

History of the New School Mural painting - and proposals for its rehabilitation

Designed - and panels constructed in winter of 1930-31.

Panels - made of wall-board, reinforced with a cradling of one by three inch pine. (Cradling should have been heavier, two by four inch timbers would have been better, as will be seen). The light cradling was used, at Joseph Urban's suggestion, so that panels would not project too far into room.

A heavy linen was glued to the cradled panels and seven coats of gesso (whiting and glue water) were applied to the linen for a painting ground.

The mural was executed in the summer of 1931 in a loft on East 12th St., procured for the purpose by Alvin Johnson. It was under painted with distemper, (pigments ground in glue and water) and over painted with egg-tempera, (pigments ground in egg yolk and water). Over some of the darker areas a thin glaze of oil pigment was applied.

Both the glue and egg mediums produce highly permanent paint films though they are more easily scratched or chipped than oil paint films. They were used because of their superior brilliance over the course of time.

The mural was installed in the Autumn of 1931 just a week before The New School was first opened. Unfortunately the moving crew which entered the panels into the New School building, through the lateral window slots of the then, Board room floor, did not realize how brittle were the "gesso" painting grounds and allowed the panels to be badly bent while hauling them aloft.

The cradling was not heavy enough to keep the panels rigid with only a rope around their centers.

I was not present at this operation arriving only as the last panel was

entered into the building. Had I been there I would have insisted on other lifting methods. The result of the one used was that every panel was cracked in the center - cracks radiating laterally from the center, as well as vertically. After the panels were bolted to the walls I repaired these cracks and the damaged paint films they had caused. Nevertheless I was uneasy about the future of the mural. However, this was alleviated when, after a few years, no deterioration was evident. I inspected the mural frequently up to 1935, when I changed my residence from New York to Kansas City. No damages had appeared up to that time.

After 1935 I did not see the mural again until 1956. At some time during these years, due to the growth of the New Schools student body, the Board-room was turned into a class room. Reports began coming to me from students who went to see the mural that blackboards and chairs were stacked up against its surface and that the paint was chipping in some places.

On a visit to New York in the Spring of 1956 I, therefore, went to look at the situation and found, in addition to some chipping of the painted surface that marked lines of abrasion were showing where the tops of chairs and blackboards had been leaned. Some of these were deep enough to have nearly obliterated parts of the drawing. Like the workers who entered the mural panels into the building in 1931 the classroom janitors did not realize the fragility of the mural surface and as the damage was inflicted, little by little, over the years probably never noticed it. I reported the situation to Alvin Johnson, who still had offices in the school buildings. I agreed with him that I would clean and repair the mural if the New School would pay for helpers and put a protective rail in front of the work.

This was done in the Autumn of 1956 - the rail.....

After the mural had been cleaned - the surface varnish and the yearly accumulated muck of New York removed - I coated it all over with a thin solution of gelatin; (one ounce of powdered gelatin to a quart of water). This was done to insure adhesion of the egg-yolk paint used for restoration. (note later development of this)

A few weeks after restorations were made my helpers applied a coat of wax-varnish. This was after I left New York.

The above comment, about temperature and humidity, is a guess - but a fairly educated one. I have had practical; though not scientific, experience with paint deterioration similar to that occurring with the New School murals.

I have also corrected them -- apparently in a permanent way. Several of my paintings which had been kept for years in steam heated apartments developed paint behaviours exactly like those occurring on our mural. The winter temperatures of these apartments were over high in each case.

As teh the glues of old furnitures which have survived for centuries in normal temperatures (and humidity conditions) the mediums in paintings dry out and fail to hold the pigment particles when subject for long periods to the high temperatures which may be developed with our modern heating systems.

All this is well known and knowledgable collectors and museum curators take it into consideration. To check the plausibility of these comments I suggest you consult experts, say those at the Metropolitan Museum in New York. Get a ruling about the proper temperature and humidity conditions for the preservation of tempera paintings on a gesso ground - which is what the New School mural is.

As I understand it, relative humidity should be 45 or 50 percent. It is very possible that some simple remedy can be found for conditions in the New School mural room.

I recommend, to those who own my paintings that containers of water be kept behind every one of the radiators and that growing plants be kept on their window sills. This has worked for my own home where we have never had dessication problems with paintings or furniture. We also never permit room temperatures to rise about 72, though I doubt many of my patrons observe this recommendation very strictly.

If the proper temperature and humidity conditions can be arrived at, and maintained, I am once again willing to restore the New School murals. Because this mural was my first public one, and represents a phaze of our American culture which has almost completely disappeared, I am just as interested in keeping it intact as are you people of the New School. So I will make no charges for any work on it beyond expenses, which will not be much. I will expect, as before, to be supplied with a couple of student helpers for the cleaning of the mural and, in addition,

Now for our new problems, the present surface chipping of the mural (There is no evidence of abrasion such as was found in 1956 - so the rail has been effective in keeping objects off the mural surface.)

So far damage is not severe. No basic drawing has been affected much. There is just the beginning of a problem in evidence. Before considering new restorations, however, we should analyze the basic causes of what is occurring - find out what the situation is with which we must deal, before a new (and permanent) restoration is made, or, I should say - can be made.

I think our trouble is not one of early installation damages. Those have apparently righted themselves.

It is my opinion, that the current chipping and "falling off" of particles of the mural surface, is largely, (perhaps wholly), the result of temperature and humidity conditions in the mural room.

When closed the room develops temperatures well up into the high eighties. (This was always the case, even in the early thirties (1930's) You should test the exactitude of this statement. I base it on reports of visitors in the last five or six years and on my earlier experiences with the room. In any case the room gets hot as hell -- too hot for the health of paintings.

The high temperatures generated, plus the fact that there is no corresponding rise in moisture content, is desiccating the paint films. (The adhesive, which holds the colored paints to the mural surface)

This heat causes contraction of the paint films and they drop off in minute pieces. Such action is presently observable in the gelatin films applied in 1956 where the contractions of the films may be now brushed off with the palm of the hand. A similar dessiccation is undoubtedly occurring in the deeper and original paint films though the oil content of the egg yolk films makes them more resistant than the gelatin films. However, in the course of time, the egg yolk films will also dry out and crack off unless we can remedy the humidity situation.

this time, the presence of an expert restorer when the cleaning process is undertaken. (Again, consult Metropolitan).

Here is what I propose doing.

1. Remove surface varnish with mineral salts and acetone. (solution to be determined by experiment) not difficult with tempera painting.
2. Remove as much of the 1956 gelatin coating as possible. This can be done by "pouncing" the surface with sponges dipped in warm water and squeezed out. As no rubbing is permissible this process will be laborious and time consuming. Probably take several days.
3. Apply to the cleaned mural several coatings of an acrylic Polymer Emulsion. This forms a very tough film and will fill cracks and the minute holes left where paint has chipped off. Restorations will be made with an Acrylic Polymer Emulsion paint which binds to and adheres permanently to the transparent Polymer coatings. I believe the Polymers to be our best bet for a permanent restoration. They resist temperature changes (and humidity) better than other mediums which is important for this case. They oxidize rapidly and do not change color with age. I have used them extensively since 1959 for new paintings as well as restorations. I knew of them and had made experiments with them in the 50's and would have used them for my 1956 restoration had they been sufficiently developed for calculated usage at the time. It is unfortunate they were not because they might have resisted even our temperature assaults on the mural. I could undertake restoration in the Autumn of this year, after a summer in the open, which should put me in good physical condition. I judge the work will take about ten days - ten days in which you could not use the room.

/Thomas H. Benton/