Book Reviews / Critiques de livres

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Book Review/Critique de livre

MACRO TO MICRO: EXAMINING ARCHITECTURAL FINISHES

Edited by Mary Jablonski and Kristen Travers Moffitt, Archetype Publications, London, UK, 2018; 240 pages, 138 colour and 31 half-tone illustrations, hardcover, CDN$86.30, UK£49.50; ISBN 978-1909492608.

Introduction: Overview of Architectural Finishes Research

Architectural Finishes Research (AFR, previously Architectural Paint Research, APR) has been practiced for several decades in response to built heritage conservation-restoration legislation and incentives. For conservators, AFR may have been encountered for the first time as a secondary or sideline task accompanying murals and monumental polychrome sculpture conservation projects. AFR clients and commissioners are typically historic building owners, managers or curators, architects, designers, architectural project managers, municipalities and local/national government cultural and heritage departments.

Canadian AFR practitioners are rare and often work in relative isolation. However, teamwork is highly recommended for AFR projects, as it allows for replications, individual observations and team discussions, all of which help to develop and verify interpretations, and to reach reliable conclusions. Producing legible, fact-supported and adequately illustrated reports often requires more time and resources than are actually budgeted for by clients and stakeholders before the AFR practitioner is approached.

Whether the end goal is only to document obliterated historic finishes, or to uncover, preserve, treat, reintegrate or reconstruct them, AFR reports must provide verifiable, accurate, correctly interpreted, well illustrated and clearly demonstrated data. The objective is to help current or future clients and stakeholders make enlightened choices and decisions when the time comes to pursue more fulsome treatment. Learning from other AFR practitioners' experiences can provide support in the often challenging task of advising clients and stakeholders about appropriate actions and tasks applicable to each building, project goal, and type of information or service sought.

Although paintings conservators are identified by some authors as trained professionals possessing the most appropriate qualifications, actual AFR practitioners do not exclusively come from that background. Architects, interior designers, painter-decorators, building managers/owners, scientists (performing sample cross-sections or instrumental analysts), historians, scholars and researchers also lead AFR projects. Of all conservators, those experienced in traditional polychrome sculptures and/or mural paintings are the most familiar with the complex methodology involved in investigating period decorative schemes on multiple and diversely finished surfaces, periodically overpainted in new combinations of colours, finishes and styles, all the while taking into account building renovations and transformations.

Architectural conservation is guided by conventions, principles and practices, charters and declarations, all of which are listed on the ICOMOS charters and other doctrinal texts page.[1] *The Venice Charter* (1964),[2] *The Nara Document on Authenticity* (1994)[3] and *Principles for the Recording of Monuments, Groups of Buildings and Sites* (1996)[4] function as lasting milestones. Conservation architects are guided by these charters which differ, in some ways, from conservators' codes of ethics. They should be known, and their implications understood, by AFR practitioners.

AFR methodology comprises the following operations:

Research: First, through material history: archives and documentation on building construction, renovation, restoration campaigns and, if applicable, earlier AFR undertaken, whether for this building or comparable ones. Second, through architectural fonds, especially when the building architect is well known and building plans and drawings are accessible. Third, when possible and relevant, through the history of techniques and materials applicable to the building being studied.

Analysis: Through on-site examination, paint/finish exposure windows,[5] stratigraphic drawings, photos, colour matching using appropriate reference indexes, sampling, cross-sections, pigment/binder identification, and instrumental analysis, if required.

Interpretation: A complex process that involves linking together local stratigraphies obtained from on-site exposure windows and sample cross-sections in the different building areas, rooms and architectural components. The goal is to establish the chronology and overall aspect of the different refinishing campaigns. It requires identifying same period colours and finishes, accounting for variable surface patinas, identifying ground and multiple layer designs belonging to a unique campaign (such as stencils and faux-finishes), distinguishing local fills, disruptions from stripping/sanding, replacement of hardware and mouldings, etc. The typical visual/graphic documentation/interpretation tool to accomplish this is the Polychromy Table, also called Time Period Charts, Room Charts or Room Data Sheets. This tool is essential in the case of complex, multicoloured schemes or periods, whether the goal of the research is to identify only one single period or multiple ones. This interpretation stage has been identified as the weakest, often missing link in AFR reports. Adequate verification and discussion are sometimes lacking or are not demonstrated clearly enough to help readers understand how conclusions were reached.

Report: Including period reconstitution illustrations, elevation drawings or on-site modular reconstitutions. This step usually involves proposals for full on-site period reconstitution or overpaint removal, when the projects include such requests from the client. Discussion with client and stakeholders takes place at this point, based on the report and site visits.

Reconstitution: When requested, this stage can be done by a different team, although most agree that it should take place in consultation with the AFR practitioner. This stage has also been identified as critical and requiring more consultation and

guidance than is often requested from or provided by the AFR practitioner.

Recording, archiving (database sharing when available): Systematic directives are typically missing for this stage, which is too often left to the client's or the contracting organization or department's archiving practices. Incorporating this step into treatment planning and, moreover, finding means to durably archive and share AFR reports, would help to advance knowledge, and improve practice, methodology, efficiency and accuracy of future AFR projects. It would also provide references for comparable buildings and allow future reviews to verify the reliability of previous interpretations or conclusions.

Beginning in 2000, a series of international conferences with published postprints were organized among AFR practitioners and colleagues, providing opportunities to share case studies and research, to discuss the challenges they face in their practice, to share tools and tricks of the trade, and above all, to agree on the methodological standards for this relatively new, rapidly growing and evolving practice. The above list summarizes the methodological standards that were discussed. The conferences brought together attendees and lecturers from a wide range of professions involved in architectural conservation: conservators, architects, materials and analytical scientists, heritage painter-decorators and designers, heritage managers, contractors, curators, researchers and scholars.

The conferences were held in London (*Layers of Understanding: Setting Standards for Architectural Paint Research*, 2000)[6]; Copenhagen (*Paint Research in Building Conservation*, 2005)[7]; New York (*Architectural Finishes in the Built Environment*, 2008)[8]; Lincoln, UK (*Architectural Paint Research: Sharing Information, Sharing Decisions*, 2010)[9]; Stockholm (*Standards in Architectural Paint Research*, 2014)[10]; and New York (*Macro to Micro: Examining Architectural Finishes*, 2017). The seventh conference of the series, originally scheduled to take place in Tel Aviv in October 2020, was postponed due to the COVID-19 pandemic and held virtually in January 2021.

The complete series of related postprints offers a fascinating example of the constitution and evolution of a discipline, through discussions and exchange, revisiting earlier reports, considering and balancing client needs with consistent and acceptable standards in documentation, methodology, scientific approach, and well-informed interpretation. AFR practitioners will find in-depth reflection and guidance for practice through these readings, along with numerous illustrations. Consultation of the full series is highly recommended to all AFR practitioners. Most postprints are still available for purchase from Archetype Publications or on the Internet.

Review: *Macro to Micro: Examining Architectural Finishes*

The most recent publication, *Macro to Micro: Examining Architectural Finishes*, is the postprint of the sixth International Architectural Paint Research Conference, held at Columbia University in New York City in March 2017. The volume comprises twenty-five papers divided into five chapters: "Traditional Finishes" (8 papers), "Replication of Traditional Finishes" (3 papers), "Nineteenth- and Twentieth-Century Finishes" (7 papers), "Expanded Finishes" (2 papers) and "New Approaches" (5 papers). Contributors presented projects from several countries in Europe, North America, Asia and the Middle East.

The postprint foreword provides a reminder of earlier conferences and calls for a change in terminology from Architectural Paint Research (APR) to Architectural Finishes Research (AFR) in order to include stucco, plasterwork, wood finishes and wallpaper – all of which are represented in this publication. The types of heritage buildings discussed in this volume are also quite diverse, which I believe reflects the progress made by AFR practice in recent years. Some presentations focus on transportation buildings and vernacular architecture, including boat, train, historic low-income neighbourhoods and districts. There is an interesting mix of interior and exterior finishes, traditional and modern heritage, and a great variety of materials and techniques, whether used historically or for reconstitution trials.

Digital-based investigations and virtual reconstitutions are also presented. Other topics include helpful tips and methods for efficient on-site sampling, health and safety issues pertaining to some historic wall papers, and what appears to be the first AFR database model to collect, save and share information among practitioners and other interested professionals and scholars.

Traditional Finishes

"The original appearance of the 'painted chamber' in Huis de Dieu, Alkmaar (1742–44): the discovery of a remarkable finish" presents a thorough AFR investigation. Assumptions about 18th-century Dutch architectural interior styles are revisited by examining archival records of the original building construction and decoration, historic paint and plaster materials and techniques, art historical sources and cross-section instrumental analysis. Unexpected discoveries include the original execution of a *faux bois* finish on a plaster ceiling and a 1743 doll house reproduction which helped illustrate and support the on-site observations and scientific findings.

Based on existing AFR and sample analysis reports, but also on archival records, on-site observations, painter-decorator manuals, cityscape paintings, tourist diaries and historical municipal architectural regulations, "History of painted façades from the Middle Ages to the 20th century in Flanders (Belgium)" revisits Flemish exterior building styles, materials, colours and finishes. From the Middle Ages to Renaissance, Baroque, Classical, Neoclassical, Gothic Revival, Eclecticism, Art Nouveau and Modern periods, common misconceptions evolving from incorrect restorations, stripping campaigns and restrictive legislations are reviewed and corrected.

"Limewashed island: architectural finishes in early Bermuda" introduces us to Bermudian traditional finishes from the 17th to the 19th century, mainly mortars, made from varying proportions of local lime and sand. Lime washes were applied over textured plasters, to interior and exterior walls,

including ceilings and roofs, with the occasional addition of earth pigments for exterior walls. Challenges and solutions are presented for sampling superposed friable lime wash layers. Instrumental analysis is used to identify pigments, investigate the presence of additives, distinguish between layers and characterize plaster superposition techniques from brown coat to finishing layer.

"Kalsomine paint: ubiquitous but ephemeral" is a thorough account of the history, composition, manufacturing, working properties, aesthetic qualities and durability of this paint, often confused with lime wash, whitewash and distemper paint. A mixture of calcium carbonate, glue, water and pigments, first sold as an alternative to lead white and lime whitewashing, it was widely used as house paint in the USA from the mid-19th to the early 20th century, at which time casein, then latex came into more widespread use.

"Conservation research for architectural ceiling paintings in Donghua Men (the east city entrance gate), the Forbidden City, Beijing" reports on the conservation treatment of the ceilings of five rooms in the semi-open building without controlled environment, decorated with a total of 213 painted panels. Of this number, 130 panels were lost after the building was left for nearly a century without regular maintenance. The remaining panels were removed in 2014 for extensive laboratory study, documentation, instrumental analysis and treatment. Two types of panels, dating from the early and late Qing periods (1644–1912), were distinguished according to style, design, technique and estimated date of creation. Conservation included the reinforcement of cracked wood panels, consolidation of delaminating supports and paint layers, and grime removal. Reproduction panels were installed in situ, and the original ones were stored in a stable environment.

"Determining the early 18th-century colour scheme of the Golden Room in the Mauritshuis, The Hague: Interpretation issues caused by changes to paint chemistry" presents an AFR investigation into the original appearance of a reception room, richly decorated in late Louis XIV style, whose current features date back to the last 1951 restoration. The project included research into art historical representations and architectural drawings, elaborate stratigraphic scrapings, polychromy tables, sampling, microscopy and instrumental analysis. The paper also demonstrates how critical chemical alterations can be to AFR interpretations and conclusions. In this case, knowledge about the deterioration of brass leaf gilding helped to correctly interpret the results of instrumental analysis used to identify the type of metal leaf. The paper also illustrates the successful use of digital images based on AFR findings to convey the original appearance of a room.

"Exterior colour schemes of historic wooden buildings in the Kassisaba District of Tallinn, Estonia" presents an investigation into traditional exterior paint on 19th-century wooden buildings in a residential district benefitting from a "cultural and historic value" designation. Such legislation had previously prompted owners to repaint in unspecified "traditional colour schemes" at a time when AFR was neither legally required nor funded. As a result, when it was performed, the reliability of AFR results was compromised by tight schedules and budgets, along with a lack of documentation and access to cross-section analysis; therefore, a number of presumed "traditional colour schemes" were inaccurate as reconstituted. The goal of the new project described in this paper was to determine the true traditional appearance of the houses. The scope was restricted to 40 wooden buildings, corresponding to common types built from 1874 to 1934, with the aim of identifying the two earliest paint schemes, rather than complete stratigraphies. Specific architectural components were studied, of which 126 of 211 were analyzed through on-site paint exposure windows and 84 through sampling and cross-sections. Unsurprisingly, the study concluded that the current trend of brighter multicoloured houses did not correspond to the more subdued and uniform traditional earth colours that had historically prevailed.

"Analytical techniques in architectural paint research: HMS Victory as a case study" revisits baseline AFR on "one of the most important surviving historic ships in the world." The vessel was launched in 1765 as the flagship of Admiral Nelson during the Battle of Trafalgar. The boat underwent a number of refit/repairs and restorations, including early 19th-century campaigns, which restored the boat to what was then believed to be its appearance during the Battle of Trafalgar. Known modifications were researched and confirmed through AFR in 2014 using cross-sections and pigment analysis. One of the goals of the current study was to further analyze pigments and binders through advanced instrumental analysis in order to determine whether more precise results could be reached.

Replication of Traditional Finishes

Three papers addressing the reproduction of traditional finishes illustrate the complexity involved in developing techniques and materials to accurately imitate the handmade appearance and application of traditional paint and finishes. Not only colour, but other qualities, like transparency, depth, texture, gloss, modulations and patina that result from traditional materials and hand-mixed colours, are impossible to replicate with present-day commercial paints, even when selected through scientific or instrumental colour-matching references. The papers are entitled: "Challenges in distinguishing ochreous colours: examining differences between ochre and raw sienna and their importance in the context of replicating historical finishes," "From pigment particles to parlor walls: contemporary practice in the reproduction of historic paints" and "Finding the right yellow: fine tuning a colour in Stenton's Yellow Lodging Room." The latter also demonstrates how critical the interpretation stage can be to historical reconstitution when uncertainties remain despite thorough research, synthesis and discussion.

Nineteenth- and Twentieth-Century Finishes

"W.R. Emerson's Eustis House: interior decorative finishes of an Aesthetic Movement masterpiece" concerns a late 19th-century house built and designed by W.R. Emerson. Some rooms still carried original finishes while others were overpainted. AFR and on-site paint exposure of original paint schemes were carried out in two phases in 2014 and 2016,

followed by replication of original finishes in 2017 before the site was open to the public. The three-storey "living hall," dining room and parlor are described, noting the subtle and sophisticated interplay between the architectural components and their finishes, from oil paint to glazes, metallic finishes and sand-textured paint. Sampling and cross-section microscopy was carried out to gain a better understanding of the original appearance of this unified interior, which is a rare example of the Aesthetic Movement style.

"The tasteful tenement: forgotten finishes at the Lower East Side Tenement Museum, New York" is fascinating for its unusual topic, which also resonates in the realm of social and immigration history through the 19th and 20th centuries. Surprising archival documents revealed the existence of "model flat" illustrations, meant to inspire Lower East Side tenement residents to improve the appearance and maintenance of their interiors. These documents paralleled a succession of "Tenement House Acts" which regulated housing, safety and sanitary conditions in these low income, densely populated, poorly lit and unventilated apartments. The examples exhibited in the Lower East Side Tenement Museum underwent AFR from 2012 to 2016. Through paint sampling and on-site paint exposure, surprisingly elaborate finishes and colour combinations were revealed, providing insight into the immigrants' preferences that departed from the plainer and more neutral suggested models.

"The Government Hospital for the Insane: a finish analysis of the Centre Building, St. Elizabeths Hospital, Washington, DC" is another great example of a complex and thorough AFR project with a period reproduction. It combines extensive archival research into the history of the building, and other similar ones, with on-site investigation, paint exposure, sampling, cross-sections, local stratigraphic references and room data charts to combine and synthesize period colours and layers. Dating and relating of the findings with known renovation campaigns is clearly documented and illustrated through chromatic elevation drawings. These help visualize the appearance of rooms at different periods and facilitate the choice between significant periods for accurate historical reconstitution.

"Investigation of paint instability and conservation requirements for decorative auditorium and library ceilings" presents the results of an interesting Canadian Conservation Institute investigation into the causes and phenomenon accompanying the deteriorations observed on one of two polychrome coffered ceilings at the Canadian Science Research Council in Ottawa, a Beaux-Arts style building dating from the early 1930s. The original finishes being still visible on both ceilings, the research consisted, in this case, in thorough identification of layers through instrumental analysis of samples taken in both rooms. Fatty acid salts were found within the ground layer of the lower-storey ceiling (the auditorium) in areas where unusual paint deteriorations were observed, such as paint protrusions and irregular primer pits on the reverse of paint flakes. In comparison, the upper-storey ceiling (library) exhibited deterioration commonly associated with water infiltration. Deterioration at the auditorium level is presumed to result from the effects of high relative humidity and RH fluctuations on the original painting and layering techniques used in that room. A full conservation treatment was performed on a modular unit of the auditorium ceiling for future modeling and reference.

"K.B. Hallen: a modernist building in the transition between tradition and industrial evolution" is an interesting combination of AFR and paint technology history. The exterior of the building – a modernist style sport arena constructed in Denmark in the mid-1930s – was originally finished with Creconto, a paint manufactured to minimize the risks of saponification, otherwise common with traditional oil paint applied onto concrete. A mixture of tung oil, linseed oil and natural resins, Creconto could be applied prior to full curing of concrete, following an alkali-neutralizing pre-treatment. Despite a fire shortly after the 2011 designation, most historical painted finishes survived and could be exposed on site, sampled and analyzed for pigment/binder identification. Since archival records had revealed a relatively short curing time and adverse environmental conditions prevailing at the time the building was originally painted, the analysis searched for traces of pre-treatment and signs of oil decomposition. Colour schemes observed on site were identical to Hallen's original elevation drawings.

"Making the traditional non-traditional: the architectural finishes of Frank Lloyd Wright" presents examples of the inventive use of stained, textured plaster finishes in a number of Frank Lloyd Wright buildings. Thin pigmented washes were applied to tint and enhance the texture of the plasters, which varied greatly from one building to another, resulting from the use of different materials, and application and texturing techniques. Original finishes were still visible in some buildings, others were discovered during building renovations and, in one instance, the overpainted plasters were uncovered during AFR. Wright's paint specifications, historical photographs, correspondence and other archival documentation provided information about his aesthetic intent and the original appearance of the finishes. Instrumental analysis helped identify pigment binders and carriers such as linseed oil, beeswax and turpentine.

"'Derailing' the myth of Gilded Age decoration in the Grand Isle private railcar: a case study of painted ceiling panels" presents interesting research of historic railcar manufacture and materials history, combined with AFR investigation. Chronic instability of finishes in this 1899 railcar, acquired by the Shelbourne Museum in 1960 and displayed outdoors under a *porte-cochère*, prompted this extensive study. The typically unstable environment to which railcars are exposed stimulated industry innovations such as the gradual replacement of wooden and metal curved ceiling panels with fibreboards, as early as 1911. In this Shelbourne Museum railcar, a mixture of metal and fibreboard panels was found. Boards were finished with aluminum leaf and paint. Inaccuracies in style and materials used during an earlier, undocumented restoration in the 1960s, and identification of zinc soaps as a possible cause for recurring paint delamination, led to a collaborative protocol for a conservation-restoration treatment, to which museum conservators, painters and curators contributed.

Expanded Finishes

"Sgraffito murals in Israel: documentation and conservation" presents the survey and conservation of 20th-century Israeli outdoor sgraffito murals in Kibbutz communities and on major cities' larger public buildings. Originating in Central Europe, sgraffito is made from the superposition and selective scraping of diversely coloured and textured layers of plaster and mortar. Portland cement was incorporated by the late 19th century to improve strength, drying time and compatibility with cement-based structures and substrates. Exposed to sunlight, outdoor environmental conditions, pollution, rain, water migration, vegetation growth and animals, the Israeli murals had undergone alterations, the most critical of which was chronic dampness in the walls, causing cracking and crumbling of the layers. Inherent vices, such as inadequate layering, plaster and mortar recipe proportions, and salt in the sand used for mortars, were also identified as common causes of degradation. Treatments included removal of vegetation, mould growth and bacteria, consolidation, loss compensation and reintegration.

"A DDT clear coating and wallpaper for the American home" is an archival and materials research project into the use of DDT (dichloro-diphenyl-trichloroethane) as an insecticide additive in architectural finishes in the mid-1940s. Pestroy was sold as a liquid coating to be brushed onto window screens, doorsills, refrigerator shelves, lockers, picnic tables and grocery store display cases, while a powder form was sold to dispense under chair cushions, inside pianos and onto rugs and pet fur. Trimz was a decorative "ready-pasted" wallpaper intended for decorating (children's!) rooms. Cedar Closet was sold for lining cupboards, drawers and closets. Public reports eventually indicated that the insecticidal effect did not last for more than a few months, after which the products became less sought after. However, the side effects of DDT on human health could still be active under paint layers which might have been brushed on shortly after the products were applied. DDT was banned in 1972 as a suspected human carcinogen and its half-life is between 2 and 15 years in aerated soils.

New Approaches

"Investigating architectural finishes and surfaces: using an online examination tool to examine historical colour schemes" introduces a comprehensive database software tool for standardized AFR documentation. Available in English and Scandinavian languages, the software can be used as a platform, both nationally or internationally, to collect, record, synthesize and share data from past and present AFR. It combines texts and images including on-site photos, elevation, stratigraphic and other drawings, cross-section photo-micrographs, comprehensive "time period charts" (equivalent to the aforementioned polychromy tables, room charts or room data sheets), and Munsell, NCS or other colour reference systems. All can be linked and synthesized to ease data collection and report production, as well as future consult-ation. The software is also presented as a means to standardize methodology and to reach a more universal level of AFR investigation and reporting quality. Future improvements to the software are also discussed. This very interesting tool would gain from more versatility to make it more universally user-friendly. Additional languages (architectural lexicons being very language-specific) and adaptability of table/chart coordinates to fit user preferences (for example, stratigraphic layers and periods plotted horizontally and building components vertically) would be my main suggestions.

Two papers present explorations of digital and colour light projection techniques, to help visualize original or historical appearance and colours in historic buildings. "Experiencing ancient polychromy at the Metropolitan Museum of Art's temple of Dendur" presents a "speculative recreation," by use of projected light, of the presumed original colours of the Egyptian Temple housed at The Met. The recreation project started with a thorough consultation of the most complete survey of the Temple, carried out and documented in 1911, before the repeated 20th-century flooding of the temple. These references were compared to the appearance of the Egyptian Temple of Dendera, dating from the same period as the Temple of Dendur, whose recent cleaning revealed vestiges of bright colours decorating all building surfaces. Projection mapping of coloured lights onto the low-relief scenes allowed for an experimental interpretation and presentation to the public through guided tours. A collaboration between the museum's Arts Media Lab and Department of Egyptian Art, the technique is presented as a prototype for a non-destructive alternative to on-site physical reconstructions of obliterated architectural finishes.

"Using image processing to understand 20th-century architectural colour schemes in Singapore" is part of a broader systematic project aimed at researching historic architectural paint and colour schemes in historic Singapore. This paper presents the use of algorithmic digital restoration techniques applied to faded photographs taken prior to a wide-scale gentrification campaign that took place in the 1980–90s. Combined with on-site AFR investigations, this technique helps visualize the presumed historical appearance of building facades and cityscape, with the goal of encouraging more authentic restorations. The absence of knowledge and financial assistance prior to 21st-century built heritage legislation had caused degradation of buildings through paint stripping, destruction of historical evidence, and rebuilding, followed by the proliferation of non-historical colour schemes and paint materials. Lime plaster and lightly coloured lime washes were traditionally applied over Singapore brick houses.

"The on-site pre-embedding of samples for cross-sections" provides practical instructions for AFR sampling. Large numbers of superposed layers in buildings are often difficult to sample: layer delamination, disintegration and contamination are common issues. Pre-embedding at the site is a good alternative. Considerations about European sampling standards, size of samples, choice of resins, drying time constraints, and health and safety are discussed. A clear description of the steps is provided, from sampling plan to materials preparation, mixing and application of resin, and extracting and mounting of the samples. Interesting case studies follow, showing practical examples with common issues and solutions.

"Interpretation of cross-sections to characterize preparatory and design layers and guide decorative paint exposure work" shows AFR case studies performed on complex painted finishes such as trompe-l'oeil, stencil and graining in 18th- and 19th-century buildings in Boston, New York, New Haven and Cambridge. Once they have been obliterated by overpaint, superposed discontinuous design layers are difficult to correctly identify and interpret, whether it is attempted based on sample cross-sections alone or based on on-site paint exposure alone. Correlation of samples with well executed on-site paint exposure is crucial. For each well illustrated case, cross-section microscopy and analysis guided the choice of techniques and layer/substrate-specific chemicals to be used, in order to achieve optimal on-site paint exposure windows, whether the goal was to remove one or multiple layers of overpaint, overvarnishes or grime.

Conclusion

Macro to Micro: Examining Architectural Finishes is a testimony to the efforts of concerned AFR practitioners and the important progress made in this field. It should provide any practitioner with relevant means of improving their work in order to respond more effectively to their clients' requests, all the while respecting existing charters and conventions in the field of built heritage conservation and restoration.

This beautifully illustrated volume is an invaluable reference which should be read by AFR practitioners today. This reading should be accompanied by consultation of postprints from the conference series, especially those papers providing documentation or on-site tools, discussing professional ethics and methodology, presenting client surveys and revisiting earlier AFR reports. These readings can serve as an inspiration to professionals working in architectural conservation. It is my hope that they could also help clients and stakeholders understand the basic requirements for an efficient and reliable AFR project, whether it is meant for documentation only or for visualizing, preserving, conserving, reconstructing or reintegrating original or period historic finishes.

Notes and References

1 ICOMOS, "Charters Adopted by the General Assembly of ICOMOS," <www.icomos.org/en/resources/charters-and-texts>. Accessed September 2021.

2 ICOMOS, *International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter)* (Venice, Italy, 1964), <www.icomos.org/charters/venice_e.pdf>. Accessed September 2021.

3 ICOMOS, *The NARA Document on Authenticity* (Nara, Japan,1994), <www.icomos.org/charters/nara-e.pdf>. Accessed September 2021.

4 ICOMOS, *Principles for the Recording of Monuments, Groups of Buildings and Sites* (Sofia, Bulgaria, 1996), <www.icomos.org/charters/archives-e.pdf>. Accessed September 2021.

5 "Paint/finish exposure windows" are on-site openings through paint and finish layers, exposing the successive refinishing campaigns. They help visualize for the naked eye the successive period colours, finishes, textures, patinas, nuances and decorative patterns (stencils, faux finishes, etc.) applied to architectural components, walls, ceilings, doors, windows, ornaments and mouldings. Although the layers are often verified through sampling and cross-sections, this step should not be overlooked. Visualizing the on-site, to-scale appearance and localization of the various colours/finishes is crucial, whether for the sake of documentation or reconstruction. Paint/finish exposure windows can vary in size depending on the scale of the decorative pattern unit to uncover. Equivalent phrases for the same concept, such as "stratigraphic scrapings," "paint exposure" and "exposure windows," can be found in the literature and are used in this paper.

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