



ALVAR AALTO FOUNDATION

PAIMIO SANATORIUM COLOR RESEARCH 2015

PART I/2 Main Building

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The Getty Foundation



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I. Paimio Sanatorium Color Research

The Color Research

The Paimio Tuberculosis Sanatorium, designed by Alvar Aalto and built 1929-33 was the main subject of the color research executed during year 2015. This research was conducted as a part of the Conservation Management Plan (CMP) study that was simultaneously carried out by a group of researchers from Alvar Aalto Foundation. The purpose of this color research was to produce vital information for the CMP research group to outline the look of original interiors and to help to perceive the state of preservation of interiors. Also the intention of this research was to further the understanding of value and importance of different spaces, areas and rooms, and finally to enable the evaluation of these spaces.

The general view of the original interior coloring is the main idea of this research. This report presents the results and the conclusions of the color research, based on the data gathered in situ, in laboratory and in the archives of Alvar Aalto Museum, Hospital district of Southwest Finland and Lazaret Museum in Turku.

This research was funded partly by Getty Foundation as a part of the Keeping it Modern initiative and partly by the National Board of Antiquities of Finland.

The Original Color Scheme

The color scheme of Paimio Sanatorium was originally designed by Alvar Aalto together with artist Eino Kauria. Kauria was commissioned to work at Paimio sanatorium building site to lead the paint work and coordinate the colors used. Kauria arrived to the building site relatively late when the Staff apartment house was already built and others including the main building were well on their way. Kauria stayed in one of the Staff house's apartments with his wife and child during the building of other buildings. Alvar Aalto visited the site almost daily by car from Turku, according to Kauria, and the pair inspected the proceedings of interior work together¹. Later work of Eino Kauria's interior color design in Finland include significant modern era landmarks of Helsinki as Lasipalatsi (1934-36) and Tilkka War Hospital (1936)².

The documents found in archives along the Conservation Management Plan research have provided vital information for the color research of Paimio Sanatorium. Documents as receipts of procurement, transcripts of meetings, original drawings, letters, notes, contracts, etcetera, have given an insight to the proceedings of the interior finishing work done at the site. Photographs taken of the buildings after they were finished give of course the most powerful evidence of the original state of the interiors.

Eino Kauria was commissioned to paint a large board presenting the finalized color scheme of the main building. The color board painted by Kauria is, according to an interview of Kauria from 1986, not a plan of colors for the building site's painters to use, but a final, executed result of the color scheme in the main building.³ This color board was one of the main motives and definers of this research. One of the aims was to find the colors presented on Kauria's board in situ.

Former Color Researches

The main building has been researched in the year 2000 by Katja Aaltonen. This research includes researching the main building once more, updating the results of year 2000 color research of Aaltonen and as well the research of other important buildings of the original Paimio Sanatorium plan: the Chief Physician's villa, the row house apartment of Sub Physicians', the staff apartment building and the mortuary. In the main building this research concentrates also in parts of the building that Aaltonen's work excluded. The year 2000's

¹ Interview of Eino Kauria by Teppo Jokinen of Alvar Aalto Museum, 30.9.1986 Helsinki.

² Makkonen Leena. *Modernismia Helsingissä*. Kirjapaino Uusimaa 2012.

³ Ibid.

research has now been inspected in situ, to complete the research made now and to take samples and redefine the color codes defined by Aaltonen in year 2000. Many of her excavations on surfaces have been covered with paintwork during the last 15 years. Therefore it was not possible to relocate all of them. One purpose of this redefinition was to see how the exposed colors have reacted to air and light during the 15 years of their exposure to sunlight and moisture and dirt in the air. As well it is interesting to see how much the original oil paints had changed in color in daylight exposure by comparing Aaltonen's color code definitions to the ones made now.

Another color research in Paimio main building was made 2014 in the 1st floor of C-wing, the kitchen area, preceding renovations the same year. Therefore the c-wing was excluded from this 2015 research.

Confining the Research

The confinement of this color research was based on the CMP research group's evaluation of spaces in the main building, the importance and function of these spaces according the original architectural plan and as well the condition of these spaces. The confinement of this research was also influenced by the former two color researches, their expanse and findings. Comparing these former findings and their researchers' methods, this research was confined to address all floors of the main building but only on the *original building volume*. This research addresses the A-wing (The wards) and B- wing (Operative hospital functions in the ground floor and dining hall in the 1st floor) and the axis between the two aforesaid wings with the entrance hall and main staircase. The wings built later stages, attached to the main building of Paimio Sanatorium are not included in this research. This research addresses the interiors of Paimio main building: the walls and ceilings. The original linoleum and rubber flooring that have been almost entirely lost in renovation have been researched in documents such as original procurement receipts and photographs. The original mosaic concrete stairs have also been defined in situ. The exterior colors and materials are not included in this study.

Other interior color research subjects in the Paimio Sanatorium premises included in this research are the Chief Physician's villa, the Sub Physician's row house of three apartments and the two storey staff house. All these three buildings of residence were part of the original 1929-33 building stage. Also the Rose cellar, a morgue that was part of the original architectural overall plan was researched. All the other buildings are still in active use, except the Rose cellar. These buildings' research is presented in another report.

Research Methods

The method used at the site was mechanical peeling of layers. The use of chemical peeling like paint stripper gel was minimal and only used on the upmost layers in the excavation of the undermost layers, to avoid any discoloring of paint and filler layers. No heating was used in excavation for the same matter.

The excavations in the main building consisted 40 excavation points (exposing of layers), 300+ small excavation craters. Over 159 cross section samples were collected and analyzed. X-Ray Fluorescence scanning was performed on 15 selected points.

The color code system used in this research is the Natural Color System, NCS (Teknos paint factory, 2012 edition). The system was developed in Sweden 1960's and 1970's. It is the Swedish national standard color-order system that is based on the four unique hues: red, green, blue and yellow. These are combined with black and white.⁴ The system is based on how the human eye sees color

Conclusion

The results of this color research differ from the present state of the main building in many ways. Probably the biggest difference between the present light, white washed state and the original look is shown in the ground floor of B-wing, the surgery wing, which was originally very brightly and imaginatively colored. This difference is of course due to the change of use as the ground floor of B-wing serves now as an office wing.

Johnston-Feller, Ruth (2001). *Color Science in examination of Museum objects*. The J. Paul Getty Trust, Los Angeles.

None of the original colors can be seen in the present look of the B-wing ground floor. However the Dining hall coloration as well as the colors of the Lounge next to it are close to the original colors found during this research. The dining hall's original ceiling radiators, along with the surrounding ceiling had more earthy green tones compared to the hues they carry today. The third floor reading room is colored quite precisely in the same way as was originally thanks to the year 2000 well stated color research by Katja Aaltonen. Only difference is the flooring, stating back to 1990's or even 1970's, which does not in any way fit the original look and design of the reading room interior.

The wards of the A-wing gave mostly a consistent result when compared to the Eino Kauria color board (presented in chapter 2). The board shows three different colors for the main corridors of the wards, green, blue and ochre orange. All these hues were found as presumed original layers, but surprisingly also three ward corridors stated a bright yellow as the undermost layer. This finding was unexpected but well stated in both cross section sample and excavation *in situ*. The yellow somewhat certainly states the original paint layer, but it is unknown why these three floors (1st, 4th and 5th floors) have been painted first yellow, then with green, blue and ochre orange to form a consistency of color in each ward. An interview of the painter, artist Eino Kauria who was responsible for managing the paint work of Paimio Sanatorium, from year 1986 states that Aalto was not happy with the yellow flooring he had specially made for the entrance hall and main staircase of main building. He regretted the choice of color and complained about the matter to Kauria. The order however could not be cancelled. It is possible that this one bad choice of yellow color has something to do with the color choices in the wards' walls as well, although the wards had a different, almost black linoleum flooring. It is possible that the three wards had yellow walls, but Aalto and Kauria changed their minds amidst the paint work and changed the color plan to follow the three color system of ochre, green, blue, and ochre, green, blue. The basement floor ward corridor was painted with the same orangey ochre as the ground floor and 3rd floor.

The patients' rooms showed little information due to the total renovation of the 1970's. The ceilings were the best source of original color. The museum room, which is a patients' room left presumably in its 1970's state, presents some surfaces that showed layers of original color. The four ceilings of patients' rooms are stated in the Kauria color board. The only exactly same color as Kauria board has, was a vibrant light green. Other findings included a dark blue and a dark grey. These comparisons to these colors are not found in the Kauria color board. However the same green ceiling color can be found in the reading room ceiling. One of the greyish greens presented in the Kauria color board can be found in the original layer of the 1st floor lounge. The mixing of paints by hand was such a laborious job, that it seems obvious that a larger color patch was made and used in several spaces.

The entrance hall showed little layers as it has been scraped relatively clean in recent renovation. The original photography states that the ceiling might have had a significant hue, something different than pure white or cream white. The gloss is nonexistent and the look in photographs matt. The columns and the main door cheeks have high gloss finishes in white.

Both the mixing of paints at the building site and buying readymade industrial paints seem to have been the choice of Kauria and the painters. The original receipts and documentation of the building site state that the painting company *Marttisen maalaus Oy* from Turku bought readymade paints by the kilo with different serial numbers and color codes. They also bought large amounts of lacquer (a base for mixing paints), zinc white, lead white, ultramarine blue, crete, yellow ochre and "black" pigments, white spirit and boiled flax seed oil to mix paints at the building site.

The *Oy Wiklund Ab* hardware store's receipt does not state the producer of the paints ordered for the building site. It lists the names of the colors: *white, light green, blueish green, light yellow, light blue*. These same 4-5 colors were ordered in three different types of paint: *a base paint (to be sprayed), the enamel paint (acid resistant, to be sprayed) and enamel paint (normal, to be sprayed)*. All these colors can be found in the original layers around the building, but the equivalence of the codes in a 1930's color chart has not been yet discovered. Some products, like flax seed oil, for Paimio building site were bought from the Tikkurila paint factory, which is still

in operation in Vantaa, Finland. They run a small archive of paint charts and two charts stating back to 1938, but none of the charts carried the same color codes as the receipts of Paimio building site.

The Reliability of the Results

The later renovations have left their mark in a very noticeable way between the layers found: the light weight white filler used on wall and ceiling surfaces that probably states to the 1970's renovation and again in the 1990's renovation. These light weight modern fillers are present in almost all cross section samples and excavations *in situ* and they helped to recognize the real age of layers beneath these white fillers. As some excavation points have shown, the layers present 12-19 layers at most. The average amount of layers is under 10 layers. This of course varies between different spaces, due to their original function and level of usage. Some spaces have gone through several paint jobs, probably because of their detrition in daily hospital use. Some heavy duty surfaces like wards' corridor walls had the most paint layers. On the other hand it was obvious that in some spaces all of the surfaces had been sand blasted or scraped clean in former renovation and original surfaces lost for good. In these cases only 3 to 4 layers of paint and filler was found. Other methods for recognizing the age or the actual original layer was cross section samples. The samples showed clear differences between modern plastic filler paints and oil based paints with pigments and organic fillers like crete, zinc or barium sulphate. The samples were examined under microscope and photographed. The X-Ray Fluorescence research method gave further information about the actual consistency of the layers exposed. Those results are presented in chapter 24.

The paint types of original, undermost layers were determined *in situ* by testing their dissolution in solutions. For example the oil based paints reacted by dissolving in a solution of ammonia (NH₃, 12%), isopropanol alcohol (C₃H₈O) and distilled water.

Further Research

As the exterior has been excluded from this research it is the next natural step in the research of Paimio Sanatorium main building. The sight of the gleaming white facade of main entrance and A- and B-wings is broken by a warm light ochre line that covers the 6th floor exterior. The iron railings of balconies and terraces have always had a distinctive red or orange color. This applies also to the eaves of some windows. The photograph at the right shows some color testing on the 6th floor facade made during the building phase of the main building. This example provides one excellent starting point for the future research.



AAM. Sign. L2116

How to Read this Report

This report is divided in 7 floors of the main building. Every floor is presented one at a time with the floor plan that presents the points *in situ* where each cross section sample was taken or excavation of surface made. The chart used to present the color codes and findings of each research point is advised to be used in color research documentation by the Finnish National Board of Antiquities. The following page of the chart has additional information, original and present photography, cross section sample photography and conclusions of the space researched. These conclusions include information addressing the original (lost) flooring, the degree of gloss or other structure of the surfaces and information about the findings done in the archives. One spread of this report usually covers one point of research. All photographs by Elina Riksman or Alvar Aalto Museum Archives.

The number of the sample and/or excavation. This number can be found in the floor plan.



The place of sample and excavation point in the building.

Photograph of the excavation on surface

The layers of paint and fillers found in excavation. NCS color codes are presented for paint layers.

Information addressing the type of paint of the original paint layer.

Former Chief Physician's office]

Number of Sample 5-6	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground Floor Chief Physician's office Jamb of window	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates The office has been divided in two separate office spaces with a light structured wall in the 1980's. Also divided a cupboard with its own door to the hallway. Ventilation system built in 1970's, with dropped ceiling structure. New door openings. Sink in opposite corner as in the original office plan.			
Photograph, drawing 		Layers of Sample 00 Chelcium based Plaster 01 Oil filler, yellowish 1 Green paint, oil, 3020-G40Y 02 Filler 2 Green 53020-G20Y 3 Blue 3030-B30G 04 Base coat , Beige 1510-Y10R 4 Beige, glossy and hard finish, 1010-Y10R 5 White 003-G80Y 006 Coarse Filler, Grey 06 Light weight filler , White 6-7 White latex, two layers	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1 layer oil paint. Most of the surfaces have been scraped clean, apparently during the 1970's renovations.			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS DeLuge 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 2 and 6, Alvar Aalto Foundation Helsinki. Scale 300µm.	Floor plan, Location of Sample 

The place of cross section sample number, the scale of the microscope photo. Tells also where the sample is stored.

A small floor plan to show in which room the research is made.

2. The Color Board of Eino Kauria

The color board painted by Eino Kauria is one of the main motives of this research. An interview of Eino Kauria from year 1986 tells that the board was a separately ordered paint work from Kauria. The board states the *results* of paint work in the main building of Paimio Sanatorium, right after it was completed in 1933.

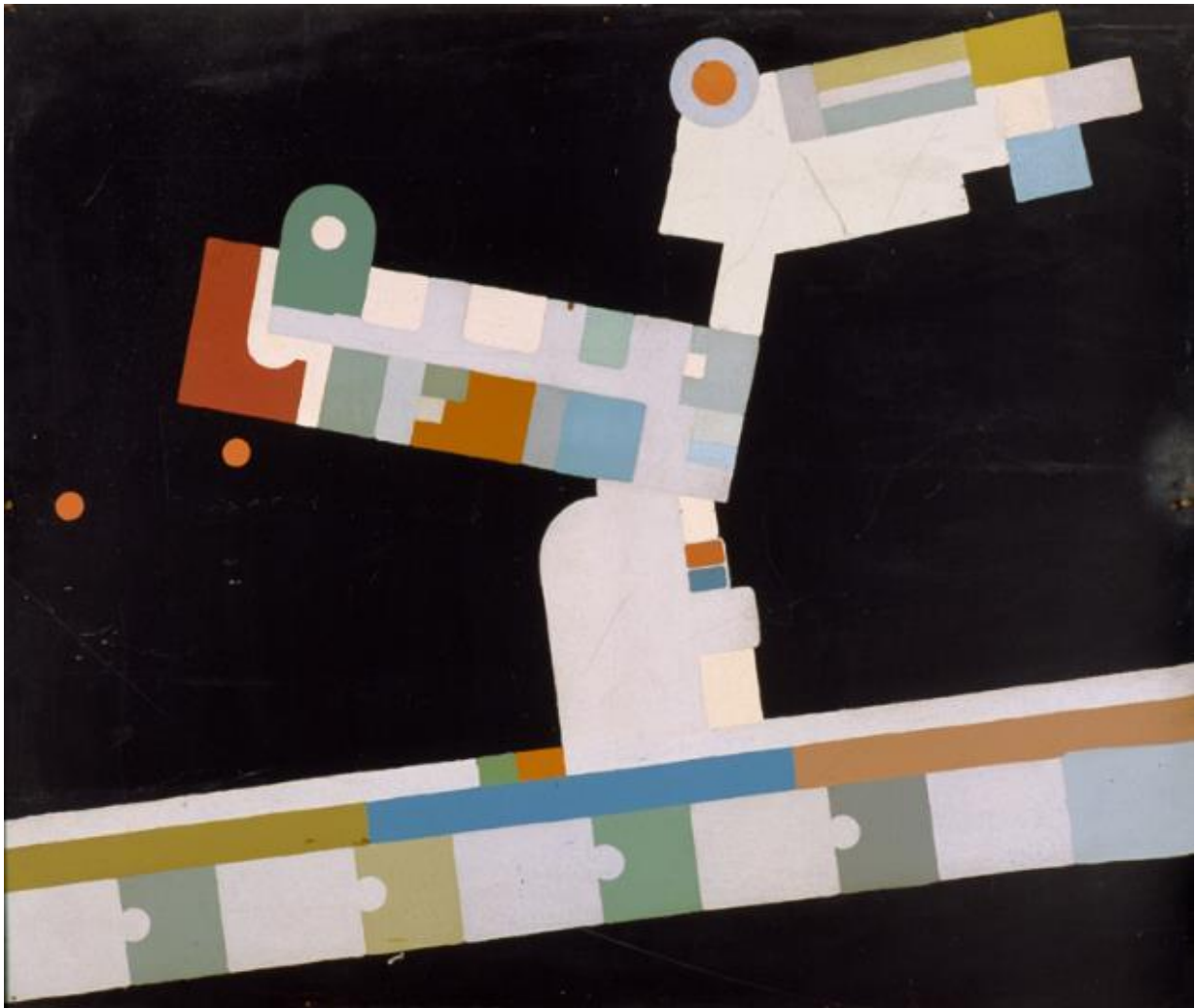
There are two boards existing. The other is located in Paimio hospital. It was found in the basement and hung up for the visiting tourist to see just a few years ago. It is relatively good condition. The second board is very similar to the first one and in the collections of Alvar Aalto Museum, in Jyväskylä. This second board is a bit more worn out than the Paimio hospital's version. It has different paint textures and the colors of paints are lighter. This board also has glossy finishes in selected areas. All these features indicate that this second board might be the original Kauria board and the one hanging in Paimio hospital could be a copy.

Both boards are painted with detail and care, using different types of brush strokes to produce distinct textures to present various rooms and areas. The second museum piece is maybe painted with a bit more care than the one in Paimio hospital. Both color schemes of these boards have been defined with NCS color codes. As said the second, museum piece is a lot lighter by its colors.

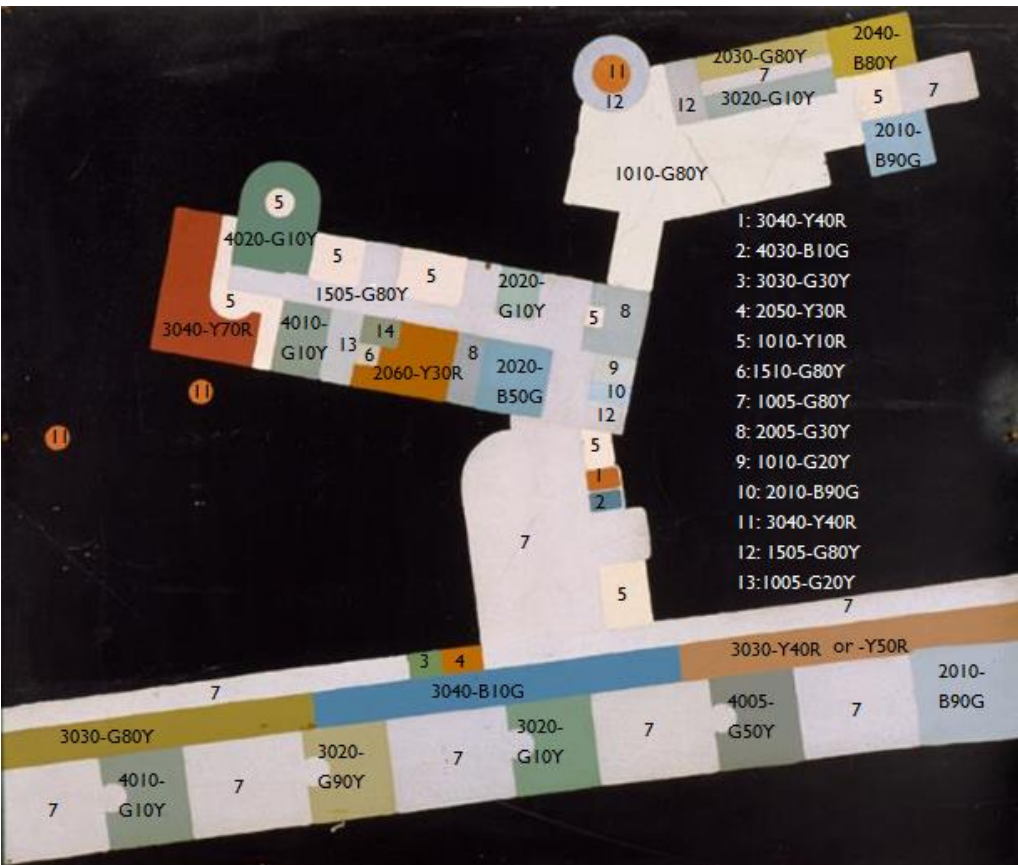
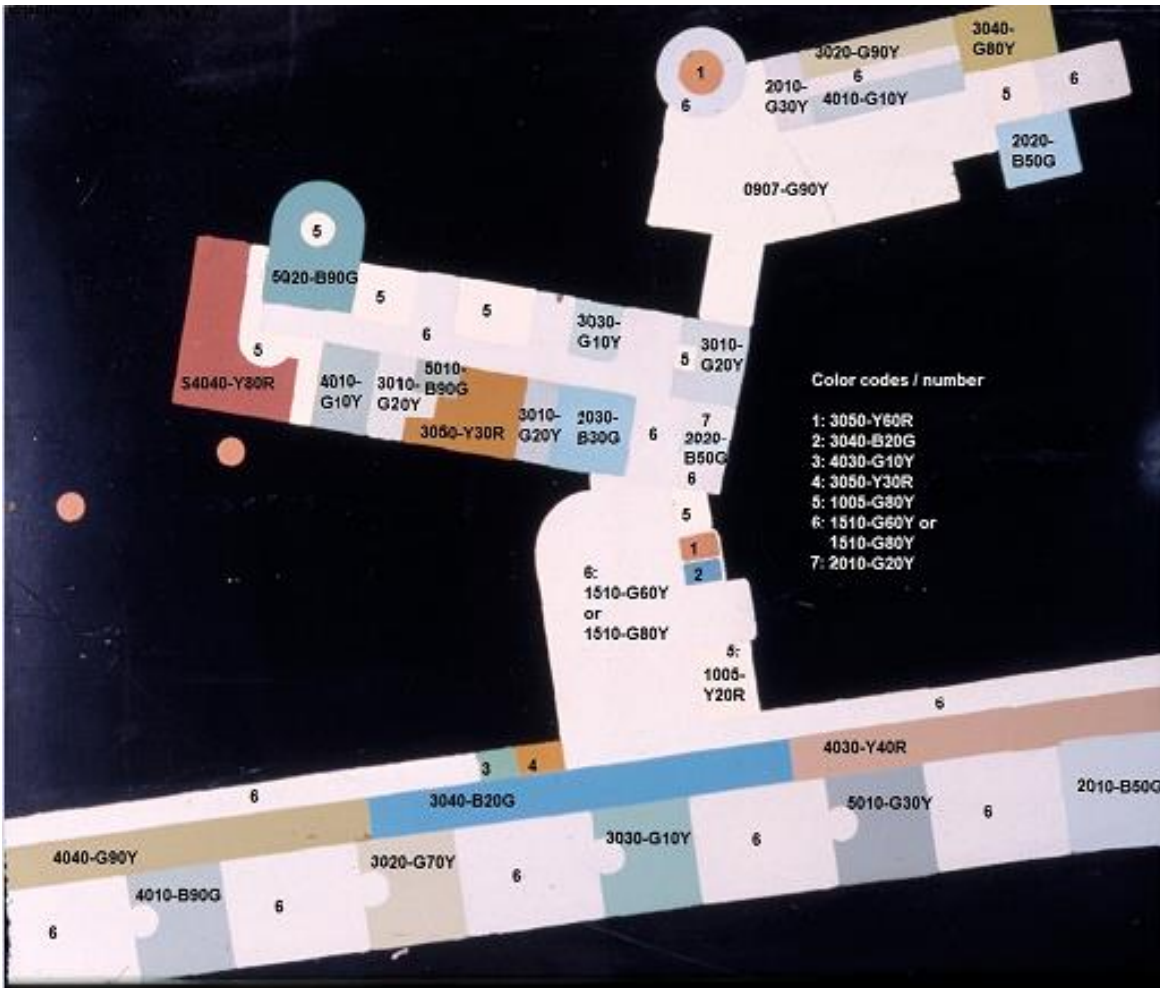
The board addresses the ground floor of B-wing (operational wing with the green round operation theatre). This wing has maybe the most interesting color scheme on the board, as this wing is one of the sections of main building that has gone through major changes. None of the colors presented here are visible today in B-wing, as it has been renovated into an office wing for staff. The red zone was the artificial sun treatment room, the green the operating theatre and orange X-ray room. The large light blue box in the right corner was the office of Chief Physician. The C-wing (the kitchen), at right upper corner of the board, presents the first floor. The wing is divided in different areas with color, to tell us which area is for baking, which for handling the meat. The freezers are for example marked with the light blue square. The A-wing with the wards' has the ward corridor divided in three color areas, marking different floors. The obvious patients' room colorings are also well stated, presenting different color options for ceilings.

The two red dots put side the building resemble the courtyard light fixtures.

For the reader it is advisable to return to this chapter and refer to the Kauria color board when reading forward this report.



The color board painted by Kauria presents the finished color scheme of Paimio Sanatorium's main building. AAM- Sign.Av 78.

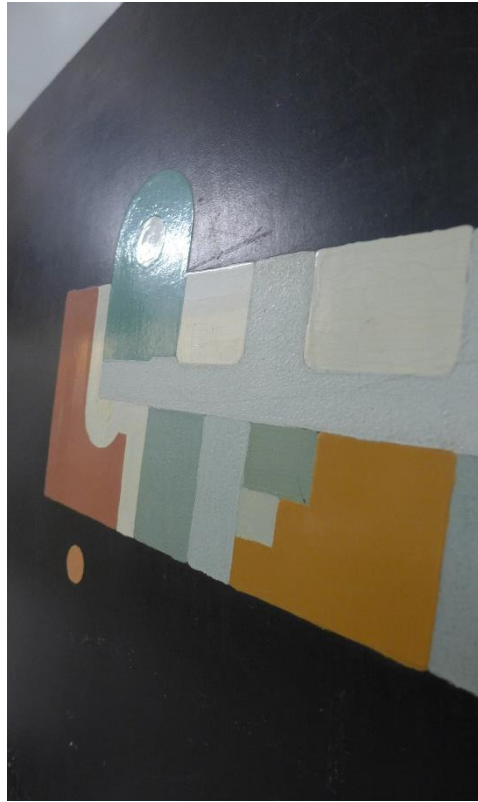


NCS color codes of the color board of Paimio hospital are presented above. This board is at the moment located in Paimio hospital's main building.

The second board's NCS codes are shown left. This board is presumably the original board painted by Kauria himself. It is in the collections of Alvar Aalto museum, Jyväskylä, Finland.



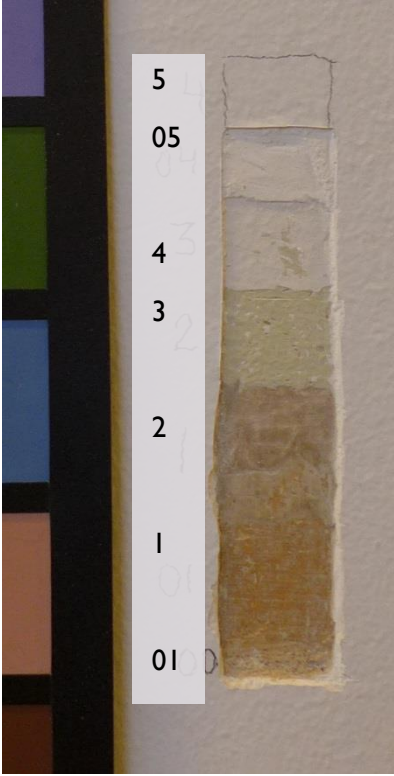
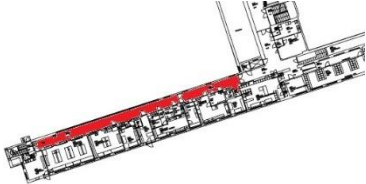
The different textures on the color board created by the brush strokes and technique. This picture presents the textures of the board located in Paimio hospital.

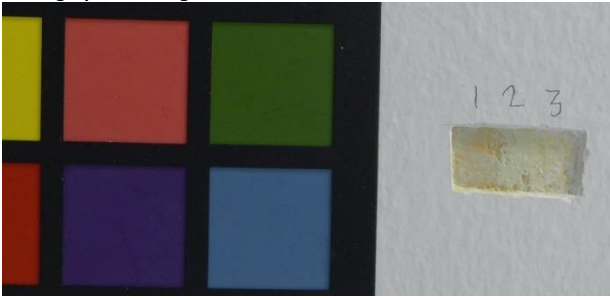
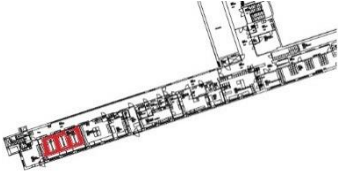


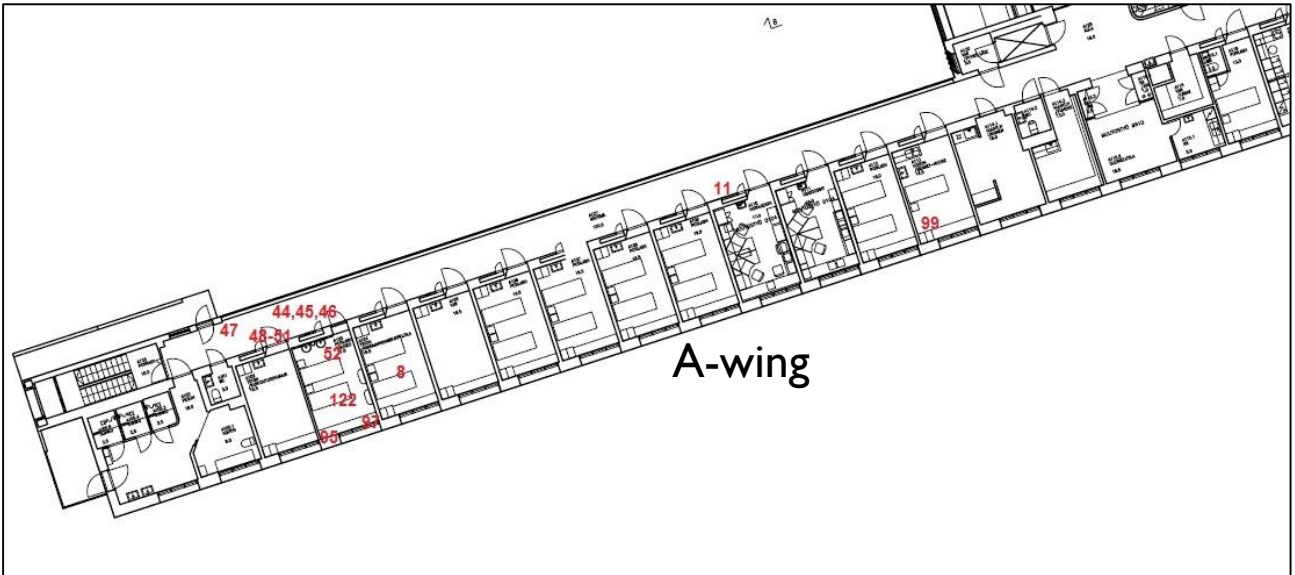
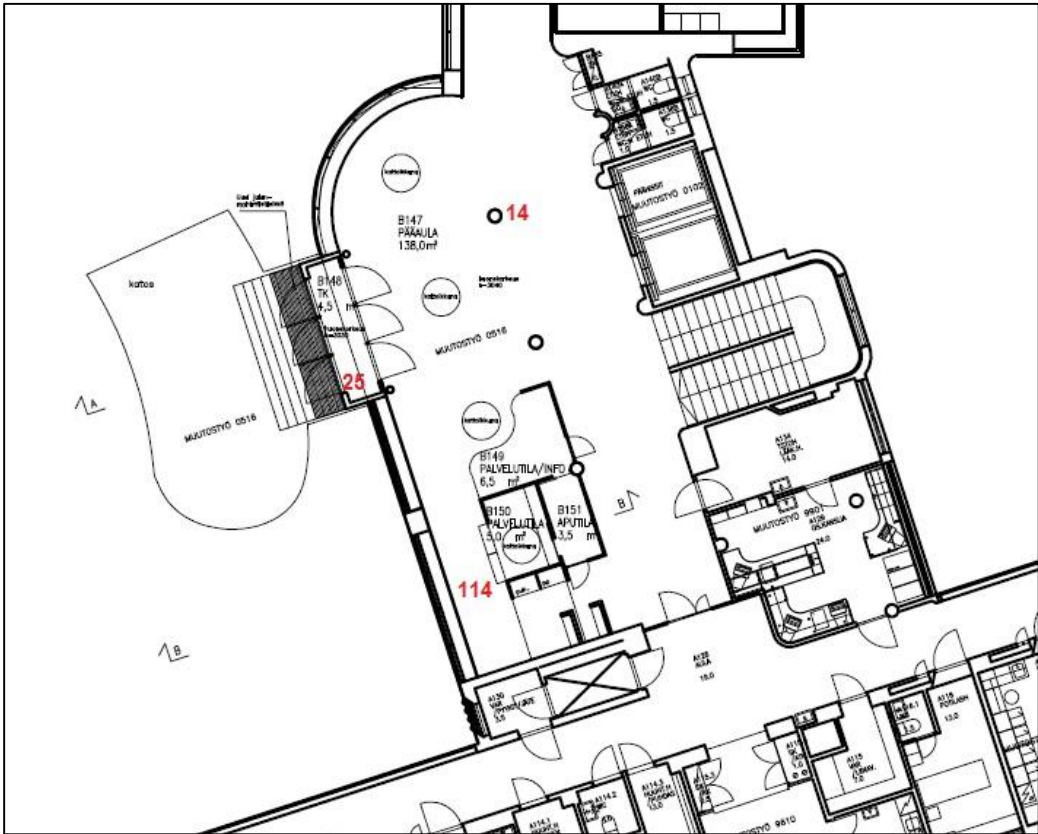
The presumably original color board of Alvar Aalto Museum collections has high gloss and matt finishes.



The Paimio main building in October 2015. The patient wards' vibrant colors gleam through windows in the evening light. Photograph by Sakari Mentu.

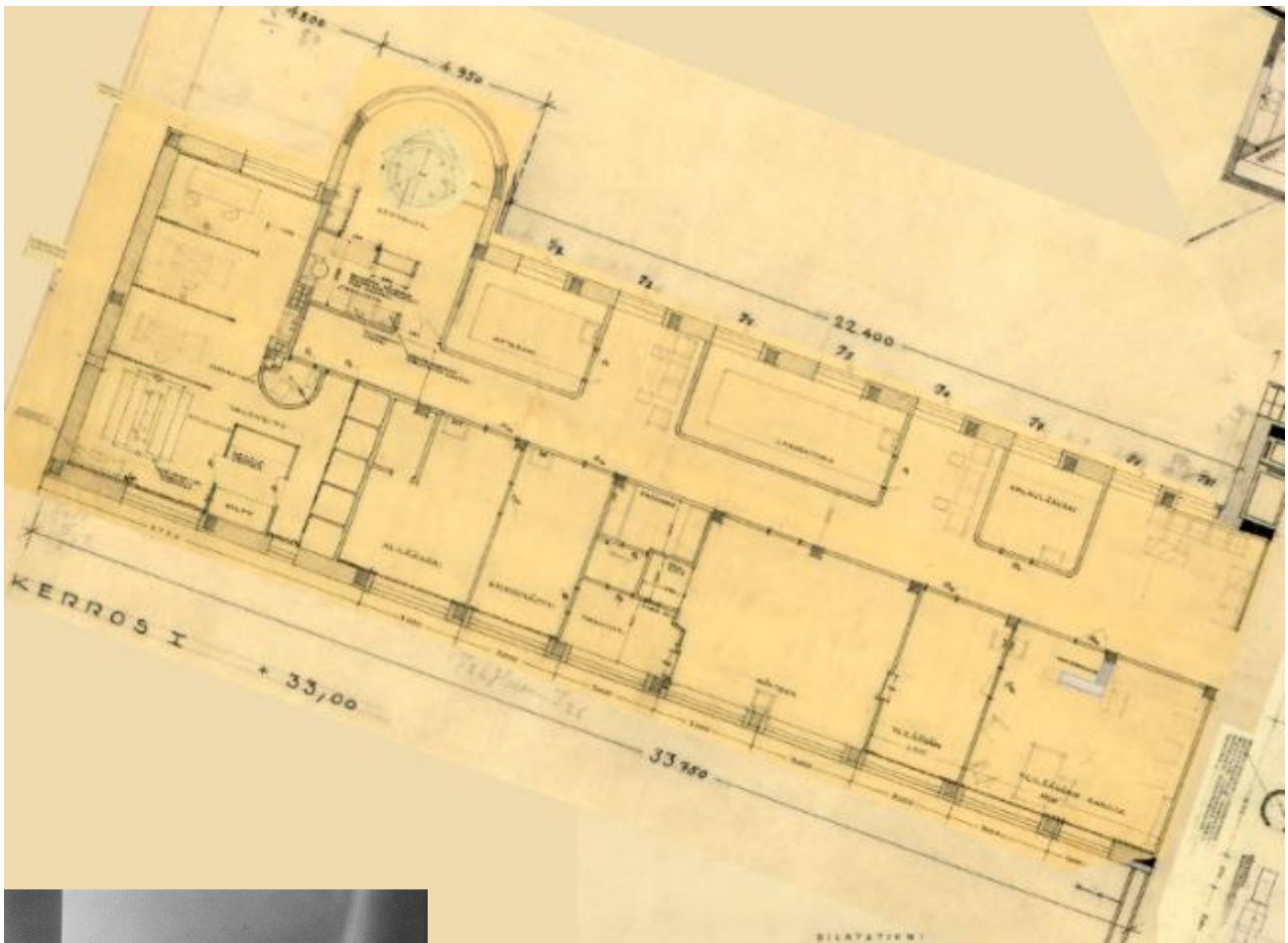
Number of Sample 160	Subject Paimio Sanatorium	Building / Space / Surface Main building Basement Ward Wing Hall way wall	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates 1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed, broader painted wooden doors have replaced the original wooden doors with lacquered surfaces. The lighting and fixtures have also been replaced.			
Photograph, drawing 		Layers of Sample 00 Chalsium based Plaster 01 Oil Filler 1 Orange paint 3040-Y40R 2 Brown 4005-Y50R 3 Green 0907-G60Y 4 White 0300-N 05 Filler, white light weight 5 White latex	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: No cross section sample.	Floor plan, Location of Sample 

Number of Sample 161	Subject Paimio Sanatorium	Building / Space / Surface Main building Basement Isolation ward Wall with windows	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates 1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed, broader painted wooden doors have replaced the original wooden doors with lacquered surfaces. The lighting and fixtures have also been replaced.			
Photograph, drawing 		Layers of Sample 00 Chalsium based Plaster (01 Oil filler, yellowish) 1 Blueish grey 2005-B20G 2 Green 1010-G40Y 3 Yellow 0510-Y (04 White filler, light weight, not shown) (4 White latex)	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: No cross section sample.	Floor plan, Location of Sample 



5. Ground Floor B-wing



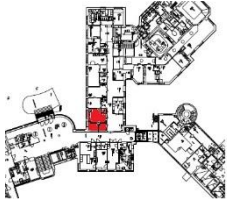
One of ground floor's most interesting areas is the wing B. This wing was not included in earlier color researches. The B wing originally accommodated the offices of Chief and Sub Physicians, X-ray room, Artificial Sun treatment room and other treatment and examinations rooms for patients, the Pharmacy and the Laboratory of the Sanatorium and of course the round shaped Operating theatre itself. The rooms of the wing are brightly colored in the fore mentioned Eino Kauria's color sample board. One interesting point of research in this wing was to see if these colors were truly found in the existing surfaces.

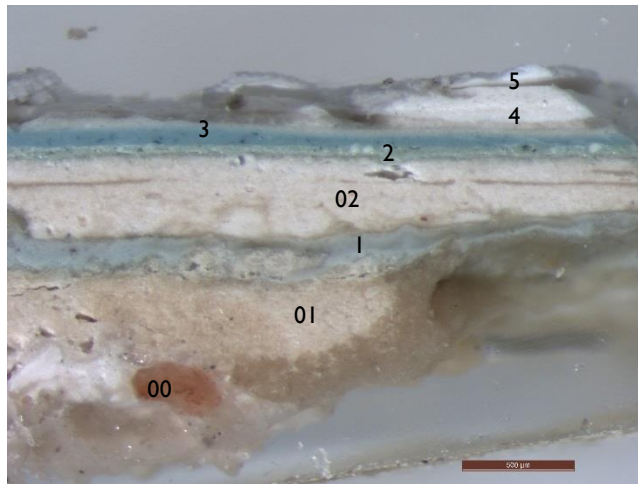
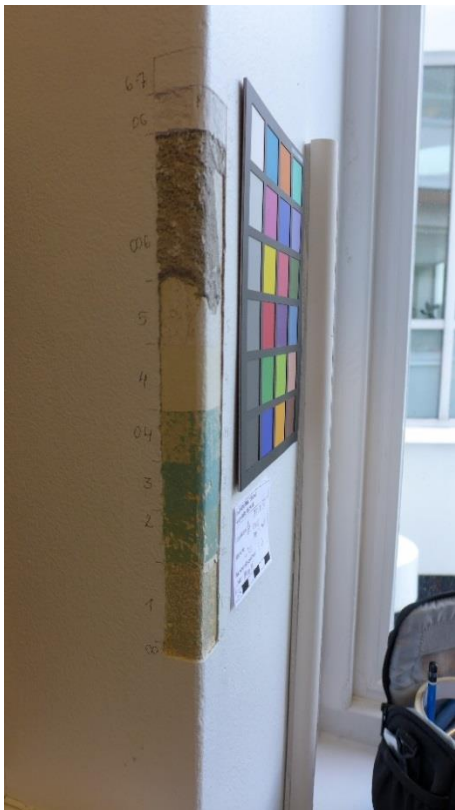


At the left: Main corridor of the B-wing 1933. AAM. Sign 50-003-334.. Above: The original plan. AAM. Sign.



Former Chief Physician's office

Number of Sample 5-6	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground Floor Chief Physician's office Jamb of window	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates The office has been divided in two separate office spaces with a light structured wall in the 1980's. Also divided a cupboard with its own door to the hallway. Ventilation system built in 1970's, with dropped ceiling structure. New door openings. Sink in opposite corner as in the original office plan.			
Photograph, drawing 		Layers of Sample 00 Chalsium based Plaster 01 Oil filler, yellowish 1 Green paint, oil, 3020-G40Y  02 Filler 2 Green S3020-G20Y 3 Blue 3030-B30G 04 Base coat, Beige 1510-Y10R 4 Beige, glossy and hard finish,1010-Y10R 5 White 003-G80Y	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1 layer oil paint. Most of the surfaces have been scraped clean, apparently during the 1970's renovations.		006 Coarse Filler, Grey 06 Light weight filler, White 6-7 White latex, two layers	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 5 and 6, Alvar Aalto Foundation Helsinki. Scale 500µm.	Floor plan, Location of Sample 



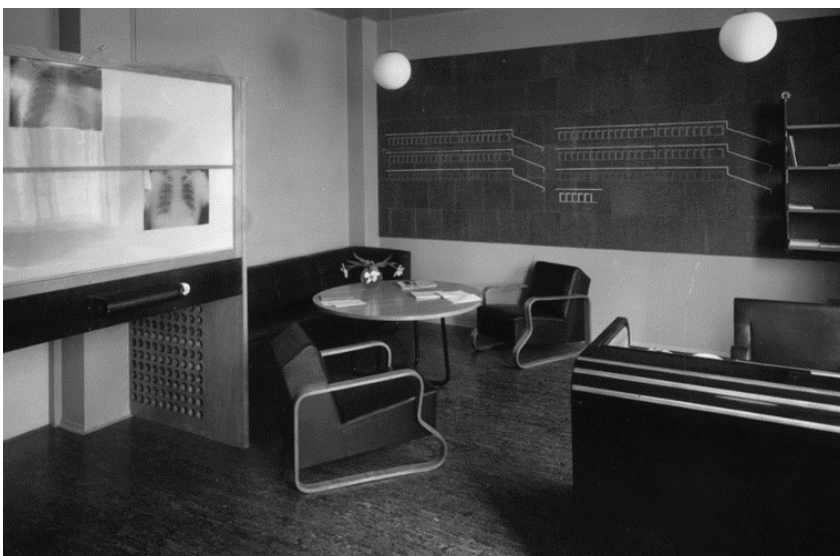
Sample no. 5 showed layers of blues and greens that are also presented in surface excavations. Scale 550μm.

Chief Physician's office's wall coloring in the window wall has originally been greyish green. It is highly possible that this color has turned yellow and been originally more blue as the cross section sample shows. This is not only because of paint's oily substance, but also due to that it is told that the Chief Physician was an extremely heavy smoker. Therefore due to the taring of walls and other surfaces, it is possible that the findings are shown considerably more yellow than the factual original shades.

The opposite side of this room showed some other colors. The undermost layer at the opposite side of the room was grey. The ceiling showed interesting layers, the probable original being greyish blue. It is possible that the Kauria color board was meant to mark the original blue ceiling of Chief Physician's office. Next few pages show excavations of paint layers carved to the ceiling (no. 121) and the pilaster (no. 22).

As the black and white photograph below shows, the floor of the office was covered with a linoleum flooring that had a heavy marmoleum pattern.

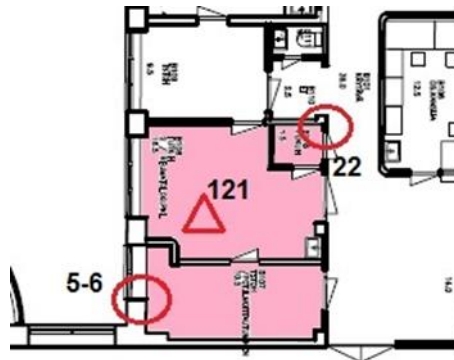
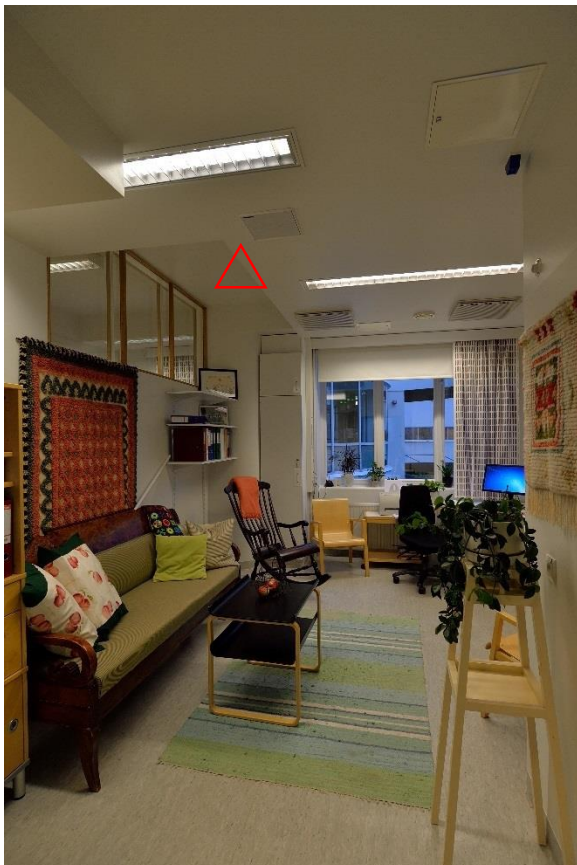
One interesting interior element also shown in the photograph below is the large panel hanging on the wall. It was made of cork according to some receipts found in the archives of the Hospital District of Southwest Finland. The painting resembling the six wards and the seventh isolation ward is painted by Eino Kauria. This was uncovered also in the archives from a receipt showing that Kauria was separately paid to do the paint job for the cork board. This board has not been found in the premises of Paimio Hospital or Hospital District of Southwest Finland.




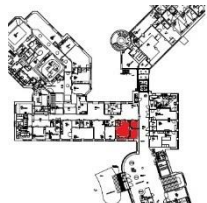
Chief Physician's office. AAM Sign. 50-003-337.





The pilaster where sample 22 (see next page) was taken is behind the gentlemen in the picture. Notice the heavily patterned linoleum flooring. AAM Sign. 50-003-369.





Pink area resembles the size of the original office. At left: A view from the door of the other half of the divided space today. The triangle marks the spot where the ceiling excavation was made.

Number of Sample 22	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground floor	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation	Former Chief Physician's office (now: offices) Pilaster in the corner of the room	
Most significant repairs and changes of the space, dates The office has been divided in two separate office spaces with a light structured wall in 1980's. Also divided a cupboard with its own door. Ventilation system built in 1970's, with dropped ceiling structure. New door openings. Sink in opposite corner as in the original office plan.			
Photograph, drawing 		Layers of Sample 00 Chalsium based Plaster 0 Oil based filler 1 Grey paint, oil 2005-B80G 2 Green paint, oil 3030-G10Y 3 Grey paint, between 2005-B20G and 3005-B20G 4 Grayish green 3010-G70Y 5 Glossy, hard paint, Beige 1010-Y10R 6 White paint 0603-G80Y 7 White latex paint	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1 Öljymaali Most of the surfaces have been stripped down, apparently during the 1970's big renovations. One of the pilasters showed good amount of paint layers in crater excavation of surfaces.		08 White, light weight filler 8 White latex	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater excavation technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 22, Alvar Aalto Foundation Helsinki	Floor plan, Location of Sample 

Number of Sample 121	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto-foundation	Chief Physician's office (now offices) Ceiling	
Most significant repairs and changes of the space, dates The office has been divided in two separate office spaces with a light structured wall with windows in 1980's. Also divided a cupboard with its own door. Ventilation system built in 1970's, with dropped ceiling structure, but not covering the whole ceiling, leaving parts of it bare. New door openings.			
Photograph, drawing  <p>001 1 1 2 3-4 5 6</p> <p>PAIMIO SANATORIUM Alvar Aalto 1929-33</p> <p>Floor/Room: 1st OFFICE OF HEAD PHYSICIAN</p> <p>Element: CEILING</p> <p>Number of specimen: 121.</p> <p>Date: 20.10.15</p> <p>1cm</p> <p>datacolor</p>		Layers of Sample 00 Chalsium based Plaster 0 Oil based filler 1 Light turquoise/blue paint, surface scratched with scalpel: 2010-B90G, untouched paint surface 4020-G10Y 02 Filler 2 Turquoise-green paint, 4020-B90G 3-4 Light Beige paint layers 1010-Y10R 5 Beige paint 1005-Y20R 6 White	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 121, Alvar Aalto Foundation Helsinki	Floor plan, Location of Sample 

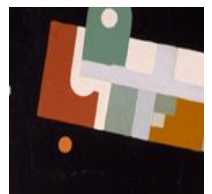
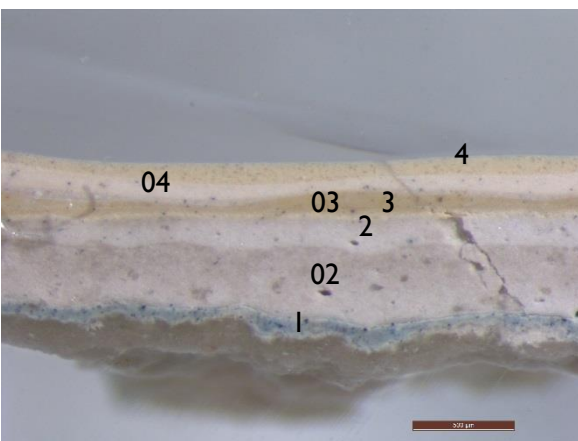
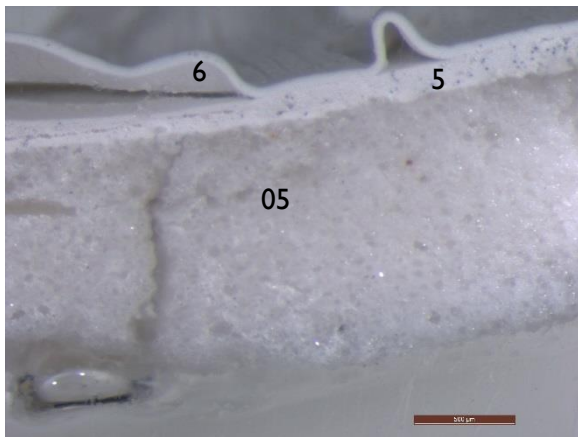
Artificial Sun Treatment Room

Number of Sample 19	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground Floor	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation	Artificial sun treatment room (now: kitchen of staff) Jamb of window, wall	
Most significant repairs and changes of the space, dates Former light treatment room has been divided in three office spaces. Kitchen, used by the staff from 1970's. Ventilation system built in 1970's, with dropped ceiling structure. New door opening.			
Photograph, drawing 		Layers of Sample 00 Plaster 0 Filler 1 Greyish blue oil paint, 3020-B50G 02 Beige filler 2 Dark Beige 2030-Y10R 03 Light filler / base coat 2010-Y10R 4 Beige 0510-Y10R 05 Filler, light weight, white 5 Grey Latex 2000-N	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1st Layer Oilpaint Small crater type excavations were made in the room.		6 White Latex	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without a prefix.	Type of Sample, Place of Storage: Cross-section sample 19, Alvar Aalto Foundation Helsinki. Scale 500µm.	Floor plan, Location of Sample 



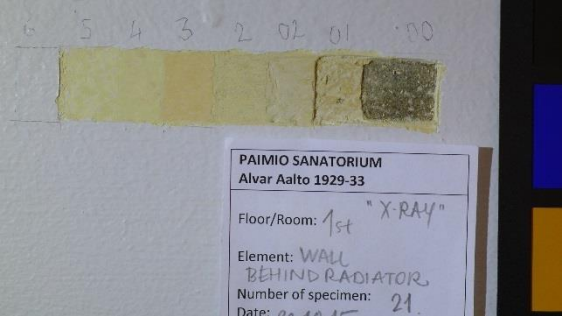
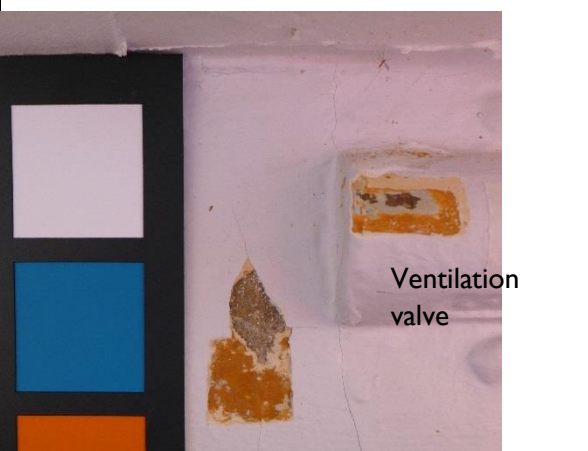


The artificial sun treatment room has originally had red linoleum flooring. This is stated in a document that states calculations addressing procurement of the original flooring. Unfortunately only few rooms and floorings are mentioned by the name and color. The rest are marked down only with a color code given by the flooring company. Alvar Aalto Foundation has some flooring samples from the 1930's in its collections but these sample charts do not state the exact same color codes found in the document with the procurement calculation.

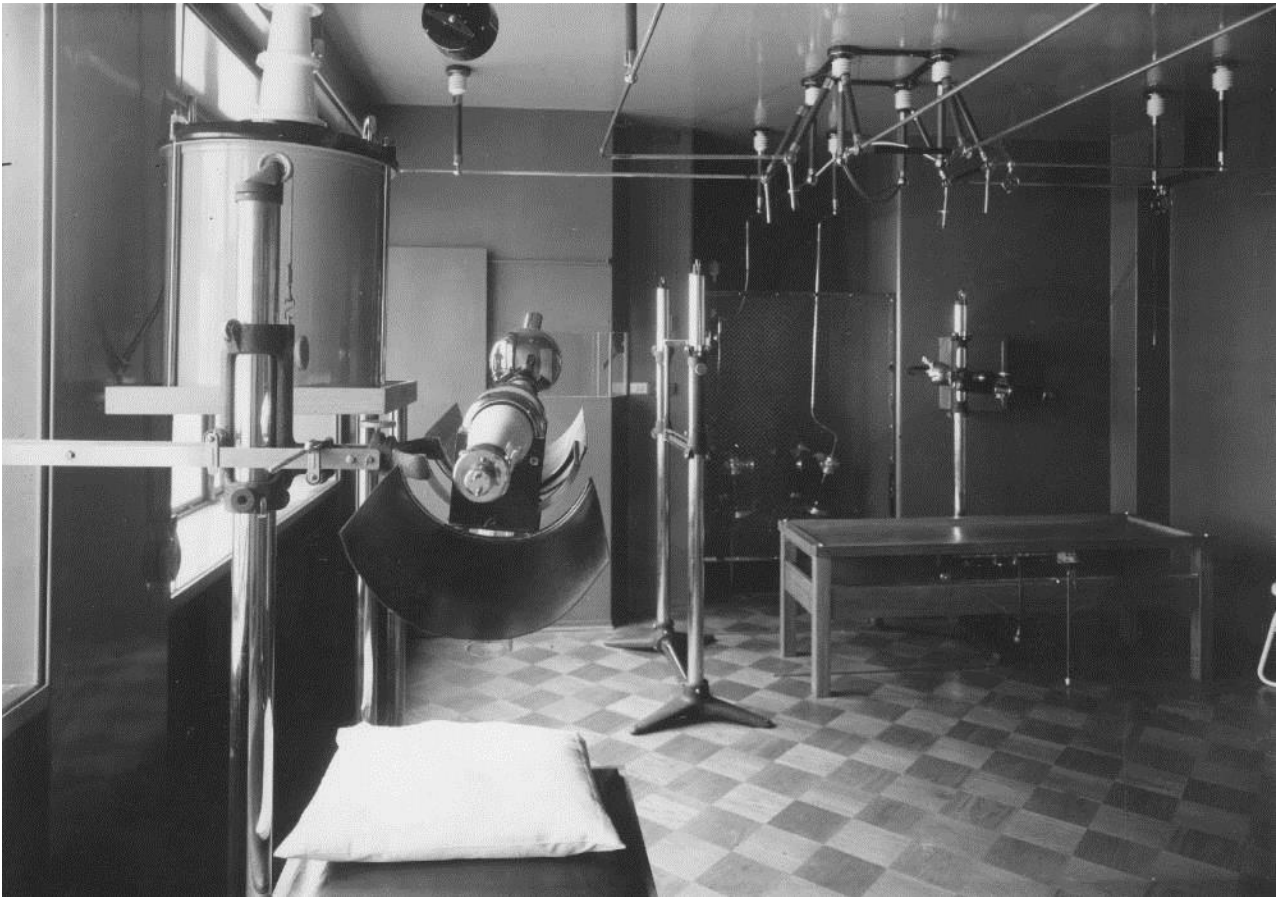
The Kauria color board shows deep red color in the area of the artificial sun treatment room. This might be due to, not the ceiling, not walls, but the color of the floor. Although the black and white photograph below presents the ceiling as a very dark glossy surface. The red color often appears dark or almost black on old black and white photographs. The ceiling of the former sun treatment room showed no traces of red or orange paints of any shade.



AAM. Sign. 50-003-356

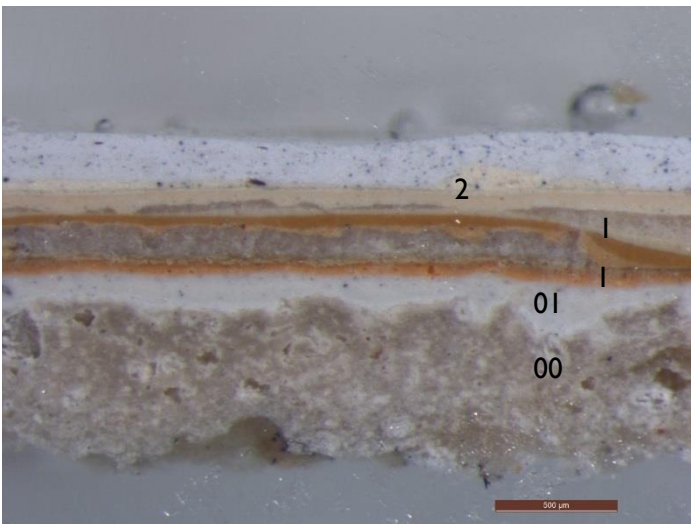
X-ray Room

Number of Sample 21	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground Floor X-ray room (now: offices) Under window. wall + the ventilation valve	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates Former X-ray room has been divided in one office and two cupboard spaces. Ventilation system built in 1970's, with dropped ceiling structure. The ceiling has been sand buffed, only raw concrete surface is visible over the dropped ceiling structure. New door openings.			
Photograph, drawing		First sample. Layers of Sample of Wall behind radiator 00 Plaster	
		0 Filler	
		1 (Base coat?) Beige 1515-Y10R	
(Sample includes already existing hole in surface.)		2 Dark Beige paint 0520-Y30R	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1 Öljymaali		3 Light yellow paint 1015-Y	
As the space has clearly been sand buffed (ceiling especially)		4 Light yellow 0507-Y	
		5 White	
		Second sample: Colors on Ventilation valve 00 Iron valve	
		01 White base coat	
		1 Orange 3060-Y30R 	
		2 Yellow 1510-Y10R	
		3 White latex	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 22, Alvar Aalto Foundation Helsinki. Scale 500µm.	Floor plan, Location of Sample 





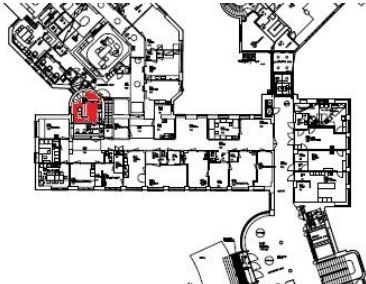
The X-ray room's original look. The orange color was found under the window (at the left in the picture). AAM Sign.50-003-371.

X-ray room's wall coloring was bright orange, just as the Kauria color board insinuates. It is possible that more than one color was used, as the photo above shows differences of gloss and darkness of surfaces. Ceiling has apparently been treated with glossy, enamel-type oil paint. If there was a certain function for this unusual color of orange due to X-ray technique i.e. is not known.



The cross section sample no.22 taken from the wall shows the orange layers.

Operation Theatre

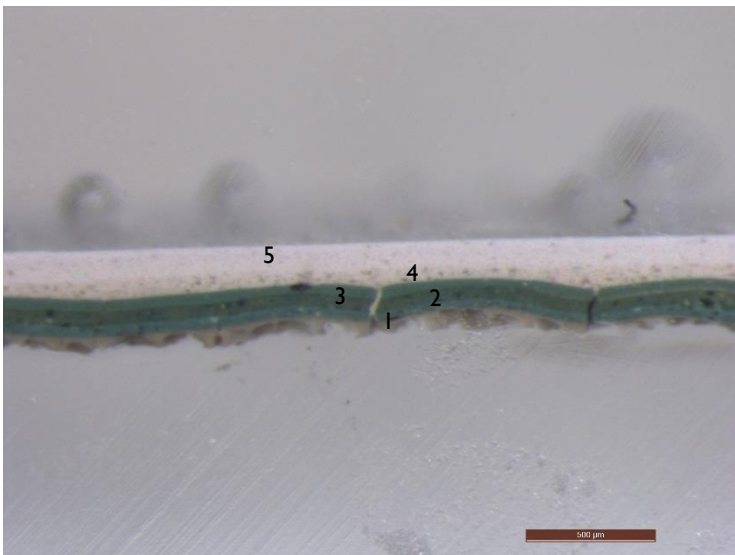
Number of Sample	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground Floor Operation theatre Ceiling window	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates Former operation theatre is being used as an archive by the present tenant.			
Photograph, drawing 		First sample. Layers of Sample of Wall behind radiator 00 Metal 01 base coat 1 Green 3040-B90G  2 Green 3 Light yellow 4 White 5	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color step on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: No sample	Floor plan, Location of Sample 



The operation theatre has had the classic “surgical” green paint as its three first layers. This green is shown in the original ceiling window, the walls, and the original round radiator in the back part of the theatre. The window wall on the left side of the room (not showing) had white and cream white layers.



AAM. Signum 50-003-376



Sample 17 shows the undermost layers of green. The first layer seems to be a blueis, teal kind green.



6. Ground Floor - Entrance Hall



The main lobby of Paimio Sanatorium has gone through several changes. One of the major changes is the change from original front desk to a curved glass cubicle 1958. The change was designed by Alvar Aalto's office. The two elevators have been renewed. The original elevators stood side by side, the structure was a see-through glass-walled shaft. It has been said in a patient statement that one of the elevators was colored red. This was maybe to mark the line of passage for different types of users. All the traces of these color coded elevator cars have been lost during the renovations. The elevator's original technical space at the roof in 6th floor does neither give any hints of color. The Kauria color board marks the elevators bright red and bright blue. The samples and small excavations made in the main hall gave little new information to the facts one can see in the coeval photographs taken after the completing of main building. The ceiling is relatively lightly colored, as the pilasters stand out white and glossy. The main doors seem dark and the cheeks of the doors are light and glossy, as nowadays these cheeks are painted black.



Main hall with the original flooring and front desk. No draught lobby was built at this stage. Below is the current status of the Main lobby. Notice how the light does not pass through the Ground floor ward through the ward doors due to some change, leaving the back part of the lobby dark. AAM Sign. 50-005-308.



Draught Lobby

Number of Sample 25	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground Floor Entrance hall Draught lobby (between outer and inner main doors)	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates Draught lobby was built 1958 as the inner doors were added. At the same time the front desk was replaced.			
Photograph, drawing 		Layers of Sample 00 Plaster 0 Filler 1 Black paint 2 Light beige or white 3 Thick filler 4 Black paint 5 Black paint	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 25. Alvar Aalto Foundation Helsinki. Scale 500µm.	Floor plan, Location of Sample 

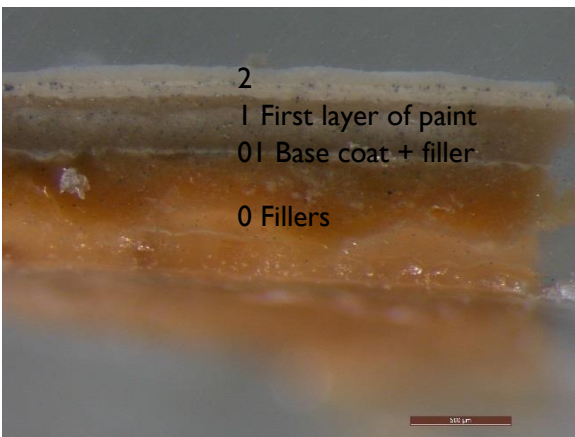
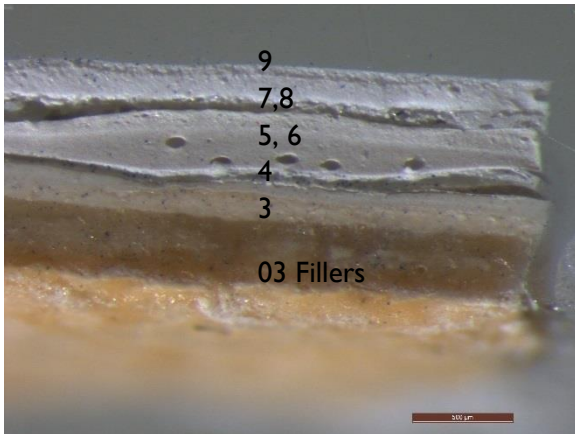


The entrance hall and drought lobby today.



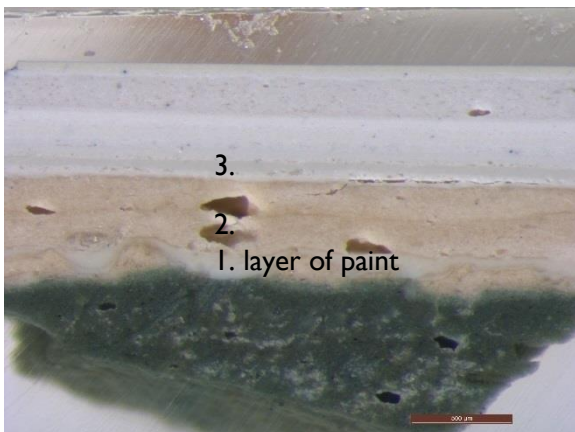
Entrance Hall's Ceiling, Sample I 14

The ceiling of the hall showed only light color shades so no actual excavation was done. The ceiling has always been painted with light shades like white and beige. This is shown on the cross section sample no. I 14 seen below. The sample was broken in half: above is the surface and the latter the bottom.



The Column in the entrance hall, Sample I 4

The original pilasters of the hall were originally glossy and colored with a light shade. This is their look also today. Below is the cross section sample no. I 4 taken from the left pilaster (from the main doors). It shows light beige and white layers of fillers and paints and a first layer of green filler. The receipts found in the archives of Hospital District of Southwest Finland tell about a certain “Yedda” brand enamel paint that was bought for the building site of Paimio hospital. Objects like these columns where possible subjects for the use of these kinds of heavy duty paints like Yedda enamel paint.



7. First Floor Ward – A Wing

Each ward from the ground floor to fifth have all had their own distinguished coloring. Three colors were divided between six floors, the first being orangey ochre. The first floor wing's ochre wall is the ward-long wall that is the background for the doors leading to the rooms for patients. These walls are colored in vibrant tones through the whole patient wing, from first to the sixth floor. The Seventh floor and the Basement floor have been neutrally colored. The opposite wall with the windows was colored with whites and window sills treated with a glossy finish. The original doors leading to patient rooms were lacquered showing the pattern of wood. They have been replaced with broader doors. Originally the floors were covered with green linoleum.


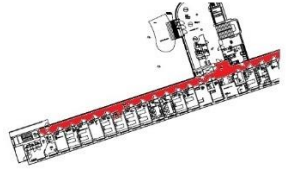


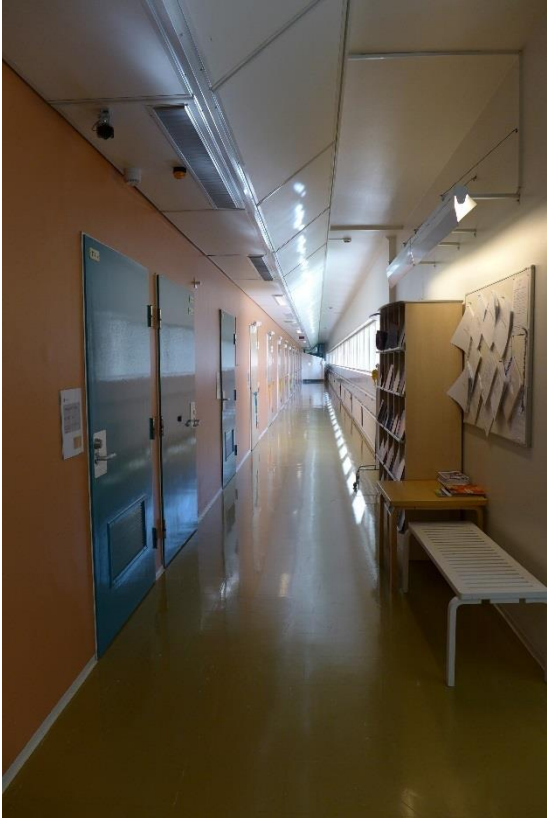
One of the wards (probably sixth according to the view from window). The wall with doors was painted in rich a tone and the outer wall in neutral color of off white. Below is a view today from the sixth floor ward to the opposite direction. Notice the built in structure in the ceiling for the purpose of hiding ventilation systems and electricity cords, dating to the 1970's. AAM. Sign. 50-003-328



The ceiling of the corridor has originally been white but as seen in the picture above, there is was a diagonal molding in the corner of the colored wall and ceiling. This molding was painted with the same color as the wall. In Eino Kauria's color board the wards are marked with three colors, ochre, blue and green.

Ward, Main Hallway

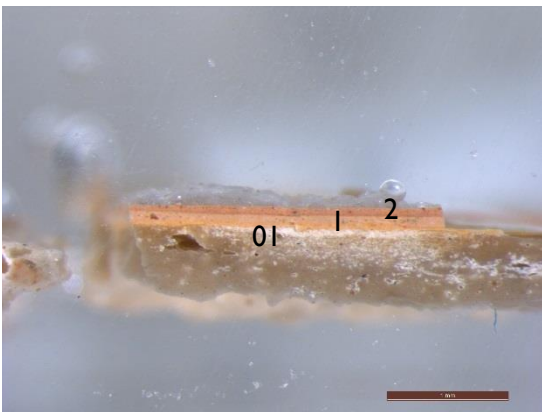
Number of Sample 11	Subject Paimio Sanatorium	Building / Space / Surface Main building 1st Floor	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation	A-wing, ward's main corridor Wall with doors	
Most significant repairs and changes of the space, dates 1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed, broader painted wooden doors have replaced the original wooden doors with lacquered surfaces. The lighting and fixtures have also been replaced.			
Photograph, drawing 		Layers of Sample 00 Plaster 01 Beige filler 1 Ochre S2050-Y30R 2 -3 Reddish browns 3020 – Y40R 4 Brown 3030-Y20R 5 Reddish dark brown 4020-Y60R 6 Brown 4030-Y30R 07 White light weight filler 7 Red 3020-Y60R	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1st layer is oil based paint.		8 Orangey red 2040-Y60R (nearest possible shade)	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 11, Alvar Aalto Foundation Helsinki. Scale 1mm.	Floor plan, Location of Sample 



The main hall way of ground floor ward is today painted with somewhat the same tone as it originally was according to the findings. The ceilings have been white and the flooring dark linoleum with light colored heavy pattern. The doors were originally veneered and lacquered.



Photo: Av 5375_26. The status of one of the wards before the 1970's renovation. Notice the color and pattern of the linoleum flooring.



The cross section sample no. 11 taken from this ochre wall, broke into three parts. The bottom picture of this sample shows the undermost plaster, the middle one shows the original base filler as a brown layer, the white base coat and the first two orange paint layers. The surface is presented in the top picture where a light weight white filler layer is visible.



8. Ground Floor Patients' Room

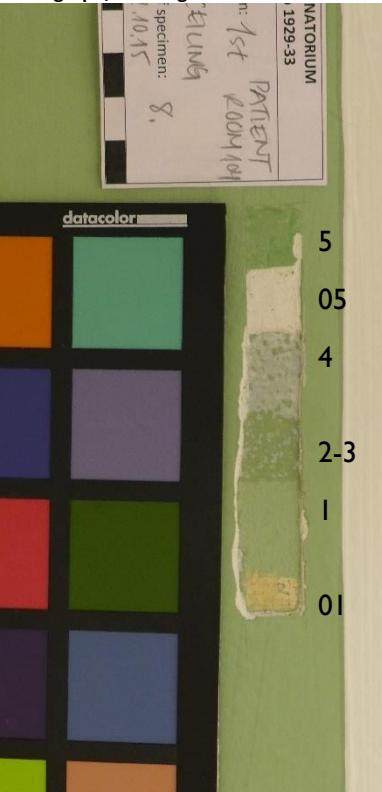
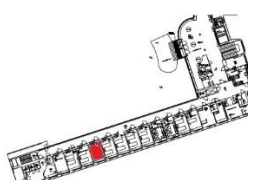
The patients' rooms have gone through many changes during past centuries, mostly because of developing hospital technology and changing standard of care. The patients' rooms' all wall surfaces have been changed to plastered, painted surfaces as originally the left wall of the room was covered with Enso card board treatment with its own recognizable pattern. The ceiling has lost its unusual original heating system, the ceiling radiator. The ceilings are now smooth and painted in vibrant green color. The door way and door itself have been changed to a broader model to allow the patient bed rolling trough. All HVAC-systems have been modernized as well. The furniture has been changed, leaving only the table board by the window in some rooms. Luckily some original furniture has been stored in the hospital storages and is there to be researched in the future. Flooring of the room was originally linoleum. The color of it is not known. The Kauria color board marks four different colors for the ceilings. The Kauria board shows the round white area in the ceiling marking the spot for the lamp, seen below in the white and black picture.

The walls of patients' rooms today throughout the wards show very few paint layers, only two or three layers including the modern light weight fillers. No excavations, except forsmall were made on these walls and samples were taken only from the window wall that showed light colored results like whites and beige paints.

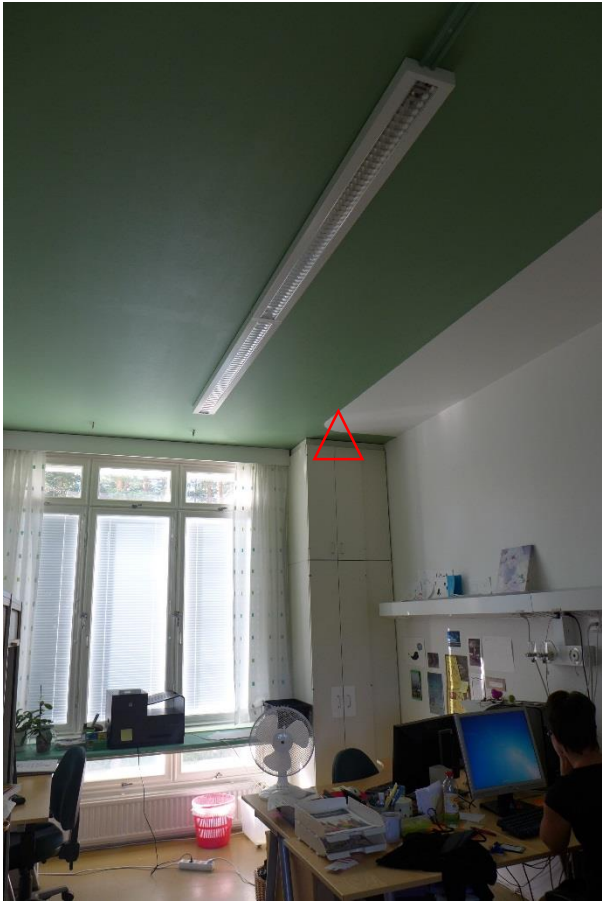
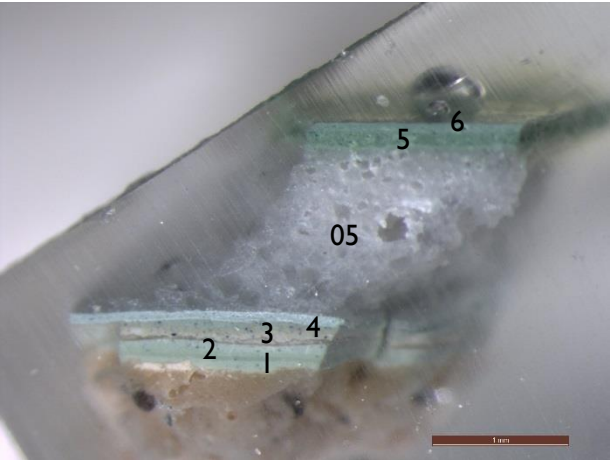


AAM. Sign. 50-003-

Patients' Room Ceiling

Number of Sample 8	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground Floor Patients' room, 4 th from West Ceiling	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June- Dec. 2015, Alvar Aalto- foundation		
Most significant repairs and changes of the space, dates Patient rooms have been fully renovated during 1970's as the hospital technique (i.e. different types of gases) and all of the surfaces, HVAC-technique and furniture were redone. Original ceiling radiators were removed and ceilings painted, but not hidden under dropped ceiling structures. Wallcoverings and flooring were replaced. Original furniture was removed.			
Photograph, drawing 		Layers of Sample 00 01 Yellowish filler 1 Green 2020G10Y 2-3 Green 4010-G10Y 4 Light blue 2020-B60G 05 White light weight filler 5 Green 4040-G10Y 6 Green 2020-G10Y	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 8, Alvar Aalto Foundation Helsinki. Scale 1mm.	Floor plan, Location of Sample 

The Ground floor ward's patient room's ceilings have had a light green original coloring. The green is shown in the cross section sample no. 8 below.




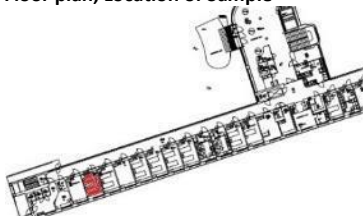
9. Ground Floor - Museum Room

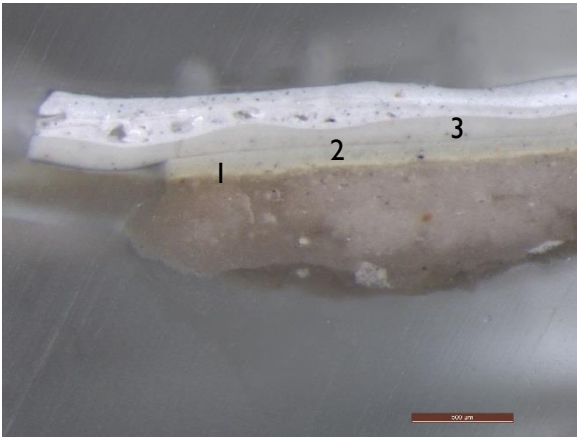
The museum room has been built in one of the ground floor ward's patients' room. The room is a 1970's interpretation of an original patients' room interior with its furniture and the original heating system in the ceiling. The coloring of the room seems not to be factual original coloration when compared to the excavations of surfaces made in the year 2000 color research by Katja Aaltonen.



One of the patients' rooms of the upper floors. AAM.Sign. 50-003-360.

Jamb / Cheek of Door

Number of Sample 52	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground Floor A wing	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto-foundation	Museum room (former patient room left untouched in the 1970's renovation) Jamb of door (cheek of door)	
Most significant repairs and changes of the space, dates Patients' rooms have been fully renovated during 1970's but this Museum room was left to resemble the original 1930's look of a patient room. No hospital technique (i.e. different types of gases) or surfaces, HVAC-technique or furniture were redone. Original ceiling radiator was left (still functioning) and ceiling painted. Wallcoverings and flooring were left as they were, a Enso-cardboard covering on one wall and linoleum flooring. Original furniture and light fixtures were put to place.			
Photograph, drawing THIS EXCAVATION WAS MADE DURING ANOTHER RESEARCH YEAR 2000 (Katja Aaltonen). 		Layers of Sample 00 Plaster 0 Filler 01 Yellow paint, base coat? 1 Grey paint S1005-G75Y 2 White paint S0505-G60Y 3 White S0601-Y21R 4 S0500-N	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1 Öljymaali			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 52, Alvar Aalto Foundation Helsinki. Scale 500µm.	Floor plan, Location of Sample 

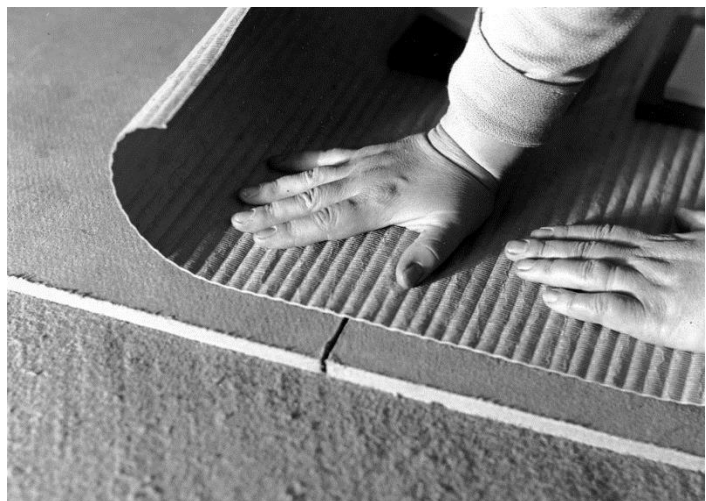
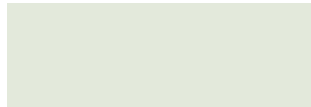


The cross section sample no. 52 from the cheek of the door way of museum room is showing little paint layers and all of them white or beige. The excavation was made on the jamb of the door by Katja Aaltonen already in year 2000. The cross section sample was taken for this report 2015.

The Enso Card Board Wall Treatment

Enso card board was a Finnish wall treatment that was easy to apply and which gave instantly smooth paintable surfaces. It had its own distinctive texture that can be seen in the pictures below. The museum room wall's card board is the last fragment of Enso board in Paimio. Katja Aaltonen made an excavation on the wall board of museum room during the year 2000 research to define the original colors of the wall.

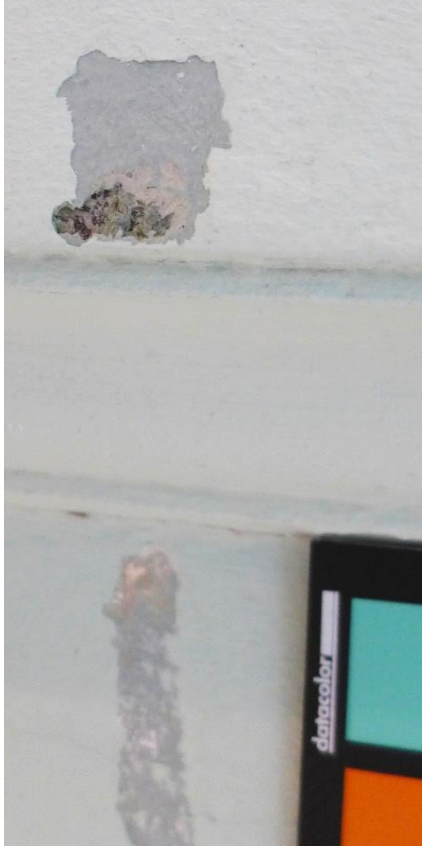
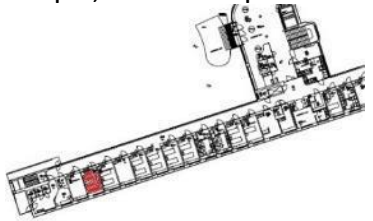
The undermost color was S1005-G30Y, a greenish grey.



Enso card board fragment excavated in Museum room in the year 2000 research.

Enso card board advertisement-type photograph taken during the Paimio Sanatorium building project. AAM Sign. 50-003-345.

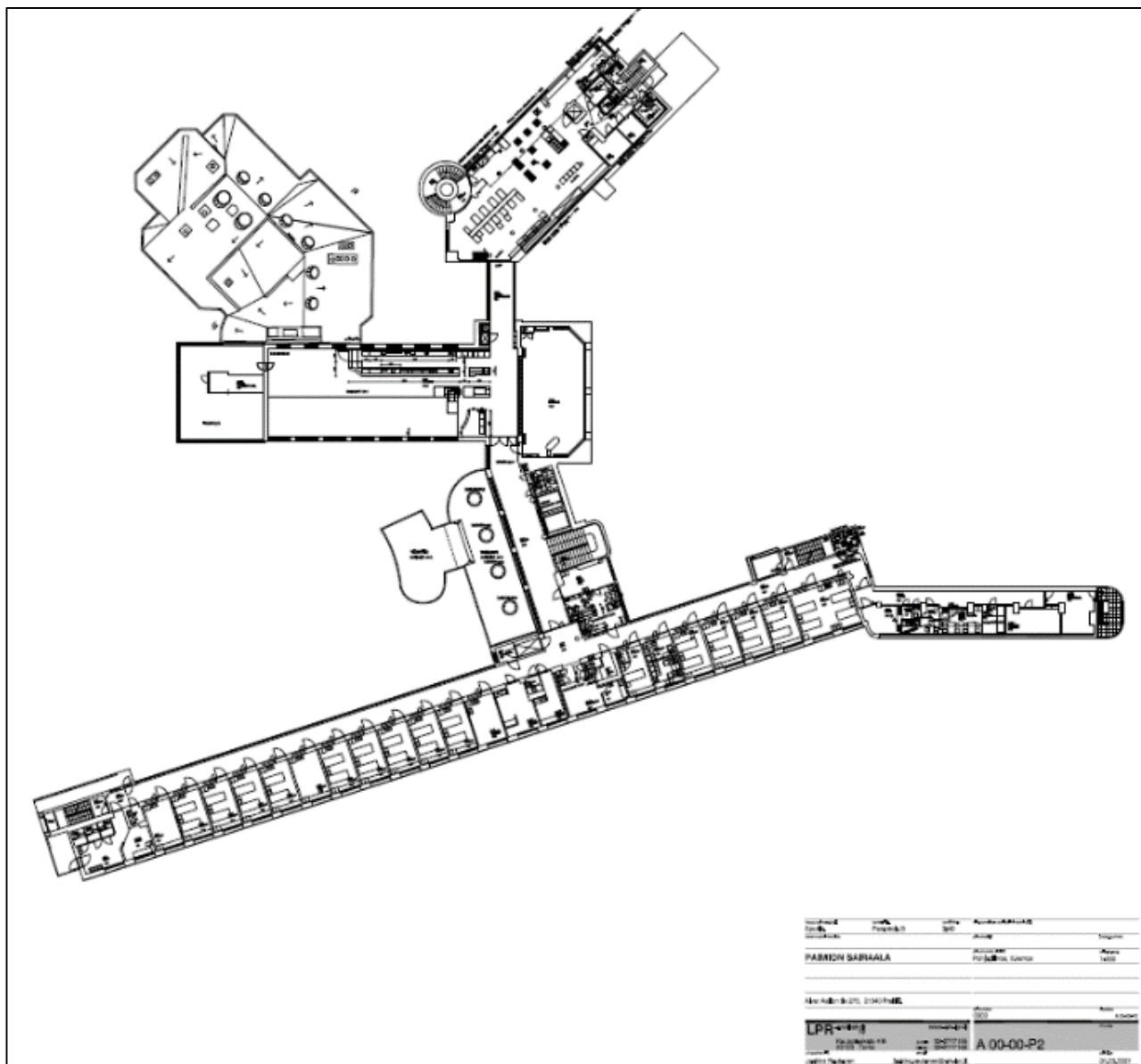
Museum Room Ceiling

Number of Sample	Subject Paimio Sanatorium	Building / Space / Surface Main building Ground Floor A-wing	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto-foundation	Museum room (former patients' room left untouched in the 1970's renovation) Ceiling + Radiator	
Most significant repairs and changes of the space, dates Patient rooms have been fully renovated during 1970's but this Museum room was left to resemble the original 1930's look of a patient room. No hospital technique (i.e. different types of gases) or surfaces, HVAC-technique or furniture were redone. Original ceiling radiator was left (still functioning) and ceiling painted. Wallcoverings and flooring were left as they were, a Enso-cardboard covering on one wall and linoleum flooring. Original furniture and light fixtures were put to place.			
		Layers of Sample 00 Plaster	
		01 base coat	
		1 Green S3010-G40Y	
		2 Green S4010-B70G	
		3 Light pink	
		4 Grey	
		5 Light green	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: -	Floor plan, Location of Sample 

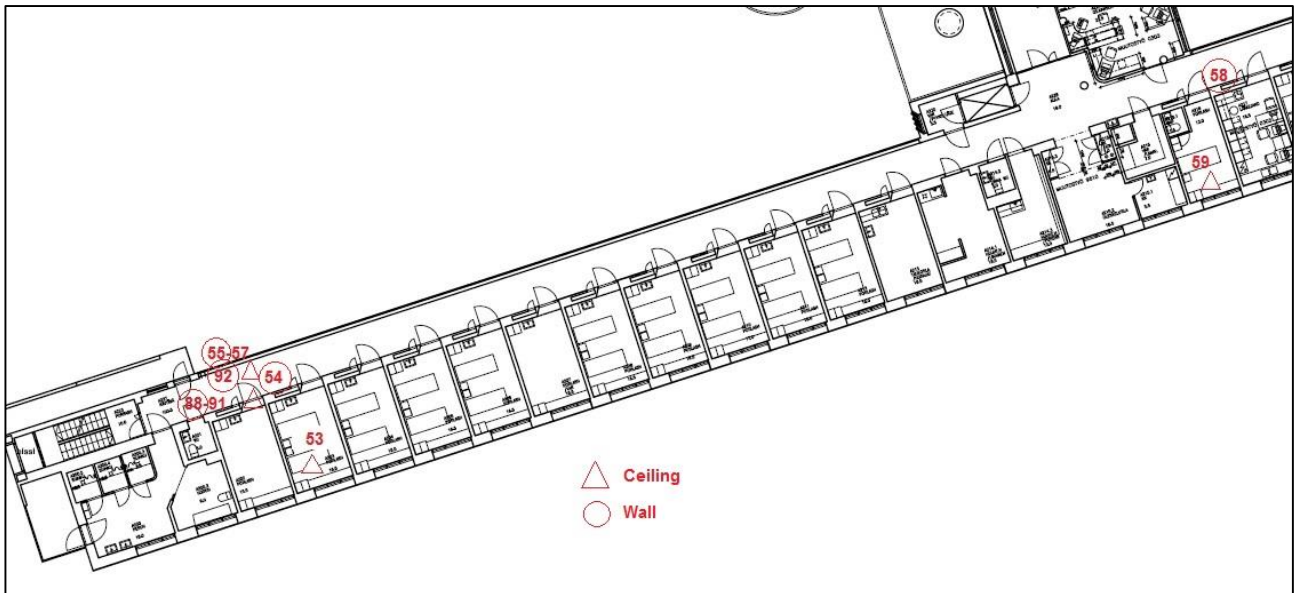
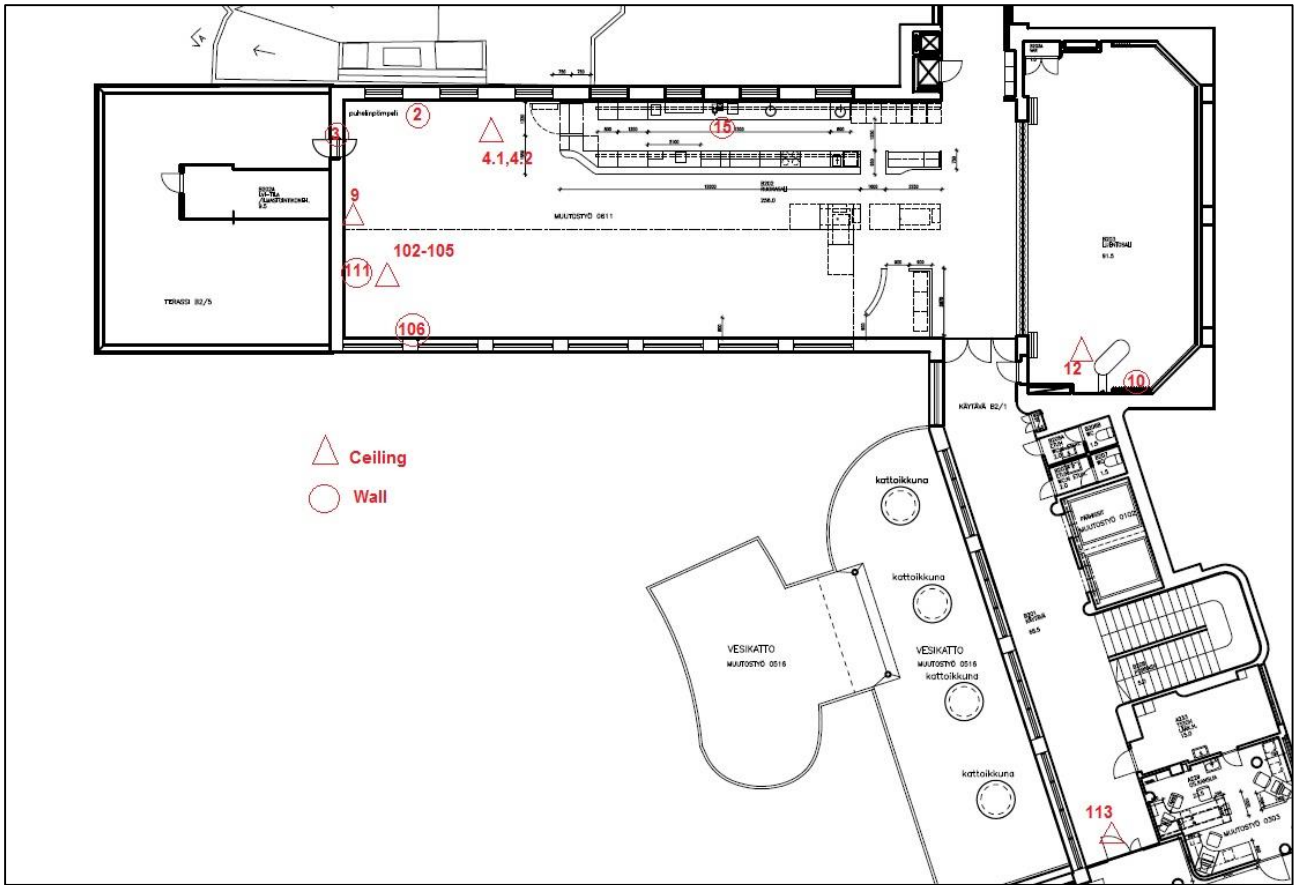
10. 1st Floor – A General View

The first floor has many interesting spaces such as the dining hall and the lounge next to it. The dining hall is one of the most valued interiors in Paimio main building as it has kept its atmosphere, furniture and some of its coloring through years of changes in the hospital.

The first floor ward is similar to the first floor by its division and type of spaces and surfaces, but the general look is different compared to 1st floor due to the green wall of the ward hall way.



First Floor Samples



11. The Dining Hall

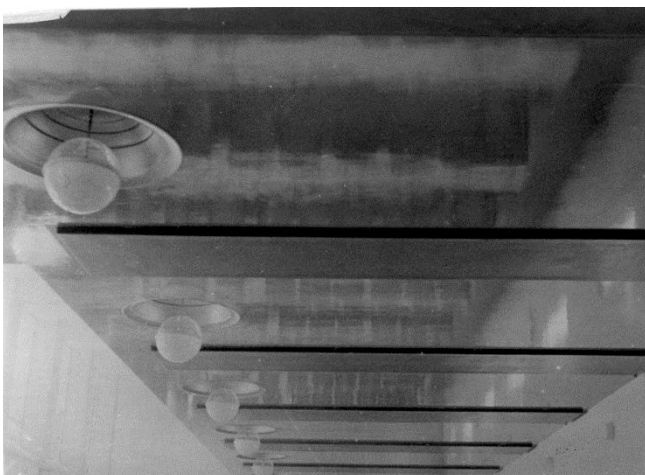
The Dining hall space is vertically divided in two heights, as the half of the hall has a lowered ceiling with original ceiling radiators and the other half of it rises to almost 6 meter heights. The lowered ceiling is now brightly colored with glossy paint treatment, just as it was originally, according to the black and white photographs. Gold painted convex domes adorn the dropped ceiling with round lamps hanging from them. The high ceiling is painted matt white with supporting beams breaking it into sections.

The low wall under the radiators has originally been white or light beige in color. That is also the color of the vertical beams, columns that divide the large windows on the opposite wall. Windows have original steel case frames that have probably been sandblasted in past renovations as they bore just three layers of paint, base included. The original furniture, the dining tables and chairs are still in everyday use, thanks to the rigorous maintenance work of the Paimio Hospital maintenance staff. The chairs have originally been treated black.



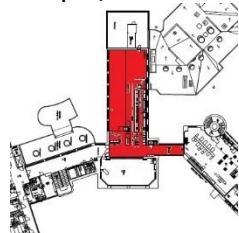
The flooring of the hall was rubber with heavy a pattern with a look familiar from marmoleum floors.

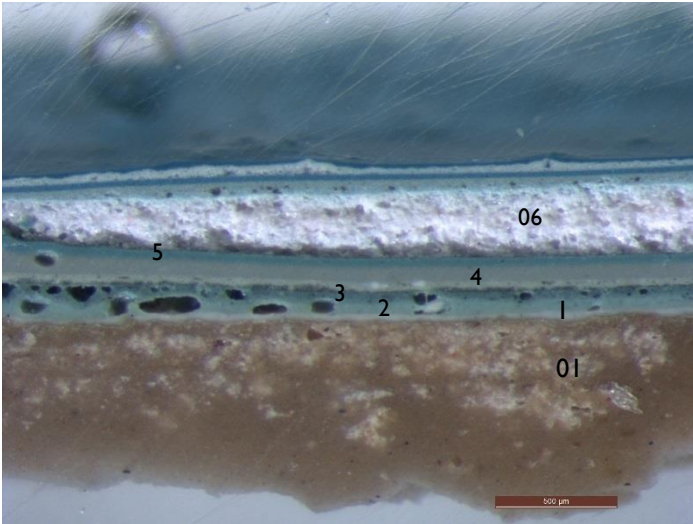


At the left the dining hall. AAM. Sign.50-003-339. Below at the left ceiling with ceiling radiators. AAM- Sign. 50-003-397. Below right a Christmas celebration in the dining hall in the 1970's. The original floor color is visible in the picture. AAM.



Ceiling Radiator's Lining



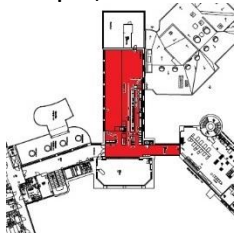
Number of Sample 4.1	Subject Paimio Sanatorium	Building / Space / Surface Main building 1 st Floor Dining hall Ceiling radiator, dark color rim lining the radiator	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates The counter desk for distributing food 1970's. Vinyl flooring 1970's. Window frames have been treated (sandblasted?) during 1948 renovation (repair and paint instructions dating 1948).			
Photograph, drawing 		Layers of Sample 00 Iron (Radiator) 01 Filler 1 Dark green paint 6020-G10Y or 6020-G  2 3 4 	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved excavations on surface, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross section sample 4.1. Alvar Aalto Foundation, Helsinki. Scale 500µm.	Floor plan, Location of Sample 





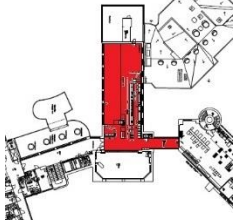
Cross section sample no. 4.1. from the dark color rim surrounding the ceiling radiators.



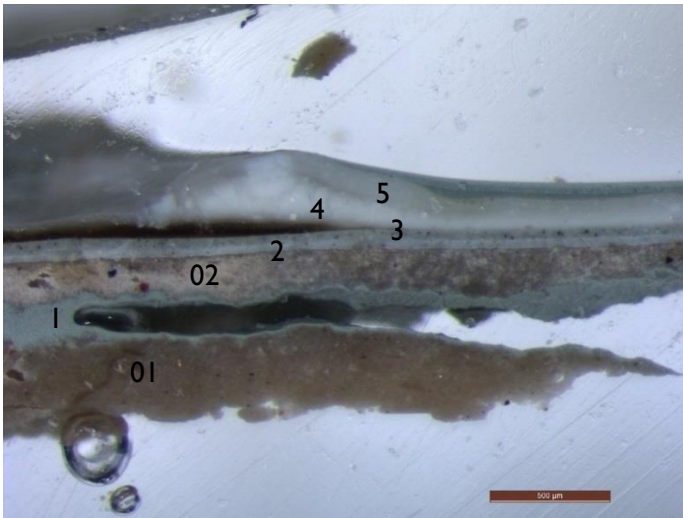
Ceiling Radiator

Number of Sample -	Subject Paimio Sanatorium	Building / Space / Surface Main building 1st Floor Dining hall Ceiling radiator	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates The counter desk for distributing food 1970's. Vinyl flooring 1970's. Window frames have been treated (sandblasted?) during 1948 renovation (repair and paint instructions dating 1948).			
Photograph, drawing 		Layers of Sample 00 Iron (Radiator) 01 Filler 1 Dark green paint 6020-G10Y or 6020-G  2 Light green paint 2030-G30Y (or white base coat that has had colorization from the 3rd layer?) 3 Dark Green 7010-G10Y 4 	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved excavations on surface, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: -	Floor plan, Location of Sample 

Dropped Ceiling

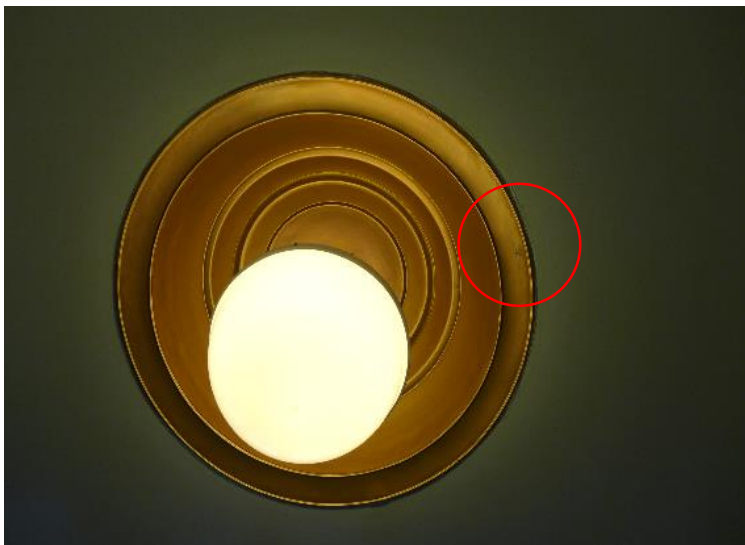
Number of Sample 4.1	Subject Paimio Sanatorium	Building / Space / Surface Main building 1st Floor Dining hall	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation	General coloring of the dropped ceiling	
Most significant repairs and changes of the space, dates The counter desk for distributing food 1970's. Vinyl flooring 1970's. Window frames have been treated (sandblasted?) during 1948 renovation (repair and paint instructions dating 1948).			
Photograph, drawing 		Layers of Sample 00 Plaster 01 Filler 1 Greyish green paint 4010-G50Y  2 Light green paint 2030-G30Y (or white base coat that has had colorization from the 3rd layer?) 3 Dark Green 7010-G10Y 4	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved excavations on surface, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross section sample 4.1. Alvar Aalto foundation. Scale 500µm.	Floor plan, Location of Sample 

The cross section sample no. 4.1 show few layers as the first paint layer on the sample is light green. The original high gloss finish of the ceiling is shown below.



Lamp Domes of the Dining Hall

The golden lamp domes of the dining hall have been painted with gold paint. Domes have only three layers and two of them gold paint. One dome already had an excavation spot from the year 2000 color research. These results were confirmed with new small research spot.



The Window Frames of Dining Hall

The iron window frames have apparently been sanded clean in the 1948 renovation. This is shown in the written order given to the painters at the time. It is highly possible that the window frames have been sand blasted again some times after 1948 renovation, due to their material, iron. The excavation from year 2000 showed only three layers + the newest white paint, the bottom one being base coat for metallic materials.



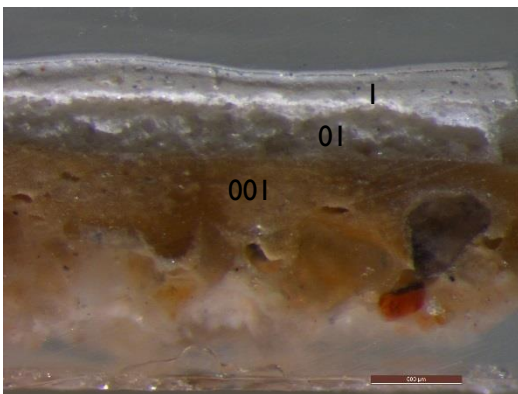
The Walls of Dining Hall

The small craters excavated and the cross section samples showed that the walls have had a neutral coloring through its history. The year 2000 color researcher Katja Aaltonen had made one large excavation on the north wall (the low wall under dropped ceiling). This excavation has deteriorated during 15 years so confirmations were therefore made. The excavation shows neutral tones of white, beige and light green color.



The Dining Hall Ceiling, Samples 102, 104, 105

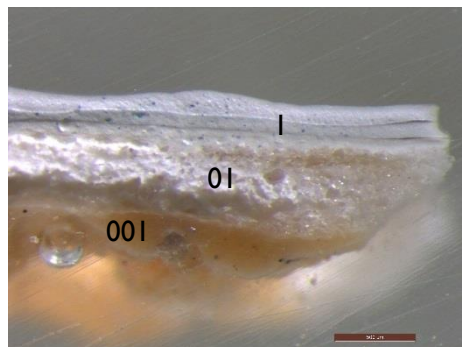
The high section of the dining hall ceiling rises to almost 6 meters and is divided with supporting concrete beams. The black and white photos stating the original coloring, show that there has not been any other original coloring then white. To see if the beams had had any other coloring in any other point in history, cross section samples were taken from the ceiling and its beams. No such results were found in the three cross section samples



The sample 105 taken from the bottom of a supporting beam shows that the bottom yellow filler layer is covered with modern looking light weight white filler. It tells that the ceiling has probably been stripped from previous paint layers in recent decades.

The East Wall of the Dining Hall, Sample 103

The eastern wall showed same results as the sample 105 above. The bottom layer of sample 103, shown below, is modern light weight white filler that indicates recent stripping of surfaces. All other layers are latex paints, due to their texture.



12. 1st Floor -The Lounge

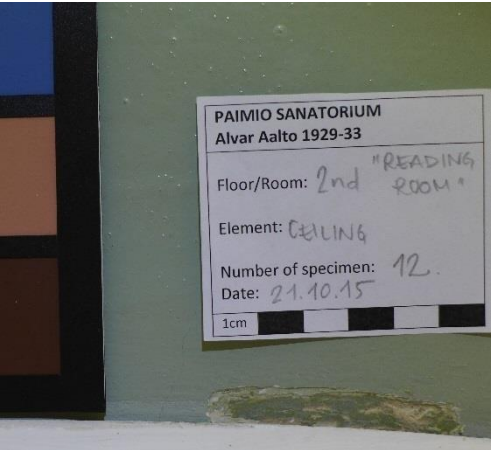
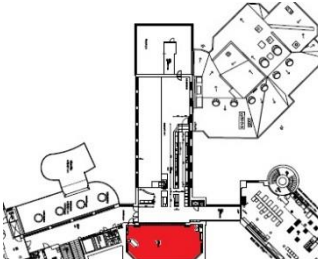
The Lounge was divided from the dining hall by a curtain door that was easy to fold open. The bright lighting of the lounge comes from the big windows that cover most of the west side wall.

The black and white photograph below show the slight difference of color in the flooring between dining hall and lounge. As the dining hall floor is black, is the lounge flooring green. The ceiling of the lounge seems to be treated with the same glossy paint as the dining hall, but with a lighter shade. However the ceiling has been renovated some times, since it has a heavy layer of modern light weight filler. The color of the west side wall with the windows has probably always been rather light as only white and beige colors showed in the cross section sample of that wall. This is also something hinted by photographs.

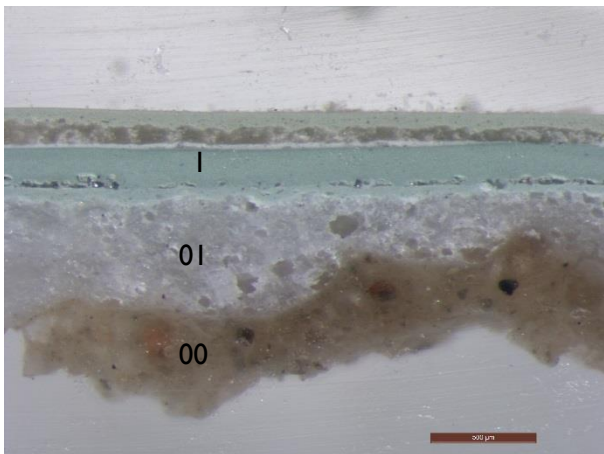


AAM. Sign. 50-003-419

The Lounge's Ceiling

Number of Sample 12	Subject Paimio Sanatorium	Building / Space / Surface Main building 1 st Floor Lounge Ceiling	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates 1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed. A new desk and speaker's podium for lecturer has been installed 1980's.			
Photograph, drawing 		Layers of Sample 00 plaster 0 1 Filler 1 Green 5010-G30Y or 4010-G30Y	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1 Öljymaali			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 12. Alvar Aalto Foundation Helsinki. Scale 500µm.	Floor plan, Location of Sample 

The sample 12 from the ceiling of lounge shows only layers that have probably been made since 1970's renovations. It was still possible to find some older layers in some parts of the ceiling, close to the ventilation system installed in the 1970's renovation. The original glossy finish is seen in the black and white picture below.



Sample no. 12, ceiling of the reading room.

The Lounge's Window Frame

The iron frames showed only few layers, and as the dining hall windows, these windows have also been stripped from paint during and after 1948 renovation. The excavation was made in the year 2000 color research by K.Aaltonen.


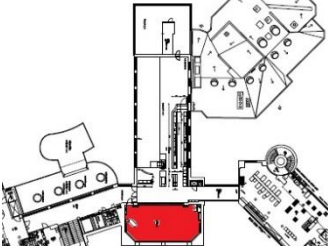


The Lounge's West Wall

The wall with windows showed a bottom layer of yellow oil based filler and beige (yellowed white) paint as the under most paint treatment. See next page.



Lounge's Wall by the Windows

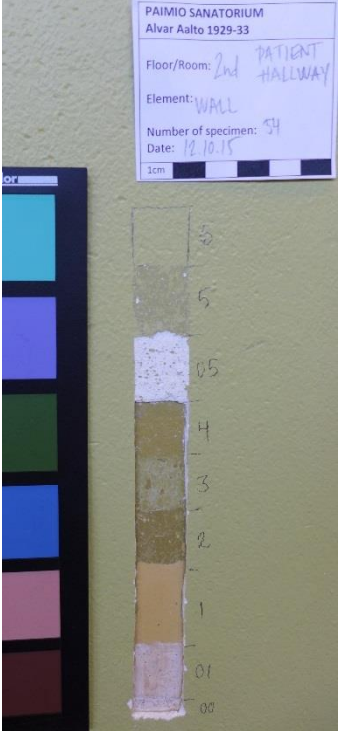
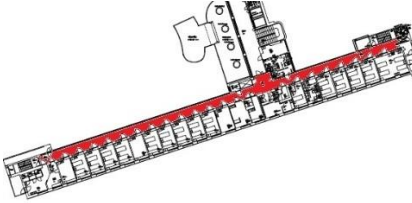
Number of Sample 10	Subject Paimio Sanatorium	Building / Space / Surface Main building 1 st Floor Lounge Wall by the windows pointing to west	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates .1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed. A new desk and speaker's podium for lecturer has been installed 1980's.			
Photograph, drawing 		Layers of Sample 00 plaster 01-1 yellow filler, 2040-Y10R 02 filler 2 Oil Paint Light green, made with a hacker technique 1510-G60Y 3 White paint	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 10, Alvar Aalto Foundation Helsinki	Floor plan, Location of Sample 

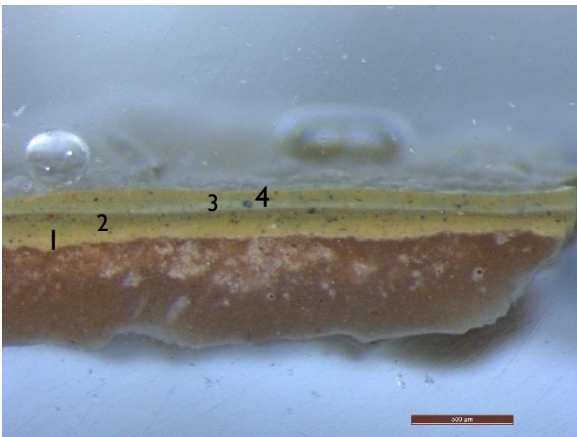
13. 1st Floor Ward

The 1st floor ward in the A-wing is similar to the ground floor by its division and type of spaces and surfaces, but the general look is different compared to ground floor due to the green wall of the ward hall way. The patient room ceiling also have a different original coloring compared to the first floor rooms. This floor has grey ceilings patient rooms.

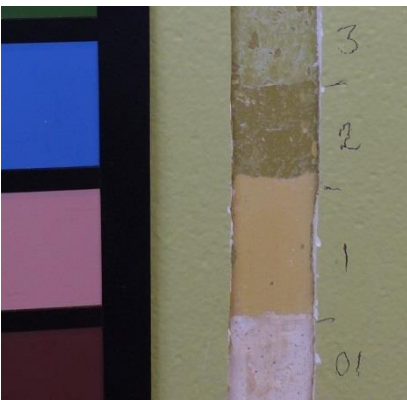


Main Hall Way


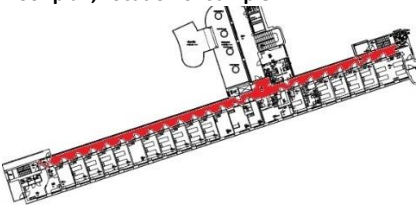
Number of Sample 54	Subject Paimio Sanatorium	Building / Space / Surface Main building 1 st Floor	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation	Ward, main corridor Wall (wall with doors leading to patient rooms)	
Most significant repairs and changes of the space, dates 1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed, broader painted wooden doors have replaced the original wooden doors with lacquered surfaces. The lighting and fixtures have also been replaced.			
Photograph, drawing 		Layers of Sample 00 Plaster 01 Filler 1 Yellow paint, oil. 2010-Y20R 2 Dark green 4030-G70Y 3 Green/blue 3010-G50Y 4 Green 3030-Y10R 05 Filler 5 Green 4020-G70Y 6 Green 2030-G70Y	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1st layer oil paint.			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 54, Alvar Aalto Foundation Helsinki. Scale 500 µm.	Floor plan, Location of Sample 

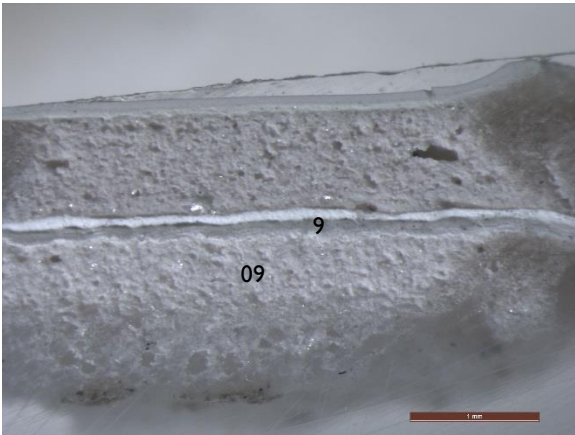


The sample no. 54 was broken in two parts. The top layers are seen at the picture above and bottom layers below with the original yellow paint. The results are not in line with the Kauria color board that states three different colors that were used one by one in the hall way of each ward. This same yellow undermost layer was also found in other ward hall ways. This indicates that the yellow was first experimented with in the ward hall ways and possibly then painted over with green, blue and ochre colors. As the Kauria interview from the year 1986 tells, Alvar Aalto did not eventually like the look of the yellow flooring he had specially made for the main building's main lobby, hallways and staircases. At that point of Aalto's skepticism it was not possible to cancel the large order of the yellow flooring. This gives one the idea that maybe the same doubt went through Aalto's mind with the main colors of the wards. This is of course only speculation. The found paint layers themselves state that the original first layer of paint truly is this bright sunny yellow.

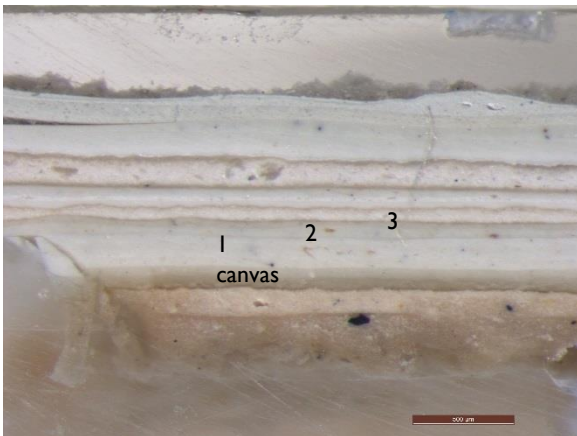


North Wall


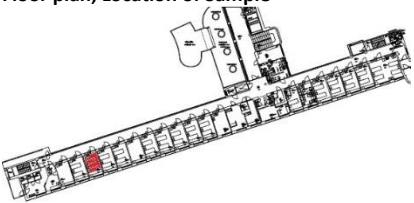
Number of Sample -	Subject Paimio Sanatorium	Building / Space / Surface Main building 1 st Floor A wing, main corridor Wall with windows, to north	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates 1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed, broader painted wooden doors have replaced the original wooden doors with lacquered surfaces. The lighting and fixtures have also been replaced.			
Photograph, drawing 		Layers of Sample 000 Plaster 0001 Filler 001 Consolidating cotton canvas with oil filler 01 Yellow filler 1 Greenish grey 1005-G50Y 2 Greenish grey 1010-G70Y 3 Grey 2005-G60Y 4 -5 White 0603-G40Y and green 1510-G60Y? 6-7 Green? 8 Light blue 2010-G50Y 09 Filler 9 White 0300-N 010 Filler 10 Light green 1005-G20Y 11 White 0300-N	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1st layer oil paint.		12 White 0502-Y 13 White 1002-Y	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample, Alvar Aalto Foundation Helsinki	Floor plan, Location of Sample 

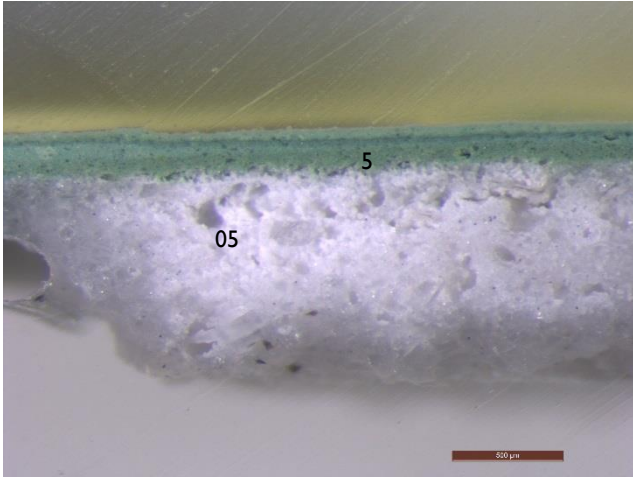


The Findings of the ward's north wall with windows were the same at every ward from 1st-6th, and the excavation was made in the second floor. The sample no. 15 broke in to two parts: picture above shows the surface, and the one underneath the shows multiple white or other light colored layers that indicates that the wards' window walls were always kept in a neural tone.

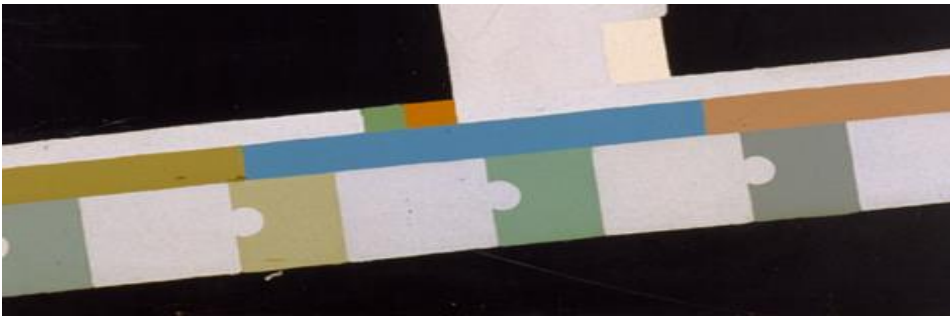
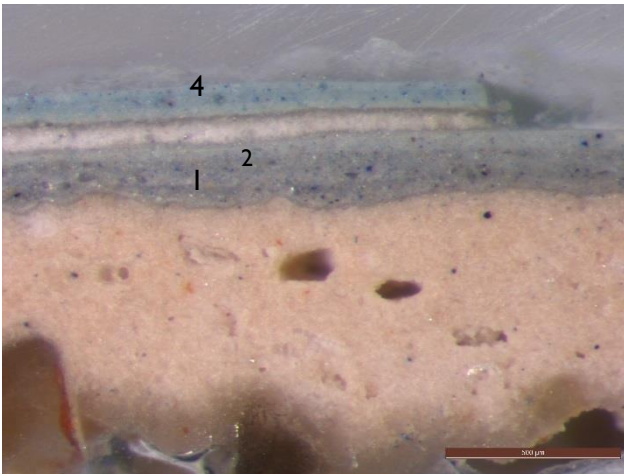


Patient Room Ceiling

Number of Sample 53	Subject Paimio Sanatorium	Building / Space / Surface Main building 1 st Floor Patients' room 203 Ceiling	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates Patient rooms have been fully renovated during 1970's as the hospital technique (i.e. different types of gases, electricity) and all of the surfaces, HVAC-technique and furniture were redone. Original ceiling radiators were removed and ceilings painted (but not hidden under dropped ceiling structures). Wallcoverings and flooring were replaced. Original furniture was removed.			
Photograph, drawing 		Layers of Sample 00 01 Filler 1 Grey 6502-G 2 Grey 3005-G50Y 3 Blue? Not possible to define 4 Blue 4010-B70G 05 White filler 5 Green 4010-G10Y or -G30Y 6 Green 4010-G10Y or -G30Y	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 53, Alvar Aalto Foundation Helsinki. Scale 500 µm.	Floor plan, Location of Sample 



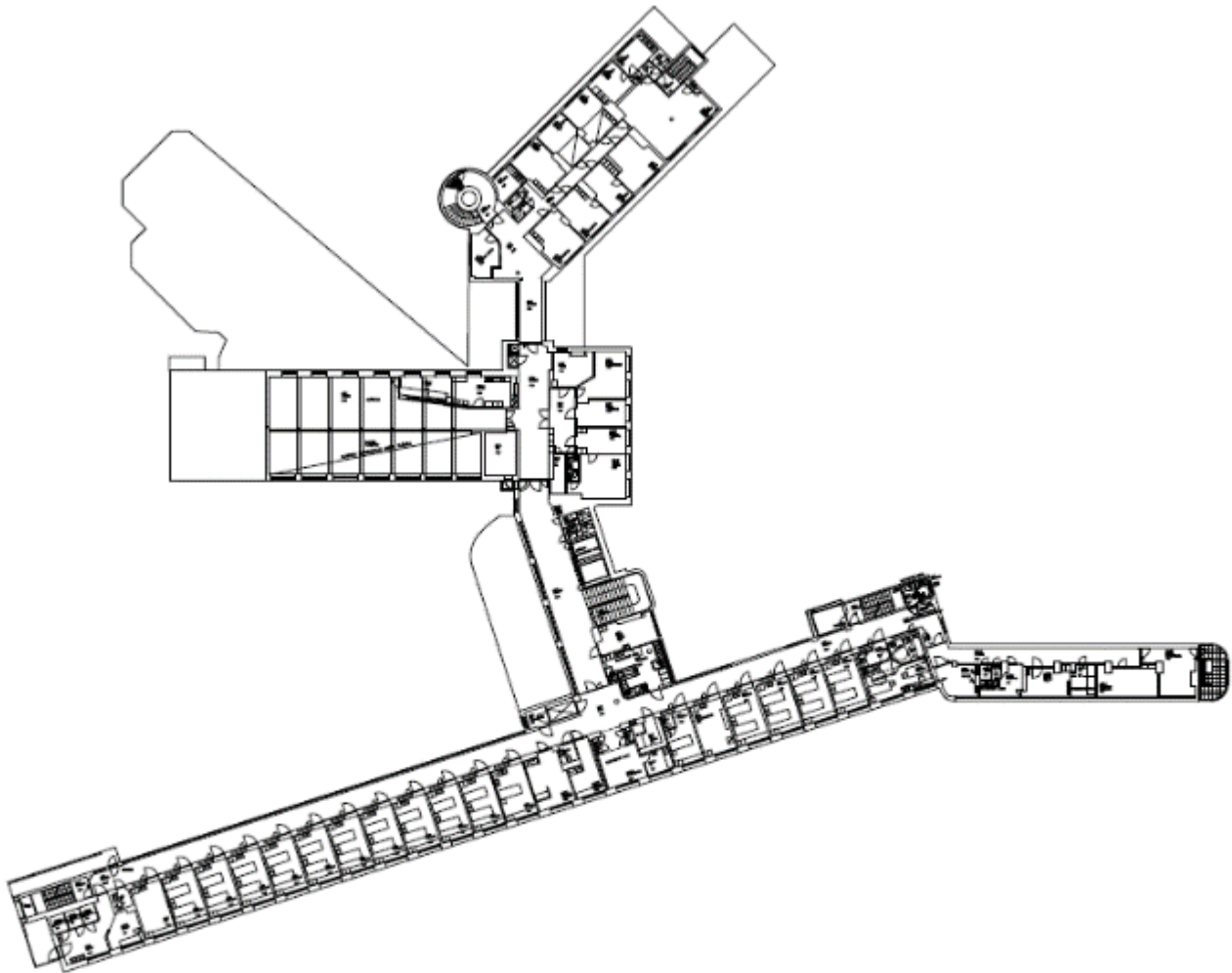
The ceiling of the patient room 203 has an original layer of grey paint that is also found in the Kauria color board. The sample no. 53 was broken in half. It shows more layers that was possible to excavate in situ. The bottom layers are shown in the picture below and the surface with thick white light weight filler in the picture above.



14. 2nd Floor – General view

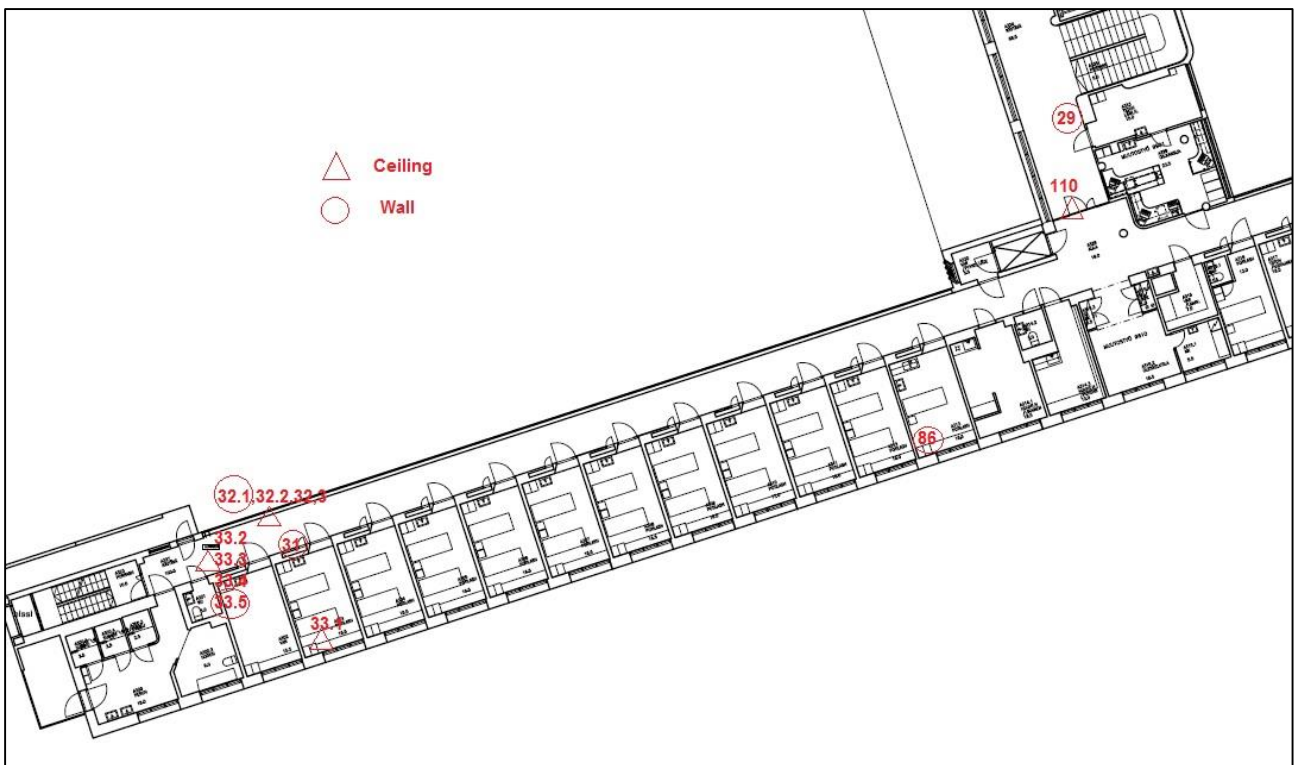
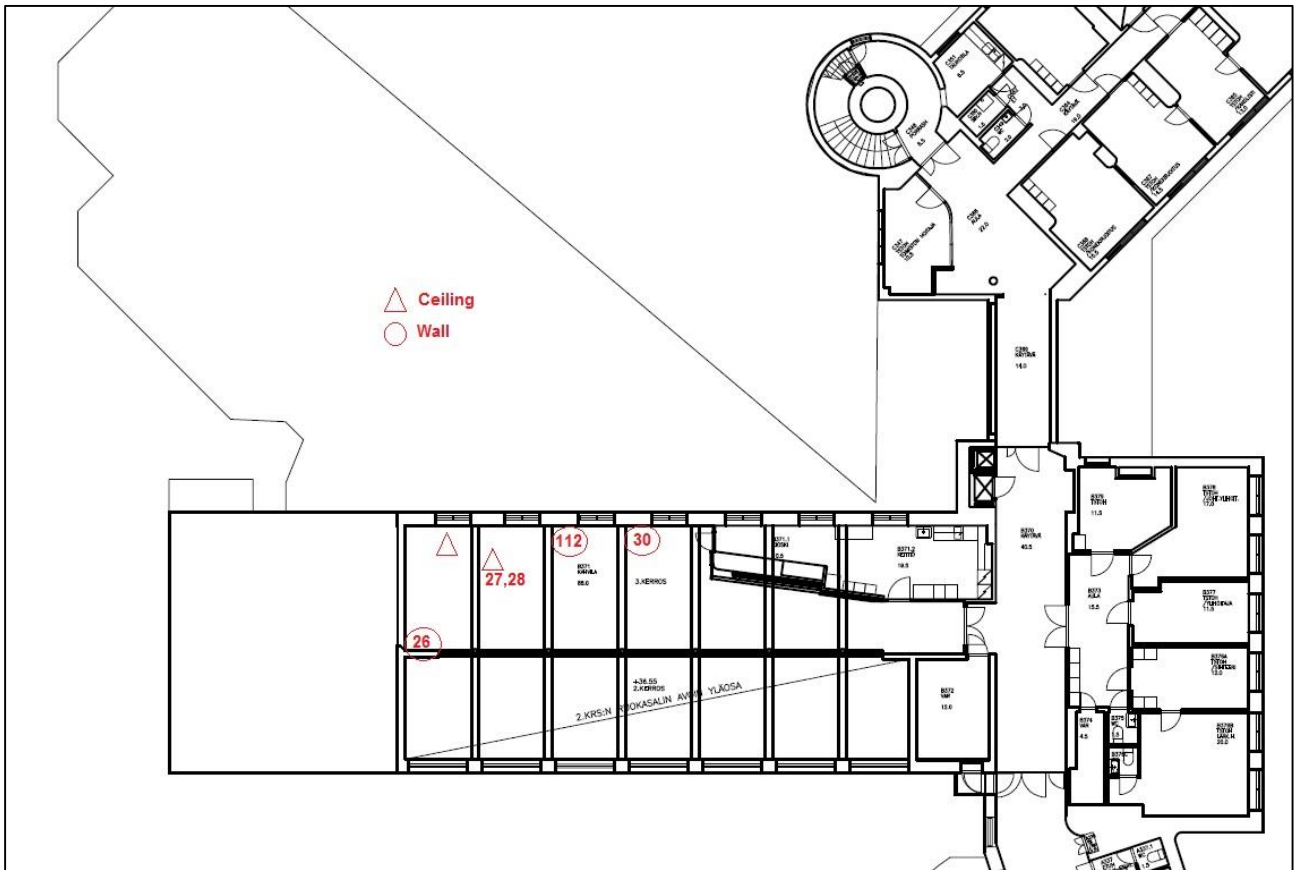
The interesting sections of original floor plan of 2nd floor is the library, a glassed balcony like space that is positioned above the low part of the 2nd floor dining room. The space has functioned also as a cafeteria for the patients.

The 3rd floor ward's main hall carries deep blue as its primary color when the first floor ward had ochre and second green or yellow.



Author	Scale	Date	Revision/Date
Architect	Project/Scale	Year	Year
PABLO SARRAIA		Author	Year
		Project/Scale	Year
Architect: PABLO SARRAIA			
Scale: 1:100			
Date: 2000			
Project: LPR-400			
Drawing: A 00-00-P3			
Scale: 1:100			
Date: 2000			

The Samples of 2nd Floor


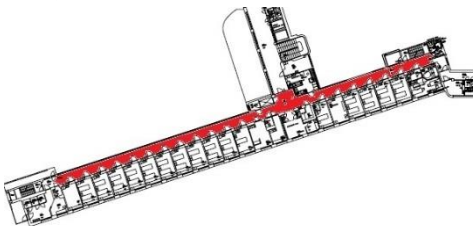


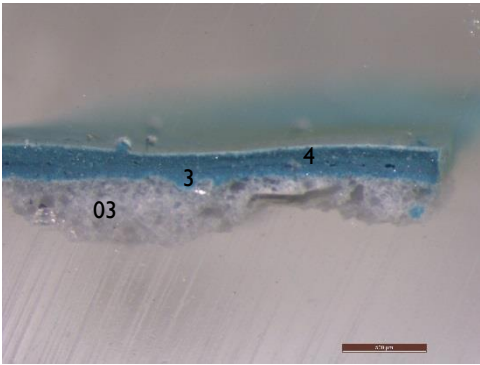
15.2nd Floor Ward

The 2nd floor ward's main corridor carries deep blue as a primary color.

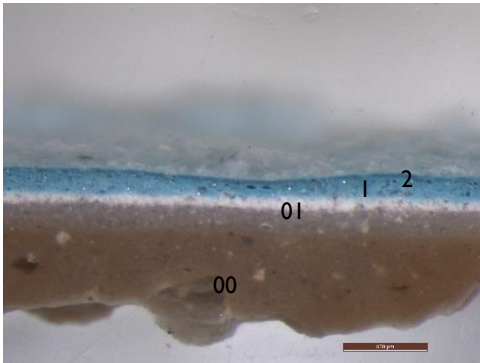


Ward, Main Corridor


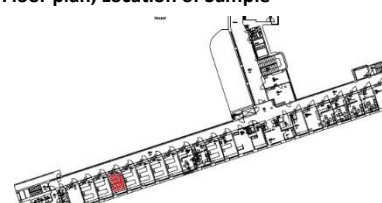
Number of Sample 31	Subject Paimio Sanatorium	Building / Space / Surface Main building 2 nd Floor	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation	Patient wing, main hallway Wall (the wall with the doors to patient rooms)	
Most significant repairs and changes of the space, dates 1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed, broader painted wooden doors have replaced the original wooden doors with lacquered surfaces. The lighting and fixtures have also been replaced.			
Photograph, drawing 		Layers of Sample 00 Plaster 01 white light weight filler 1 Blue 2040-B20G 2 Two shades: 3040-B30G, 3040-B20G 03 White filler 3 Blue 4040-B10G 4 Two shades: 4040-B10G, 4050-B 5 Blue 4040-B30G	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 31, Alvar Aalto Foundation Helsinki. Scale 500 µm.	Floor plan, Location of Sample 

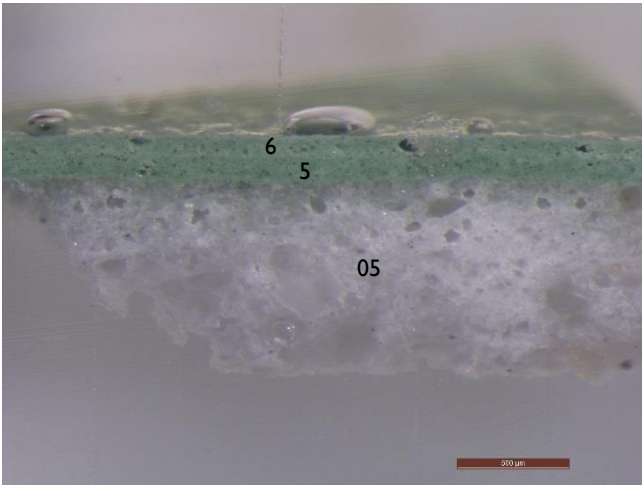


The ward's main corridors colored wall shows less layers than other ward corridors have shown. The bottom one found stated a blue color. The sample no. 31 broke in to two parts: the surface is seen in the picture above, and the bottom layers below. The undermost layer is white, porous, light weight filler that obviously is not the original 1930's oil filler used, but a layer from later renovation.

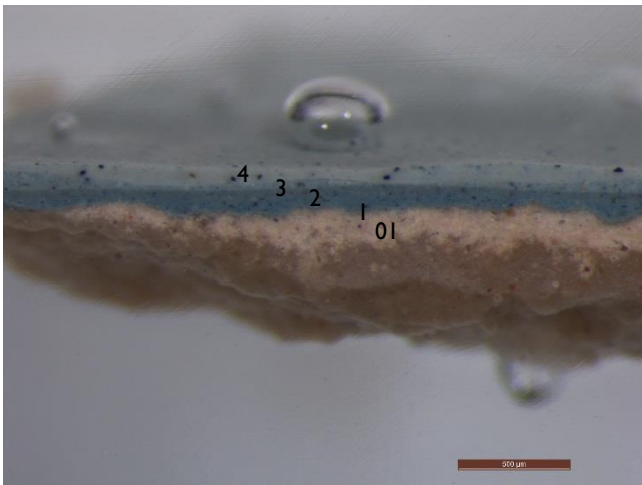


Patient Room Ceiling

Number of Sample 33.1	Subject Paimio Sanatorium	Building / Space / Surface Main building t Floor 2 nd Floor Patient room Ceiling	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates Patient rooms have been fully renovated during 1970's as the hospital technique (i.e. different types of gases, electricity) and all of the surfaces, HVAC-technique and furniture were redone. Original ceiling radiators were removed and ceilings painted (but not hidden under dropped ceiling structures). Wallcoverings and flooring were replaced. Original furniture was removed.			
Photograph, drawing  <p>PAIMIO SANATORIUM Alvar Aalto 1929-33</p> <p>Floor/Room: 3rd PATIENT ROOM 302</p> <p>Element: ceiling</p> <p>Number of specimen: 33.1</p> <p>Date: 12.10.15</p> <p>1cm</p>		Layers of Sample 00 Plaster 01 Filler, yellow oil based 1 Blue 5020-B10G 2 Blueish grey 4010-B30G 3 Grey 3010-G10Y 4 Light grey 2005-G 05 Filler white light weight 5 Green 2020-G10Y	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: Oil paint			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample, 33.1. Alvar Aalto Foundation Helsinki. Scale 500µm.	Floor plan, Location of Sample 



The patients' room ceilings of 2nd floor ward have blue undermost layers that can be seen in the sample no. 33.1 bottom layers, in the picture below.



16.2nd Floor Reading room

Today the reading room has rich colors that originate to the year 2000 color research and renovations done after. The ceiling has supporting beams. The south wall is glass framed with iron. The big windows facing east are also iron framed and they bare a vibrant petrol blue. The north wall is neutrally colored with smaller windows. The thin iron columns line the glass wall giving to the dining hall. They are now, as they were before, painted-bright red. The 1970's renovation brought dropped ceiling structures on the north

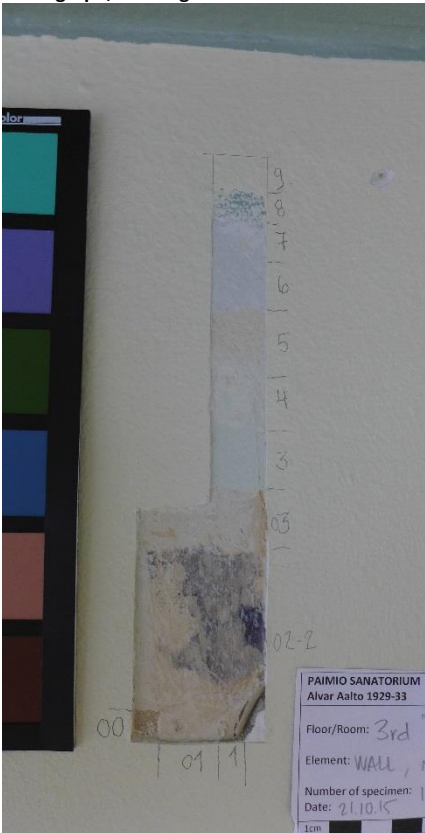
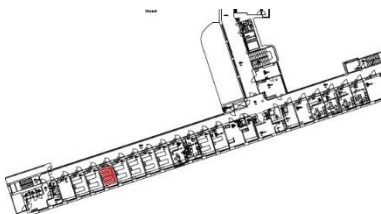


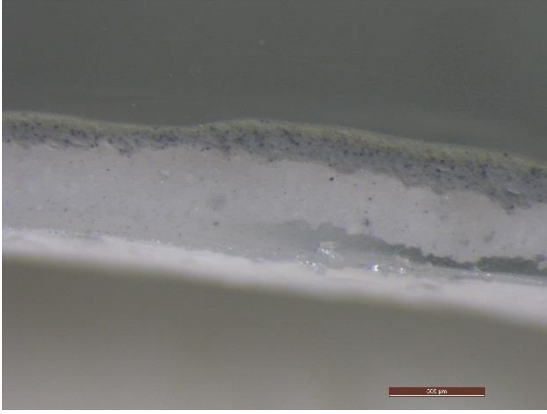
side of the room, to cover the

ventilation system installed.

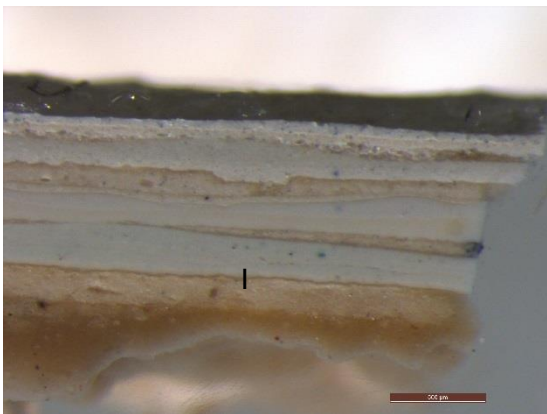


North Wall

Number of Sample 112.	Subject Paimio Sanatorium	Building / Space / Surface Main building t Floor 3 rd Floor Reading room North wall	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June- Dec. 2015, Alvar Aalto- foundation		
Most significant repairs and changes of the space, dates HVAC-remodeling in the 1970's renovation brought the dropped ceiling structures that hide ventilation pipes and electric cords. Original rubber flooring has been changed to a vinyl floor.			
Photograph, drawing 		Layers of Sample 00 Plaster	
		01 0505-Y30R light beige	
		1 Beige 1005-Y20R	
		02-2 Black 9000-N and 0505-Y30R (?)	
		03 White base coat 1002-Y50R	
		3 Light green (hecker technique, oil) 1005-G50Y	
		4 Light yellow 0507-Y	
		5 Beige (hacker technique) 0907-G90Y	
		6 Light grey 1500-N	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1oil paint		7 White	
		8 Green 3010-G20Y	
		9. Yellow 1010-G90Y	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample, Alvar Aalto Foundation Helsinki	Floor plan, Location of Sample 



The cross section samples no. 112 show only neutral colors.




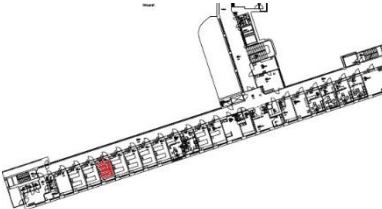
Cross section sample 112 presented in two parts..

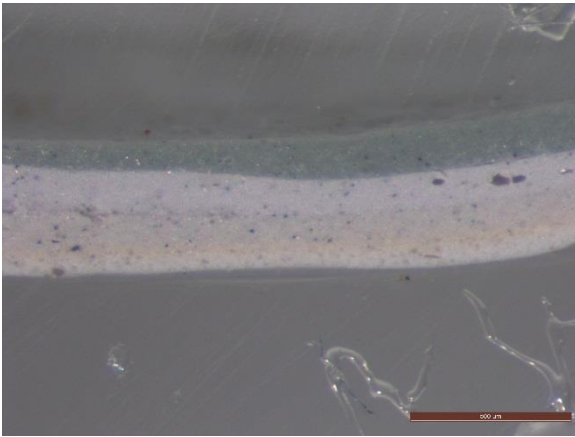


The Coloring of HVAC Pipes

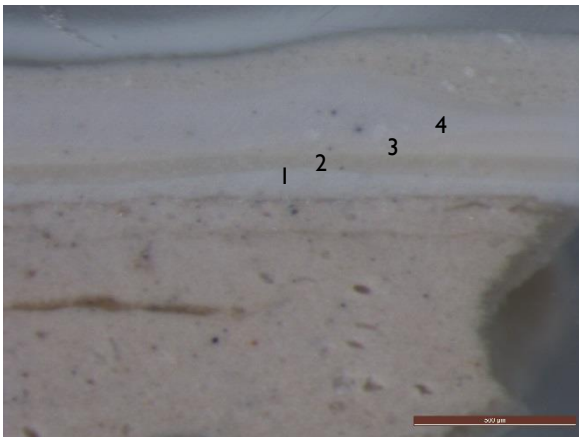
The warm water pipe sticking from the wall is a pipe for bleeding the air in the original radiator system below, in the ceiling of the Dining hall. This pipe is the only piece of evidence found that shows in reality the fact that originally at least some of the HVAC system's pipes in Paimio main building were color coded. This small air bleeding pipe shows bright red paint underneath the other layers.

Ceiling Beams

Number of Sample 28	Subject Paimio Sanatorium	Building / Space / Surface Main building t Floor 2 nd Floor Reading room Ceiling beams, cheek and bottom surface	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates HVAC-remodeling in the 1970's renovation brought the dropped ceiling structures that hide ventilation pipes and electric cords. Original rubber flooring has been changed to a vinyl floor.			
Photograph, drawing 		Layers of Sample 00 Plaster 01 Filler 1 Green 2020-G10Y 02 Filler 2 Light grey 1005-B80Y 3 Yellow 0510-Y10R 4 Grey 1502-Y 05 White light weight filler 5-6 Green 3010-G20Y	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: It was not possible to specify the type of paint of 1st layer.			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 28, Alvar Aalto Foundation Helsinki. Scale 500µm.	Floor plan, Location of Sample 





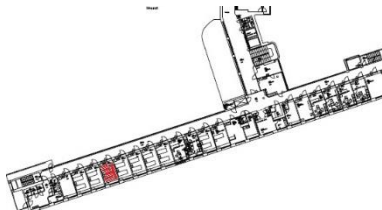
The cross section sample no. 28 from the ceiling beams of reading room show no trace of green original color layer. The excavation how ever showed the green original color. The sample was broken in two parts, the undermost half is presented in the picture below.





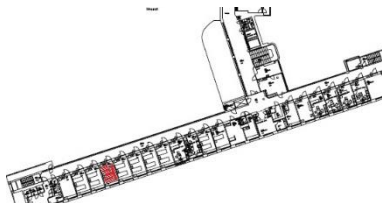
Cross section sample 28 presented in two parts..



Iron Frame Windows Giving to West

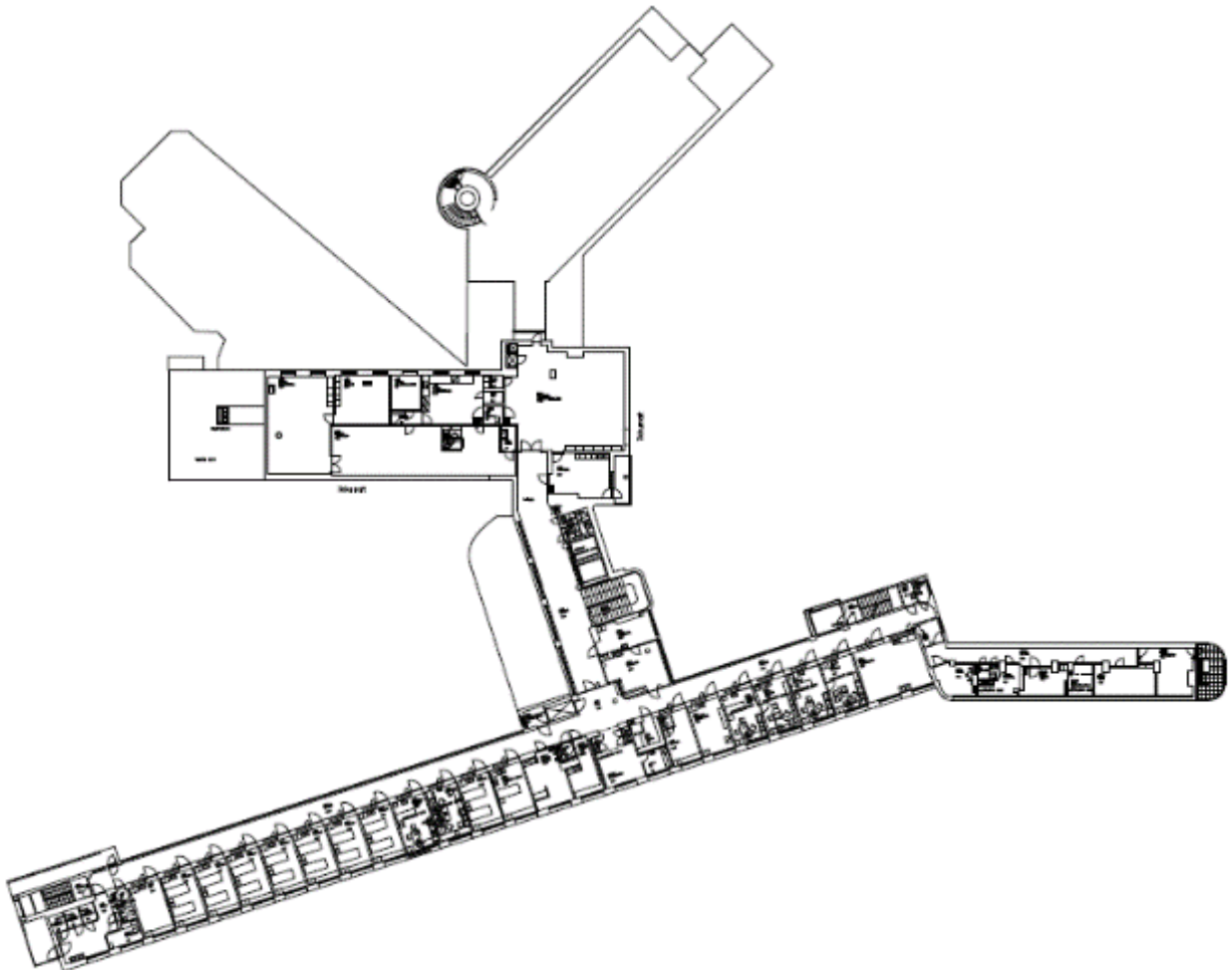
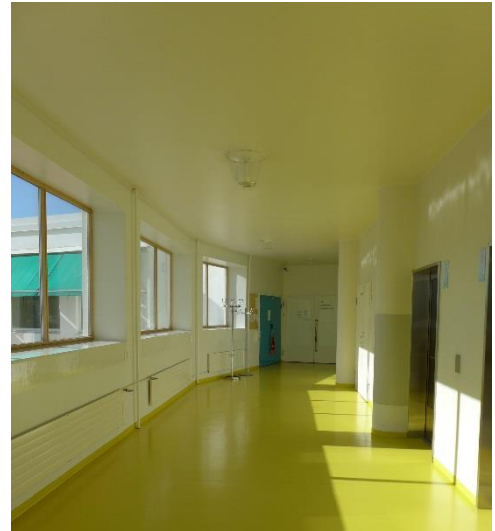
Number of Sample	Subject Paimio Sanatorium	Building / Space / Surface Main building t Floor 2 nd Floor Reading room Iron windows (to west)	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates HVAC-remodeling in the 1970's renovation brought the dropped ceiling structures that hide ventilation pipes and electric cords. Original rubber flooring has been changed to a vinyl floor.			
Photograph, drawing 		Layers of Sample 00 Iron 01 base coat, light beige 1 Blue 3030-B30G  2 Blue 3040-B10G 3 Light blue 2020-B30G 4 Blue 3050-B30G	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: No sample.	Floor plan, Location of Sample 

Columns

Number of Sample	Subject Paimio Sanatorium	Building / Space / Surface Main building t Floor 3 rd Floor reading room Columns lining the windows giving to south and dining hall	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates HVAC-remodeling in the 1970's renovation brought the dropped ceiling structures that hide ventilation pipes and electric cords. Original rubber flooring has been changed to a vinyl floor.			
Photograph, drawing 		Layers of Sample 00 Iron 1 Red 1580-Y80R  2 Yellow 1040-Y 2 Blueish grey 4010-B30G 3 Red 3030-R 4 Red 2770-Y80R	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: XRF-Analysis made. See Appendix.			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps RXF-Analysis, X-ray Fluorecence	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: No sample.	Floor plan, Location of Sample 

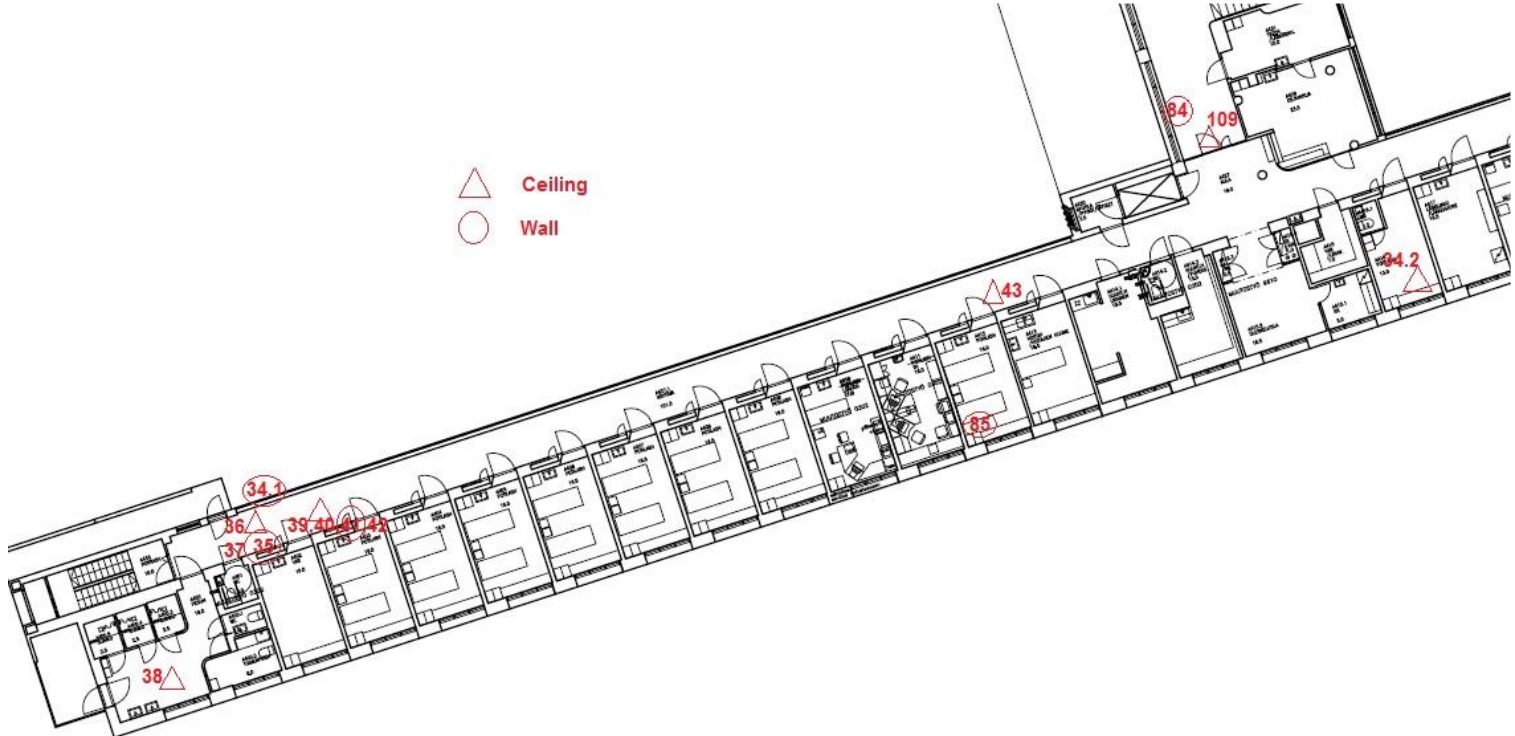
17.3rd Floor – General View

On the third floor this color research concentrates on the patient wing, the ward. The main stair case leading to the lobby areas in each floor is and has been colored in neutral white and beige tones. The samples taken from the ceiling of the space (picture right) stated that same result: white ceiling paint layers.

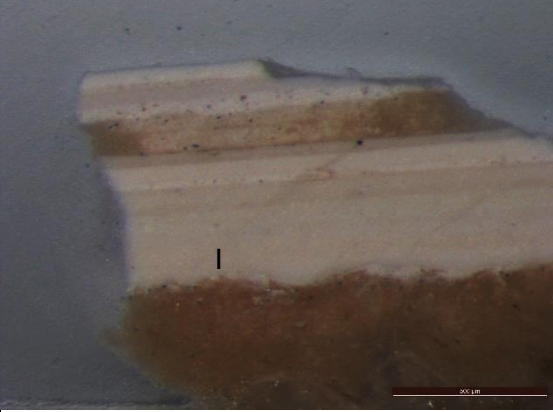
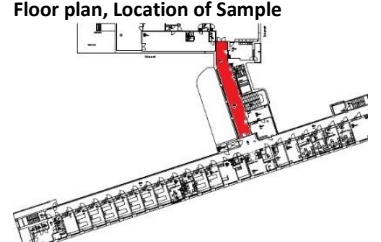


PROJECT	NAME	DATE	REVISION/REVISION
17.3 rd Floor	Paint & Co.	2011	01/01/11
DESIGNER	APPROVER	DATE	DATE
FARHON SARIAGA	DR. J. S. SARIAGA	2011	2011
17.3 rd Floor - 2011 - 01/01/11			
LPR	2011/01/11	2011/01/11	A.00-00-P4
DATE	DATE	DATE	DATE
2011/01/11	2011/01/11	2011/01/11	2011/01/11

The Samples of 3rd Floor



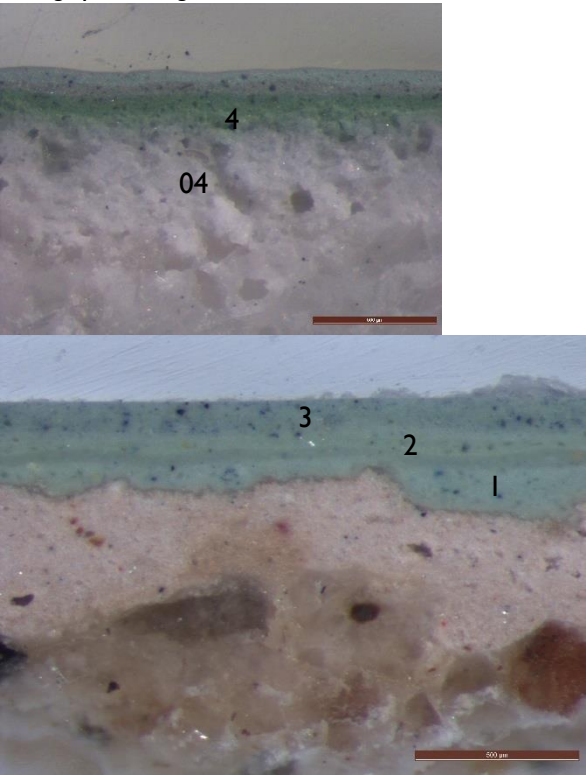
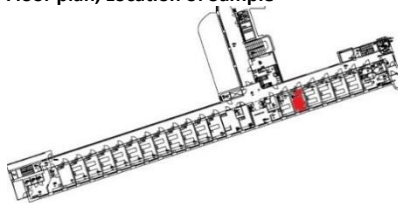
3rd Floor, Main Corridor

Number of Sample 84	Subject Paimio Sanatorium	Building / Space / Surface Main building 3 rd Floor Main hall Wall under window	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksman, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates Main hall around main stair has had a few changes. The flooring has been changed from the original yellow rubber flooring to new material. The last change of flooring was made in the 1990's. Walls have been painted. Window sills are now painted with glossy paint to accentuate and easy maintaining. No dropped ceiling structures have been installed, ceilings of main hall have only been painted during many renovations. The window sills have few layers and probably they have been stripped from original layers at some point of renovation history.			
Photograph, drawing		Layers of Sample 00	
		0 Filler	
		1-12 White and beige paints	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 84, Alvar Aalto Foundation Helsinki. Scale 500 µm.	Floor plan, Location of Sample 




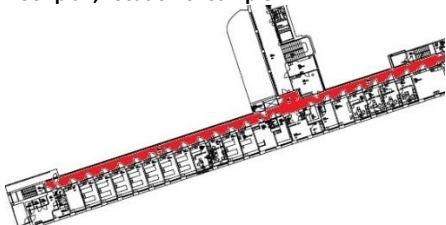
The main corridors through out the main building had the same coloring. The sample no. 84 shows the general situation of the walls surrounding corridors, a palette of neutral tones through decades, as the undermost layers are white.

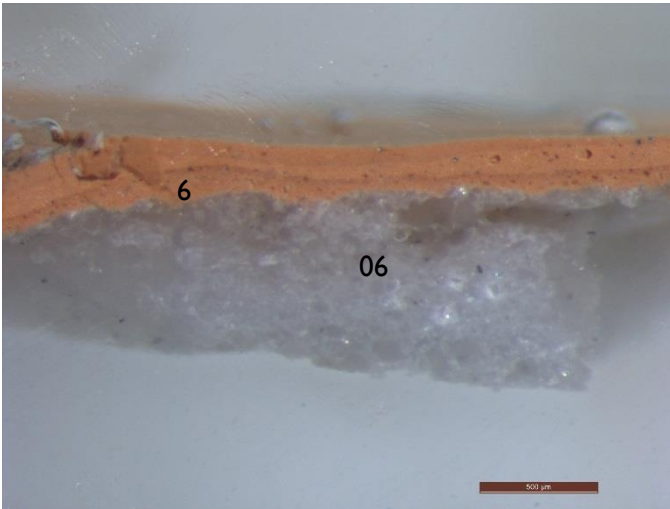
3rd Floor Patients' Room, Ceiling

Number of Sample 34.2	Subject Paimio Sanatorium	Building / Space / Surface Main building 3 rd Floor Patients' room (opposite to nurses office) room 416 Ceiling	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates Patients' rooms have been fully renovated during 1970's as the hospital technique (i.e. different types of gases, electricity) and all of the surfaces, HVAC-technique and furniture were redone. Original ceiling radiators were removed and ceilings painted (but not hidden under dropped ceiling structures). Wallcoverings and flooring were replaced. Original furniture was removed.			
Photograph, drawing 		Layers of Sample 00 01 Filler 1 Light green 2020-G30Y 2 Dark green 3020-G10Y 3 Green 04 White light weight filler 4 Green 5-6 Green 2010-G	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 34.2. Alvar Aalto Foundation Helsinki. Scale 500 µm.	Floor plan, Location of Sample 



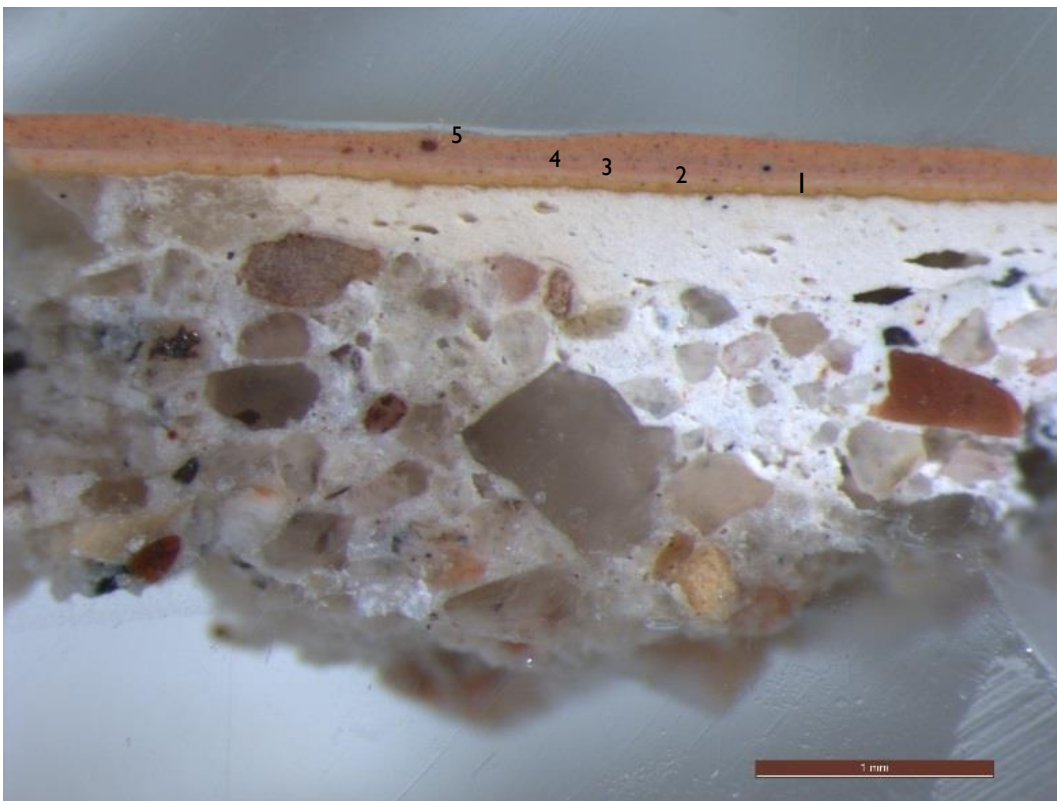
Patient Ward, Main Hallway

Number of Sample 35	Subject Paimio Sanatorium	Building / Space / Surface Main building 4 th Floor	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation	Patient wing, main hallway Wall (the wall with doors leading to patient rooms)	
Most significant repairs and changes of the space, dates 1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed, broader painted wooden doors have replaced the original wooden doors with lacquered surfaces. The lighting and fixtures have also been replaced.			
Photograph, drawing 		Layers of Sample 00 Plaster 01 Filler 1 Orange, ochre 2040-Y30R 2-3 Brown 3020-Y30R 4 Red 3030-Y50R 5 Ochre 3030-Y50R 06 White light weight filler 6 Red 3040-Y60R 7 Red 2030-Y40r or 2030-Y50R	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1st layer: Oil paint			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 35. Alvar Aalto Foundation Helsinki.	Floor plan, Location of Sample 



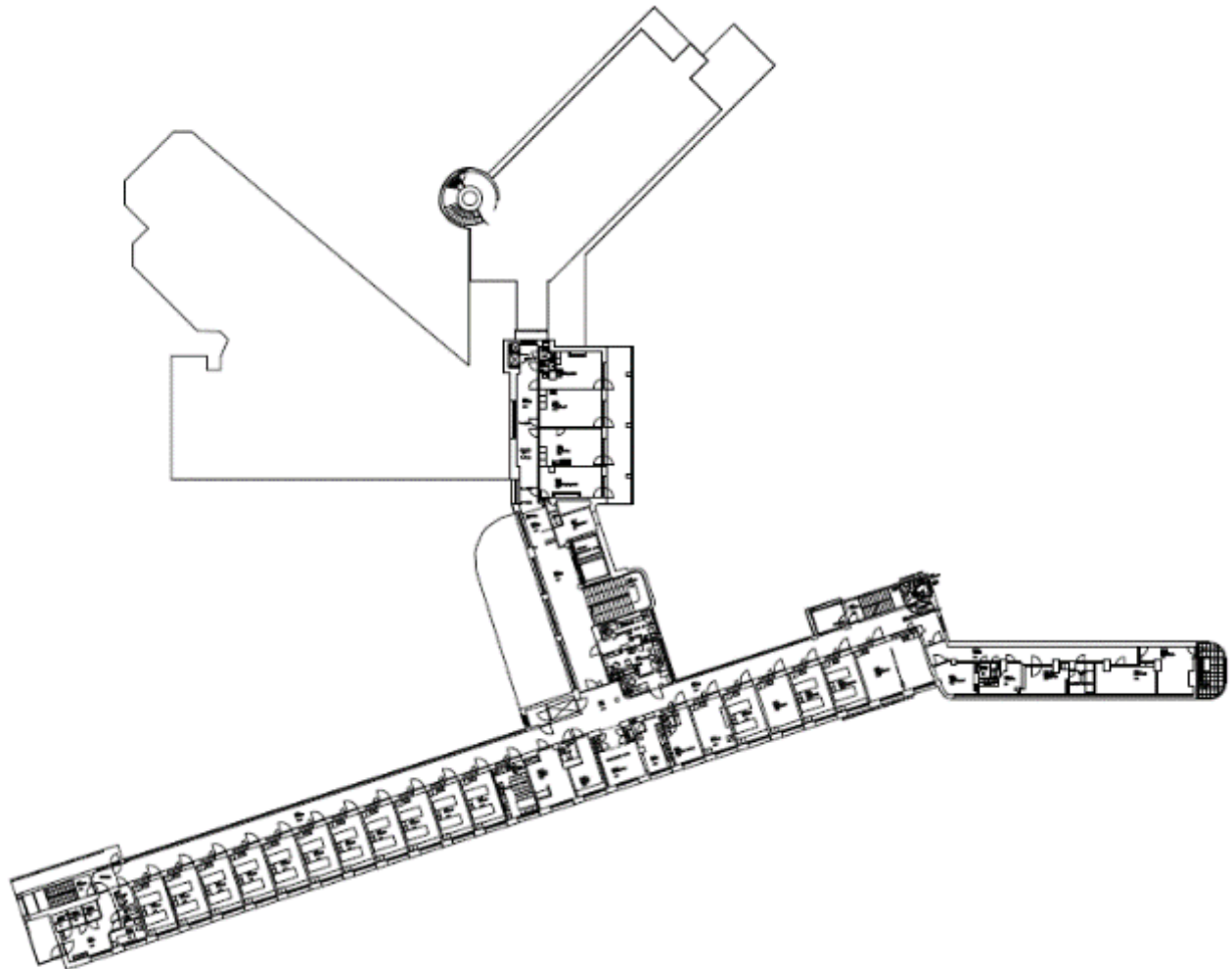
The sample no. 35 broke in two parts: the picture below shows the undermost layers.

The ward of 4th floor has had the same coloring as the first floor ward also originally had.



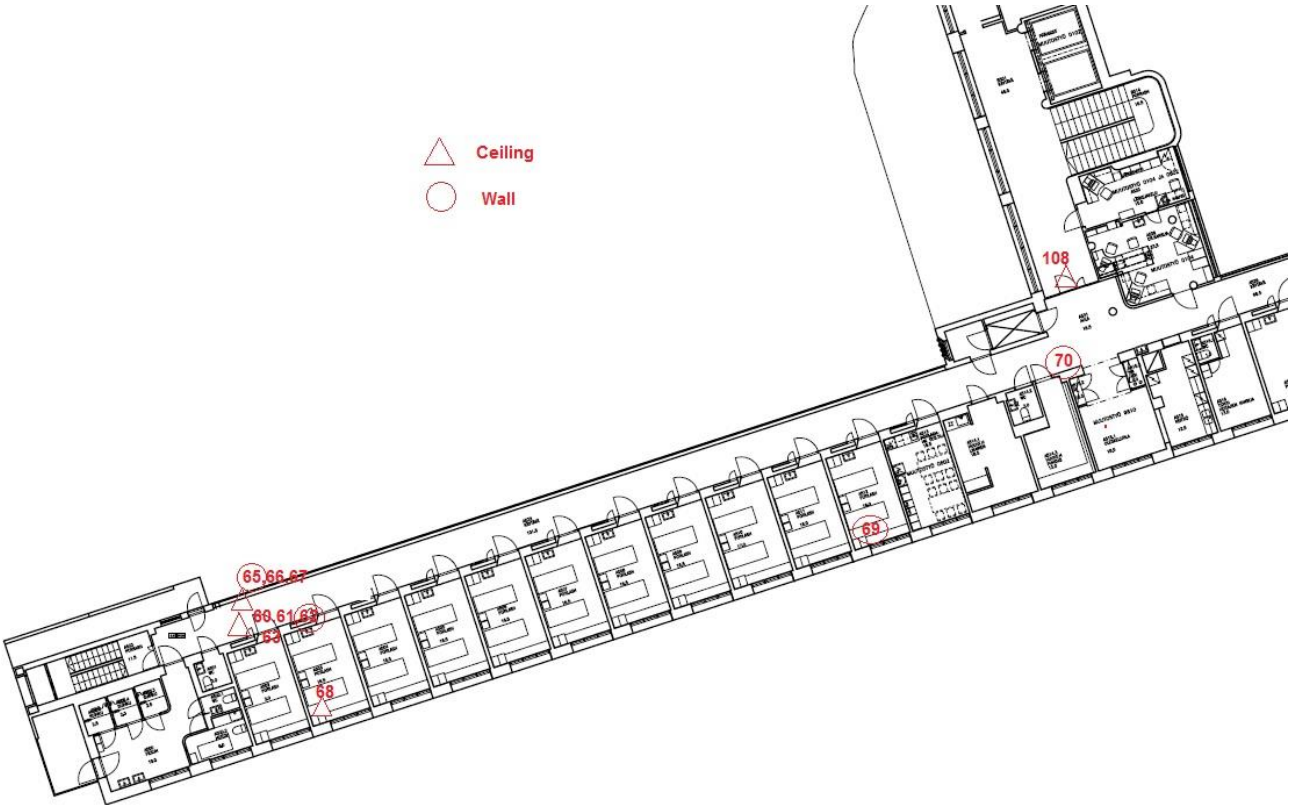
18. 4th Floor – General view

The fourth floor has some offices and small apartments in its north end wing. These apartments were not included in this research. On the fourth floor the research concentrated on the patient ward. The main color of the 4th ward is blue. The surprising discovery in fourth floor ward was the same as in the first floor. The undermost original color was not blue, but yellow. The same yellow was found in the bottom layer of first floor ward walls. This again confuses the rhythm that otherwise is possible to find in all of the six floors, and seen in the wards today. See second floor ward for further details.

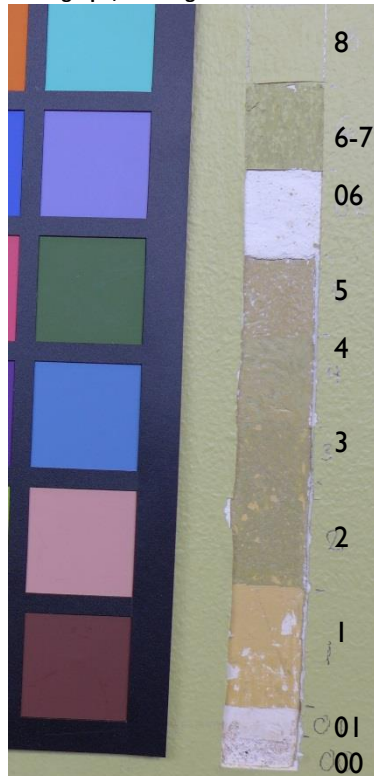
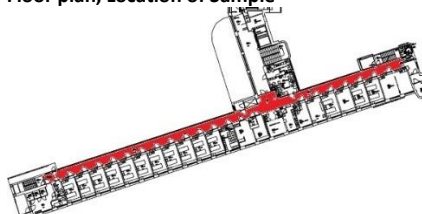


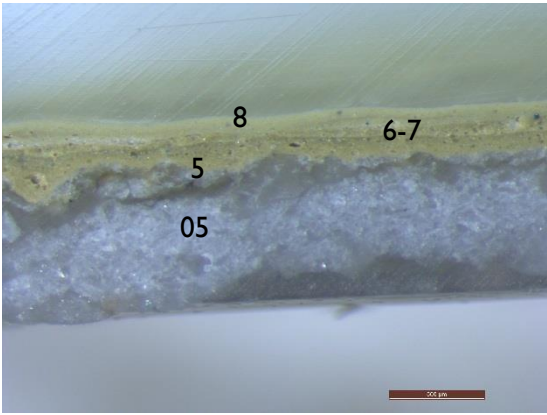
Project Name	Project No.	Scale	Revision/Date
PAMON SARIKALA	1000000000	A-00-00-P5	1/1/2000
Author	Checked	Drawn	Scale
Project Name		Project No.	Scale
PAMON SARIKALA		1000000000	A-00-00-P5
Author	Checked	Drawn	Scale

The Samples of 4th Floor

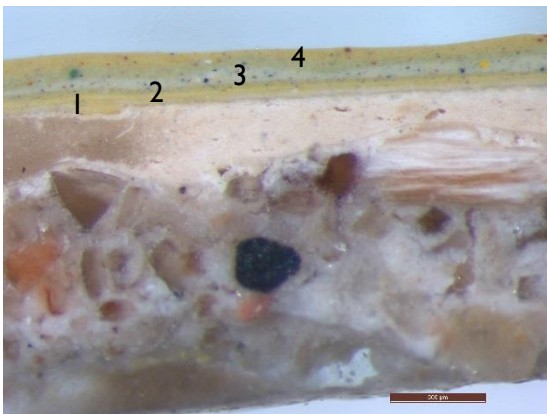


Patient Wing, 4th Floor Ward

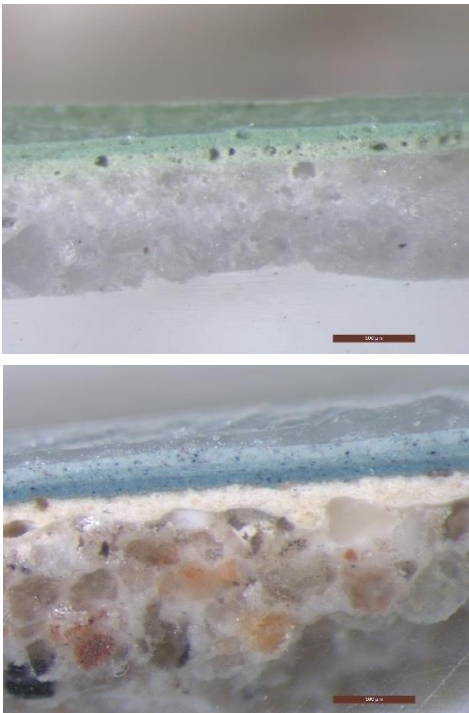
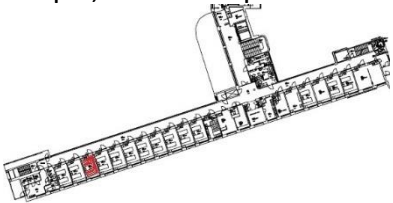
Number of Sample 64	Subject Paimio Sanatorium	Building / Space / Surface Main building 4 th Floor	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto-foundation	A wing, main corridor Wall (wall with doors leading to patient rooms)	
Most significant repairs and changes of the space, dates 1970's ventilation system brought casing of the pipes and electric cords in the ceiling. Doors and their sizing has changed, broader painted wooden doors have replaced the original wooden doors with lacquered surfaces. The lighting and fixtures have also been replaced.			
Photograph, drawing 		Layers of Sample 00 plaster 0 Filler 1 Yellow 2040-Y10R 2 Dark Green 5020-G70Y 3 Green 2050-Y 4 Green 4020-G70Y 5 Brown 3040-Y 06 White light weight filler 6 -7 Green 4030-70Y and 5020-G70Y 8 Green 2030-G80Y	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1st layer Oil paint		8 Green 2030-G80Y	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 64. Alvar Aalto Foundation Helsinki. Scale 500 µm.	Floor plan, Location of Sample 



The sample no. 64 broke in two parts: the undermost layers are seen in the picture below. It shows original undermost the oil paints with colors of yellow and green.

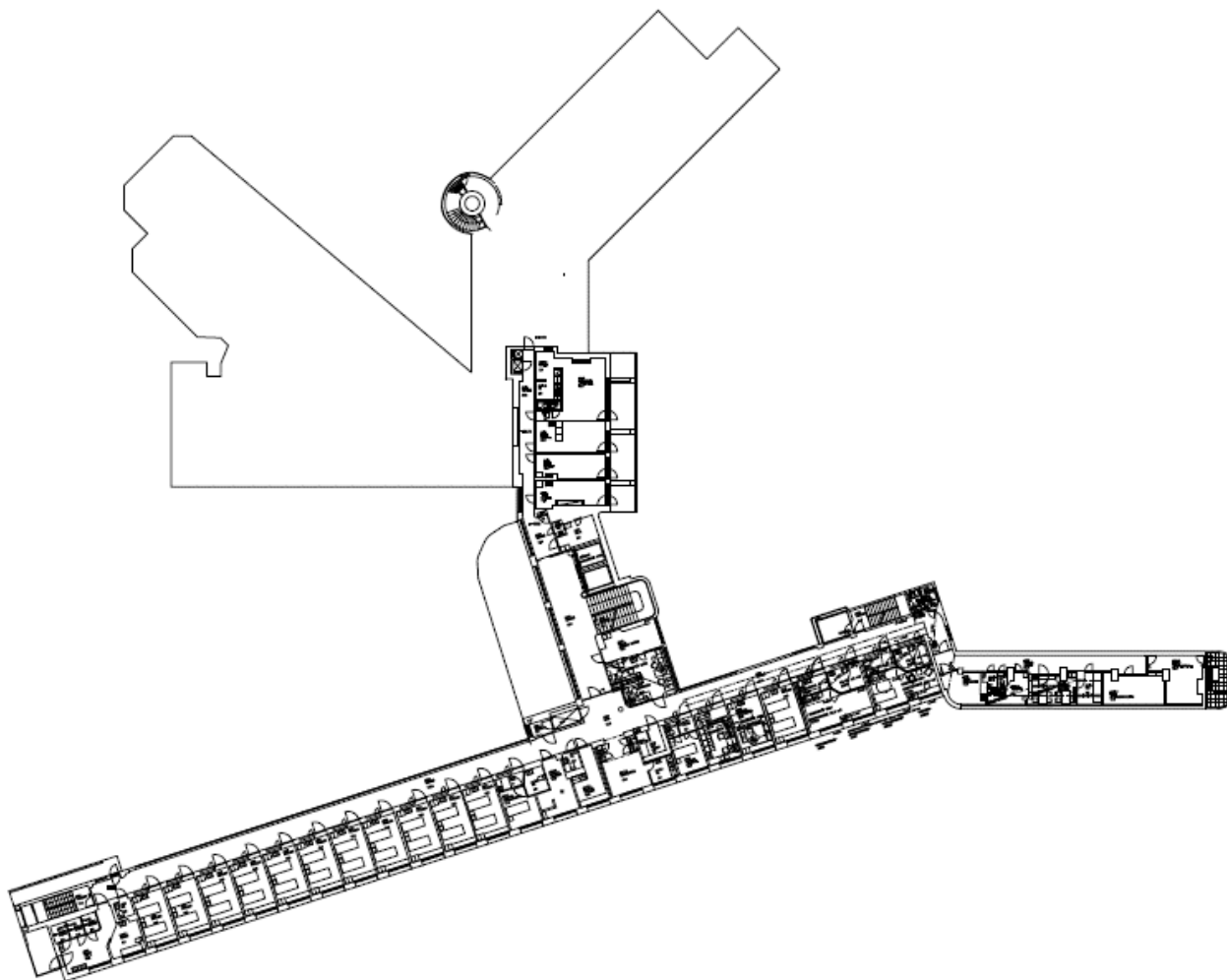


Patient Room Ceiling, 4th Floor

Number of Sample 68	Subject Paimio Sanatorium	Building / Space / Surface Main building 4 th Floor Patients' room Ceiling	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksman, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairments and changes of the space, dates Patients' rooms have been fully renovated during 1970's as the hospital technique (i.e. different types of gases, electricity) and all of the surfaces, HVAC-technique and furniture were redone. Original ceiling radiators were removed and ceilings painted (but not hidden under dropped ceiling structures). Wallcoverings and flooring were replaced. Original furniture was removed.			
Photograph, drawing 		Layers of Sample 00 0 1 2 3 4 6 7	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1 Öljymaali		8 9 10	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample, Alvar Aalto Foundation Helsinki	Floor plan, Location of Sample 

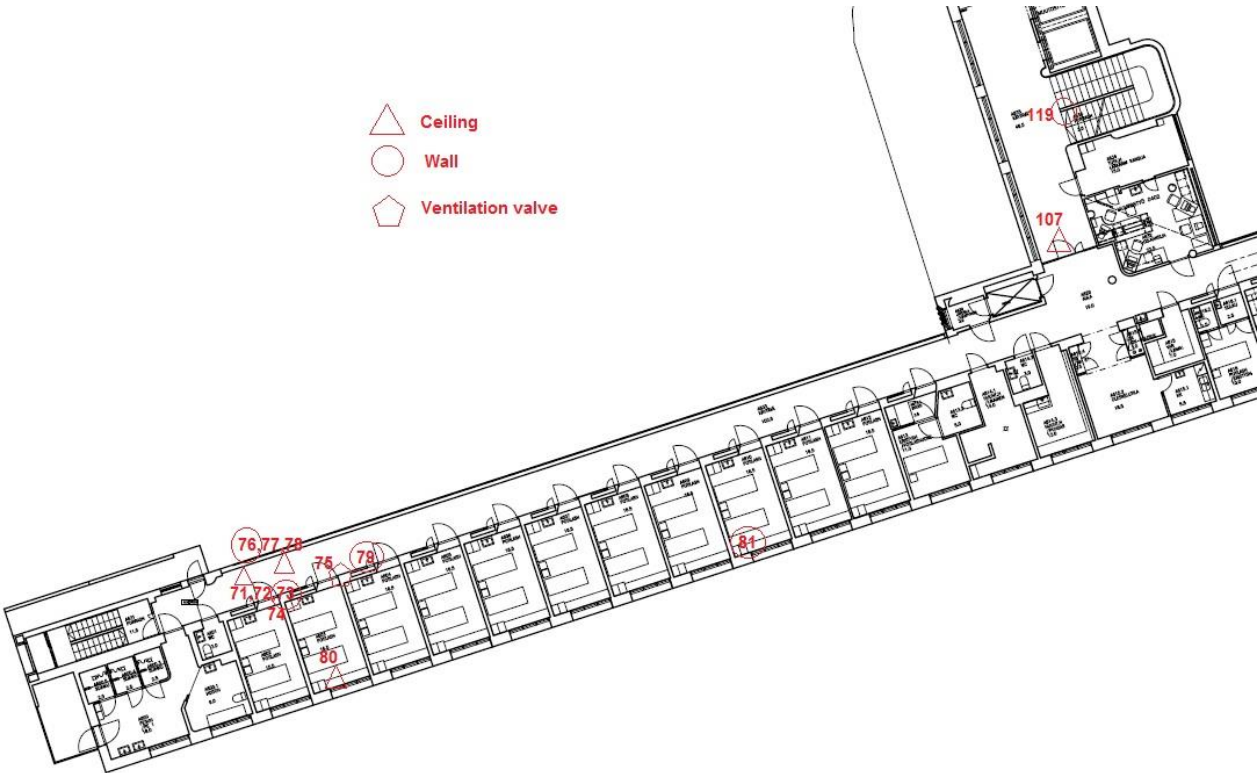
19.5th Floor – General view

Just as the fourth floor, the fifth also has apartments in the north wing. These were excluded from this research. The ward on sixth floor has blue as its main color. The other blue ward was the 2nd floor ward.


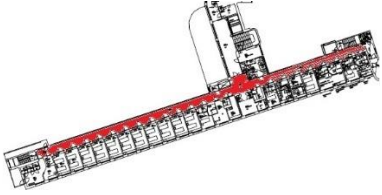


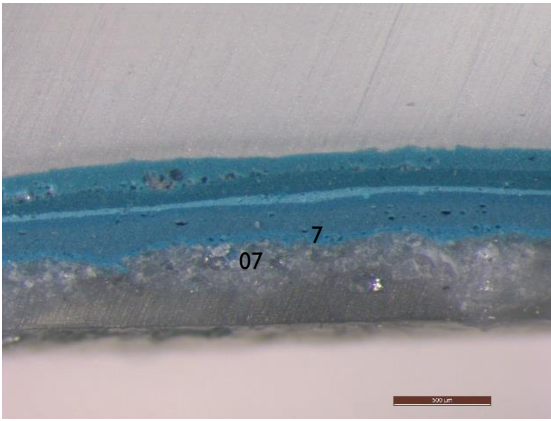
RESİDANS	YERİ	YERİ	PROJELENERİN ADI
Adı	Proje No	200	ACGM
PAMİR SARAL		Adı	YERİ
		Proje No	1000
Mimarlık & İnşaat Firması			
LPP		Proje No	2000
Kazım Karabekir		Adı	YERİ
19000 Tuzla		Proje No	2000000
		Adı	YERİ
		Proje No	2000000

The Samples of 5th Floor

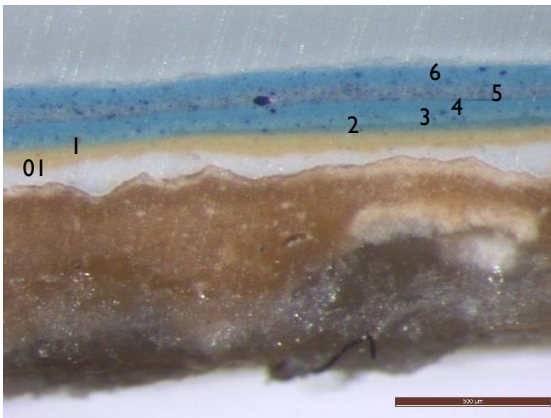


Patient Wing, Main Corridor

Subject Paimio Sanatorium 79	Building / Space / Surface Main building 5 th Floor	
Researcher, date Elina Riksmán, June-Dec. 2015, Alvar Aalto- foundation	Patient wing, main corridor Wall (wall with doors leading to patient rooms)	
Most significant repairs and changes of the space, dates Patient rooms have been fully renovated during 1970's as the hospital technique (i.e. different types of gases, electricity) and all of the surfaces, HVAC-technique and furniture were redone. Original ceiling radiators were removed and ceilings painted (but not hidden under dropped ceiling structures). Wallcoverings and flooring were replaced. Original furniture was removed.		
Photograph, drawing 	Layers of Sample 00 01 Filler 1 Yellow, oil paint, 1040-Y10R 2 Blue 3030-B10G 3 Blue 3040-B10G 4 Blue 4020-B10G 5 Violet blue 4020-R80B 6 Blue 2050-B 7 Blue 4030-B10G	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1st layer: Oil paint	08 Filler, white light weight 9 Light blue 1040- B20G 10 Petrol Blue 4550-B20G 11 Blue 3050-B30G	
Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 79, Alvar Aalto Foundation Helsinki. Scale 500 µm.	Floor plan, Location of Sample 


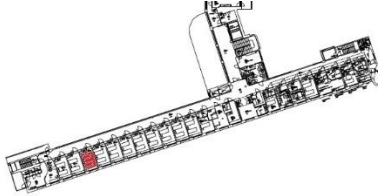


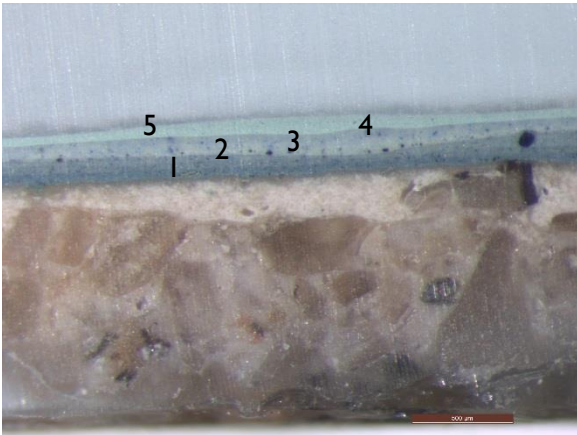
The sample no. 79 was broken into two parts, the undermost layers shown here below. The cross section sample clearly shows a rather thick yellow paint layer that has been painted on white filler. This same undermost yellow layer is also found in the ward walls in 2nd and 5th floors. See second floor ward wall for further details addressing the yellow paint.



Sample 79 presented in two parts.

5th Floor Patients' Room Ceiling

Number of Sample 80	Subject Paimio Sanatorium	Building / Space / Surface Main building 5th Floor Patients' room Ceiling	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksman, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates Patients' rooms have been fully renovated during 1970's as the hospital technique (i.e. different types of gases, electricity) and all of the surfaces, HVAC-technique and furniture were redone. Original ceiling radiators were removed and ceilings painted (but not hidden under dropped ceiling structures). Wallcoverings and flooring were replaced. Original furniture was removed.			
Photograph, drawing		Layers of Sample 00	
		01 Filler	
		1 Grey 6502-G 	
		2 Grey 3005-G50Y	
		3 Blue 4010-B70G	
		4	
		05 White filler	
		5 4010G-10 Y Green	
6 Green 4010-G30Y			
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section sample 80. Alvar Aalto Foundation Helsinki. Scale 500 µm.	Floor plan, Location of Sample 




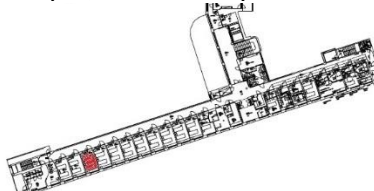
The sample no. 80 shows the layers of 6th floor patient room ceiling. The colors are the same as in 1st floor patient rooms, with greyish blue undermost layers.

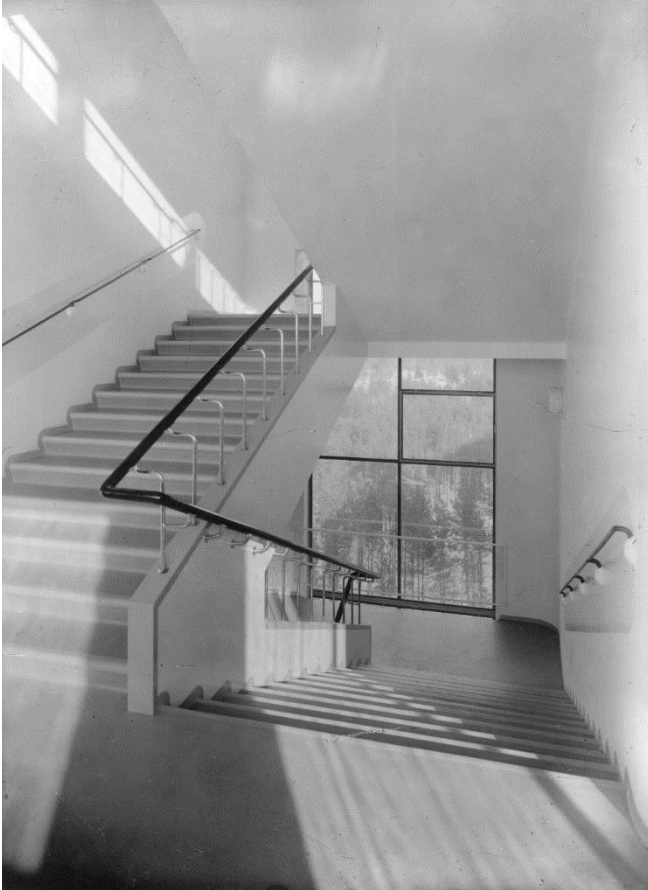
The black and white photograph below states the interior of sixth floor ward after the completion of main building in 1933. The flooring is heavy patterned rubber.



Ward corridor of 5th floor presents the original look and confining of color. Notice the corners of walls and ceiling, the original radiators, laquered doors and linoleum flooring. AAM. Sign. 50-003-328.

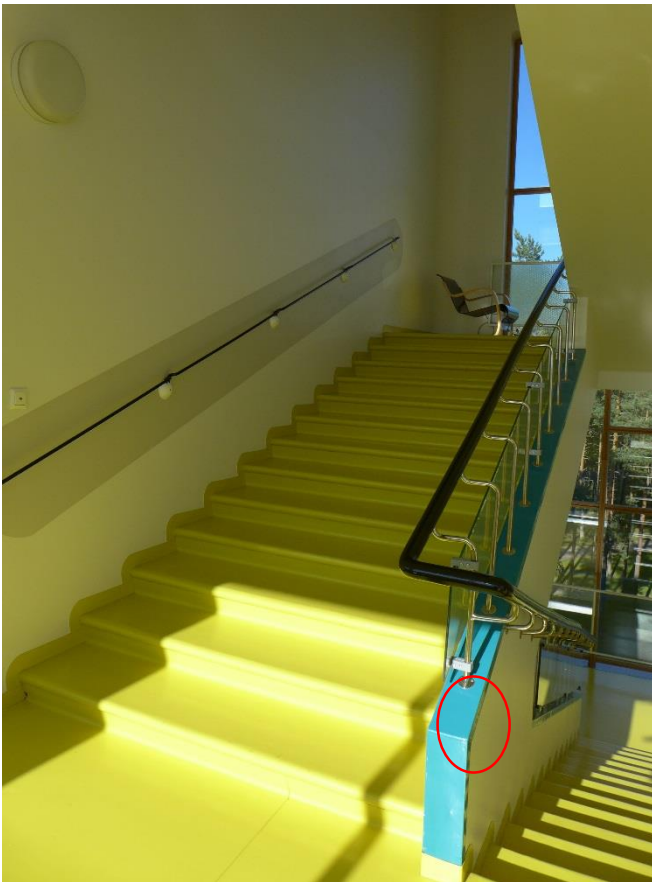
5th floor, Main Staircase, Handle

Number of Sample 80	Subject Paimio Sanatorium	Building / Space / Surface Main building 5th Floor Main staircase, handrail Ceiling	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation		
Most significant repairs and changes of the space, dates Patient rooms have been fully renovated during 1970's as the hospital technique (i.e. different types of gases, electricity) and all of the surfaces, HVAC-technique and furniture were redone. Original ceiling radiators were removed and ceilings painted (but not hidden under dropped ceiling structures). Wallcoverings and flooring were replaced. Original furniture was removed.			
Photograph, drawing 		Layers of Sample 00 Iron 1 White 0502-Y 2 Blue 3040-B20G 3 White 4 White 5 Blue 4030-B10G 6 Blue 3040-B10G 7 Blue 4040-B30G	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: 1st layer not determined.			
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: No sample.	Floor plan, Location of Sample 



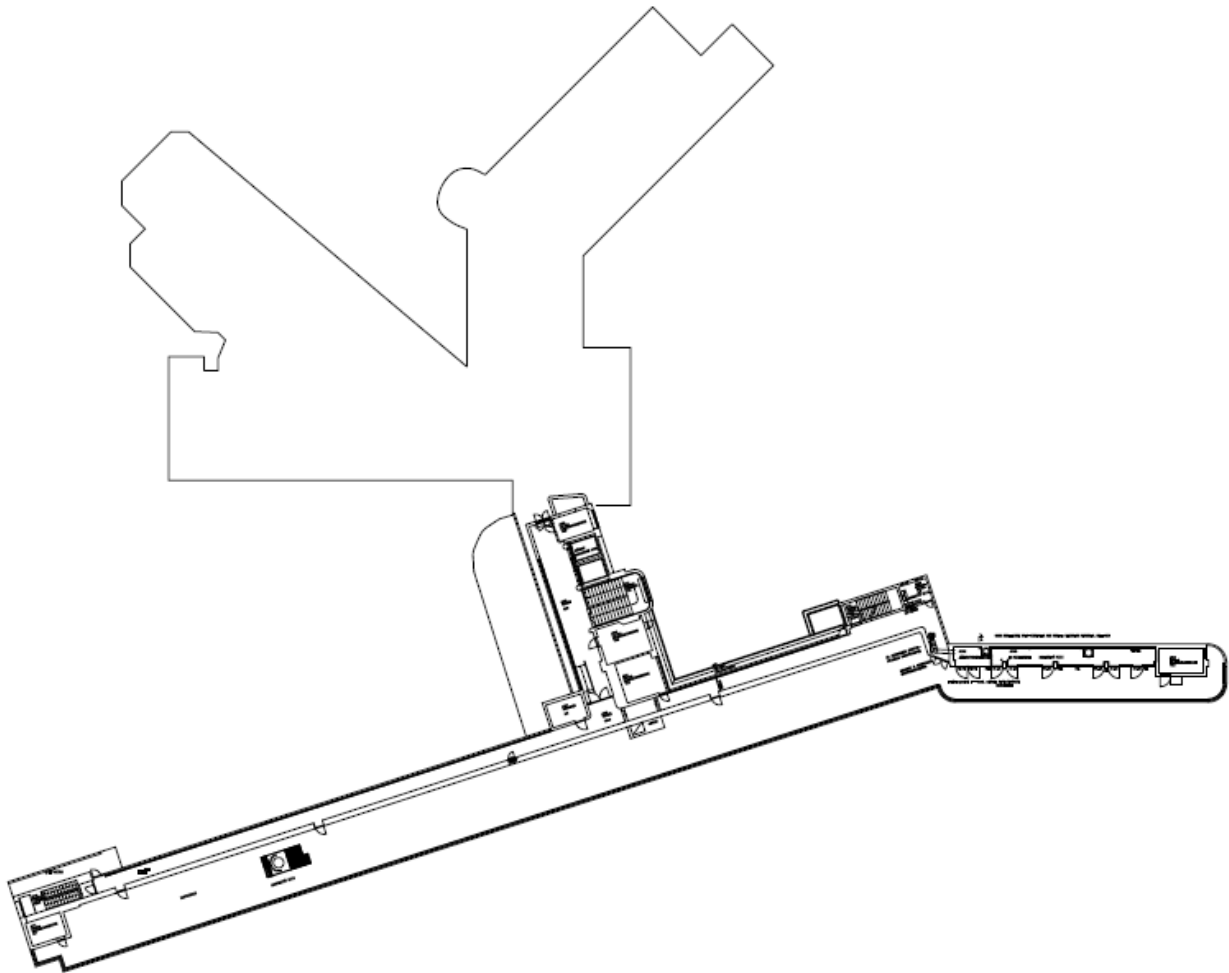
The excavation was made in the middle barrier of the main stair case. The exact spot is marked in the picture below.

AAM. Sign. 50-003-321a.



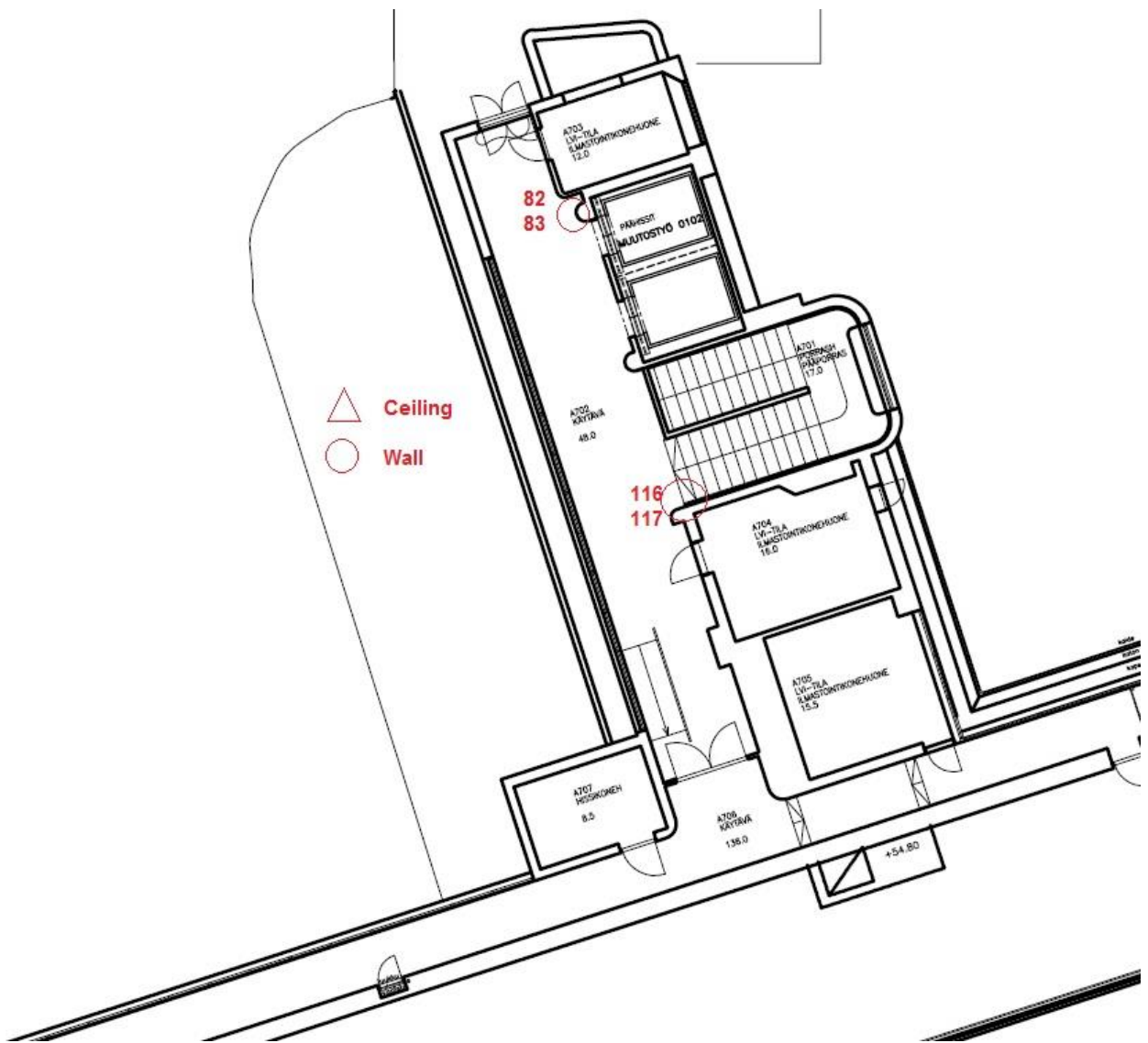
20.6th Floor- A General View

The sixth floor has access to the top floor balconies facing south and to the roof giving to north. The corridors leading to the balconies above the 5th floor ward showed white layers of paint, it was not researched more retentively. The research concentrated in the main hall and stair case of the seventh floor.

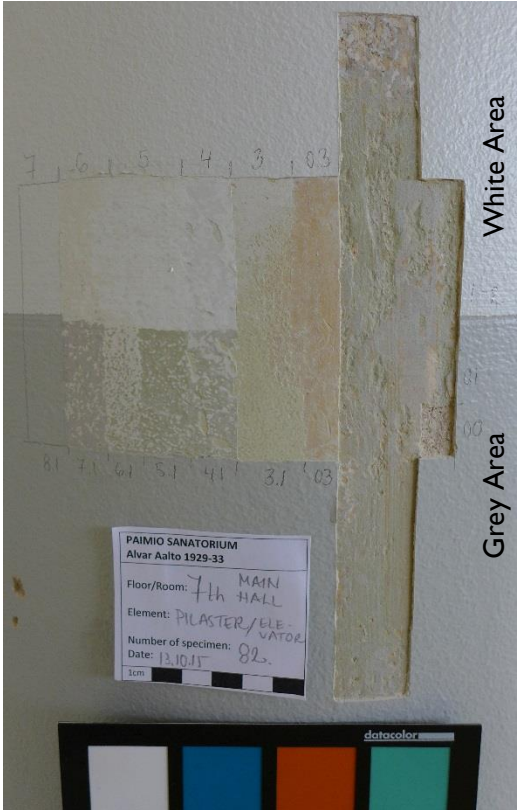
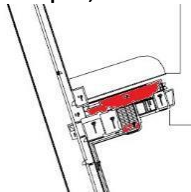


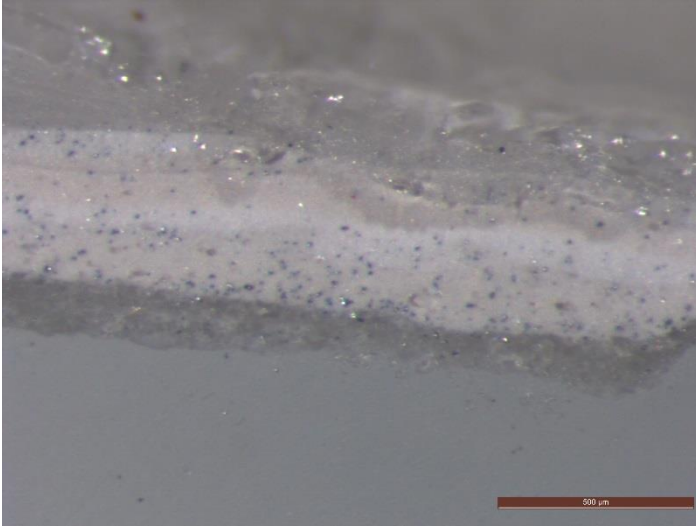
Project Name	Project No.	Scale	Revision/Date
Client	Architect	Structural Engineer	Structural Engineer
PAMON SARAALA		Port of Spain, Guyana	1:100
Floor Area: 205, 2150 P.M.E.			
LPR	Project No.	Revision/Date	Scale
Project Name		Project No.	Revision/Date
		A 00-00-P7	1:100
			24/03/2011

The Samples of 7th Floor

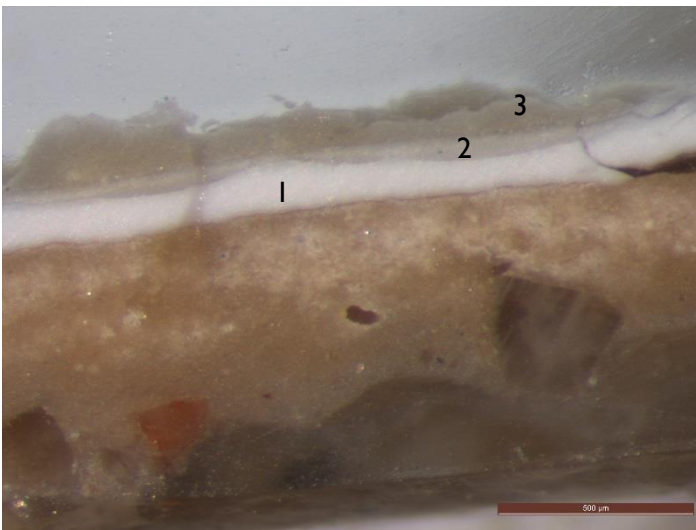


Main Staircase, Pilasters Next to the Elevators


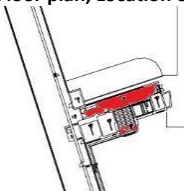
Number of Sample 82, 83	Subject Paimio Sanatorium	Building / Space / Surface Main building 6 th Floor Main staircase	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation	Pilaster next to the elevators, an area of grey paint in a white painted pilaster.	
Most significant repairs and changes of the space, dates Main stair has had a few changes. The flooring has been changed from the original yellow rubber flooring to new material. The last change of flooring was made only in the 1990's. Walls have been painted. The main stair's middle handrail has had a recent change as clear screens were attached between railings to protect visiting children. Hand railings are original on both sides of stairs. No dropped ceiling structures have been installed, ceilings of main stairway have only been painted during many renovations.			
Photograph, drawing 		Layers of Sample, WHITE AREA 00 plaster 01 Filler 1-2 Grey 2002-B, Green 3005-G80Y 03 Filler 3 White 0500-N 4 Grey 1002-H 5 White 0300-N 6 Beige 0804-Y10R 7White Layers of sample. GREY AREA. 00 to 2 same layers as above 03Filler 3.1.Yellow , enamel-kind, 1005-G80Y 4.1 Grey 1005-N	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:		5.1 Grey 3005-G80Y 6.1 White 0804-Y10R 7.1 Grey 2005-R80B 8.1 Grey 2005-B	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: Cross-section samples 82 and 83, Alvar Aalto Foundation Helsinki. Scale 500µm.	Floor plan, Location of Sample 



The cross section samples no. 82 and 83 gave a poor result. Neither gave the information needed. Excavation work gave better results. All things considered the grey area and its' original size researched on the pilaster was not thoroughly determined.



Main Staircase, Wall Behind Stair Handrail

Number of Sample 117	Subject Paimio Sanatorium	Building / Space / Surface Main building 6th Floor	
Architect, building year Alvar Aalto, 1929-33	Researcher, date Elina Riksmann, June-Dec. 2015, Alvar Aalto-foundation	Main staircase Wall, an area of grey paint on white painted wall.	
Most significant repairs and changes of the space, dates Main stair has had a few changes. The flooring has been changed from the original yellow rubber flooring to new material. The last change of flooring was made only in the 1990's. Walls have been painted. The main stair's middle handrail has had a recent change as clear screens were attached between railings to protect visiting children. Hand railings are original on both sides of stairs. No dropped ceiling structures have been installed, ceilings of main stairway have only been painted during many renovations.			
Photograph, drawing 		Layers of Sample, WHITE AREA 00 Plaster 02 Filler 2.1 White 1002-G50Y 3.1 White 1002-Y50R 4.1 White 0300N Layers of sample. GREY AREA 00 plaster 1 Grey 2005-G80Y or 3005-G80Y	
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis: Grey undermost paint: oil paint.		02 Filler 2 White 0500-N 3 Grey 1502-Y50R 4 Grey 1502-Y	
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, crater technique, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: No sample.	Floor plan, Location of Sample 

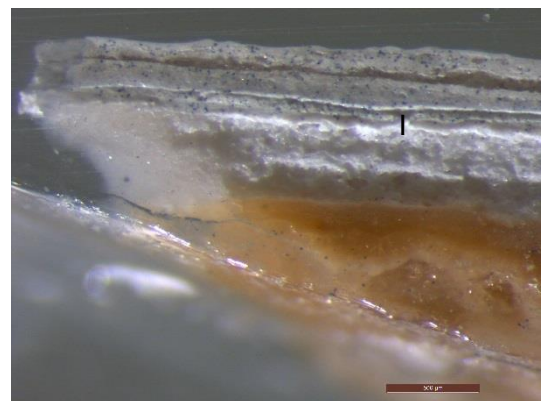
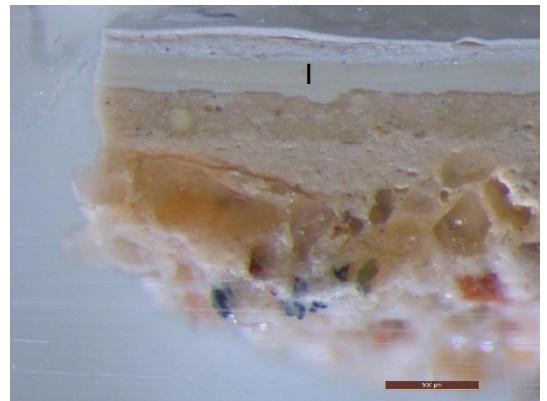
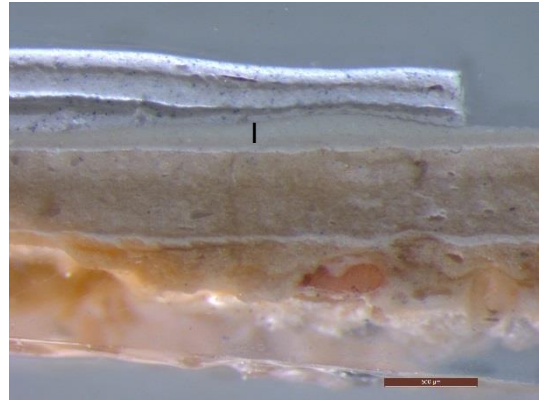


21. The Main Staircase Ceilings from Ground to 5th Floor

The ceilings of main staircase corridors were researched throughout the floors from ground floor to 5th by taking cross section samples. All samples showed white and beige neutral colors. Below are three examples from the cross section samples taken from the ceilings of main halls in each floor.



The fifth floor main staircase. The spot where cross section sample was taken.



Above are three samples from ceilings of main hallways in 2nd, 3rd and 4th floor. All together six samples were taken from 6 floors.

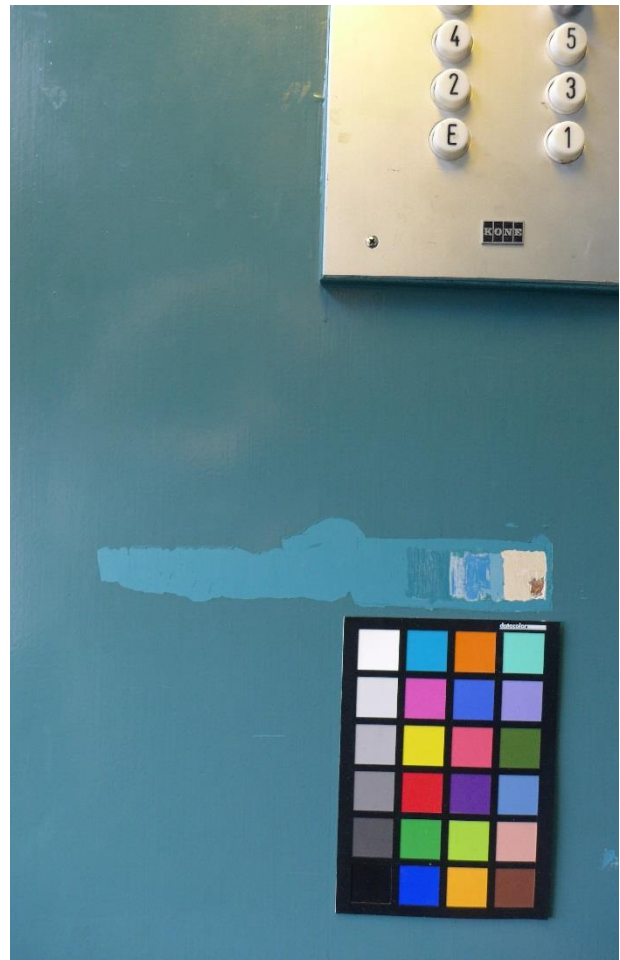
22. The West Staircase and Elevator

The original elevator in the west end of the ward wing is still in its place. The Elevator car and technique are well preserved and fully functioning. The elevator is still in use, if not daily, but by the tourist groups that visit the main building. They ride it down from the scenery balconies down to the first floor ward. The elevator shafts west wall is mainly glass, hence the nickname Scenic elevator.

The elevator car and the staircase surrounding it, rising from cellar floor to the seventh floor, was included in the year 2000 color research. In this 2015 research the aim was to define also the front door and its' surroundings coloring, in every half floor where the elevator stops. The results gathered there were linked to the "three color system" that Kauria originally used when painting the ward hall ways. These same three colors, blue, green and ochre, were found in the doorways of elevator shaft. For example the color of 1st floor ward hallway was ochre. This same color was found in the elevator doorway between 1st and 2nd floor. The 2nd floor ward color green was found in the elevator doorway between second and third floor, et cetera. The layers were few, which points to the fact that also these metallic surfaces of elevator doorways were stripped from original paints during renovation of past decades.



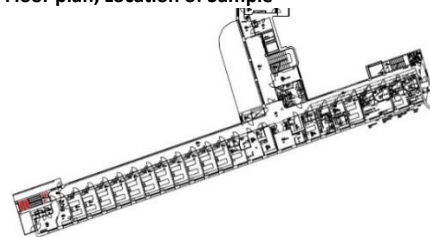




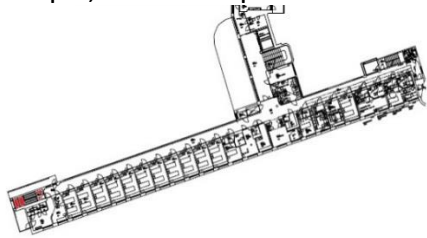
Original look of the elevator. AAM. Sign. 50-003-



An excavation of the year 2000 color research shows the vibrant blues and teals used in the painting of the elevator car.

Elevator Car

Number of Sample	Subject Paimio Sanatorium	Building / Space / Surface Main building The west elevator of wards	
Architect, building year Alvar Aalto, 1929-33	Researcher, date June-Dec. 2015, Alvar Aalto- foundation	The elevator car walls RESEARCH POINT MADE IN YEAR 2000 COLOR RESEARCH	
Most significant repairs and changes of the space, dates The elevator car is original. The ceiling light fixture of the elevator has been changed at some point. The front wall surrounding of every floor elevator door was originally made of glass. It was been changed to metal board. The button board inside the car has also been changed.			
Photograph, drawing 	Layers of Sample 00 0 1 White 1010-Y10R, base coat 2 Blue 2030-B10G  3 Blue 3040-B10G 4 White base coat 5 Teal blue 6 Teal blue 7		
Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:	8 9 10		
Technique used to make and take Samples, Circumstance in site, Lighting: Carved color steps on surface, made 2000 by Katja Aaltonen, daylight + fluorescent lamps	Color chart in use: NCS Teknos 2004 Color codes are written without the NCS prefix.	Type of Sample, Place of Storage: -	Floor plan, Location of Sample 

Number of Sample	Subject Paimio Sanatorium	Building / Space / Surface Main building 3rd Floor Ward The West Staircase	
Architect, building year Alvar Aalto, 1929-33	Researcher, date June-Dec. 2015, Alvar Aalto- foundation	The handrail, metallic base RESEARCH POINT MADE IN YEAR 2000 COLOR RESEARCH	
<p>Most significant repairs and changes of the space, dates</p> <p>The elevator car is original. The ceiling light fixture of the elevator has been changed at some point. The front wall surrounding of every floor elevator door was originally made of glass. It was been changed to metal board. The button board inside the car has also been changed.</p>			
<p>Photograph, drawing</p> 	<p>Layers of Sample</p> <p>00 Metal</p> <p>0</p> <p>01 White 1010-Y30R, base coat</p> <p>1 Blue 3040-B30G </p> <p>2 Blue 2020-B30G</p> <p>4 Blue 3040-B10G</p> <p>5 Blue 3020-B10G</p> <p>6 Blue teal 4040-B40G</p> <p>7</p>		
<p>Observations, remarks, e.g. pigment, adhesive, type of paint, material analysis:</p> <p>-</p>	<p>8</p> <p>9</p> <p>10</p>		
<p>Technique used to make and take Samples, Circumstance in site, Lighting:</p> <p>Carved color steps on surface, made 2000 by Katja Aaltonen, daylight + fluorescent lamps</p>	<p>Color chart in use:</p> <p>NCS Teknos 2004 Color codes are written without the NCS prefix.</p>	<p>Type of Sample, Place of Storage:</p> <p>-</p>	<p>Floor plan, Location of Sample</p> 

23. The Flooring

The Original Yellow

The flooring of Paimio main building has gone through several changes. The original, significant material and color in the entrance hall and the main staircase was thick yellow rubber flooring. These floorings have been lost in renovations, except for one small fragment left inside the 4th floor main staircase cleaning cupboard. This piece of flooring has naturally lost the original vibrancy of the yellow hue. Still the yellow of the flooring is relatively bright. The NCS Color codes of the fragment are

NCS S1050-G90Y or I050-Y.

The yellow flooring was originally specially made, a hue that was not available in catalogs. In an interview from 1986 Eino Kauria tells that soon after the order for the yellow flooring was made, Aalto had some grave second thoughts about the color yellow. At that point it was impossible to cancel the order. According to Kauria, Aalto himself stated that the chosen yellow color was a mistake.



The original fragment of yellow flooring in comparison to the renewed flooring surrounding the cupboard.

Other Floor Fragments

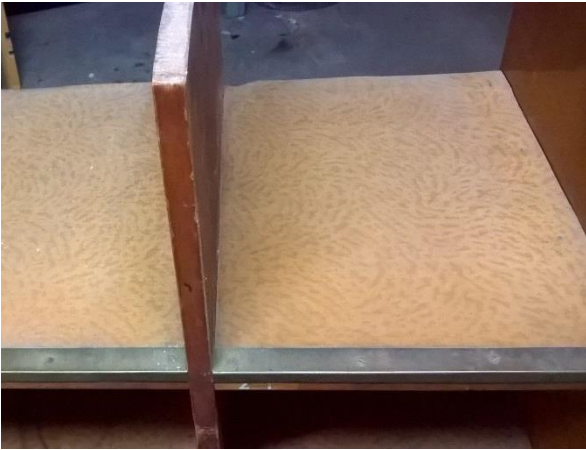
Other flooring fragments beside the original yellow, found in Paimio main building, have no resembles to the marmoleum patterned linoleum floorings seen in the photographs that present the original state of the dining hall, lounge or ward corridors. This brown linoleum at the middle, left, found in a drought lobby of a balcony in second floor main building, has somewhat heavy but straight pattern, and it is presumably a later linoleum from 1940's or 1950's. The same flooring, in a better condition is found in the second floor of former engine room for the cinematography technique.



The two floor samples seen below were found inside old cupboards in the hospital's staff building from the 1950's (by architect Lauri Sipilä). The fragments have been used for covering the cupboard shelves. The red sample shows some resembles to the original 1930's type of linoleum with marmoleum pattern. Green flooring sample covering another cupboard shows a slightly more modern pattern and material. The green fragment is probably from the 1950's.



The linoleum type flooring was also used to protect some heavy duty furniture like the original shoe shelves that were originally situated in the entrance hall. The flooring matt seems to have a pattern typical in 1940's so it has likely been installed during the 1948 renovation to cover up some detrition of the shelves. This flooring has not been found in any other location in the main building nor in the other buildings in the hospital area. nor shown in any photographs found.



Museum Room Flooring Today

The deep brown linoleum flooring of the ground floor museum room showed at the left, is probably not the original flooring of a patient room as it is in such good, resilient condition and shows vibrant uniform color throughout the room. The color code of this flooring is something between the two NCS color codes

NCS S 6020-Y50R and 6020 Y60R.



The Original Mosaic Concrete Stairs

The few original surfaces in Paimio main building are the mosaic concrete the two staircases in both ends of the A-wing, the wards and in the staircase of the central heating chimney attached to the C-wing or the kitchen wing.

The mosaic concrete steps of these stairs were pre-produced modules and they were installed on site. The color of all three stairs was the same: the base concrete mixture had a deep color of green with 3mm to 15mm sized white stone grains. The NCS color codes for the green are

6020-G30Y or 5020-G20Y.



The stairs climbing around the chimney of C-wing.



The staircase in the east end of the wards.



The staircase with panoramic lift, in the west end of the wards.



24. The Ceilings

In common areas like the entrance hall or the lounge or smaller spaces like laboratories, artificial sun treatment room and X-ray room had ceilings with high gloss finishes. The finishes are well presented in the black and white photographs of the original state of main building. A glossy finish was a common sight in the functionalism era buildings and Paimio was no exception. It was used not only on ceilings but on columns, window sills and walls where high durability or easy maintenance was required. This was also the case in Paimio, on all building parts mentioned before.

A vast number of the spaces today have a dropped ceiling structure to cover HVAC-systems installed during 1970's renovation (mainly ventilation pipes but also later electrical installations have been fitted inside these structures). These structures cover the whole original ceiling or just parts of it. In some rare cases the original ceiling was still left as a fragment above these structures, but mainly the ceilings had only new, few layers as the original surface had been sand blasted off, or otherwise removed in earlier renovation. The problem of the glossy paint surfaces produced on calcium plastering was that they had the tendency to detach from the ceiling as it is visible in the picture below.

Ceilings in main building had some noteworthy hues like light greens and light blues as the obvious whites and cream hues used mainly in common areas.



An original ceiling fragment in one of the 4th floor toilets, above the dropped ceiling structure hiding the 1970's and later HVAC-installations. The gloss of this fragment is not as distinctive as it probably has been in more important spaces like entrance hall or lounge in the first floor.

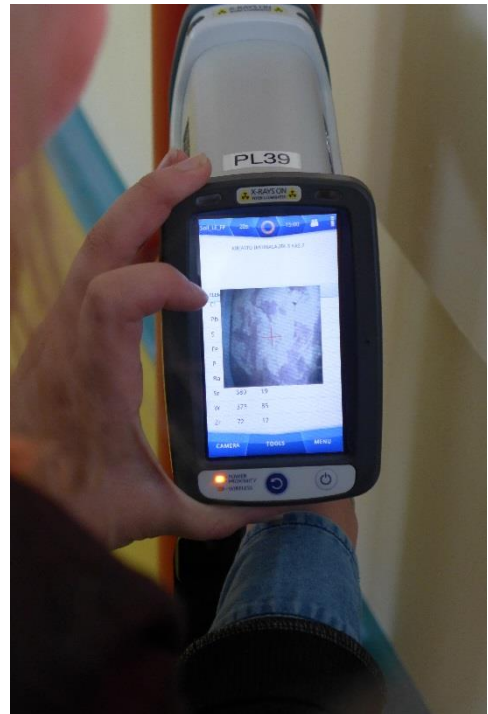
25. X-Ray Fluorescence

The X-ray Fluorescence (XRF) measurements were made in selected research points in the reading room of second floor and in the museum room of ground floor. Mainly first layers were measured to achieve data from the assumed first and original layers of paint. The aim was to gather data from paints to find out if these materials contained toxic elements as Lead (Pb) or Arsenic (As).

Lead was expectedly present in red paints but also in white paints as Lead white was commonly used in base coats. Arsenic, nor the environmentally dangerous heavy metal Vanadium (V) were present in data measured from surfaces. Also the data gathered provides information about the pigments used in paints, as Calcium (Ca) of chalk used as a filler in paints or in Calcium lime plaster, Titanium (Ti) that is used in Titanium white pigment, or Zinc (Zn) of Zinc white pigment that was heavily present in many measuring points. The XRF method provides data also under the surface measured. This gives us data through all layers present in the measuring point. Some concentration of Barium (Ba) was also measured. Barium is used in the production of white pigment.



The conservation students from Metropolia University of Applied Sciences measure Reading room columns with the guidance of chemist and lecturer Krista Hackzell (in front).

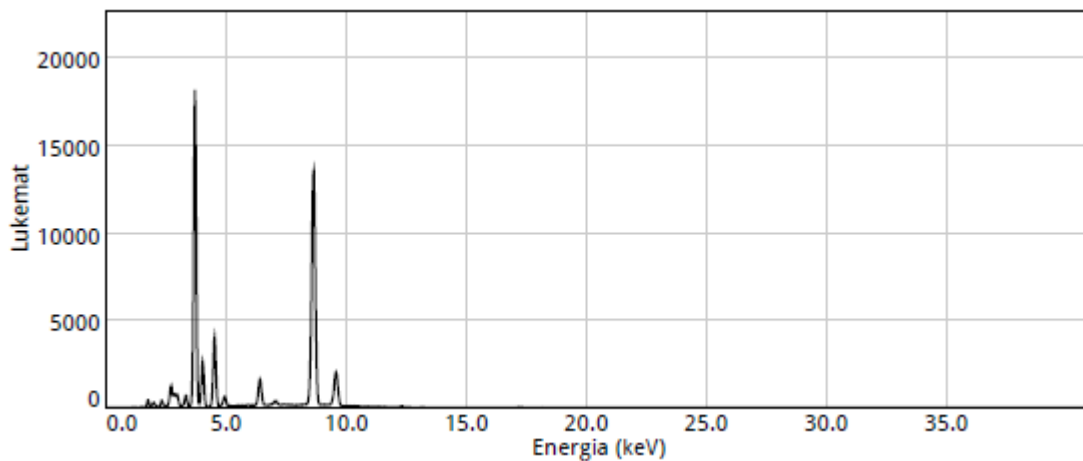
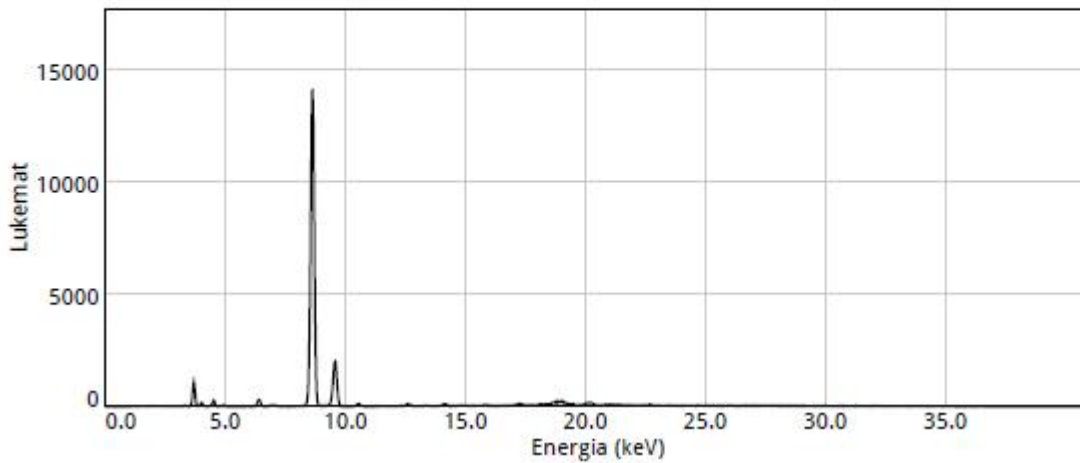
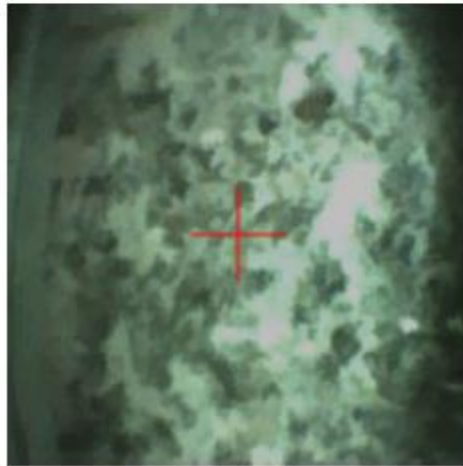


X-Ray Fluorescence Measurement Results

Reading room, window sill of north wall, first and undermost layer of paint

SAMPLE NAME	CLASS (element)	DATE	TIME	DURATION				
Nimi kirjasto ikkunala krs 1	Luokka Soil_LE_FP	Päivämäärä 7.9.2015	Kellonaika 14.51.05	Kesto 20,5 s				
Alkuaine	Ca ppm	Zn ppm	Si ppm	Ti ppm	K ppm	Cl ppm	Al ppm	S ppm
	286249	161677	56836	53049	15246	14857	10736	9657
±	850	455	1432	338	268	276	2366	262
Alkuaine	Fe ppm	P ppm	Pb ppm	Ba ppm	Sr ppm	Co ppm	Zr ppm	Rb ppm
	9135	8041	1483	1320	432	266	111	102
±	197	432	80	421	24	57	24	20

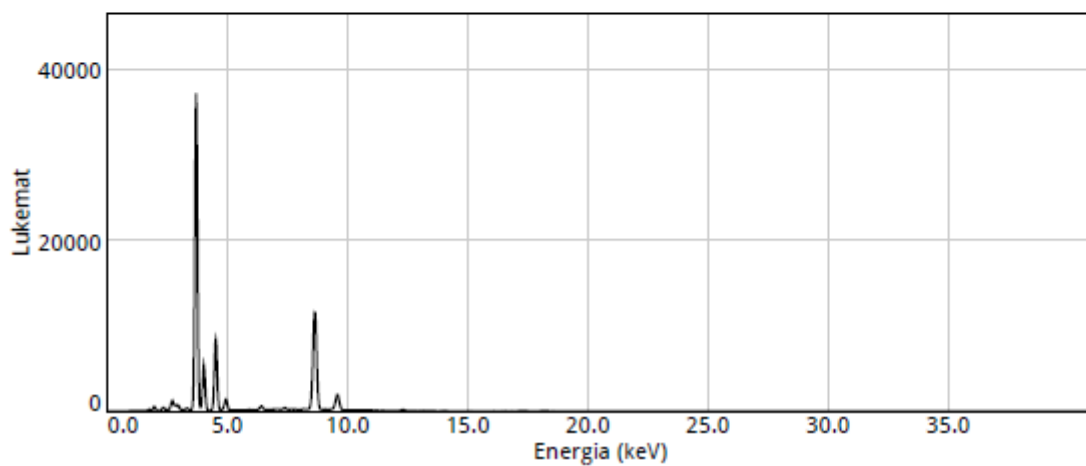
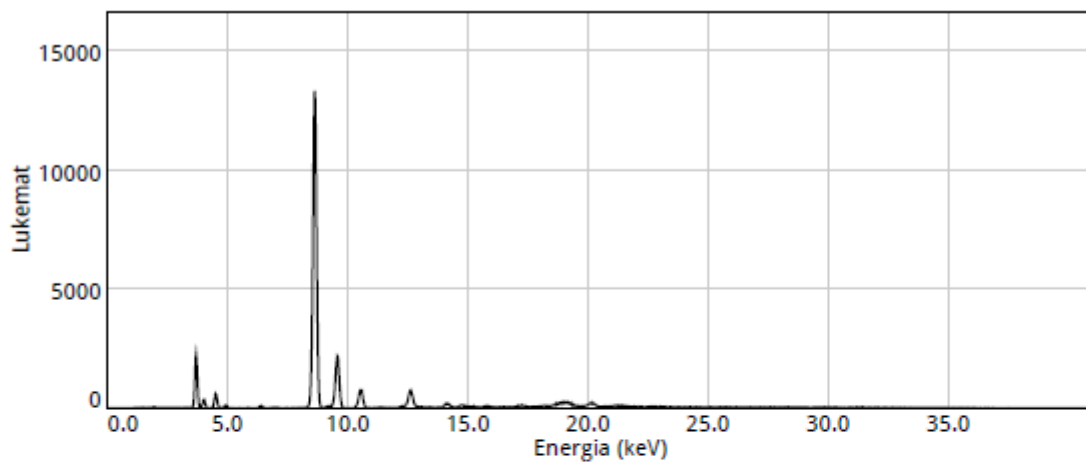
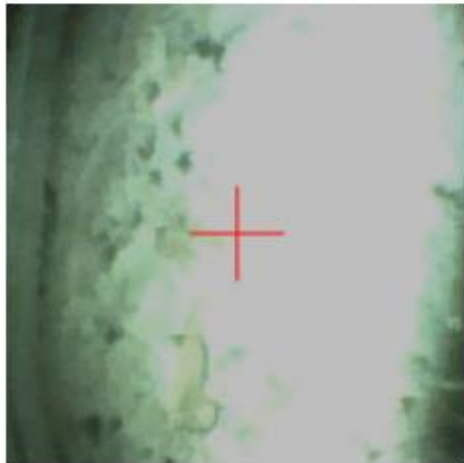
CHEM.
ELEMENTS
FOUND



Reading room, window sill of north wall, second layer

Nimi	Luokka		Päivämäärä		Kellonaika		Kesto	
kirjasto ikkunalauta krs 2	Soil_LE_FP		7.9.2015		14.55.49		20,6 s	
Alkuaine	Ca ppm	Zn ppm	Ti ppm	Mg ppm	Si ppm	Cl ppm	Pb ppm	S ppm
	361693	106987	83676	38131	13923	8778	7169	5775
±	742	306	352	10685	718	172	113	167
Alkuaine	Fe ppm	P ppm	Ba ppm	Sr ppm	W ppm	Zr ppm		
	2169	2087	1213	588	373	72		
±	92	259	296	18	85	16		

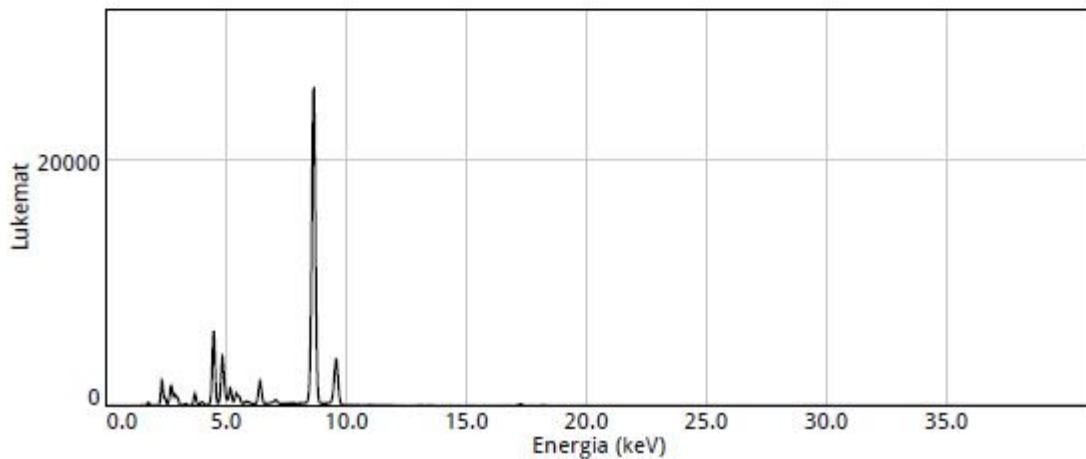
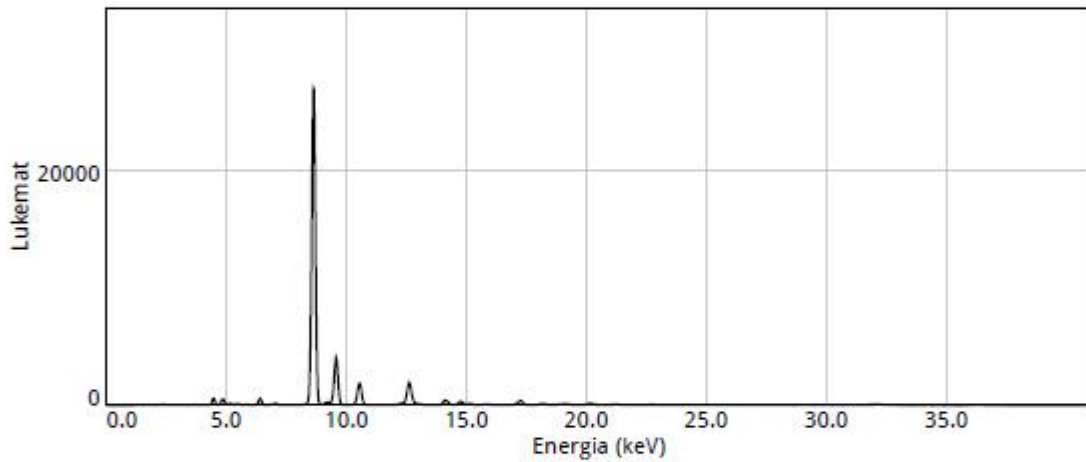
Vertailunäyte:



Reading room, red iron columns, second layer, yellow

Nimi	Luokka	Päivämäärä	Kellonaika	Kesto			
kirjasto punainen 3 krs keltainen	Soil_LE_FP	7.9.2015	15.01.54	20,5 s			
Alkuaine	Zn ppm	S ppm	Ti ppm	Pb ppm	Si ppm	Ba ppm	Cl ppm
±	367139 717	74520 738	51650 285	50192 490	44216 1735	26752 888	22110 440
Alkuaine	Ca ppm	Fe ppm	V ppm	Cr ppm	Sr ppm	Mn ppm	Ta ppm
±	19428 267	14786 231	13557 1177	4658 1191	4304 70	950 172	636 130
Alkuaine	Co ppm						
±	415 72						

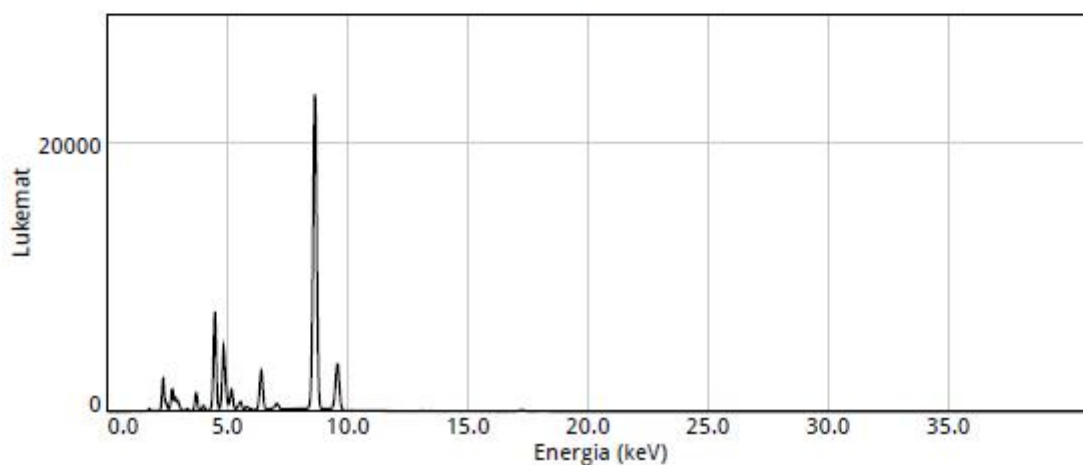
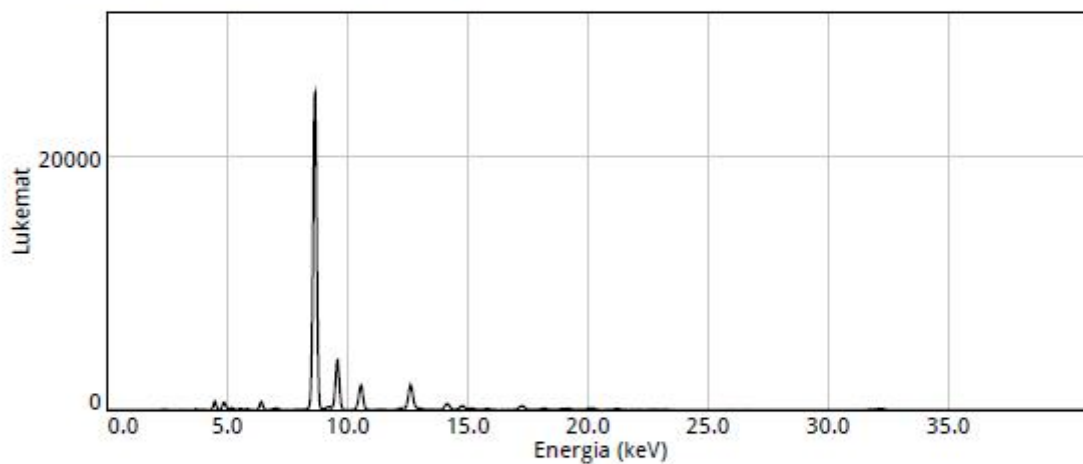
Vertailunäyte:



Reading room, red iron columns, third layer, red

Nimi	Luokka	Päivämäärä	Kellonaika	Kesto			
kirjasto punainen 3 krs punainen	Soil_LE_FP	7.9.2015	15.06.03	20,5 s			
Alkuaine	Zn ppm	S ppm	Ti ppm	Pb ppm	Si ppm	Ba ppm	Ca ppm
	343118	90489	57583	50054	34118	31350	29420
±	692	782	304	475	1496	907	323
Alkuaine	Cl ppm	Fe ppm	V ppm	Sr ppm	Mn ppm	Ta ppm	Co ppm
	28197	17650	14593	4985	1332	629	260
±	471	254	1276	72	169	143	70

Vertailunäyte:

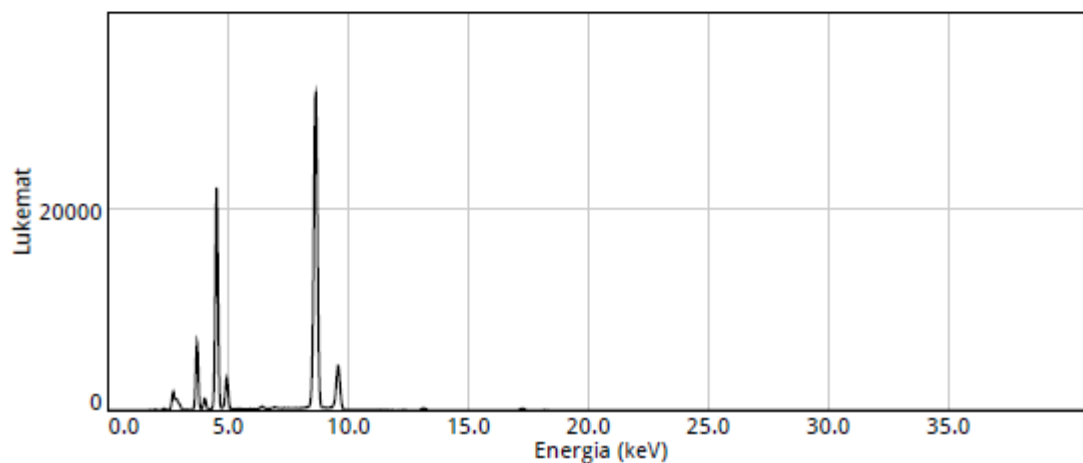
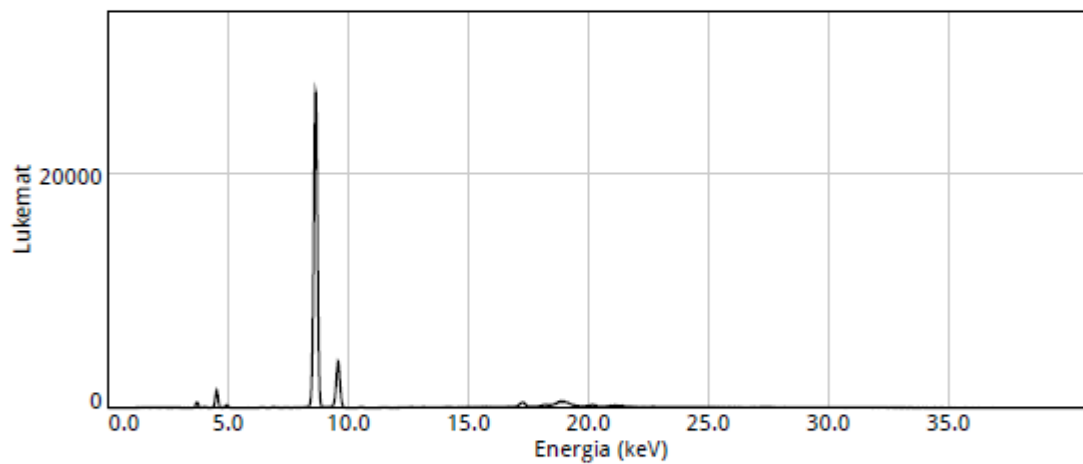
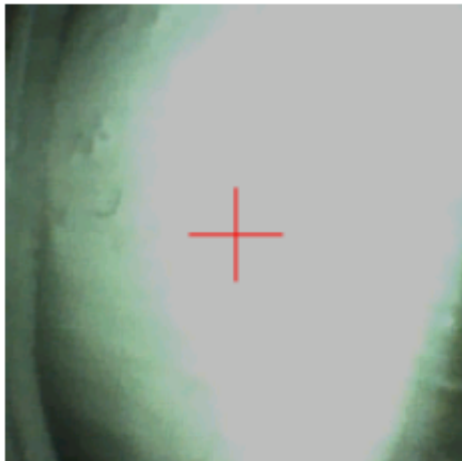


Reading room, railing of glasswall giving to dining hall, third layer

Nimi	Luokka		Päivämäärä		Kellonaika		Kesto	
kaide 3 krs kirjasto	Soil_LE_FP		7.9.2015		15.12.03		20,5 s	
Alkuaine	Zn ppm	Ti ppm	Ca ppm	Cl ppm	S ppm	Si ppm	Ba ppm	W ppm
±	330976	194133	90351	14909	4654	4548	3091	1250
	671	508	441	283	225	932	677	162

Alkuaine	Fe ppm	Pb ppm	Ta ppm	Co ppm	Sr ppm
±	1129	870	714	391	288
	85	352	126	58	41

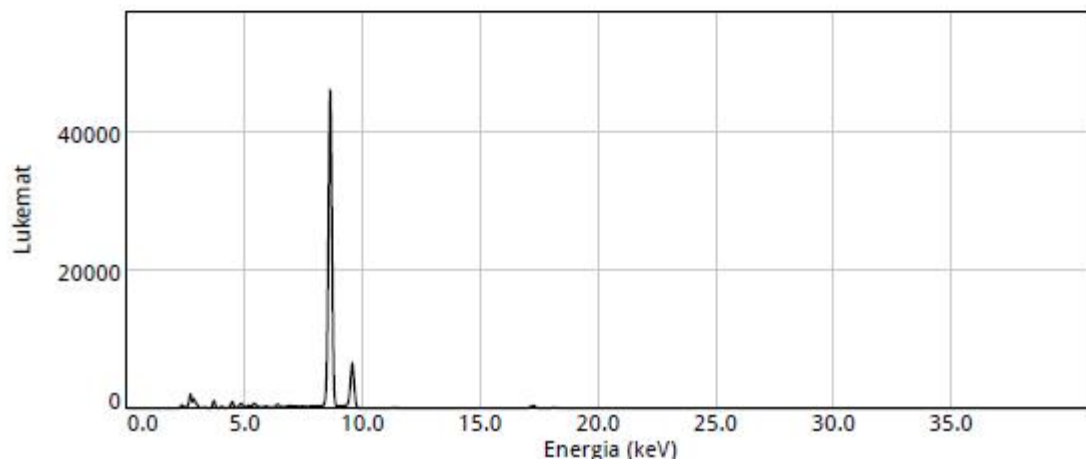
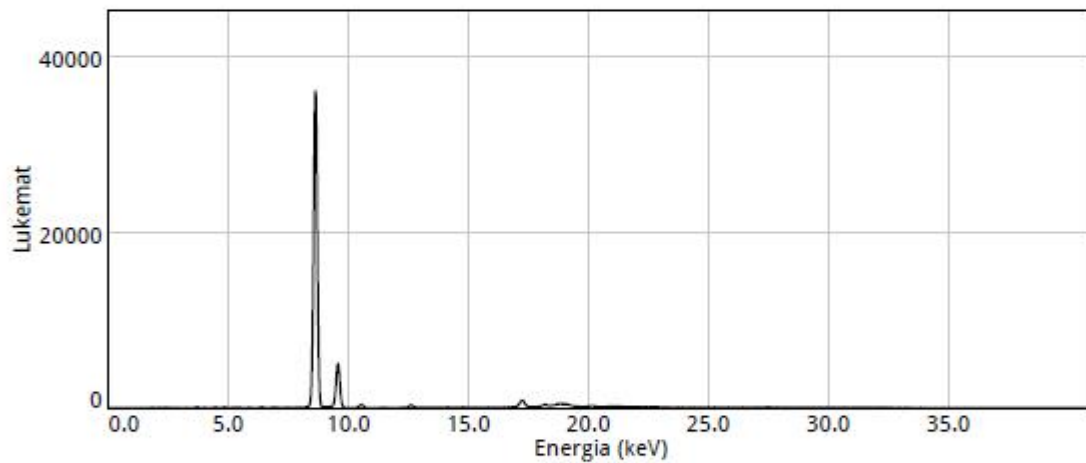
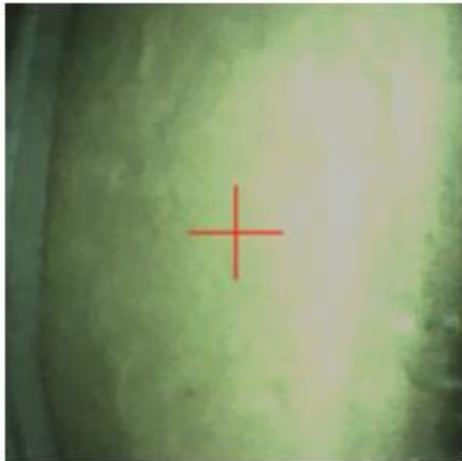
Vertailunäyte:



Museum room, space divider (furniture), first layer of paint

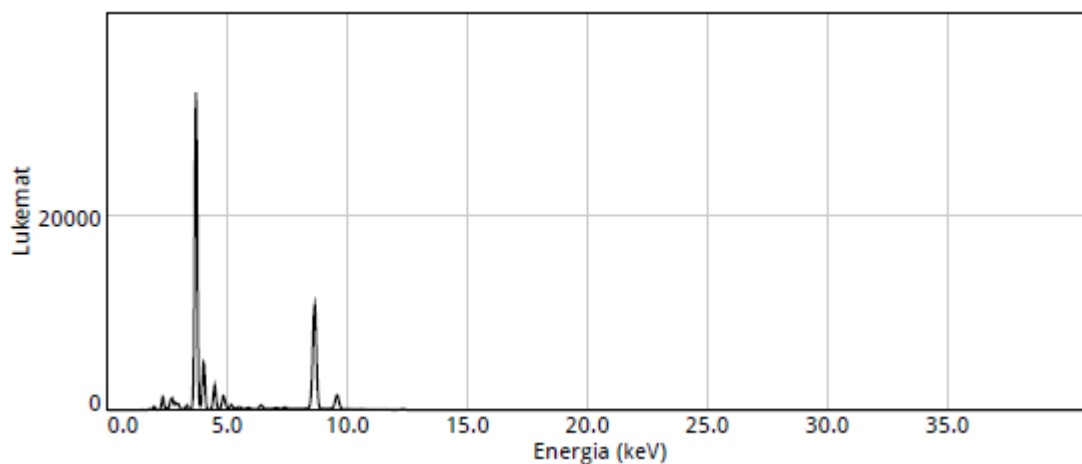
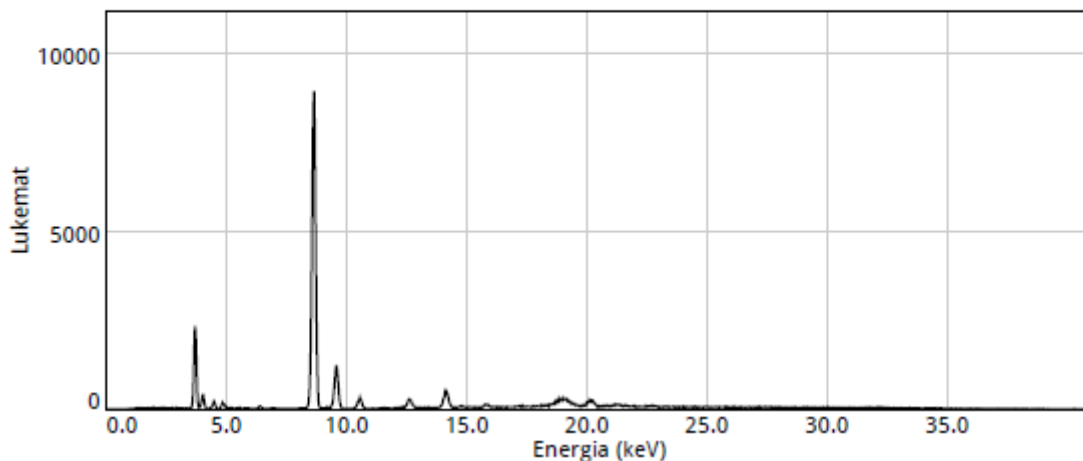
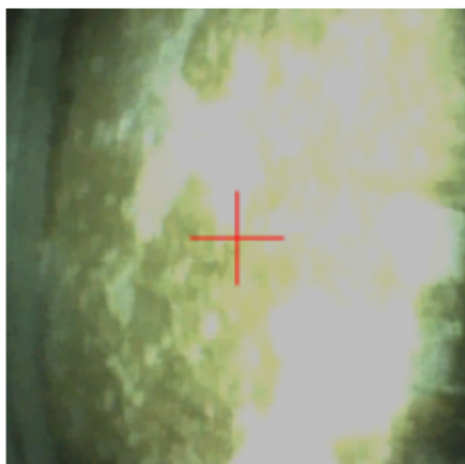
Nimi museohuone 1. sermi	Luokka Soil_LE_FP		Päivämäärä 7.9.2015		Kellonaika 16.01.25		Kesto 20,5 s	
Alkuaine	Zn oom	Cl oom	Ca oom	S oom	Pb oom	Ba oom	Ti oom	Si oom
±	591641 1026	52249 686	24055 322	22754 536	13941 1922	7204 1541	7148 130	4915 1427
Alkuaine	W ppm	V ppm	Fe ppm	Ta ppm	Sr ppm			
±	2845 261	1751 484	1476 91	1336 188	862 79			

Vertailunäyte:



Museum room, the cheek of door, undermost layer

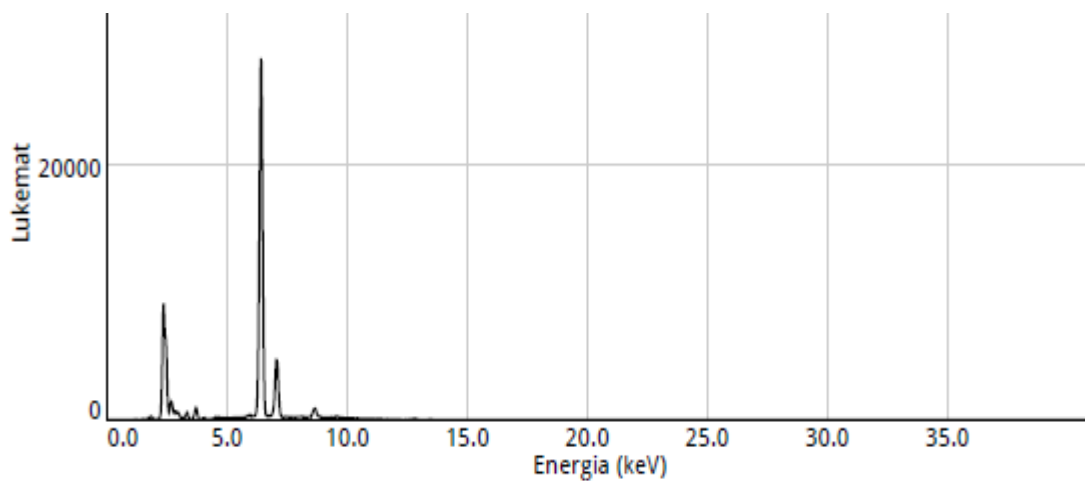
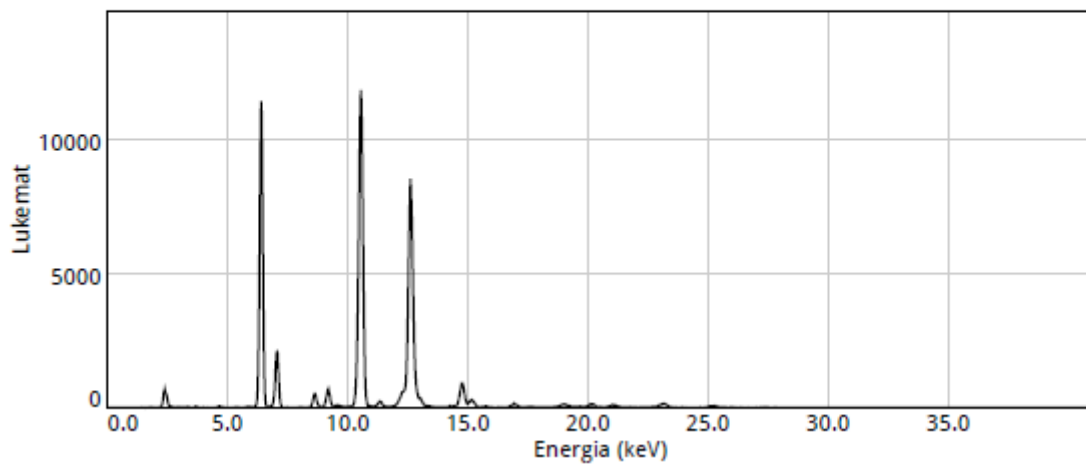
Nimi	Luokka		Päivämäärä		Kellonaika	Kesto		
museuhuone 1. smyygi 0	Soil_LE_FP		7.9.2015		16.05.44	20,5 s		
Alkuaine	Ca ppm	Zn ppm	S ppm	Ti ppm	Cl ppm	Si ppm	K ppm	V ppm
	448485	94237	27419	24356	21314	9736	7765	6691
±	981	336	327	252	273	700	190	1066
Alkuaine	Al ppm	Ba ppm	Pb ppm	Sr ppm	Fe ppm			
	6224	3548	3288	2103	1647			
±	1942	406	93	33	110			
Vertailunäyte:								



Museum room, jamb of door, undermost layer

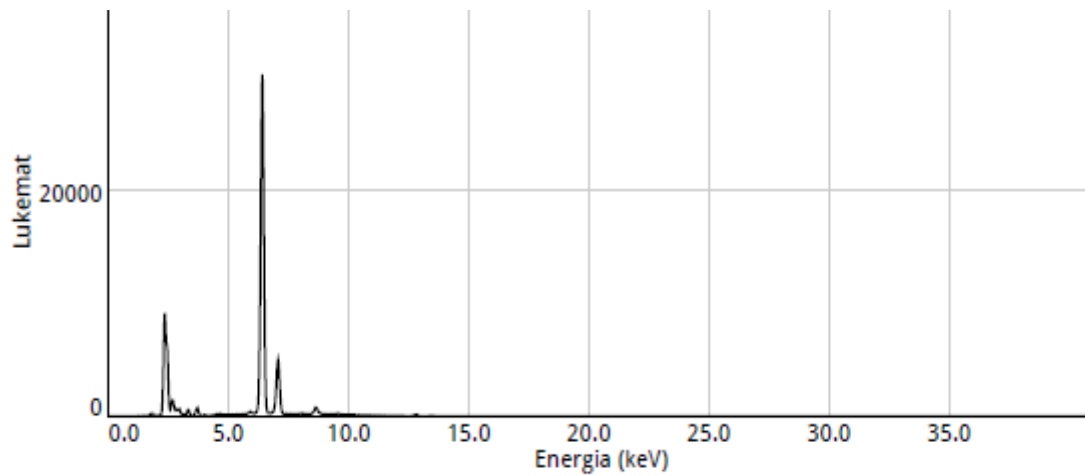
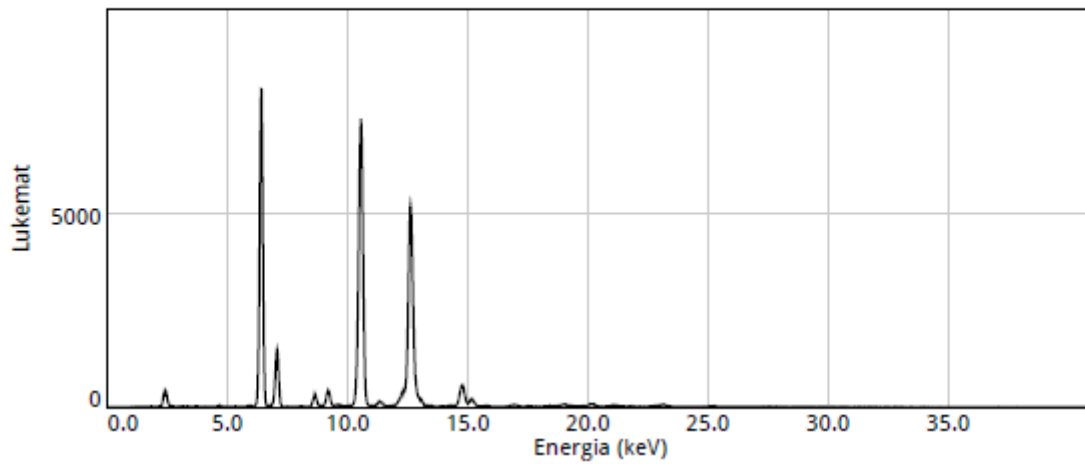
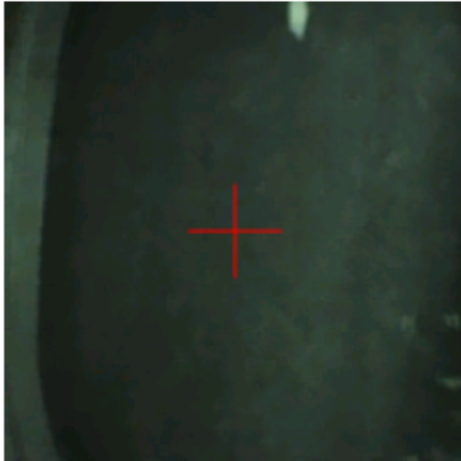
Nimi	Luokka	Päivämäärä	Kellonaika	Kesto			
museo huone 1. karmi 0	Soil_LE_FP	7.9.2015	16.09.19	20,6 s			
Alkuaine	Fe ppm	S ppm	Pb ppm	Mg ppm	Cl ppm	Si ppm	Al ppm
	227355	214687	103671	54941	47720	28100	11194
±	713	814	427	7833	455	788	1440
Alkuaine	Ca ppm	K ppm	Zn ppm	P ppm	Ti ppm	Mn ppm	Cd ppm
	10175	8522	4561	1702	899	723	703
±	181	233	71	222	54	96	69
Alkuaine	Tl ppm	Se ppm	Rb ppm	Zr ppm			
	602	234	115	76			
±	49	21	17	18			

Vertailunäyte:



Museum room, jamb of door, first layer. Notice element class used in measurement: Alloy_LE_FP

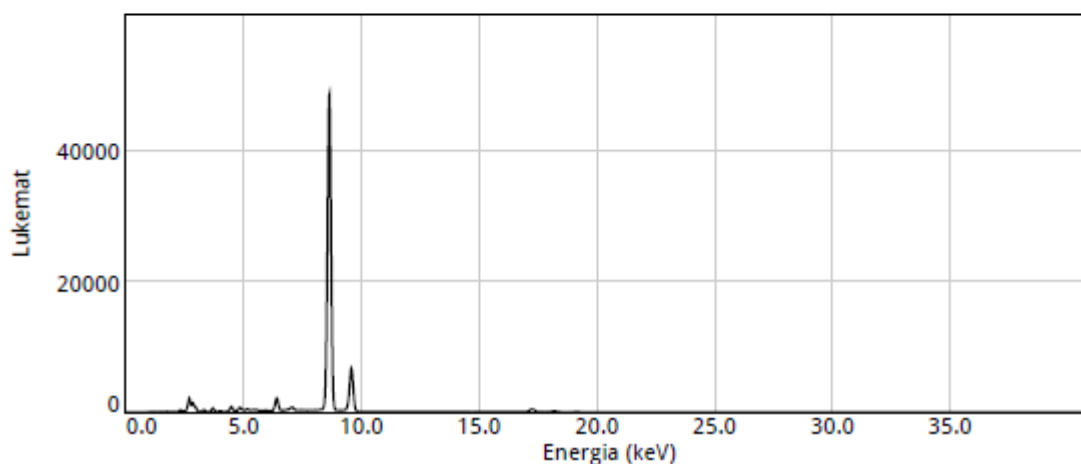
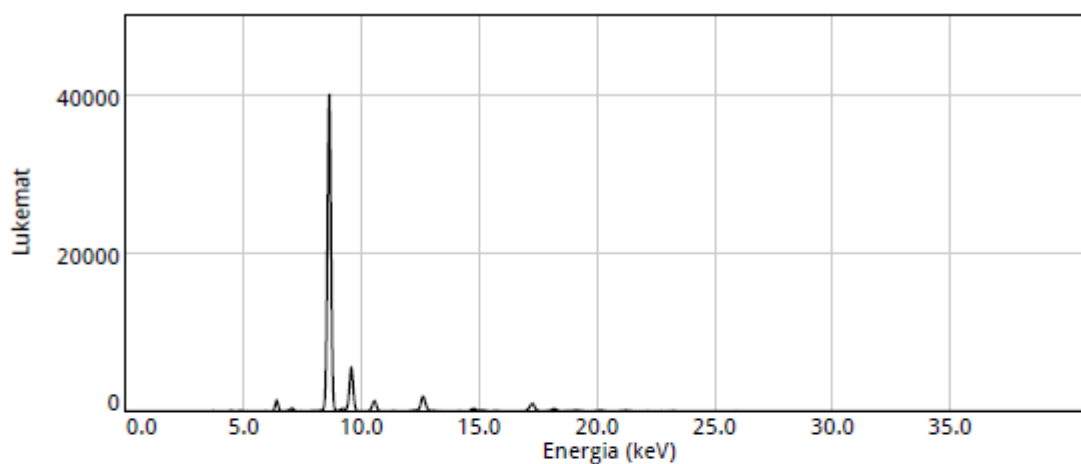
Nimi	Luokka		Päivämäärä		Kellonaika		Kesto
museuhuone 1. karmi 1	Alloy_LE_FP		7.9.2015		16.12.26		20,5 s
Alkuaine	Fe %	Pb %	Si %	Zn %	Ir %	Mn %	Se %
	53,14	42,73	2,28	1,15	0,48	0,18	0,04
±	0,215	0,153	0,113	0,026	0,030	0,026	0,010
Vertailunäyte:							



Museum room, jamb of door, 1st layer

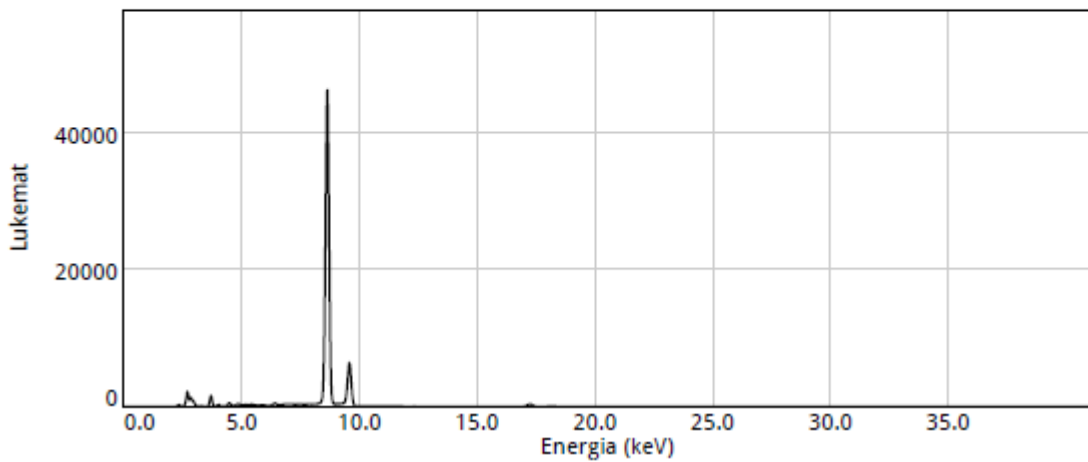
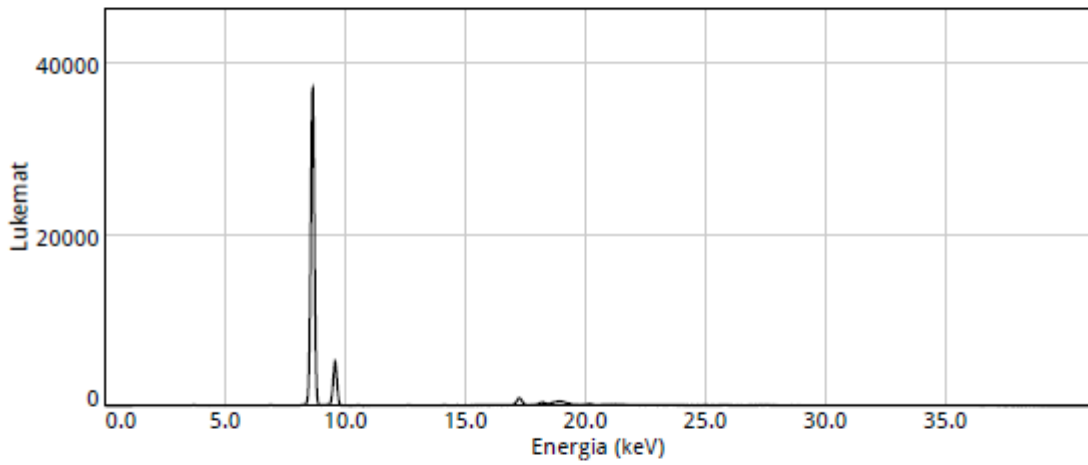
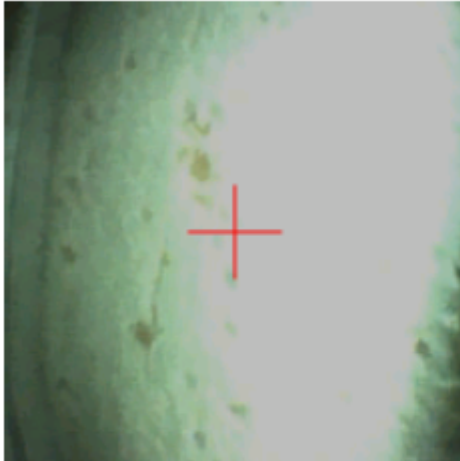
Nimi	Luokka		Päivämäärä	Kellonaika	Kesto		
museuhuone 1. karmi 1	Soil_LE_FP		7.9.2015	16.14.01	20,6 s		
Alkuaine	Zn ppm	Cl ppm	Pb ppm	Fe ppm	S ppm	K ppm	Ca ppm
	543240	58974	52808	27566	10401	8482	8475
±	881	611	574	270	328	265	207
Alkuaine	Ba ppm	Si ppm	Ti ppm	V ppm	Ta ppm	Cd ppm	Co ppm
	6885	6760	5320	2256	1535	1219	722
±	661	1096	104	486	156	147	72
Alkuaine	Mn ppm	Sr ppm					
	412	138					
±	113	42					

Vertailunäyte:



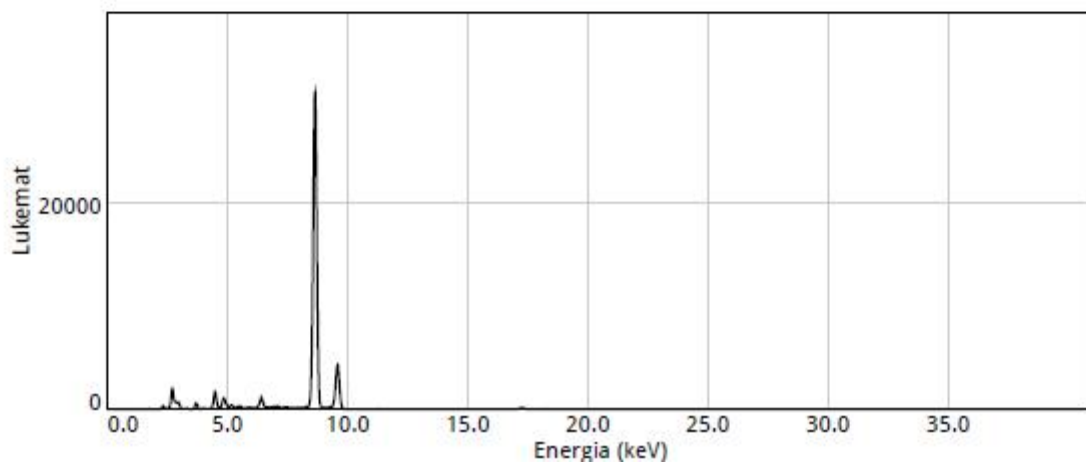
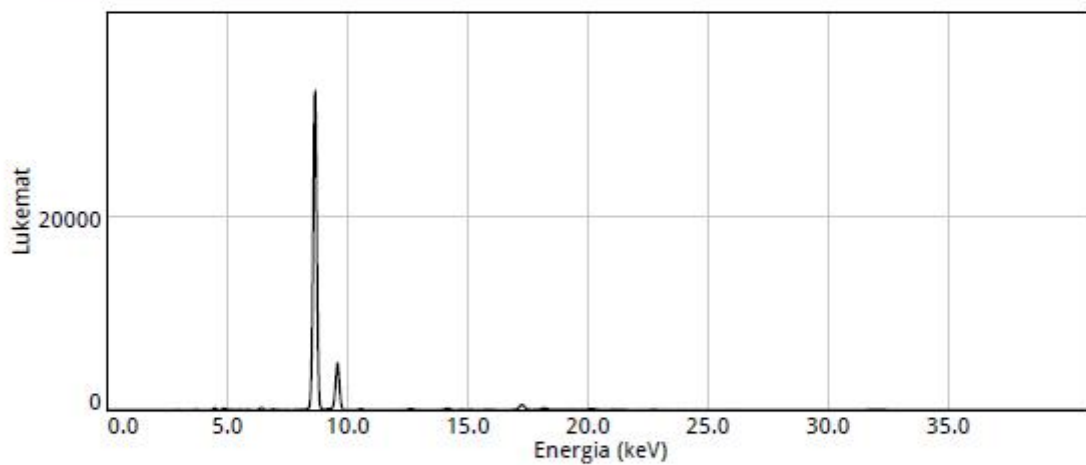
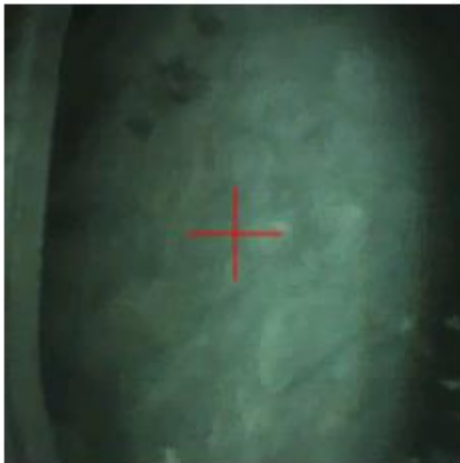
Museum room, closet door, 1st layer

Nimi	Luokka	Päivämäärä	Kellonaika	Kesto			
museuhuone 1. kaappi 1	Soil_LE_FP	7.9.2015	16.18.10	20,5 s			
Alkuaine	Zn ppm	Cl ppm	Ca ppm	S ppm	W ppm	Ti ppm	Pb ppm
±	624000	50891	32227	10120	4109	4067	2584
	1083	727	374	467	289	122	237
Alkuaine	Ta ppm	Fe ppm	Sr ppm	Mn ppm			
±	1645	647	607	334			
	200	82	89	98			
Vertailunäyte:							



Museum room ceiling, 1st layer

Nimi	Luokka	Päivämäärä	Kellonaika	Kesto			
museuhuone 1. katto	Soil_LE_FP	7.9.2015	16.26.28	20,5 s			
Alkuaine	Zn ppm	Cl ppm	Ba ppm	S ppm	Ti ppm	Ca ppm	Si ppm
	582971	34232	29276	17420	16870	14597	8163
±	1062	640	1181	557	207	278	1613
Alkuaine	Fe ppm	V ppm	Pb ppm	Sr ppm	Ta ppm	Mn ppm	Co ppm
	5186	4506	3912	2409	1005	418	199
±	141	727	228	76	172	115	56
Alkuaine	Ni ppm						
	132						
±	37						
Vertailunäyte:							



Museum room, wall with window, 1st layer

Nimi	Luokka	Päivämäärä	Kellonaika	Kesto					
ikkunaseina 1. valk	Soil_LE_FP	7.9.2015	16.30.47	20,5 s					
Alkuaine	Ca ppm	Ti ppm	Mg ppm	Zn ppm	Cl ppm	Si ppm	S ppm	Ba ppm	
	396502	97401	59539	41927	9305	6737	3268	1510	
±	745	381	9367	185	155	535	123	205	
Alkuaine	Pb ppm	Fe ppm	Sr ppm						
	1307	1194	714						
±	46	72	16						
Vertailunäyte:									

