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Using Photogrammetry in Outdoor Sculpture Conservation: Assessing Jean Dubuffet’s Jardin d’email

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This research evaluates the use of innovative imaging technologies, photogrammetry and image-based 3D modelling, to aid the conservation of the large-scale contemporary outdoor sculpture, Jardin d’email (1974) by Jean Dubuffet (1901-1985) owned by the Kröller-Müller Museum. It specifically analyses the effectiveness of using 3D models of the sculpture and its scale-model to inform the treatment process of repainting the intended design. This research was done at the initiative of the museum during the current on-going conservation treatment of the sculpture, led by its senior conservator for sculpture and modern art. Through this project, original hand-painted markings were uncovered that were hidden by overpaint. Being 600m2, Jardin d’email is one of the largest outdoor hand-painted sculptures in Europe, which visitors can enter and walk on. Due to this interactive feature and exposure to the outdoor environment the work has a known history of overpainting. Photogrammetry is used as a practical tool to document the original markings, prior to repainting the sculpture based on the design of Dubuffet's 1:10 scale-model. It is explored how 3D models of the sculpture and scale-model can be used to improve the accuracy of the repainting process. Using photogrammetry in conservation shows promising results. It involves a cross-disciplinary collaboration between contemporary art conservators and digital archaeologists, supported by information from other sources. The artistic design of hand-painted sculpture is difficult to reconstruct, but the use of 3D models alongside information from interviews with stakeholders of the artwork, allows the sculpture to portray Dubuffet’s vision.