



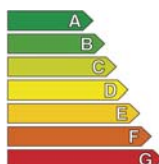
Myhrerenga Housing Cooperative – renovation project

Introduction

This is a report of the decision making process for a high ambition renovation project, which started construction in February 2010.

Myhrerenga Housing Cooperative is located in Skedsmo, 15 km north of Oslo. The cooperative owns 7 identical blocks with 168 flats. 3 storey blocks with unheated cellar. The Housing Cooperative consists of 1-bedrooms (55 m²) and 2-bedrooms (68m²) apartments. The buildings were built in 1968-1970

The Norwegian research institute Sintef Byggforsk concluded after an examination of the building that energy-efficiency rating corresponded to an “F” in the new energy labelling system.



Sintef Byggforsk summarized the technical issues as these:

- Monotone and weary façades
- Windows in bad condition (some are rotten)
- Complaints about poor indoor climate, draft problems and cold floors
- Extremely high energy consumption; 275-300 kWh/m² per year "overall" energy consumption. Few years earlier it was as high as 400 kWh/m² but had been reduced by several measures (see under 2. Analysis – Key actors).
- The residents want larger balconies
- Moisture problems with existing balconies

The housing cooperative has an administration and service agreement with USBL which is a housing cooperative company in Oslo.

USBL is managing approx 26.500 homes owned by 566 housing co-operatives.

It requires a 2/3 majority at the General Assembly of the respective housing co-operative to decide upon a renovation project.

USBL was invited to participate in the EKSBO Project, which is a sub project to the Norwegian participation in IEA SHC Task 37.

The technical director in USBL launched the idea of an advanced renovation project to the board of Myhrerenga Housing Cooperative. In USBL there was an internal scepticism regarding the feasibility of convincing a big housing cooperative to go for a high ambition renovation project.

The main steps in the process were:

- The housing cooperative had been talking about the façades for long time.
- 2007: offer for renovating the façades
- Fall 2007: 3 options were presented for the occupants
- Waited 1 year for specified suggestions and calculations.
- Several work meetings
- Distribution of the final proposal to occupants
- 29th of January 2009: General Assembly
- Conclusion: Mandate to board 63,4 mill NOK (approx. EUR 8 mill) +/-15%
The decision implies an ambition close to the Passive House standard.

1. Information gathering

The obvious need for renovation of the façades of the buildings initiated an internal process in the housing cooperative to find good renovation solutions. In this work they were assisted by the technical department at USBL.

The Norwegian Housing Bank contacted USBL in order to find potential high ambition demonstration projects. This idea was presented to the board of Myhrerenga Housing Cooperative.

2. Analysis

Important factors which indirectly influence this market (PEST-Analysis):

Political factors

- Norwegian authorities are encouraging sustainable solutions – also incentives
- Media focuses more on how to increase supply of more energy rather than on saving

Economical factors

- General strong purchase power
- Relatively low energy prices
- From overheated Norwegian economy to international financial crisis, which could change from “sellers” market to “buyers market”

Social factors

- The residents were a mixture of young and mature persons:
 - Starters; 20-30 years
 - Divorced, older singles; 50-70 years

Technological factors

- Still little knowledge about sustainable solutions
- Sintef Byggforsk is the main actor with competence in this field

- New building code to be implemented only for new houses
- Few existing examples of advanced renovation.

The key actors

1. The board of Myhrerenga
The board was well respected among the inhabitants in the cooperative. During the last years it was decided and implemented several cost savings measures. To be mentioned:

- Trading on utility services
- Closed down fridge room in the basement
- Closed down washing room
- Measurement system

The chairman and a second person in the board possessed both technical and organising skills.

2. The residents

The people living in the housing cooperative may be seen as the customers of the board. The people living in Myhrerenga are either “starters” with no kids or “mature” single people. The majority has not lived there for a long time.

Their basic need is a warm cosy home for a reasonable price, and the board’s job is to handle all types of issues in a housing cooperative.

As each resident owns their share in the cooperative they also have an interest in increasing the value of the buildings, and in this particular case to reduce energy costs. Some also pay attention to non energy benefits, such as better indoor climate and comfort.

3. Key suppliers

USBL is the main supplier of services to the Myhrerenga Housing Cooperative. It is long term relationship, and includes mainly management services and

planning of maintenance. In this project the technical department was involved in the analysis of the buildings (part of the maintenance planning) and project management.

Sintef Byggforsk was hired to the project as the specialist regarding good renovation measures to achieve a high energy efficiency performance.

Sintef Byggforsk had experience from a decision making process in a housing cooperative in Lillehammer, which concluded not to go for an advanced renovation solution. This gave important knowledge about possible pitfalls in how to communicate the message.

The Norwegian Housing Bank and Enova (Norwegian Energy Efficiency Body) contributed with a beneficial financing package. The Norwegian Housing Bank also played a role as an informer at the start of the decision making process in the housing cooperative.

Arkitektskap AS was chosen as designers of the buildings and the outdoor area.

Summarised SWOT-analysis

Based on the analysis presented above in addition to other relevant analysis, we can summarise the initial status into a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) seen from Myhrerenga Housing Cooperative:

Strengths

- The rent had been increased more than necessary according to existing payment obligations. As a consequence the cooperative had built some equity for new investments.

- A high proportion of occupants had lived there for a shorter time, and had therefore other references for quality of dwellings.
- An active and impatient board, with sufficient knowledge to understand the benefits of advanced renovation.
- The board had a good standing among the residents, due to earlier implemented cost savings measures.

Weaknesses

- Buildings in a very poor condition (in respect to the renovation project this could also be seen as a "Strength").
- The two board members who were the key actors had moved out before the decision of renovation was to be made.

Opportunities

- As this would be the first pilot of advanced renovation of multi storey dwellings in Norway, extensive financial incentives from authorities could be expected.
- Also special financial terms from important building systems and components suppliers could be expected.
- Significant energy saving potential could result in reduced energy costs.
- Significant improvement in quality of indoor climate, comfort and temperature. It would also eliminate existing draught and moisture problems. It would upgrade the quality of the buildings above the new building code.
- Increased living space and balconies.
- Increased aesthetics
- Increase attractiveness and value of flats
- Increased interest in media for sustainable solutions, such as "house of future"

Threats

- Renovation costs could be too high
- Based on experiences from planned similar project in Lillehammer, the decision making process with the requirement of 2/3 majority could stop the project.
- Relatively low energy prices

3. Goal

For the pilot project at Myhrerenga the goals were:

- To realise a renovation project towards the Passive House standard.
- Through reduced energy costs, grants and sound financing the rent should not be higher than by a traditional renovation.

4. Strategies

These strategic choices were made for the launching of the idea to go for advanced renovation project at Myhrerenga:

1. The two board members, who initially played a very important role, remained as board members until the decision was made although they had moved out from their apartments in the cooperative.
2. An integrated decision making process with strong involvement of the residents.
3. Building credibility by using the best technical expertise in Norway.
4. Design of a very good financing of the project.
5. Communicate the message that the net cost per month should not be higher than by traditional renovation. It was presented only two options; advanced renovation and ordinary façade renovation.

5. Results and lessons learned

Results

In January 29th 2010, the General Assembly decided to give a mandate to the board to realise the project within a frame of 63,4 mill NOK (approx. EUR 8 mill) +/- 15 %.

The total construction cost including supervision, enlargement of balconies and drainage work is now estimated to NOK 74,5 million.

In February 2010 the construction started.

The calculated net rent compared with a traditional façade renovation is as follows (source: Sintef Byggforsk):

(NOK)	1-bedrooms	2-bedrooms
Trad. Ren.	3.510	4.390
Adv. Ren.	3.190	3.990

The reason why the rent is estimated to be lower for the advanced alternative than a traditional façade renovation is due to:

- Grant from Enova: NOK 6,4 mill
- Lower rent from Norwegian Housing Bank (4,7%) compared with ordinary bank (5,7).
- Reduced energy costs (based on energy price 0,1 Euro/kWh)

Both types of renovation will also lead to tax deductions, which are not included in the figures above. Before renovation the rent was:

2-bedrooms NOK 3200,-(EUR 400,- /m)

1-bedrooms NOK 2700,-(EUR 340,- /m)

The board estimated that the renovation would increase the value of a 2 bedrooms flat from NOK 1,4 mill to NOK 2 mill.

Lessons learned

- As the majority of the residents had not lived in the apartments for a very long time, they “knew” what to expect from a good apartment. In other words they were not used to and would not accept to live in such poor buildings.
- Due to the rent policy the cooperative had saved some own funding for the project, and had established a rent level which made the additional increase less dramatic (approx. 20%).
- The board as a team:
 - “We are very complimentary”
 - “We challenge each other”
- Smart moves:
 - Chairman of the board is not directly involved
 - Always presentation for the board and challenging questions
 - Always positive atmosphere at the resident meetings
 - Make alliances with the critical persons
 - Presented only two options to choose between.
- Mr. Tor Helge Dokka from Sintef Byggforsk gave the idea credibility. He had in depth knowledge about the technical challenges, while at same time he communicated and acted in a manner enabling ordinary people to easily understanding his message.

In summary the main reason for the positive decision, was that it did not imply higher rent than they would have had to pay for an urgent needing façade renovation.

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References

Tor Helge Dokka, Sintef Byggforsk; and
Michael Klinski; Myhrerenga Borettslag
(Housing Cooperative) 2008 (in English).

[http://www.husbanken.no/Venstremeny/
Miljo%20og%20energi/Lavenergiboliger/
~/media/58B0C523C34B4845A535FBD9
FAB9000E.ashx](http://www.husbanken.no/Venstremeny/Miljo%20og%20energi/Lavenergiboliger~/media/58B0C523C34B4845A535FBD9FAB9000E.ashx)

Tor Helge Dokka, Sintef Byggforsk; and
Michael Klinski; The first apartment
house renovation with Passive House
components in Norway, Paper to the
Passive House Conference in Dresden
May, 2010.

The information in this document is
gathered through interviews of:

- The board of Myhrerenga Borettslag
- Key technical persons at USBL
- Key persons at Sintef Byggforsk