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|---------------------------|---|
| NUMBER OF PARTNER: | P3 Cesmar7, P4 An.t.a.res srl |
| TYPE OF WORK: | Mural painting |
| COUNTRY: | Italy |
| CITY: | Reggio Emilia |
| ADDRESS: | Via Selo |
| OWNER / CUSTODIAN: | Cooperative Popular Houses of Mancasale e Coviolo |
| ARTIST: | KENOR (Proyecto Ritual) |
| TITLE OF THE WORK: | Big Sacral Bird |
| YEAR OF EXECUTION: | 2010 |
| MATERIALS: | housepaint acrylic and Montana spray |

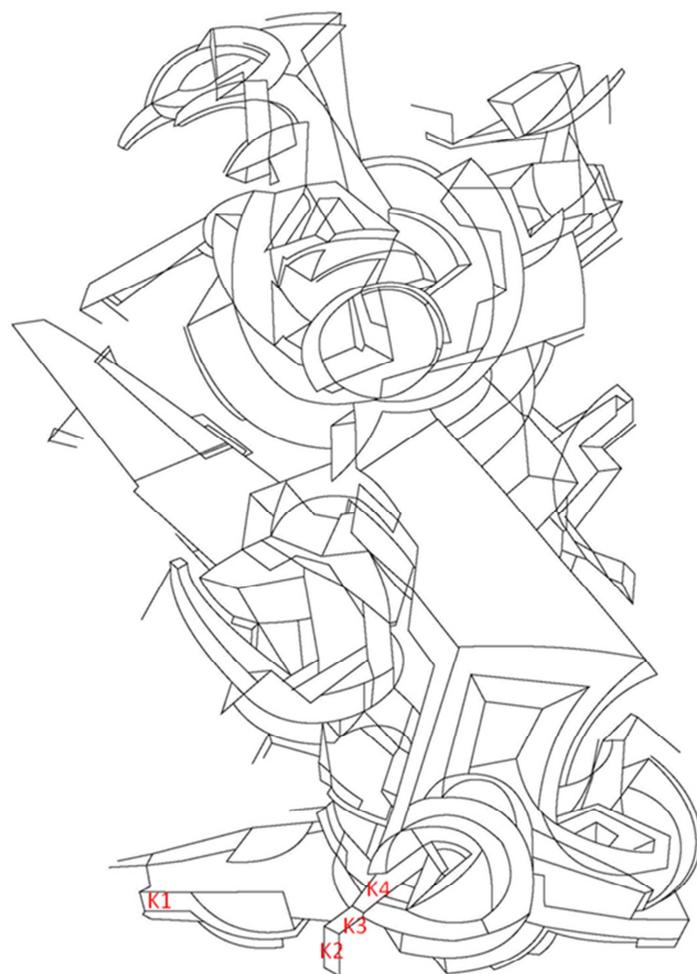
| | Name of the sample | Original materials | No original materials | Pigments / dyes | | Organic binders | | Type of support* | | Other** | |
|---|--------------------|--------------------|-----------------------|------------------------|---------|------------------------|-------------|------------------------|---------|--------------------------------------|---|
| | | | | Identification methods | Results | Identification methods | Results | Identification methods | Results | Identification methods | Results |
| 1 | K1 | X | | | | FTIR-ATR | Alkyd resin | - | | Stereomicroscopy on sample fragments | Stratigraphy: a. Ground layer b. Yellowish ground layer c. White prime coating d. Greenish-yellowish paint layer e. light blue paint layer |

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|---|--------|---|--|--------------------------------------|---|----------|-------------------------------------|--|--|--|---|
| | | | | | | | | | | | |
| 2 | K2 | X | | μ- Raman on the cross-section sample | Rutile is ubiquitous and mainly present in the patina. The orange color is due to PO34 – Diazopyrazolone and PY74 acetoacetic arylide | | Alkyd resin is in the patina layer | | | | Stratigraphy: a.Yellowish ground layer b.Pale orange paint layer c.Pale yellow thin layer (patina) |
| | | | | | | Py-GC/MS | Alkyd resin | | | | |
| 3 | K3 | X | | | | Py-GC/MS | Alkyd resin and PVAc-VEoVA (traces) | | | | Stratigraphy: a.Yellowish ground layer; b.Orange paint layer; c.Pink thin layer (patina) |
| 4 | K4 (c) | X | | Raman Spectroscopy in situ | Acetoacetic arylide based pigment (PY74) plus probably goethite | FTIR-ATR | Alkyd resin | | | | Stratigraphy: a.Yellowish ground layer; b.Orange paint layer with a glossy whitish |

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|----|--------------------|---|--|-----------------------------------|---|--------------|---|--|--|--|--------------------|
| | | | | | | | | | | | superficial patina |
| | | | | | | Py- GC/MS | Alkyd resin +DEHA (diethyl hexyl adipate, plasticizer) | | | | |
| 5 | 1 (005) | X | | Raman Spectroscop y in situ | Rutile, Phtalocyanine or Hostasol green? | | | | | | |
| 6 | 2 (020) | X | | | Rutile, plus? | | | | | | |
| 7 | 11 | X | | | Rutile, Hostopen Violet | | | | | | |
| 8 | 12 | X | | | Rutile, Polycyclic pigment, phtalocyanine | | | | | | |
| 9 | a | X | | | Rutile, PY74 acetoacetic arylide | | | | | | |
| 10 | b | X | | | | | | | | | |
| 11 | 014 | X | | Raman Spectroscop y in situ | Carbazole dioxazine violet PV23?+Phtalocyanine? Or Hostopen Violet? | | | | | | |
| 12 | d | X | | | probably PY74 acetoacetic arylide or Maybe a disazopigment, pyrazolone (PO?) | | | | | | |
| 13 | e | X | | | Rutile, Disazopigment, Pyrazolone P034 | | | | | | |
| 14 | f (023) | X | | | Monoazopigment, Naphthol AS PR112 | | | | | | |
| 15 | t | X | | | Rutile, Monoazopigment, acetoacetic arylide PY 74 | | | | | | |
| 16 | 020 | X | | Raman | phtalocyanine | | | | | | |

| | | | | | | | | | | | |
|----|----------------|---|--|----------------------------|---|--|--|--|--|--|--|
| | | | | Spectroscopy in situ | | | | | | | |
| 17 | s | X | | Raman Spectroscopy in situ | Rutile, Monoazopigment, acetoacetic arylide PY 74 | | | | | | |
| 18 | p ¹ | X | | Raman Spectroscopy in situ | Carbazole dioxazine violet PV23? Calcite? | | | | | | |
| 19 | n | X | | | Rutile, Monoazopigment, acetoacetic arylide family? | | | | | | |
| 20 | p | X | | | Rutile, Monoazopigment, acetoacetic arylide PY 74 | | | | | | |
| 21 | l | X | | | Rutile, Monoazopigment, acetoacetic arylide PY 74 | | | | | | |
| 22 | v (022) | X | | | Rutile, Disazopigment, Diarylde PY83 | | | | | | |
| 23 | w | X | | | Rutile, Monoazopigment, acetoacetic arylide PY 74 | | | | | | |
| 24 | r | X | | | Monoazopigment (probably PR48:1 form) | | | | | | |
| 25 | h | X | | | Rutile, Monoazopigment, acetoacetic arylide family? | | | | | | |
| 26 | 013 | X | | | Polycyclic pigment, phthalocyanine (PB15:3?) | | | | | | |

* mortars, stone, metal ect. ** Additional research or analyzes, for example: aging tests, colorimetry, pH...



Sampling map

- K1 Blu > light blu
- K2 Light orange > pale yellow
- K3 Orange > pink
- K4 Orange > dark orange

Fig. 1 " Big Sacral Bird " – sampling location

K1 sample was collected from a light blue area (spray paint) (**fig.2-4**) affected by cracking and fading, it was originally darker. The study of the K1 sample has shown the following structure and composition:

- a)* Traces of the plaster ground layer;
- b)* Yellowish ground layer, regular feature and thickness;
- c)* White paint layer (prime coating?);
- d)* Greenish-yellowish paint layer;
- e)* Very thick and porous light blue paint layer containing alkyd resin



Fig. 2 “ Big Sacral Bird ” – sample K1 – before sampling

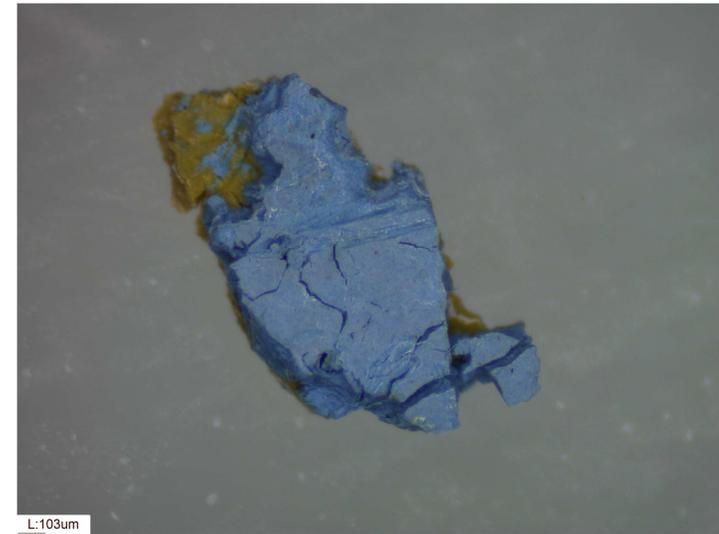


Fig. 3 “ Big Sacral Bird ” – sample K1 – SM – magnification 40 x



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Fig. 4 “ Big Sacral Bird ” – sample K1 – SM – magnification 40 x

K2 sample was collected along a crack of a pale yellow area (spray paint) (**fig.1;5-7**) that was originally light orange. The study of the K2 sample has shown the following structure and composition:

- a)** Yellowish ground layer, regular feature and thickness (about 120 μm), containing Calcite, Goethite and Rutile.
- b)** Pale orange paint layer containing red pigment P034 Diazopyrazolone and yellow pigment PY74 acetoacetic arylide with Rutile. Regular feature, average thickness of 30 μm
- c)** Pale yellow thin layer (patina) mainly composed of Rutile and alkyd resin probably styrene-modified for the peak of aromatic C-H stretching

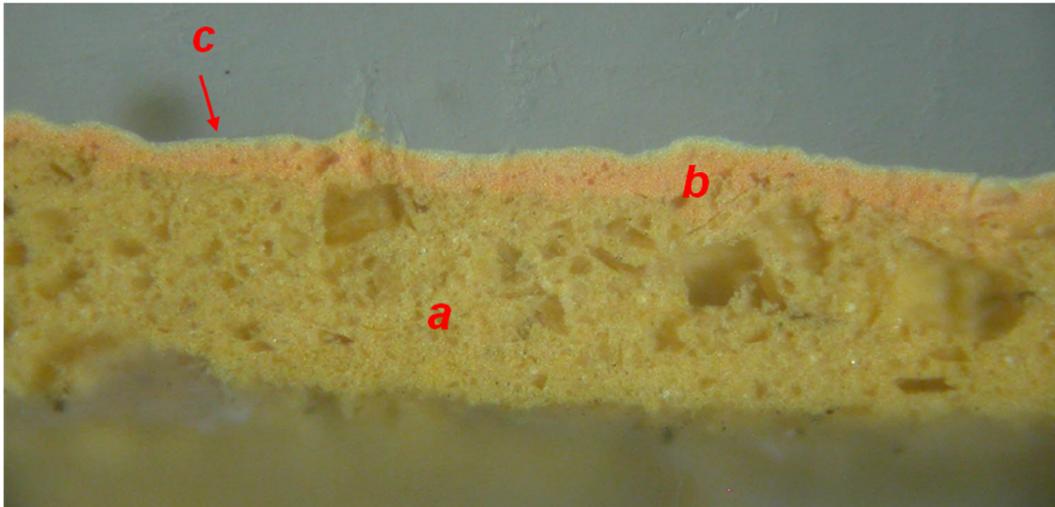


Fig. 5 "Big sacral birds" – sample K2 – cross section – reflected Visible light – magnification 180x



Fig. 6 "Big Sacral Bird" – sample K2 – after sampling

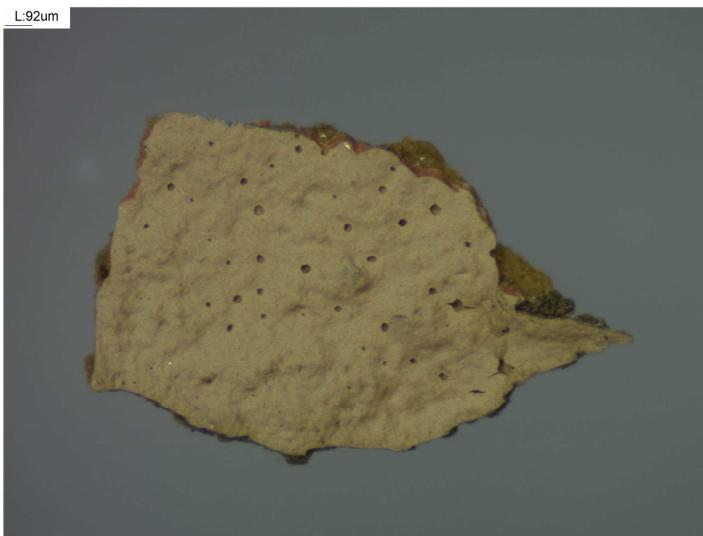


Fig. 7 “ Big Sacral Bird ” – sample K2 – SM – magnification 45x

K3 sample was collected along a crack of a pink area (spray paint) (**fig.1,8-9**) that was originally orange. The study of the K3 sample has shown the following structure and composition:

- a)** Yellowish ground layer;
- b)** Orange paint layer;
- c)** Pink thin layer (patina) mainly composed of alkyd resin, confirmed also by Py-GC-MS.



Fig. 8 " Big Sacral Bird " – sample K3 – after sampling

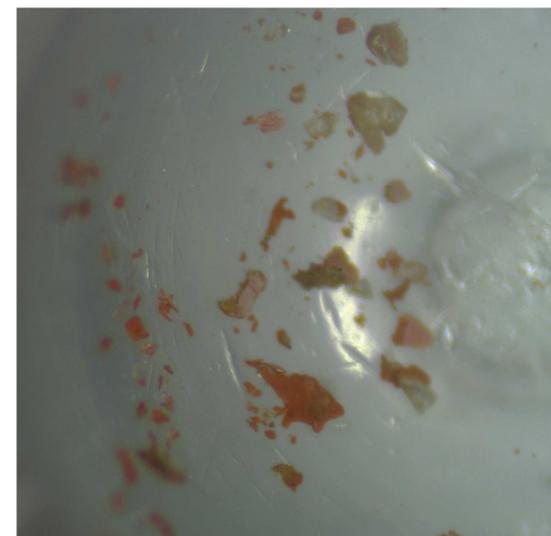


Fig. 9 " Big Sacral Bird " – sample K3 – SM – magnification 45 x

K4 sample was collected along a crack of an orange area (spray paint) (**fig.1,10-11**) that was originally lighter. The study of the K4 sample has shown the following structure and composition:

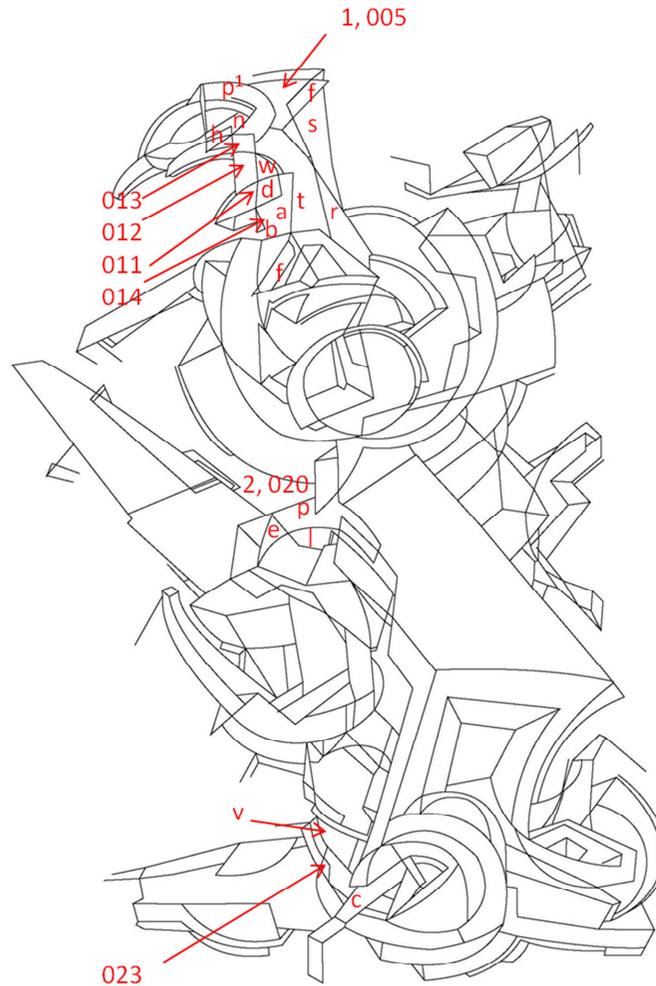
- a)** Yellowish ground layer;
- b)** Orange paint layer with a glossy whitish superficial patina, containing an alkyd resin confirmed by Py-GC/MS, an acetoacetic arylide based pigment (PY74) plus likely goethite. Differences between FTIR spectra collected on the top of the sample and on the inner part have been observed.



Fig. 10 " Big Sacral Bird " – sample K4 – after sampling



Fig. 11 " Big Sacral Bird " – sample K4 – SM – magnification 30 x



Points of measure for in situ Raman sp.:

- a. Light orange > pale yellow
- b. Orange > pink
- c. Orange > dark orange (K4)
- d. Orange-red > brown
- e. Orange-red > light purple
- f. Red > light Red (023)
- h. Light pink > white
- l. Salmon pink > whitish color
- n. Pink > white
- p. Orange > pink
- p¹. light violet > dark violet
- r. Purple > violet
- s. Pale yellow > whitish color
- t. Lemon yellow > pale yellow
- v. Gold yellow > light brown (022) ?
- w. Green > greenish color
- 1. Water Green stable color (005)
- 2. Military Green stable color (020)
- 011. Water blue stable color
- 012. Light blue stable color
- 013. Light purple stable color
- 014. Deep blue stable color

Fig. 12 “ Big Sacral Bird ”– measurement point location



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