# DOCUMENTING AND VISUALIZING GRAFFITI

NEW METHODOLOGIES AND APPROACHES

Graffiti are made on a variety of surfaces not intended for writing (rocks, marbles, ceramics, bricks, wood) usually with the use of makeshift tools. Graffiti are a particularly fragile and sensitive body of material subject to natural or human deterioration. The main challenge in the documentation of graffiti is their state of preservation; faded inscriptions and light incisions are particularly difficult to identify and document with traditional systems. Before the use of digital photography, graffiti were recorded by hand-traced copies.

This method is easy to apply but presents many limitations. First of all, the copy is subject to the researcher's ability and knowledge to provide a subjective reproduction. The digital lab of APAC Labs/ STARC has been able to develop specialized solutions that provide high quality, objective and digitally manageable documentation based on the physical and material characteristic of the graffiti and their support. Reflectance Transformation Imaging (RTI) is particularly efficient on small inscriptions, highlighting the visibility both for carved and painted graffiti.
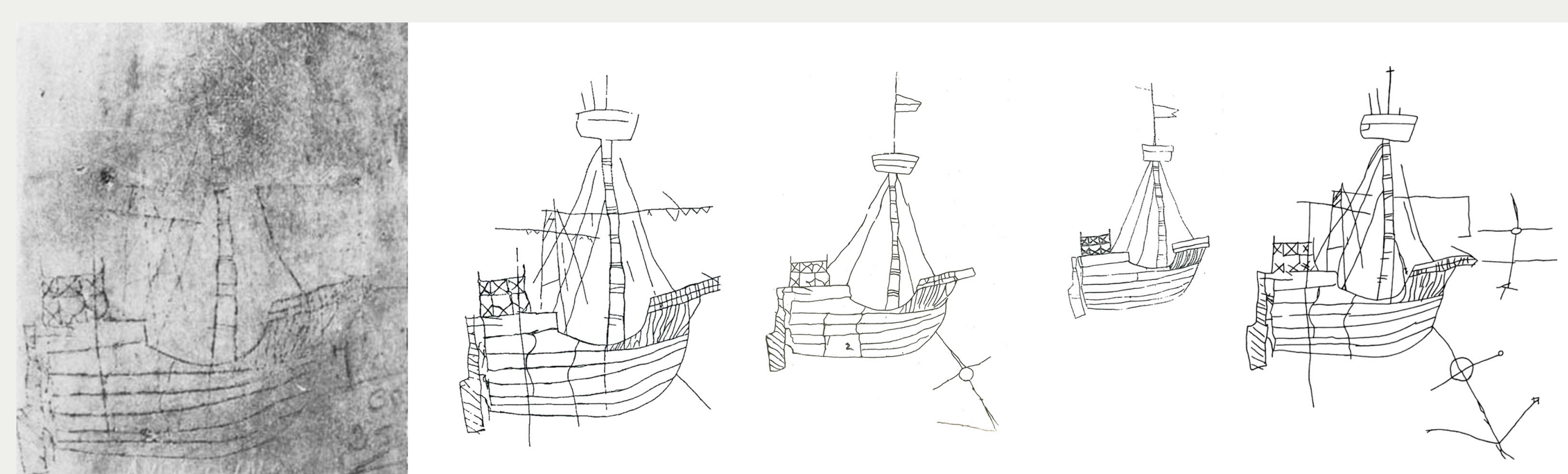
In the case of painted graffiti, multispectral imaging can help enhance visibility and integrate possible lacunae. Furthermore, pigment identification of painted graffiti can be performed with the use of X-Ray Fluorescence spectroscopy (XRF). Moving from micro to macro scale, photogrammetry can document more extended surfaces, providing measurable 3D models. Thanks to specific applications (i.e. Edge detection and Change detection) a specialized methodological pipeline has been developed to identify and document almost invisible graffiti. The collected data can also be integrated on a 3D model of the building mapping graffiti positions in space. Graffiti distribution in space is an essential element which must be taken into account to provide a solid base for the analysis and interpretation of this invaluable historical source.