

## National Museum Lima, Peru

This report covers the testing of RE-ORG worksheets on unit fullness and height usage, floor space occupation and object circulation routes in seven storage areas of the National Museum Lima.

### Author

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### Worksheets tested

Unit fullness and height usage

Floor space occupation

Objects Circulation

### Abstract

This case study was focused on seven storage areas of the National Museum in Lima, Peru (textiles, organic, bones, paintings & sculpture, stone and metals). In addition to testing RE-ORG, museum staff wanted to use this opportunity to verify existing data on storage areas and the size of units. To obtain an accurate measurement of the available storage space, staff decided to count in the working furniture as well, such as the tables and chairs since these were to remain in storage. A difficulty was observed in measuring the floor space occupation, as storage units were of varying shapes and sizes; consequently each one had to be measured individually. The object circulation evaluation was conducted using the floor plan of the building, indicating routes by object type between functional areas of the museum. Obstacles were not recorded explicitly, but key problems are clearly identifiable from the plans provided.

### Disclaimer

Differences in numbering and titles of worksheets:

- 1B2 Evaluate the circulation routes (now: 2.11 Evaluate functionality of object circulation routes)
- 1F5 Estimate the fullness of units & height usage (now: 2.15 Estimate unit fullness and room height usage)
- 1F6 Calculate the current unit floor space occupation (now: 2.16 Calculate the level of floor space occupation by units)

**Note:** The text of this case study is presented as it was submitted by the authors. It has not been edited or modified in any way. Be aware that terminology used is not necessarily consistent with that found in the current version of RE-ORG.

## National Museum. Lima- Peru

**Introduction**

The Card 1f5 was tested at the National Museum, in Lima, Peru.

Duration: <b>5 hours</b>
Team members: <b>2</b>

The results expected for the task were:

- Survey of the fullness of units in the storage areas of different categories of materials
- Completed Unit fullness Evaluation form
- Provide suggestions for future users

**Objective of the task:**

- Estimate the fullness and height usage of the storage units

**Specific Objective:**

- To check data of the size of each storage unit (length, wide, height) .

**Difficulties / Restrictions**

There were restrictions to access to the ceramic area and some cabinets (few) were not allowed to open, nevertheless, an interview with the conservator helped to clarify the fullness of the storage ceramic room.

**I. Testing Card 1F5**

The first approach and visit to the museum was done on the first day, and purpose of the UNESCO-ICCROM project as well as the methodology was explained briefly to the Director of the museum.

- The methodology of Card 1F5 was applied step by step at the National Museum storage areas
- To facilitate the collaboration, a self-evaluation in Spanish was given to the Director.
- A scheme of the floor plan of the storage department without scale was provided. The measurements of the storage rooms were nearly done for card 1F6

<b>Card 1F5</b>	<b>ESTIMATE THE FULLNESS OF UNITS AND HEIGHT USAGE</b>
<b>Product</b>	<ul style="list-style-type: none"> <li>- Design of the Unit Fullness Form</li> <li>- Completed Unit fullness Form:               <ul style="list-style-type: none"> <li>- Units measures of seven storage areas</li> </ul> </li> <li>- Floor plan scheme of the storage department.</li> <li>- Complete self-evaluation by the Director</li> <li>- Report</li> </ul>
<b>Strength</b>	<ul style="list-style-type: none"> <li>- Relevant card. The card is very useful and important to evaluate Units fullness</li> <li>- It is feasible to calculate the % of the fullness units.</li> </ul>
<b>Weakness</b>	<ul style="list-style-type: none"> <li>- When units are not available and objects are placed on the floor, the fullness might not be real, hence, it should be considered area that objects occupy and/or boxes, containers placed on the floor.</li> <li>- Not all furniture has the same features, so it is necessary to identify types of furniture and sizes.</li> <li>- At this time, it should be done the unit floor space occupation survey to facilitate 1F6 card calculation. Consider other units of furniture dimensions (chairs, tables, etc.). This will allow calculating the space left for a redistribution and new furniture to optimize the total height usable.</li> </ul>

## II. Estimating the fullness of Units and Height Usage Evaluation

To estimate the fullness of units and height usage, the following steps were followed:

- Identifying the permanent storage areas: Seven storage areas were assessed at the storage department. One of the areas was dismissed (“Colecciones selectivas”) because the objects housed were in transit.
- Measuring the sizes of the different storage units.
- Estimating the surface fullness per unit at each storage room in order to obtain the usable space percentage (All units were different one from each other)

### Result of testing the Card 1F5.

- The total area of storage surface: 354.32 m<sup>2</sup> approximately:

Material	Surface	Total storage units	Fullness average coef.
Textiles	63 m <sup>2</sup>	9	0.79
Organic	63 m <sup>2</sup>	10	0.74
Bones	37 m <sup>2</sup>	2	0.85
Painting & Sculpture	72 m <sup>2</sup>	2	0.87
Stone	22 m <sup>2</sup>	1	0.40
Metals	8.35 m <sup>2</sup>	4	0.57
Ceramic	90 m <sup>2</sup>	4	0.70

- Total heights of rooms cannot be used. Concrete beams do not permit the height usage more than 2.70 m. height.
- Units are not organized in a proper way in order to optimize the available surface to use.
- In some of the storage rooms, boxes and paintings are displayed on the floor due to a lack of shelving facilities.
- In some case, certain objects of large size that does not belong to the current storage room. They are housed in a different area due to a lack of space in their proper storage room.

### Suggestions /advice for future users

- Is better if a floor plan or draws is provided to visualize the surface and location of different storage areas.
- It is always necessary to calculate the occupied area by objects when they are placed on the floor if a container or furniture does not exist.
- Not always is possible to lay out the drawers (planners) one on top the other, thus, optimized the total height is not possible.
- When units are not available and objects are placed on the floor, calculate the floor area that objects occupy and/or boxes or containers on the floor.

## CALCULATE THE CURRENT UNIT FLOOR SPACE OCCUPATION 1F6

National Museum. Lima- Peru

Duration: 4 hours
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Team members: 2
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### Introduction

The Card 1F6 was tested at the Storage Department at the National Museum, in Lima, Peru.

The results expected for the task were:

- Calculation of the floor space occupation of storage units and other furniture inside the storage rooms.
- Completed Storage Unit Floor space Occupation form
- Provide suggestions for future users

### Objective of the task:

- Calculation of the floor space occupation of storage units

### Specific Objective:

- To check data of the surface of the storage rooms in m<sup>2</sup>.

### Difficulties / Restrictions

There were some restrictions for measurement of the surfaces due to the storage units' display.

### I. Testing Card 1F6

The collected data for this card was done while collecting data for card 1F5.

- The methodology of Card 1F6 was applied step by step at the National Museum storage areas.
- A scheme of the floor plan of the storage department without scale was provided.
- Measurement of the surface of each of the seven areas for storage of different materials: textiles, organic, bones, painting & Sculpture, stone, metals.
- Using the unit sizes found in the Completed Unit Fullness Evaluation Form in the card 1F5, a chart was made with the total floor space occupied by units, expressed in square meters and percentage. To have an accurate size of the space available for reorganizing each storage room, it was necessary to add the size occupied by other furniture existent (tables, chairs, etc.)

<b>Card 1F6</b>	<b>CALCULATE THE CURRENT UNIT FLOOR SPACE OCCUPATION</b>
Final Product	<ul style="list-style-type: none"> <li>- Design of the Unit Floor Space Occupation Form</li> <li>- Completed Form: <ul style="list-style-type: none"> <li>- Unit measures of seven storage rooms (1F5)</li> <li>- Working surfaces measures (tables and chairs)</li> <li>- Percentage of storage unit occupation</li> </ul> </li> <li>- Floor plan scheme of the storage department</li> <li>- Complete self evaluation by the Director (1F5)</li> <li>- Report: Completed Current Unit Floor Space Occupation</li> </ul>
Strength	<ul style="list-style-type: none"> <li>- Relevant card. The card is indispensable for the evaluation of the total surface area compared with the total unit occupation</li> <li>- It is feasible to calculate the percentage of the total unit occupation</li> </ul>
Weakness	<ul style="list-style-type: none"> <li>- Not always is possible to have similar types of storage units. To subdivide the storage area(s) in smaller sections won't help to estimate a unit floor space occupation</li> <li>- It is required to measure length and wide of all storage units and other furniture and multiply to acquire square meters occupation of them.</li> <li>- It should be included occupation area of objects placed on floor without units.</li> </ul>

## II. Calculating

To estimate the, the current unit floor space occupation the following steps were followed:

- Identifying the permanent storage areas: Seven storage areas were assessed at the storage department. One of the areas was dismissed ("Colecciones selectivas") because the objects housed were in transit.
- Measuring the sizes of the different storage areas

### Result of testing the Card 1F6.

- The total area of storage surface: 354.32 m<sup>2</sup> approximately:

<b>Material</b>	<b>Surface of storage room</b>	<b>Occupation of units</b> (Percentage expressed as decimal)
Textiles	63 m <sup>2</sup>	0.31
Organic	63 m <sup>2</sup>	0.34
Bones	37 m <sup>2</sup>	0.14
Painting & Sculpture	72 m <sup>2</sup>	0.13
Stone	22 m <sup>2</sup>	0.04
Metals	8.35 m <sup>2</sup>	0.19
Ceramic	90 m <sup>2</sup>	0.63

- In some of the storage rooms, boxes and objects are display on the floor due to a lack of unit facilities.
- To calculate the current unit occupation it has also been considered, other furniture and objects on the floor that occupy surface.

## **Suggestions /advice for future users**

- Is better if a floor plan is provided or to draw it at scale to visualize the surface of different storage areas.
- When calculating units' areas take into account only the size of one of the units (planners) if they are placed one on top to the other.
- It is indispensable to have an idea of the amount of surface necessary for circulation in each room of storage in order to plan the reorganization and display of the old and new units.
- Cards 1F5 and 1F6 **could be merged** in only one.

## Introduction

The Card 1B2 was tested at the Museo de Arte de Lima – MALI, in Lima, Peru. In spite of the current situation of remodeling of the building, the objective of the task was achieved.

The results expected for the task were:

- Follow and trace the eventual routes objects circulation
- Provide suggestions for future users

### Objective of the task:

- Identify obstacles and functionality problems in the object circulation routes within the museum

### Specific Objective:

- To check data of the floor plan, and sections (heights); measurements of doorways and circulation areas.

### Difficulties / Restrictions

There were restrictions to access to some areas due to the remodeling works of the building, nevertheless, the use of a printed floor plan helped to follow the routes of the objects.

## I. Testing Card 1B2

The first approach and visit to the museum was done on the first day, and purpose of the UNESCO-ICCROM project as well as the methodology was explained briefly to the Director of the museum.

- The methodology of Card 1B2 was applied step by step in the MALI context.
- To facilitate the collaboration, a self-evaluation in Spanish was given to the curator.
- An updated plan of the building with scales and measures was provided. The measurements of interest were checked (corridors, doorways, etc.)
- Remodeling works of the building are currently taking place; nevertheless, the card was tested.

<b>Card 1B2</b>	<b>EVALUATE OBJECT CIRCULATION ROUTES</b>
<b>Final product</b>	<ul style="list-style-type: none"> <li>- Updated Floor Plan, elevations and sections of the building with measurements of rooms, doorways, windows and heights.</li> <li>- Circulation evaluation graphic. A color-code was used to identify the circulation routes to make understandable the objects circulation.</li> <li>- Complete self-evaluation by the curator</li> <li>- Report</li> </ul>
<b>Strength</b>	<ul style="list-style-type: none"> <li>- Relevant card. The card is very useful and important to evaluate circulation routes</li> </ul>
<b>Weakness</b>	<ul style="list-style-type: none"> <li>- If floor plan and sections are not provided, skills on drawing are required.</li> <li>- Not easy to calculate the amount of threats while carrying objects due to the size of the building and levels to go across.</li> <li>- No moving objects policies are available only a brief mission statement and other documents about loans, growing of the collection and rules for the Cultural Committee.</li> </ul>

Preventive Conservation for Collections in Storage.

Report of CARD 1B2. Tested at Museo de Arte de Lima (MALI). Peru.

Rosanna Kuon- Lima-Peru.

## II. Circulation Evaluation

The building of the MALI is approximately 10,500 m<sup>2</sup> of construction that holds about 11,000 objects. The new remodeling project has considered new storage areas (3) in two levels:

### First floor:

- One storage area for Textiles, paper and photographs
- One storage area for large paintings, sculptures and Decorative arts.

### Mezzanine floor:

- One storage area for small paintings and ceramics

## Result of testing the Card 1B2. Circulation routes

Minor changes are allowed to carry out in the Historic building; as a result, the second floor has been assigned for the permanent collection and three areas for temporary exhibition in the ground floor (first floor).

- Movement of objects at the MALI is complicate due to the level changes and the large dimension of the building. It represents considerable trajectory for the objects, especially those fragile objects.
- Only small objects could reach the second floor within the elevator (for handicapped people) which is located in the ground floor (first floor).
- Small paintings and ceramics have the same route to the exhibition areas. They have to be moved primary to the first floor, to reach the exhibition area in the second floor.
- Some objects (paintings, decorative arts) have to circulate primary through the courtyard and through two exhibit areas to reach the permanent collection (second floor).
- Scales and corridors have good sizes (width) for moving objects.

As a result, the main threats to objects are the level changes and some locations that objects have to go across:

- From Entry to → register → conservation → restoration
- From paintings storage (first floor) to → courtyard → temporary exhibitions → stairs → to permanent exhibitions (second floor).
- From textiles, paper and photographs storage (first floor) to → stairs → permanent exhibitions (second floor).
- From Mezzanine floor → stairs down to courtyard → temporary exhibitions → scale to permanent exhibitions (second floor) or from mezzanine floor → conservation → restoration → scale → to second floor.

Most of movements in the museums are due to loans (two or three times a year) for temporary exhibitions. Permanent collections are hardly moved during the year. Some of the objects are moved from and to conservation and restoration areas.

## Suggestions /advice for future users

- Is better if a floor plan is provided by the staff, otherwise, skills in drawing a floor plan or a scheme is required. A graphic scale is essential.
- If a floor plan is provided, it is important to know how to “read” (interpret) the floor plan and details (elevation and section drawings) in addition to the conventional draw-description of architectural elements: windows, doors, doorways, walls, others, etc.
- Most of museums has already a floor plan, but not always are clear enough if you are not familiar with. So, find a simple design or make it yourself. Find a person who can help to solve the problem (architect student or assistant).
- It is also important to find out the way to transport objects within the museum (trolleys, trays, etc.) Threats to objects will also depend on this issue.

**CIRCULATION OF OBJECTS EVALUATION  
CARD 1B2**

**Museo de Arte de Lima  
(MALI)  
Lima- Peru**

# PRIMER NIVEL

0 m 5 m 10 m 15 m 20 m

Elevator

To 2nd floor

Textiles, paper & photos storage

Large paintings & sculptures storage

To Mezzanine storage

INGRESO 3 AULAS

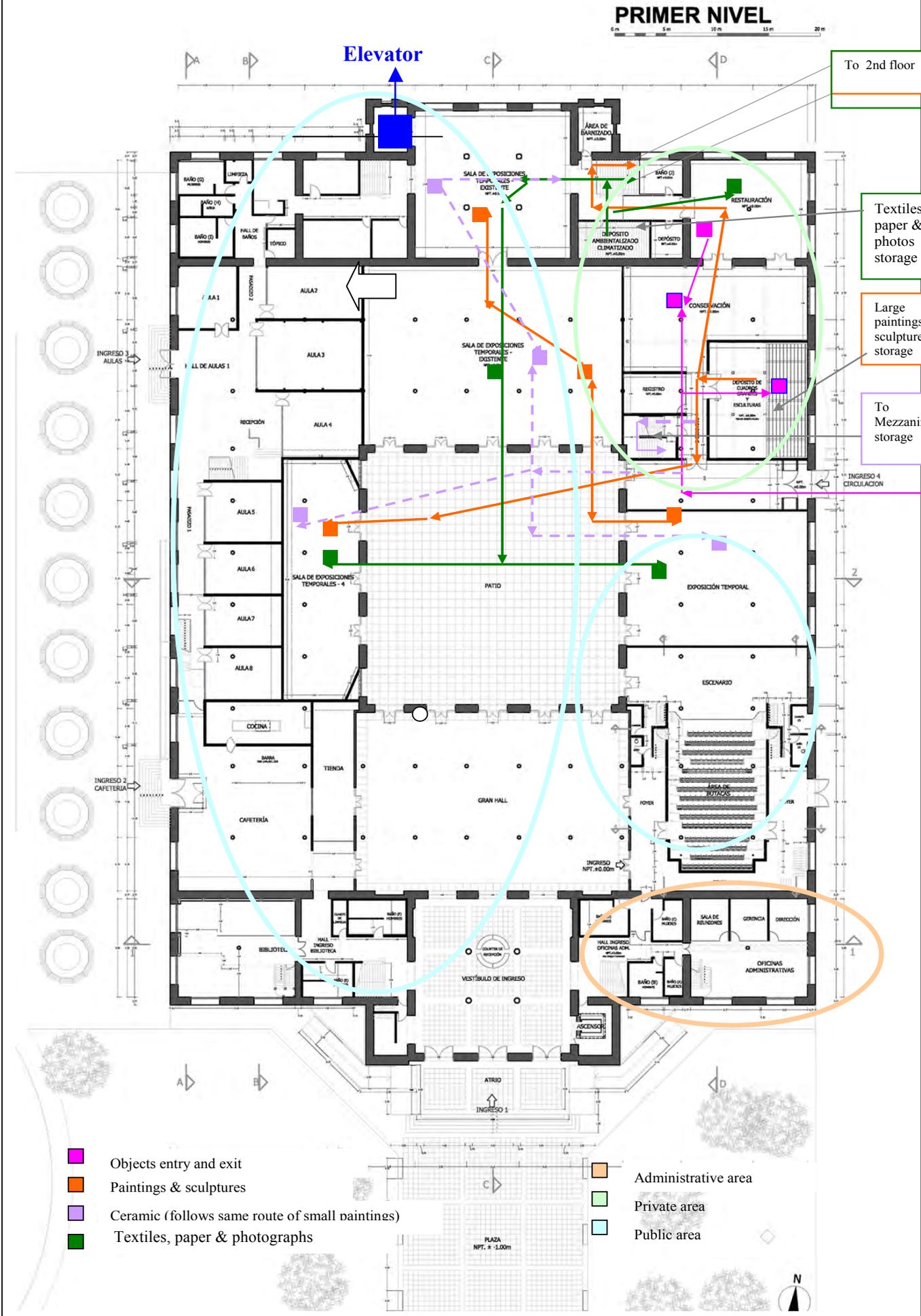
INGRESO 2 CAFETERIA

INGRESO NPT. +0.00m

INGRESO 4 CIRCULACION

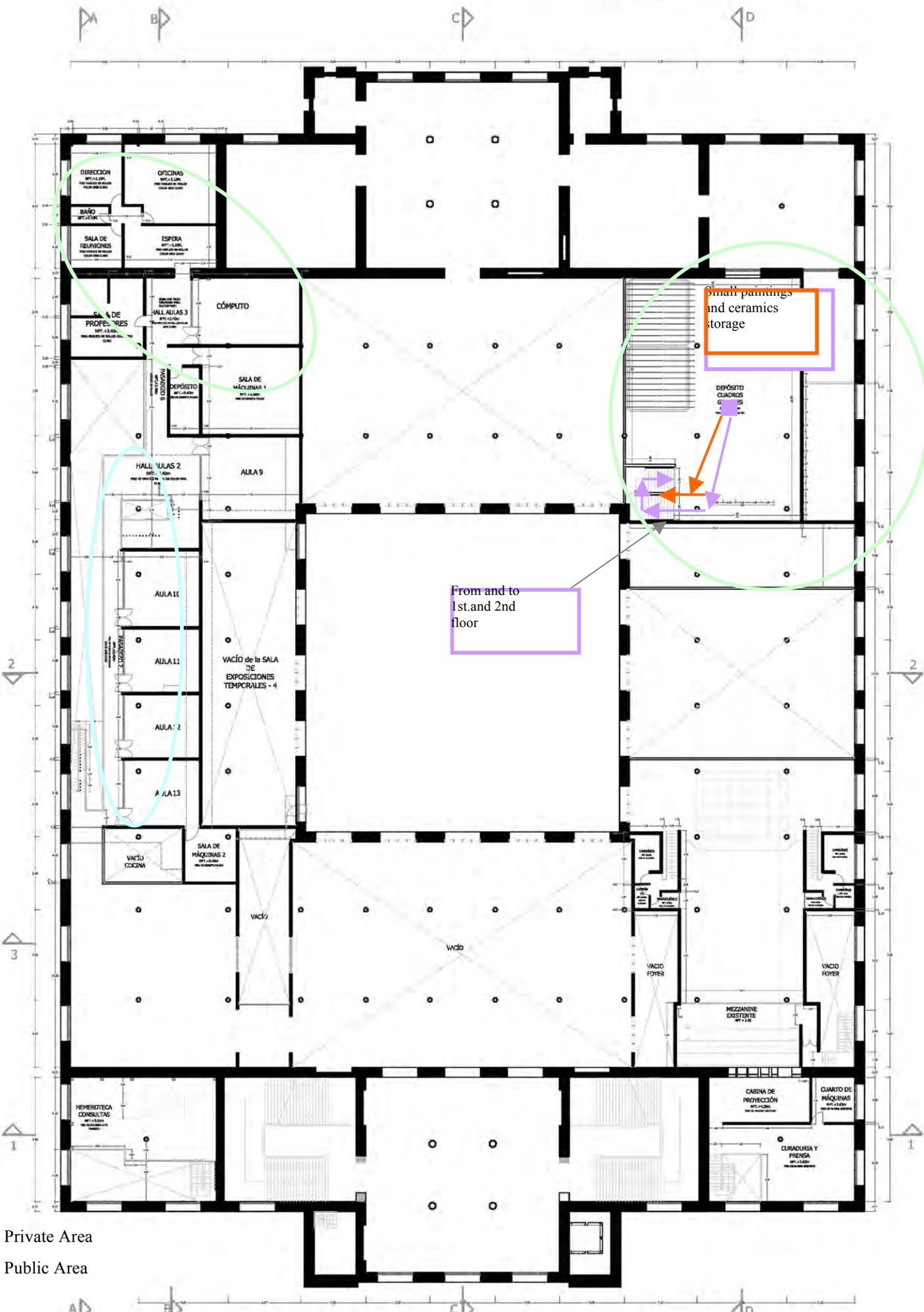
- Objects entry and exit
- Paintings & sculptures
- Ceramic (follows same route of small paintings)
- Textiles, paper & photographs

- Administrative area
- Private area
- Public area



# MEZANINE PRIMER NIVEL

0 m 5 m 10 m 15 m 20 m



small paintings and ceramics storage

From and to 1st and 2nd floor

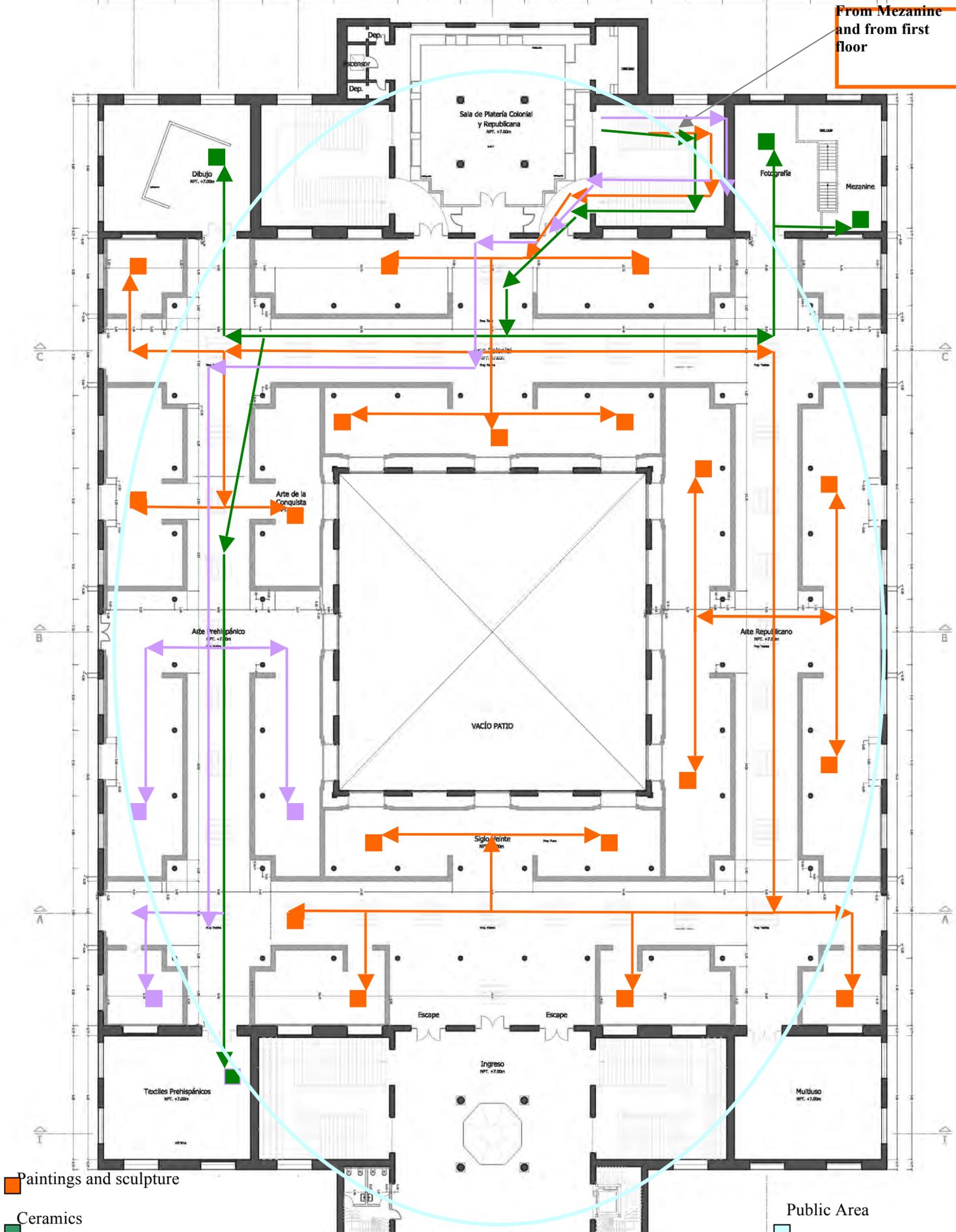
- Private Area
- Public Area

# SEGUNDO NIVEL

0 m 5 m 10 m 15 m 20 m

PASEO COLON

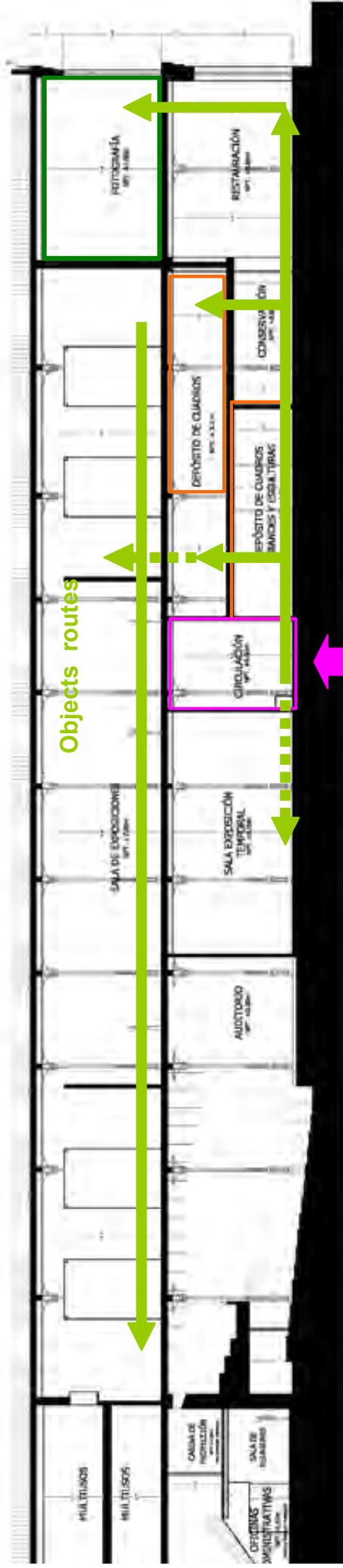
From Mezzanine  
and from first  
floor



Paintings and sculpture

Ceramics

Public Area



Objects routes

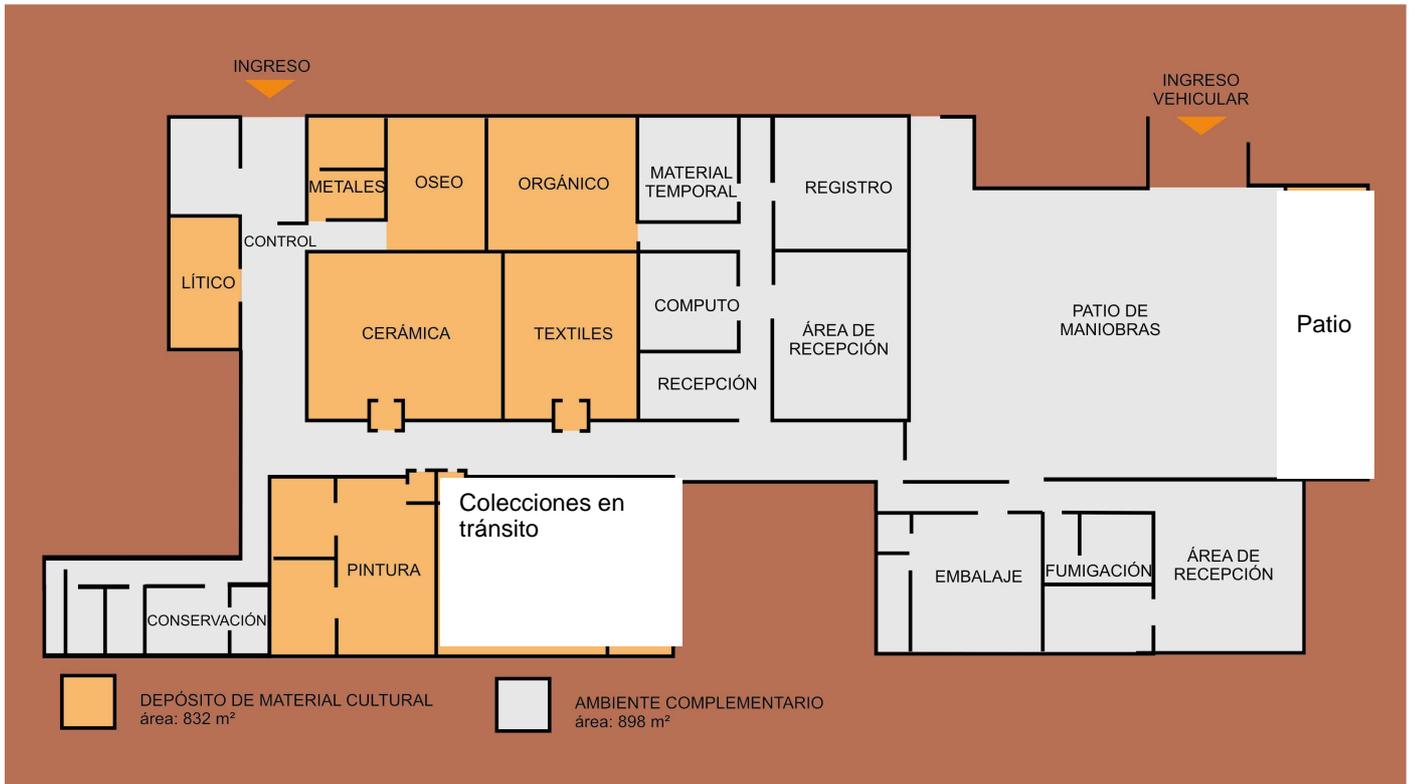
Entry

SECCION LONGITUDINAL D-D



NATIONAL MUSEUM (Museo De La Nación). Lima- Peru

Floor Plan of Storage Areas scheme



354.32 m<sup>2</sup> evaluated storage areas (approximately).

898 m<sup>2</sup> of conservation services