Interventions in Existing Buildings
- Methods and Materializations

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Interventions in existing buildings
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Studio 7, Supervised by Elizabeth Hatz & Peter Lynch

About the project
Our aim with this project was to become more aware about the consequences that different kinds of changes or additions have on existing buildings and their characteristic architectural qualities. We have focused our study on the part when a change or addition is designed, how the planned intervention is to be materialized, trying to understand how a change or addition relate to the existing. Whether it is made to closely resemble that which is already there or contrast in for example form, colour or material. In our thesis we call these ways of relating to the existing methods, and it is these methods that we have tried to identify, analyse and implement throughout this project. Some of the questions we have asked ourselves are:

- What different methods are there and how can they be materialized? How do they work in combination? What effect do they have on a room and what do the different methods communicate?

About the building
A chosen building has created the boundary for the project, allowing us to understand through implementation. In order to create a sense of relevance we wanted to work with a seemingly common or ordinary building that was in need of renovation today. We found this combination in an apartment building in Ör, Sundbyberg from the 1960s. Within this building we have chosen to focus on the sequence from the outside to the apartment, the places shared by the people living there as well as people visiting.
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Siteplan, scale 1:3000

Kavaljersbacken
Örsvängen
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Documentation of ground floor
Scale 1:100 (drawn in 1:50)
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Documentation of entrance floor
Scale 1:100 (drawn in 1:50)
A - Section of the facade before and after renovation
B - Section of the stairwell

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Documentation of floor 2 and 3

Scale 1:100 (drawn in 1:50)
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Documentation of the existing facade towards the southwest

Scale 1:100 (drawn in 1:50)
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Documentation of the existing facade towards the northeast

Scale 1:100 (drawn in 1:50)

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MAKING THE NEW THE SAME AS THE OLD
Bellmanhuset, Stockholm
Additions or infills are made in the same material, construction technique, form and colour as the parts that are replaced or the surrounding existing building, making the new and the old blend together. The slight distinction is due to the difference in age which will fade over time along with the aging of the new parts.

Methods

CONNECTING THROUGH COLOUR AND COMPOSITION
Målsåker slott, Sweden
Visually linking an addition, in another material, to the existing through the usage of the same colours and composition of decorative elements.

Methods

CAMOUFLAGE - connecting through colour and form
Gripsholm, Mariefred
Visually imitating the colour and composition of one material on/in another material.

Methods

CONTEMPORARY ADDITION OF ITS OWN TIME
Ör, Sundbyberg
An intentional contrast between the old and the new. The new does not have the same construction, material or formal language as the existing building which surrounds it.

Methods
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Methods

CONNECTING THROUGH MATERIAL, TREATMENT AND COLOUR
Livrustkammaren, Stockholm
Additions and infills relate through using the same material, treatment and colour to the surrounding existing building. This creates a visual connection although the addition and infill may have different construction techniques and/or form.

CONNECTING THROUGH MATERIAL AND SURFACE TREATMENT BUT A DIFFERENCE IN COLOUR
Stockholm
Additions or infills that has the same material and surface treatment as the part being replaced or the surrounding existing building but a different colour. This creates a noticeable difference between the old and the new.

CONNECTING THROUGH MATERIAL, TREATMENT AND COLOUR
Colosseum, Rome
Additions and infills relate through using the same material, treatment and colour to the surrounding existing building. This creates a visual connection although the addition and infill may have different construction techniques and/or form.

CONNECTING THROUGH MATERIAL AND SURFACE TREATMENT BUT A DIFFERENCE IN COLOUR
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UNIFYING WITH A COVERING LAYER AND COLOUR
Livrustkammaren, Stockholm
Unifying the old and the new by covering them with the same surface treatment and colour. What is new and old is however still noticeable due to a difference in aesthetic language.

A PARTIAL DIFFERENTIATION IN CONSTRUCTION
Mälsåker slott, Sweden
A new addition or infill that is made in the same material, and perhaps technique, as the surrounding existing building except for the usage of (some) contemporary constructive techniques.

Methods
The methods

ADJUSTED FORM AND COLOUR OF THE MATERIAL
Colosseum, Rome
Additions or infills are made in the same material, material treatment, construction technique and composition within the material as the parts that are replaced or the surrounding existing building. However, a difference between the new and the old is achieved through a difference in colour and aesthetical language.

ADJUSTED AESTHETICAL LANGUAGE AND SURFACE TREATMENT
Acropolis, Athens
Additions or infills are made in the same material, construction technique and colour, one or more, as the parts that are replaced or the surrounding existing building. A difference between the new and the old is achieved by a, sometimes only partial, difference in aesthetical language and surface treatment.

CONNECTING THROUGH COLOUR
Mälsåker slott, Sweden
An addition or infill that only relates to the surrounding existing building through it being in a similar colour.

A DIFFERENCE IN AESTHETICS
Mälsåker slott, Sweden
Additions or infills are made in the same materials, construction techniques and colour as the parts that are replaced or the surrounding existing building. A difference between the new and the old is achieved by a difference in aesthetics, perhaps only partially. In the example above only the decorative paintings have not been reconstructed.

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**SELECTIVE REMOVAL OF ELEMENTS**
Livrustkammaren, Stockholm
Removing chosen parts and exposing an underlying layer that have perhaps never been exposed before.

**SELECTIVE PRESENTATION OF ELEMENTS**
Livrustkammaren, Stockholm
Leaving selected parts visible when covering a surface.

**A DIFFERENCE IN SURFACE TREATMENT**
Belleville, Paris
Making infills clearly stand out from the older parts through a differentiation in surface treatment of the material. Otherwise, the new is made to look like the parts being replaced or the surrounding existing building by using the same materials, construction techniques and aesthetics.

**ADJUSTED FORM AND MATERIAL**
Arch of Titus, Rome
The addition or infill relates through using a similar but slightly different material and form as the surrounding existing building, creating a small but visible difference.

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The methods

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- Methods and materializations

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MAKING THE NEW THE SAME AS THE OLD
Mälsåkers slott, Sweden

Additions or infills are made in the same material, construction technique, form and colour as the parts that are replaced or the
surrounding existing building, making the new and the old blend together. The slight distinction is due to the difference in age
which will fade over time along with the aging of the new parts.

Most of the loose furnishing, including the wall panels, were removed and stored when new concrete floors were casted in the 1960s.
During the restorations in the 1990s an inventory of the loose furnishing was made, identifying what pieces belonged where
and remounting them in their respective place. New infills were made to replace the missing pieces of the panels, drawing upon
information from the surrounding pieces and/or documentation. In the situation documented above the infill pieces have
been treated in the same way as the existing only making them distinctive because of their difference in texture and for this reason as well
in colour.

Methods
1. New wood infills are painted with linseed oil
   paint in a grey colour.
2. Existing wood is cleaned.
3. The fitting of the new infill is made with glue.

A DIFFERENCE IN SURFACE TREATMENT
Mälsåker slott, Sweden

Making infills clearly stand out from the older parts through a differentiation in surface treatment of the material. Otherwise, the new is made to look like the parts being replaced or the surrounding existing building by using the same
materials, construction techniques and aesthetics.

Most of the loose furnishing, including the wall panels,
were removed and stored when new concrete floors were casted in the 1960s. During the restorations in the 1990s an
inventory of the loose furnishing was made, identifying what pieces belonged where
and remounting them in their respective place. New infills were made to replace the missing pieces of the panels, drawing upon information from the surrounding pieces and/or documentation. In the situation documented above the infill pieces have intentionally been left unpainted or
left with original wood panels with several layers of paint showing
at the same time. The top layers have been preserved in order
protect the underlying original layer.

Methods
1. Original wood panels with several layers of paint showing
   at the same time. The top layers has been preserved in order
   to protect the underlying original layer.
2. Wooden infill imitating the shape of the surrounding
   panels. The infills have been left untreated.

Documentation of studyprip to Malshaken

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- Methods and materializations

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Interventions in existing buildings

Methods

A DIFFERENCE IN AESTHETICS
Gripsholms slott, Sweden
Additions or infills are made in the same materials, construction techniques and colour as the parts that are replaced in the surrounding existing building. A difference between the new and the old is achieved by a difference in finishes, perhaps only partially.

1. Brick with the same measurements and colour as the ones on the building.
2. The same colour of the mortar has been used
3. The steps appear to be of the same material as the ones on the inside of the building
4. Copper detail is similar to the existing windowsills

A new staircase has been added in front of an existing door, probably replacing another. The new staircase has the same material as the building but is connected to it through strength ties and framed together. Because of its material this stair would be quite difficult to change making it close to irreversible.

CONNECTING THROUGH MATERIAL, TREATMENT AND COLOUR
Gripsholms slott, Sweden
Additions and infills relate through using the same materials, treatment and colour as the surrounding existing building. This creates a visual connection although the addition and infill may have different construction techniques and form.

A new staircase has been added in front of an existing door, probably replacing another. The staircase is fairly easy to remove and has a limited impact on the existing building fabric, making it close to reversible. The connection between the door and the new staircase is mainly visual. They have the same material and the same perceived colour but the staircase is of a different form.

Methods

1. Wood paneled door
2. Wood staircase made with a freestanding construction that has little impact on the existing building

Documentation of studytrip to Gripsholm

Interventions in existing buildings

Methods and materializations

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- Methods and materializations

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Documentation of process: Categorising the methods

- Scale
- Addition - Removal - Replacement
- Noticeability (visible intervention to the right - not visible intervention to the left)
- How much they relate (starting with not relating from the left)
- How they relate to the existing
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- Methods and materializations

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Reference projects

We identified what we interpreted as methods through reference projects, some by visiting and others through research. We actively choose mostly restoration projects due to them having an awareness about the existing and the fact that there is often a lot of information about them. We also wanted to see what the restoration mindset could bring when applied to a building that is perhaps not seen as very old, such as the building we have chosen.

The analysis

During the first part of the project we tried to investigate the methods and get to know the building at the same time. We did this by choosing two different parts of the building: a part of the stairwell and the main entrance. These two parts allowed us to find out different kinds of information about the building as well as provide us with scenarios that we could test our identified methods in.

The scenario outside dealt with the facade and entailed the changing or repair of the balcony fronts. For this scenario we worked in isometric drawing and collage, zooming out in order to see the effect on the whole. For the upper part of the stairwell we worked in different scenarios such as a new shaft and the exchanging of broken terrazzo tiles. These scenarios were explored in models, allowing us to zoom in.
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- Methods and materializations

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Test of methods: A difference in surface treatment

Elevation in scale 1:100 (drawn in 1:50)
Isonometric drawing in scale 1:80 (drawn in 1:20)

New panels in galvanized metal made in the same from and construction as the ones that they replace.
Method: 

A contemporary addition of its own time

The whole balcony front and railing is replaced with one made out of expanded metal.
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Method: Connecting through material, treatment and colour

Test of methods: Connecting through material, treatment and colour

The whole balcony front is replaced with one made out of sinus corrugated metal with a curvature similar to the board at the end of the roof.
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- Methods and materializations

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Method:
Connecting through colour

Test of methods: Connecting through colour

New panels out of fibercement in the same white colour as the ones that they replace.

Scale 1:40
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- Methods and materializations

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Test of methods: Making the new the same as the old

Method: Making the new the same as the old

New panels in white painted metal like the ones that they replace.

Scale 1:40
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- Methods and materializations

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Test of methods: A difference in aesthetics

Method: A difference in aesthetics

Scale 1:50

The whole balcony front is replaced with one made out of concrete with exposed ballast.
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Test of methods: Pluralistic version
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Models from test of methods in scale 1:10
After the initial study we decided to work with the methods more indirectly by putting them to use in the designing of a number of changes and additions to the building. We wanted to work with common interventions, usually made to houses of the same time and typology as our building, in order to study the possibilities within these scenarios. The scenarios that we have worked with were chosen based on our collected information about the building as well as information about buildings from Rekordåren and their maintenance. We have tried to identify the key elements and characteristics of the building that will be affected in each scenario in order to be able to decide what to preserve, enhance, remove or mimic.

Our scenarios:
- Renovation of the facade with added insulation
- The adding of an elevator
- Maintenance of surfaces and materials in the stairwell
- Increased sight accessibility in the staircase
- Additions to the entrance towards southwest
- Changes and additions to the entrance towards northeast
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- Methods and materializations

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Relief models in scale 1:50

- The existing facade towards northeast
- The facade towards northeast with proposed renovation
- The existing facade towards southwest
- The facade towards southwest with proposed renovation
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- Methods and materializations

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Sketchmodels of window detail in the renovated facade, scale 1:20
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Window detail in the renovated facade

Model of window detail in the renovated facade in scale 1:20
Window detail in the existing facade (left) and the renovated facade (right), scale 1:20

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Detail of added inner railing on the balconies

Scale 1:20 (drawn in scale 1:10)

Model in scale 1:20
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- Methods and materializations

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Drawing of the existing facade in scale 1:40 (drawn in scale 1:20)
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- Methods and materializations

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Drawing of the renovated facade with added insulation in scale 1:40 (drawn in scale 1:20)
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Drawing of the renovated facades with added insulation in scale 1:200 (drawn in scale 1:50)
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Sketches for the facade renovation, drawn in scale 1:50
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Ground floor, Entrance floor and section in scale 1:100 (drawn in scale 1:50)

Drawings of the extension for an added elevator
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Photo of model (1:10) showing the extension for the added elevator and the proposed new painting of the stairwell
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- Methods and materializations

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Photo of model (1:10) showing the extension for the added elevator and the proposed new painting of the stairwell
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Photo of model (1:10) showing proposed maintenance of the stairwell
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- Methods and materializations

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Drawings of stairwell with existing painting (left) and proposed new painting (right)

Scale 1:100 (drawn in 1:50)
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Test of painting for the stairwell, done in scale 1:10
Test of painting for the stairwell (with the chosen one to the far right) done in scale 1:1
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Detail of changing of terrazzo in the staircase in order to improve contrast, scale 1:10
Collage showing the changing of terrazzo in the staircase
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Detail of the meeting between the new and existing terrazzo tiles at the extension for the elevator, scale 1:10
Sketches for the adding of a bench in the stairwell
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Sketches for the adding of a bench in the stairwell

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Sketches for the adding of a bench in the stairwell
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Drawings of the entrance on the northeast facade

The entrance today, scale 1:40 (drawn in scale 1:20)

The entrance with proposed changes and additions, scale 1:40 (drawn in scale 1:20)
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Detail of the new handrail to the entrance on the northeast facade

Scale 1:10 (drawn in scale 1:5)
Drawing of the entrance on the southwest facade with changes and additions, scale 1:40 (drawn in scale 1:20)
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Detail of meeting between new and existing handrail at the entrance on the northeast facade

Scale 1:10 (drawn in scale 1:5)
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Sketches of the new handrail at the entrance on the northeast facade with the chosen one to the far left, scale 1:10 (drawn in scale 1:5)
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Models in 1:20 of the added ramp and handrail for the entrance on the southwest facade
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- Methods and materializations

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Sketch of the added ramp and handrail for the entrance on the southwest facade.