

# **Behind the scenes of the exhibition “The Lisbon that could have been” – Care and conservation of manuscripts**

## **Abstract**

The temporary exhibitions are excellent possibilities for selection of museum objects that some times are kept for ages in Storage Departments, away from the sight of the public. In fact what we have the privilege to see in the permanent or temporary museum exhibitions is only a very small detail, compared to the quantity of other historic objects that are kept in the museums Storage Buildings. This is the subject of this paper. A temporary exhibition and the care and conservation of a selected unique collection of architectural drawings, paintings and projects, planned for the renovation and architectural reconstruction of Lisbon. Among the seven masterpieces art on paper objects, restored for this exhibition, three we chosen, here presented as conservation and restoration case studies.

## **Introduction**

The temporary exhibition *The Lisbon that could have been*, organized by Museu de Lisboa, took place at palace Pimenta (Lisbon), from January to July 2017 and brought to “life” an important group of manuscripts (drawings, designs, paintings, models and paper based documents) that have rarely or never before been shown to the public.

The Museu de Lisboa has an extensive heritage assets of thousands of pieces spread across various types and categories of materials, the area of graphic documents holding a prominent position with a weighting of around 3/4 of the collection.

In this macro universe, the priority in care and conservation of paper based materials tends to be placed on works that present more complex pathologies, with others naturally awaiting their opportunity for intervention. At times, this

window of opportunity comes about with thematic exhibitions, as is the case with *The Lisbon that could have been*, which brought to the forefront works that had never been exhibited. Their restoration and stabilisation contributed to rekindling their original aspect, allowing them to finally be appreciated to their full potential.

Among the different works belonging to the Museu de Lisboa's archive, seven drawings were selected for this exhibition. As they were in a very poor condition, their restoration and conservation was difficult but well succeeded in the end. From this group, three of them merit special highlight for the characteristics of the conservation and restoration intervention carried out, planned according to the pathologies and materials of these paper based objects.

## Results and discussion

**Case study one** - Drawing by Carlos Ramos, 1934, Proposal for the conversion of the buildings of Rossio squar

(ink on paper, inventory number. MC.DES.4397; dimensions 2,600mx0,575m)



**Photo 1** - Front of the object before restoration treatment



**Photo 2** - Back of the object before restoration treatment

In 1934, the Lisbon City Council conducted an exhibition for the renovation and architectural restoration of Rossio square (GOMES, p.115-136; MOREIRA, p.234-239). This drawing was one of the five proposals presented by this architect. After this 1934 exhibition, all these drawings were placed in a storage department and only now were selected for the temporary exhibition *The Lisbon that could have been*.

This drawing was in a very poor condition. Originally stuck to cardboard, a wooden grid with the same size as the piece, nailed to the back, and finished at the front with 1.5 cm wooden laths that formed a small frame, clearly without any aesthetic intentions, emphasising only the work itself.



**Photos 3, 4, 5** - Removing the object from the display system

This method of display, created in 1934, more than 80 years ago, gave rise to various pathologies that seriously damaged the support of the work and the inks used, with visual effects detected macroscopically with special emphasis on the discolouration of the support with general brownish tones, random deep brown stains, discolouration of the inks and small points of metallic corrosion corresponding to contact with the fixing nails

After being detached from the wooden structure, the pH reading of the support (4.79) confirmed strong acidification resulting from direct contact with the wooden board, and the urgent need to stabilise the pH balance.

The colour was also measured in 4 windows of reference (point of oxidation through contact with wooden board; stain of unknown nature; stain from metallic oxidation; more pronounced photo-oxidation) in order to compare the efficacy of treatment, after its conclusion.

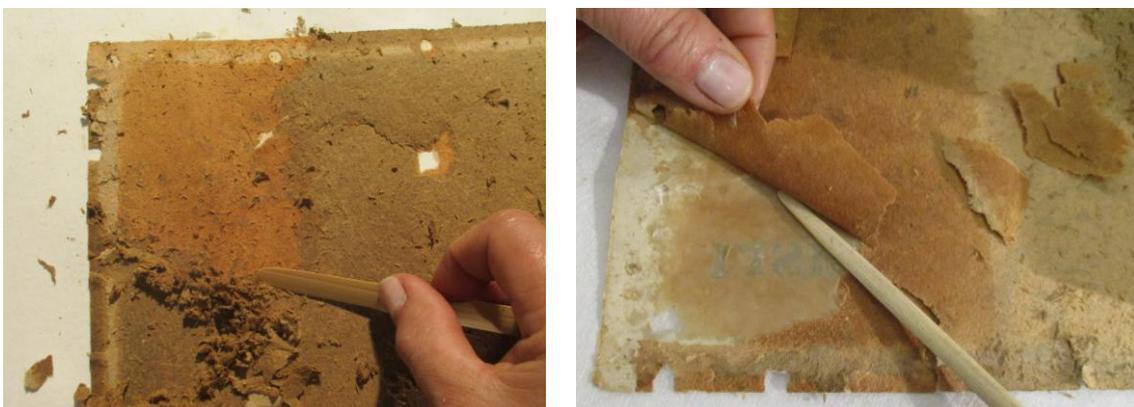
A solubility test was carried out on the inks to assess their stability, which confirmed a high degree of solubility, a decisive factor in the choice of cleaning system to be adopted.



**Photo 6** - Main problems: discoloration of the support, discoloration of inks, stains of metallic corrosion; **Photo 7** - pH reading; **Photo 8** - Solubility test

After consideration of the different variables, a proposal was outlined for the most suitable treatment to stabilise the work, which would involve: surface cleaning of the obverse, removal of the wooden board from the back, washing of the support through capillary action, using a capillary unit treatment, the consolidation of tears, fissures and gaps, lamination of the support, if necessary, and to be considered after the removal of the board, drying and smoothing of the support and isolated chromatic reintegration, if necessary.

After detachment from the baseboard, we confirmed that the work was composed of 4 pieces, two of which were central and larger in size, the other two lateral and narrower. It was also possible to verify that the high acidity of the paper had greatly increased its fragility, with multiple fissures and small tears in evidence, which made it advisable, as expected, to carry out total lamination.



**Photos 9, 10** – Removing of the cardboard base

The cleaning system for the support was planned according to the solubility sensibility of the inks, especially in the bands of brown tones. According to bibliography (SCHOLLS, p 11-19), in capillary action cleaning, the object is placed on a textile support that, in contact on one side with the water of a container and on the other side with another container at a different level from the first (lower), to get the contaminated water, creates a system of communicating containers in which the liquid is transferred from the first to the second one, passing underneath the contaminated moist of the work to the fabric, dragging with it the acidic compounds present.

The efficacy of this method is proved when a yellowish band is formed on the fabric holding the work, which advances progressively as it is dragged through the water in the bath, corresponding to the acidity of the paper as it passes to the bath. With this system, which works only on the support, there is no migration of inks, even those that are markedly soluble, as was the case.



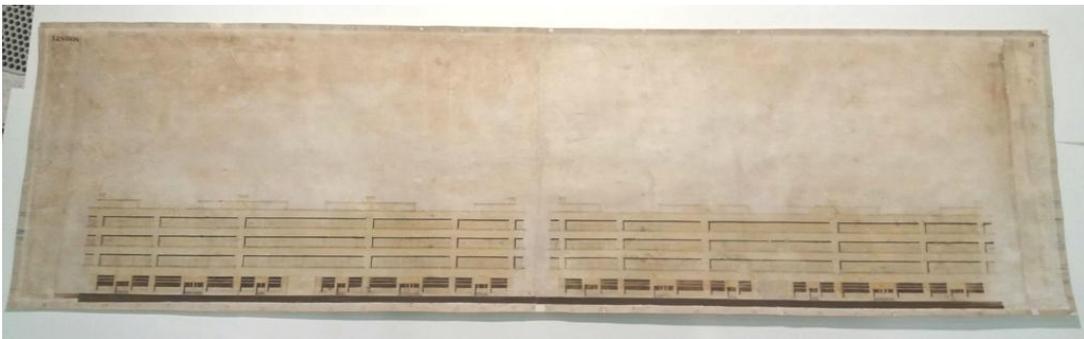
**Photos 11, 12** – The capillarity unit system, created for cleaning this object

After washing the 4 pieces separately, the discontinuities were consolidated with starch adhesive and Japanese paper (sekishu thin), then the four parts of the support were joined and full lamination and tension drying carried out.



**Photos 13, 14, 15** – Consolidations of the support, lamination and tension drying

After total drying and on the obverse, small restorations were inserted in areas with gaps and small continuity lines were chromatically reintegrated to the sketch to optimise the aesthetic reading of the work.



**Photo 16** – Aspect of the obverse of the object after the restoration treatments

With the treatments concluded, the second colour measurement was carried out in the initial reading windows. The initial and final values and the respective rate of variation are shown in the following table.

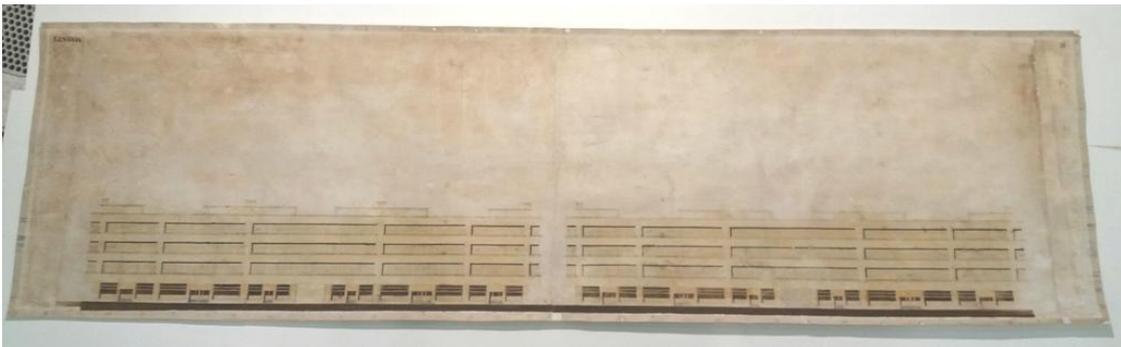
**Table of colour reading and final variation rate**

	<b>Initial reading</b>	<b>Final reading</b>	<b>Variation rate</b> (1-[InitialValue/FinalValue]x100%)
Point 1 – Contact oxidation	$\Delta L = +69.5$ $\Delta a = +6.5$ $\Delta b = 17.7$	$\Delta L = +75.9$ $\Delta a = +4.7$ $\Delta b = 12.7$	$\Delta L = +8.4\%$ $\Delta a = -38\%$ $\Delta b = -39.4\%$
Point 2 –Stain of unknown nature	$\Delta L = +61.9$ $\Delta a = +12.7$ $\Delta b = +23.2$	$\Delta L = +68.5$ $\Delta a = +8.6$ $\Delta b = +21.1$	$\Delta L = +9.6\%$ $\Delta a = -47.7\%$ $\Delta b = - 9.9\%$
Point 3 – Metallic oxidation	$\Delta L = +66$ $\Delta a = +10.3$ $\Delta b = +24.1$	$\Delta L = +75.5$ $\Delta a = +6.2$ $\Delta b = +16.8$	$\Delta L = +12.6\%$ $\Delta a = -66\%$ $\Delta b = -43.5\%$
Point 4 – Photo of more pronounced oxidation	$\Delta L = +57$ $\Delta a = +12.4$ $\Delta b = +22.2$	$\Delta L = +73.1$ $\Delta a = +8.3$ $\Delta b = +19.9$	$\Delta L = +22\%$ $\Delta a = -49.4\%$ $\Delta b = -11.6\%$

Analysing the results, we can conclude that in the case of variable “L” (indicator showing the level of luminosity), there was a qualitative gain in luminosity in all four points of reference, with the most significant gain at the point where photo oxidation had occurred, with an increase of 22%.

In the case of variable “a” (indicator fluctuating between reddish tone and greenish tone), it could be confirmed that there was a considerable reduction in reddish/brownish tone at all four points, coherent with the reduction in brownish colouration, resulting from the washing of the support.

Finally, in the case of variable “b” (indicator fluctuating between yellowish and bluish tone), it was also confirmed that there was a significant reduction in yellowish tone, especially in the case of oxidation by contact. Indeed, macroscopically, the final tonality of the work is much lighter and more luminous, with the values obtained being coherent and as expected.



**Photos 17, 18** - The final tonality of the work is much lighter and more luminous, as expected

In relation to the pH balance, there was also a qualitative gain, with a final reading of 6.5, which is reasonably stable when considered in relation to the initial value.

**Case study two** - Drawing by Veloso Reis Camelo, 1934, Proposal for the conversion of the buildings of Rossio square

(tempera on paper, inventory MC.DES.4398, dimensions 2,000mx0,470m)



**Photo 19, 20** - Front and back of the object before restoration treatment

This tempera on paper painting was glued to a plank of wood and framed on the day it was created and kept like that until today. The wooden plank may have been contaminated with insects that, in the natural process of the creation of tunnels, perforated the wood and support of the piece, creating multiple exit holes. In order to stabilise the work it was fundamental to remove the wooden structure, to stabilise the support in relation to its discontinuities, and to restore the aesthetic and chromatic reading, this being one of the more visually appealing pieces among those on display.

The work was stuck to the wood with organic glue, soluble with moisture and temperature so we used indirect moisture and controlled temperature to remove it, a laborious task considering on one hand the size of the piece and on the other the fact that tempera is quite sensitive and stains can easily form if it becomes too humid. After the complete removal of the work, it was possible to assess the true extent of the infestation, evident from the abundant sawdust deposited at the base where the wood had been glued and from countless traces of inactive insects. From the pH reading, strong acidification was also confirmed.

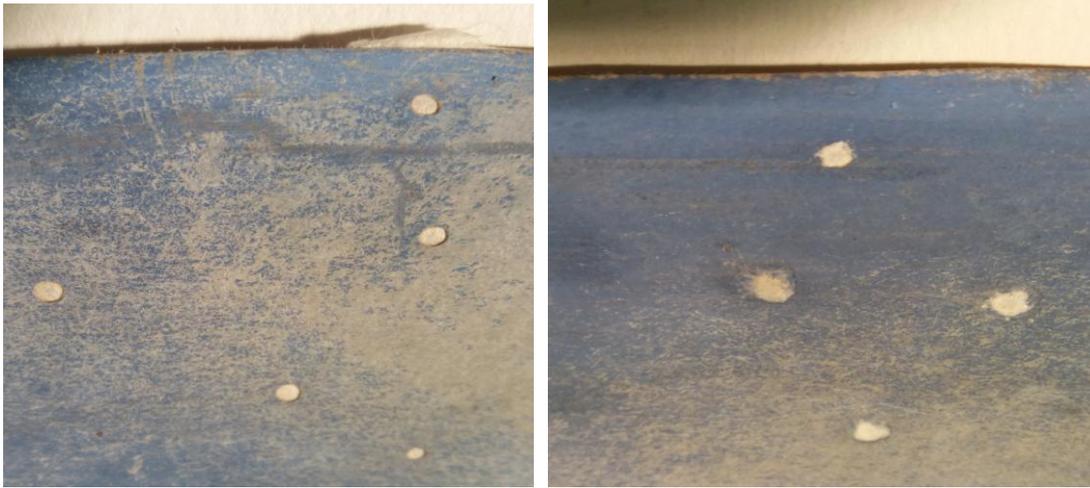


**Photo 21, 22** – Perforation of the support by insects and countless traces of inactive insects



**Photo 23, 24** – Removing the object from the wooden board

In this case, the treatment carried out was surface cleaning on the back and obverse, aqueous cleaning of the traces of glue present on the back, deacidification of the back using a nebuliser, the drying and smoothing of the support, consolidation of all orifices on the back, filling of all the orifices on the obverse, and chromatic reintegration of the areas where intervention had occurred for the restoration of the chromatic reading of the work as a whole.



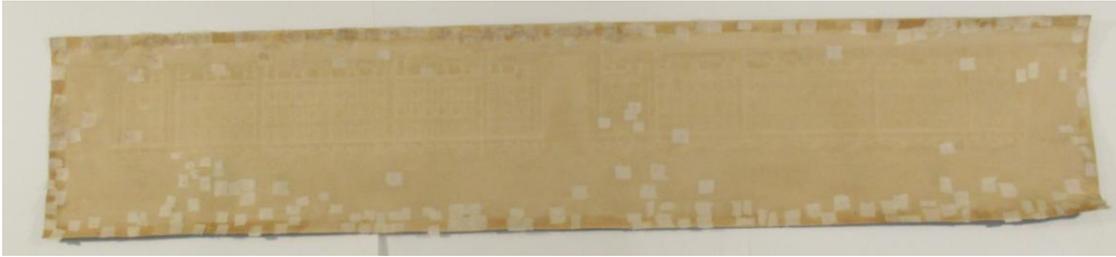
**Photos 25, 26** - Consolidation of all orifices on the back, filling of all the orifices on the obverse



**Photos 27, 28** - Restoration of the chromatic reading of the work as a whole



**Photo 29** – Front final aspect, after the restoration treatments



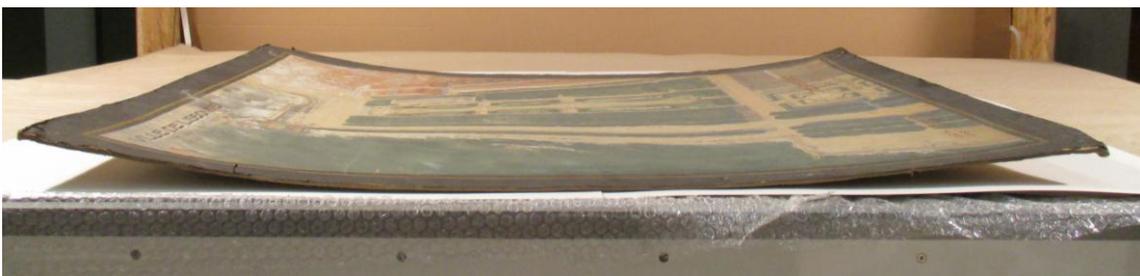
**Photo 30** – Back final aspect, after the restoration treatments

**Case study three** - Painting by Jean-Claude Nicolas Forestier, 1927, “Perspective des Jardins et de l’Avenue sur le Taje” (gouache on paper, inventory number MC.PIN.490, dimensions 1,180mx0,780m)



**Photos 30, 31** - Front and back of the object before restoration treatment

This gouache painting on paper was stuck to thin black cardboard and outlined with gold thread. The whole piece was then fixed to a card board of a thickness of around 4 mm. On the day of intervention, the baseboard presented a central curvature, with an arch of around 5 cm.



**Photo 31** – Central curvature of the card board

In relation to the work, it was possible to detect various pathologies from contact and impact with other pieces, with perforations, superficial lacerations, lines, others that might be caused from contact with liquids, showing bleeding and tidemarks, as well as abundant surface dirt, gaps and tears in the black cardboard and gold thread.



**Photos 32, 33, 34** – Some of the pathologies of the object

After a close evaluation of the condition of the painting, we considered that the baseboard was a risk factor for the support of the piece, forcing it into an unnecessary and incorrect curve, but that the cardboard should be maintained because it constituted an original aesthetic frame.

The treatment carried out began with the mechanical removal of the back baseboard, surface cleaning on the obverse, both dry and aqueous, filling and consolidation of gaps and lacerations on the obverse of the painting, consolidation of gaps, tears and fissures on the black cardboard and gold thread and chromatic reintegration in the zones where intervention had occurred.



**Photos 35, 36** – Mechanical removal of the back baseboard, cleaning, consolidation and filling the gaps, tears and fissures



Photos 37, 38 – Lamination of the back and chromatic reintegration



Photos 39 – Front final aspect, after the restoration treatments

## Conclusions

The concept of this exhibition was centred on the unfinished work, the unused work, drawings and paintings that went inside a box and there were kept for decades until the moment they were selected to be shown again. Following this concept, the option for the design of the exhibition led to very simplified constructions and supports but where the preservation of the art on paper based objects was the main purpose. As a secondary consequence this exhibition, had the possibility of showing masterpieces of architectural drawings and projects that we never built. Caring and conservating all this heritage assets

was the real challenge and a very well succeeded one as all this objects are now stable, physically and chemically speaking.

### **Author**

Aida Nunes, graduated in 1999 in Art History from the Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa, graduated in 2003 as a paper conservator from the Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa. In 2007 received Master's degree in Chemistry applied to Cultural Heritage, from Faculdade de Ciências, Universidade de Lisboa. Works at Museu de Lisboa as Senior Conservation and Restoration Officer since 2000 and was nominated in 2012, Coordinator of the Conservation and Restoration Department.

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