Cosmetic Aspects of Historic Preservation

— by James Marston Fitch

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Conservation of Architectural Polychromy

All buildings, like all material objects, have color. But the term architectural polychromy applies to that cosmetic aspect of the building in which colors are manipulated according to preconceived systems, for specific esthetic ends. Such polychromy is achieved by two means: (1) the physical structure and integral pigmentation of the building materials themselves—e.g., the grain and color of wood, the veining of marble, the monochrome of slate or cast iron; (2) the colors, patterns and textures of applied membranes—e.g., wallpapers, frescoes, paints and stuccoes. Polychromies based on integral pigmentation are usually thought of as being more durable than applied membranes like paints. In a sense this is true, since the characteristic cellular structure of wood or crystalline structure of marble is three dimensionally continuous. But from a cosmetic point of view, the exposed surface of an integrally-colored material is quite as vulnerable to attrition as any applied membrane. Thus coal smoke with a high sulfur content is quite as hostile to marble or limestone as to painted metal or stucco. The principle difference is that the process of attrition is more easily reversed in three-dimensional pigmentation than two-dimensional membranes. Tarnished metal can be burnished, marble polished, wood sanded to restore its original: applied membranes ordinarily have to be replaced.

In any case, all surfaces everywhere are subject to attack from the same environmental forces—physical, chemical, mechanical. Heat and cold; moisture and dryness; sunlight and darkness; gravity, wind pressure and vibration—all are constantly at work. These forces, in turn, determine the nature and scope of biological attrition from animals, insects, plants and fungii. Thus the ammoniac feces of Venetian pigeons combine with salts and gases of the Venetian atmosphere to produce acute degradation of Venetian marbles. Thus, too, it has been found that the deterioration of old stained glass in English churches is a function of the microclimate generated by its orientation. Glasses in north-facing windows will have mosses, lichens and fungii which cannot survive on the south; but southern and western glass will be subjected to much greater thermal and photo-chemical stress than those in the shade. Thus the condition of different windows in the same church may be radically different, demanding radically different therapies.

In architectural terms, this environmental attrition is expressed in terms of soiling, fading, rusting and discoloration; cracking, flaking and erosion; efflorescence and incrustation from precipitated salts. These forces interact to cause a bewildering array of pathologies which cannot be diagnosed, much less treated, without a fundamental knowledge of the processes involved. This is a field in historic preservation which is just beginning to be placed on a scientific basis. Ironically, the conservation of works of art—i.e., of movable artifacts displayed in the controlled climate of the museum—is much more advanced than architectural conservation. Preservation architects have much to learn from this allied field of activity, as is clear in the published proceedings of Williamsburg Conference of 1972.

There are philosophical as well as methodological problems to be faced in the restoration of old polychromatic systems. The very concept is much more high structured in upper class, urbane and monumental architecture than in folk or vernacular buildings. Either extrinsically (as in Gothic wall paintings and stained glass) or intrinsically (as in Renaissance use of exotic veneers in marble and wood), color plays a decisive role in the iconographic and symbolic function of the building. Across time, these polychromatic systems have become dimmed, soiled or faded, acquiring patinas from burning incense, candles and fireplaces. Thus by slow and imperceptible degrees, the Gothic church was converted from a glowing, light-filled vessel of pinkish-beige Caen stone or pearly white limestone, ablaze with gilt and color, into the dark cavernous voids we know today. By the same token, taste accommodated itself to these altered chromatic values so that today the average tourist assumes that these churches were "always that way." One needs only to see the recently cleaned interiors of York Minster or Westminster Abbey to realize how dazzling different were the esthetic ambitions of the original architects and prelates who built them.

In the light of current archaeological and laboratory research, it is now apparent that we have consistently underestimated the brilliance, even stridency, of the coloration of the architecture and decoration of the past. The Renaissance assumed that Greek architecture and sculpture had always been a pure chaste white. Even as late as the 1850's sculptors like Hiram Powers were astonished at the growing evidence that, on the contrary, they had been consistently polychromed. Recent archaeology has unearthed evidence that Periclean taste in color was actually garish. There are sculptures in the Acropolis Museum in Athens whose painted surfaces are very close to the painted figures on a circus carousel: chalmys in emerald, mammary glands tinted pink, mustaches and pubic hair painted jet black.

We know that Eighteenth and Nineteenth century polychromy, especially of interiors, was much more brilliant than had been universally assumed. The first basic research into American paint colors was carried on at Colonial Williamsburg. This led to

the formulation c. 1940 of a pallette of colors which were accepted for decades as objectively valid for Eighteenth Century architecture. Subsequent research, employing much more sophisticated methods of chemical and optical analysis, has shown this pallette to be fundamentally inaccurate. The original colors were brighter, harsher, more intense; the decorative color schemes much less bland and muted than had been assumed. (The recently restored polychromy of the great Adams rooms at Syon House near London and the reception rooms of the Otis House in Boston are both based on these new research techniques. The results are startlingly different from what would have been assumed only a decade ago to have been an accurate restoration.

Polychromatic Consequences of Structural Intervention

It can well be argued that in polychromy, as in other areas of preservation, the wisest policy is the most conservative—i.e., the least done, the better. That intervention which is most easily reversed is not to intervene in the first place. This has been the experience of art conservators, especially in the past few decades, because of the rapid evolution of scientific methods of research, analysis and treatment. Unfortunately, however, it is often not possible to leave the polychromed architectural surface undisturbed. Any of a number of situations might compel therapeutic intervention. If the subject is a wall painting or fresco, it might be threatened either by processes at work in the structural fabric behind it or by destructive environmental factors attacking from the outside or—most commonly—a mix of both. This is the case with many of the frescoes in Italy where the only way to save the work of art is to detach it from its base and remount it on a new, free-standing backing which is chemically inert and dimensionally stable. In such cases, cleaning the fresco will be an essential prelude to diagnosis and treatment.

If orthodox restoration to some fixed historical date is called for, then later decorative surfaces will certainly be disturbed. Very often, as in archaeology, one layer will have to be peeled away to discover what lies beneath it. In old buildings this can lead to very important discoveries. Thus, in the process of restoration of the royal palace of Wilanov near Warsaw, some of the state rooms were found to have as many as seven complete wall paintings superimposed on one another. Again, in what seemed to be a routine investigation of floor and ceiling construction in the palace in Prague, some exploratory probes were made in the baroque plaster ceilings. (These ceilings had been installed in the Eighteenth Century as a fire-deterrent in accordance with the decree of Maria Theresa). Behind these plaster surfaces were discovered some twenty handsome Renaissance ceilings consisting of stencilled beams which in turn carried some 2100 painted wooden panels, no two of them alike. The plaster had, ironically, kept them in perfect condition. Thus, what had begun as a routine structural probe led to a discovery of such magnitude that plans for the adaptive use of the palace had to be radically revised. A similar discovery, though of smaller scale, occurred in a house in Newport, R. I. There in the process of cleaning the wood-panelled walls of the dining room, an extraordinary painting in the Chinese style was discovered on the plaster walls behind the panels. Since both panelling and paintings were original and excellent examples of their kind it was decided to hinge the panels accordion fashion, so that both surfaces are accessible for inspection and display.

Finally, in old and complex buildings, the very first step in preparing a long-range program of preservation will be a detailed visual examination of the entire fabric, indoors and out. Such an examination will require the removal of soot, efflorescence and rust as well as clinging vines and mosses. This will require the erection of scaffolding, in itself an expensive operation, and dictates that corollary operations such as cleaning should take place at the same time. Thus, even if no signs of structural failure are uncovered, there will be a perceptable alteration of the cosmetic aspect. If, on the contrary, serious structural weaknesses are discovered, then the visual traces of intervention will be correspondingly severe. Examination of the huge tower over the Crossing at

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York Minster revealed that the entire masonry mass had to be consolidated. This meant drilling of hundreds of holes on 3 ft. centers and the injection of gallons of grout. Decayed stones had to be replaced, traces of drilling and injection had to be removed, all mortar joints had to be repointed. Under circumstances such as these, the architect had no choice but to leave the entire massive tower as clean as the day it was finished. The results are astonishing—never have the original intentions of the Gothic architect been more splendidly displayed.

There are specialized cases of preservation in the fields of science and technology where immaculate cleanliness and/or perfect maintenance would be a *sina qua non* of the curatorial function. Under such a heading would fall scientific exhibits such as the observatory at Greenwich in London, recently reconstructed and re-equipped with great care to recreate the Seventeenth Century conditions of its founding. To replicate such an atmosphere, the old equipment is carefully maintained: lenses are polished, metal parts kept rust-free and shining, all moving parts oiled. An example of what happens if such curatorial standards are *not* observed is to be found in the Edison Laboratories in East Orange, N.J. This complex, now under the care of the National Park Service, purports to maintain Edison's personal laboratory in exactly the condition it was on the last day that Edison used it in 1932. Unfortunately, it falls