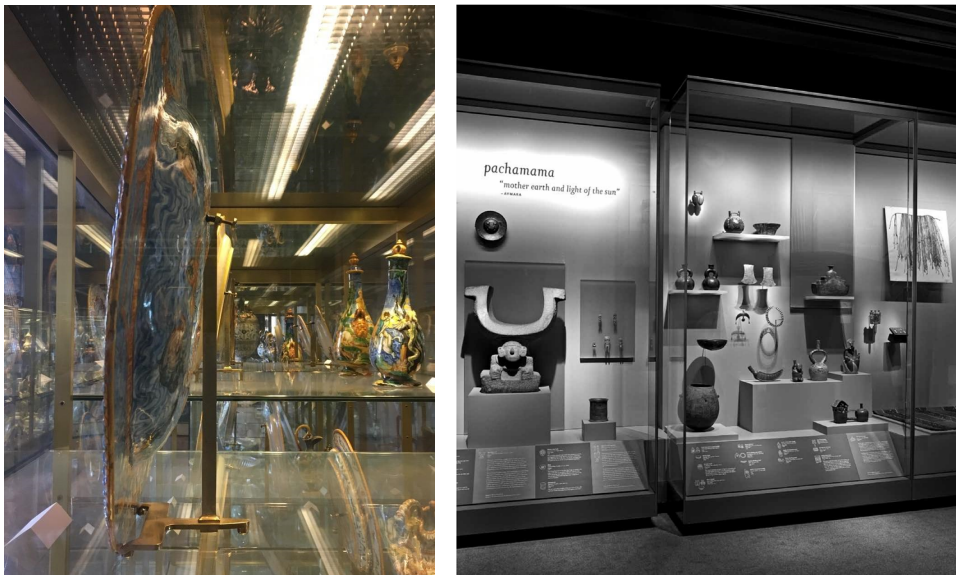

Fig. 8. Example of the current exhibition system used in the Majolica room (G. Cerri) and a reference solution, the National Museum of the American Indian, NYC, US. (Goppion S.p.A.).

2.4.3 Graphic design and communication

The proposal includes a new communication apparatus that would lead the visitors through the two rooms. The graphic is coherent with the rooms' general layout and in line with the museum's graphic identity. The text and the graphic do not overwhelm the objects but are supportive. The labels are minimal. In certain parts, they are close to the objects, and in others, are grouped in summary panels.

The goal is to have simple, easily removable, and replaceable labels. Particular objects, the masterpieces, or the must-sees, have longer descriptions, explaining why they are that important. The general graphic follows the curatorial plan and the colours of the new exhibition design vary inside a shade of neutral tones. Such choice enhances the colours of the ceramics, standing up in the background. The masterpieces' corners have different colours or graphics (Da Milano and Sciacchitano, 2015). The catching solution helps and guides the visitors. The arrangement of the mounts and the internal bases is not fixed. Thanks to this exhibition system, the curator might change the order and the disposition at any time. That also allows the possibility of rearranging the objects (during restorations, loans, rotation) with a small expenditure. According to this project, the "educational" aspects materialize in the multimedia wall. Such a solution needs to be preceded, though, by the digitalization of the collections. Here, new technologies, traditional solutions, and showcases work together.

2.4.4 Lighting, natural and artificial

The lighting project maintains the most recent interventions. The eight led spots hanged to the chains are moved and redirected. The new showcases embed different lights, emphasizing the contents, and the curtains shade the natural light coming from the big windows. Such a solution diminishes the effects of the reflections on the glasses, the dazzle, and dark-light effects.

2.4.5 Accessibility

The position of the cases allows the passage of wheelchairs and strollers. The object's arrangement inside the showcases follows the prescriptions suggested by the document Accessible Exhibition Design (Smithsonian Museum, 2016). The colours, the lettering, and the element of wayfinding have to be understood by most people. The written text is bilingual, Italian, and English. The label design is set to host material legibly for all visitors, so to be ready to have available label information in alternative formats (e.g., Braille, audio, LIS) for people who cannot read print.

3. **Conclusion**

The paper presents the on-going research project Flo-RESIMUS, showing a real application of the RESIMUS method to a case study. The goals of the paper might sum up in three points. It highlights:

- the necessity of a shared awareness about the culture of seismic prevention;
- the importance of preventive studies and the mixing knowledge to provide an inclusive standard site-specific procedure;
- the necessity of a collaboration among professionals and academics to develop a complex and complete museum and cultural project.

The paper tries to answer open questions through a learning-by-doing approach. The answer is the museum design project. In general, the research is given by the combination of several fields of knowledge. The results are that the safety of the objects might be accomplished using simple but not apparent expedients. To do so, museography and anti-seismic technology have to work jointly. One of the goals of the research is to design a coherent exhibition project with a harmonic combination of all the elements: disposal of objects and showcases, the natural and artificial light, the curatorial program, the public and educational program, the use of the spaces, the communication system, the graphic, the accessibility.

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