WINDOW FOR ALL

Inclusive windows for NorDan

March - August 2010

Royal College of Art
Postgraduate Art and Design

helen hamlyn centre

NorDan

NORSK DESIGNRÅD
NORWEGIAN DESIGN COUNCIL

KADABRA
produktdesign

This project was initiated in anticipation of the new requirements for windows (“Byggteknisk Forskrift”) which are launched in Norway on July 1st 2010. These requirements place an emphasis on usability and safety for the end user.

With these requirements as a starting point this project has taken a detailed look at the everyday experiences of a variety of users aiming to get a better understanding of their needs and going further to understand their aspirations in relation to windows.

The Helen Hamlyn Centre
Kadabra Produktdesign

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REGULATIONS **Overview**

Regulations

FOR 2010-03-26 nr 489: Forskrift om tekniske krav til byggverk (Byggteknisk forskrift)

http://www.lovdata.no/cgi-wift/ldles?doc=/sf/sf/sf-20100326-0489.html

Standards

Norsk Standard (NS): Universell Utforming av Byggverk

NS 11001-1:2009 og NS 11001-2:2009

Guidelines

Veiledningene til Forskrift om tekniske krav til byggverk

http://byggeregler.be.no/forskrift-om-tekniske-krav-til-byggverk

Extreme Users

Experts

Private House

Tower Block / Appartment

1. Older arthritic person
2. Parent & young child
3. Wheel-chair user
4. Space precious Student
5. House Proud
6. Physically Impaired

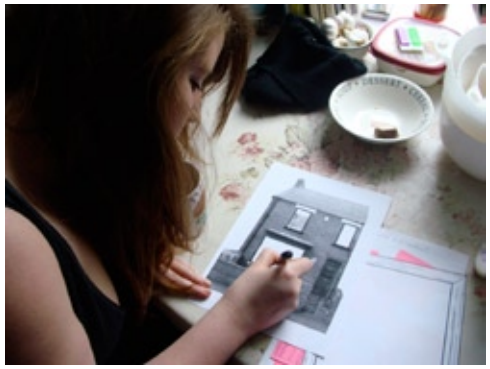
Fire Inspector
FM manager
Reseller
Police (burglar)
Real estate
Developer
Architect
Insurance broker

Locations
Two building types have been chosen as research sites which will offer contrasting perspectives for the project and also reflect Nordan UK's different markets. The first is the 'private house' and the second is the 'tower block'. This selection will offer us examples different in terms of ownership, privacy, size, value, aesthetics and lifestyle.

Extreme Users
A variety of users were selected to take part in the project. These people each represented a particular challenge - for example, a wheel-chair user, a blind person, an older person with arthritis, a student in a tiny flat. These people had extreme demands of how the window should function and were therefore able to provide unique insights into their use, inspiring new ideas for design.

Expert Interviews
Architects, developers, insurers, police, fire safety were all consulted in their role as experts.

RESEARCH METHODS



Home Interviews

Informal interviews took place with users in their own homes focusing on their everyday experiences of using their windows.

Research Lab

A variety of users and experts were invited to try Nordan windows out during a research lab held at the Royal College of Art. Two windows, the *NTech Topswing* and the *Tilt & Turn* were trialled.

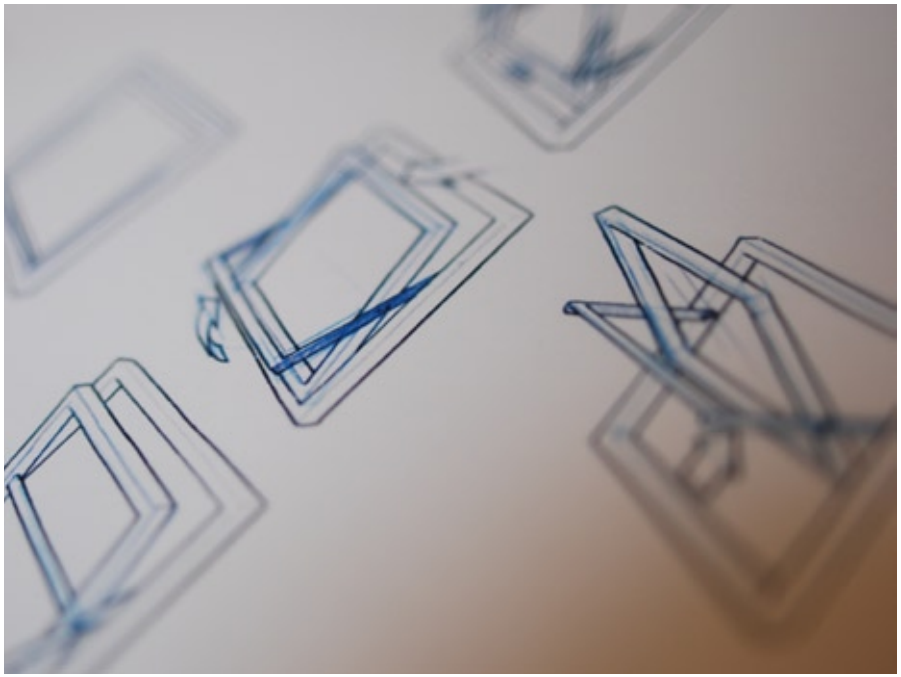
Design Workshop

Users were invited to attend a further workshop. This workshop focused on getting user feedback on several of the concepts generated from the research. The workshop was held at the Norwegian Design Council in Oslo.

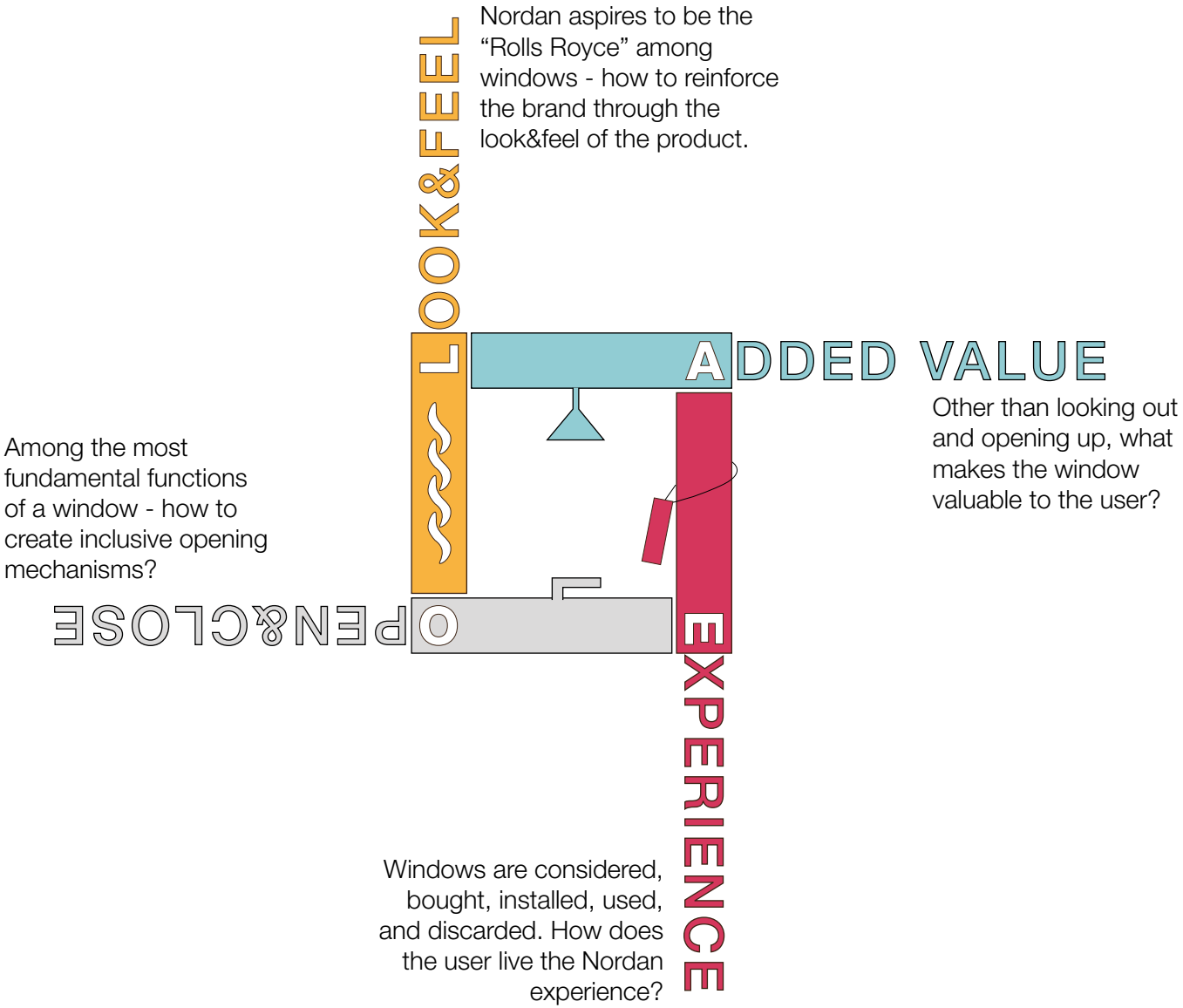
RESEARCH METHODS **Home interviews**

RESEARCH METHODS **Research lab**

RESEARCH METHODS **Design workshop**



INSIGHTS **Main themes**



OPEN & CLOSE

Insights & Design Concepts

OPEN & CLOSE **Insights**

'you have to really work this out, if there was a fire and you had to get out, you would be panicking'

1. People want fully opening windows.

We found that the 'cleaning mode' is, in practice, the normal opening mode with windows opened for many different reasons for example letting the day in or letting cooking smells out.

2. The Tilt & Turn is difficult to learn how to use.

Users regarded three handles on a window as confusing and felt that they did not indicate their function. In order to open the window they had to rely on trial & error and were surprised when the window opened suddenly from the top.

3. The Topswing window requires a level of physical strength to open & close it.

This makes it difficult for a wheel-chair user, shorter person or person of reduced strength to use them.

OPEN & CLOSE **Insights**

4. Motorisation

Users were wary of motorised opening mechanisms as they did not ‘trust’ technology.

Other users, wanted to buy a window with the possibility of motorising it, if necessary, at a later stage.

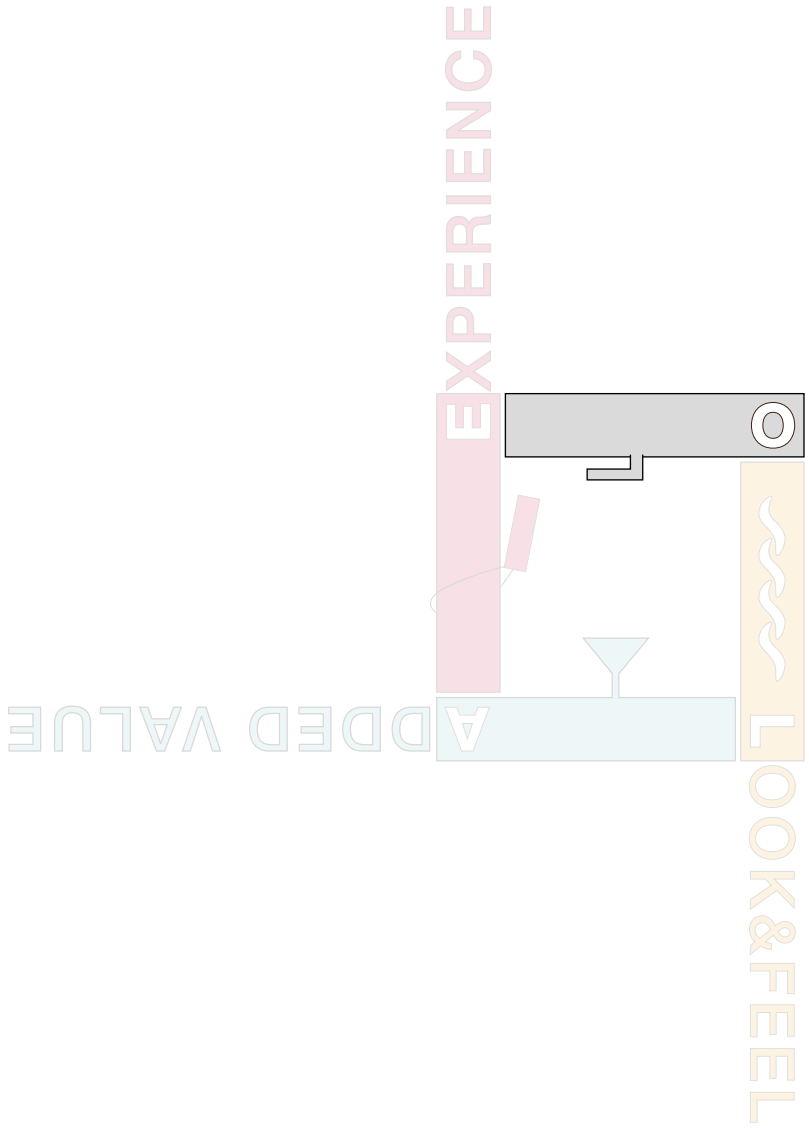
5. Grip, Force & Reach

- Users found a longer handle required less force and was easier to use.
- Our research found 530mm to be the maximum reach out for a wheelchair user.
- Grip was not always possible for persons with arthritus or reduced dexterity.

6. Users have different ergonomic needs for handles.

A wheel-chair user needs handles placed lower, while a parent wants ones that are child ‘safe’. Other users found the handles them uncomfortable to hold, too small or difficult to see with low contrast.

OPEN & CLOSE **Key Points**



OPEN&CLOSE

* Reach / Force / Grip
* Fully Opening
* Intuitive Opening
* Space Efficiency
* Safe Washing

OPEN & CLOSE **Design Concepts**

Motorised tilt ’n’ manual turn

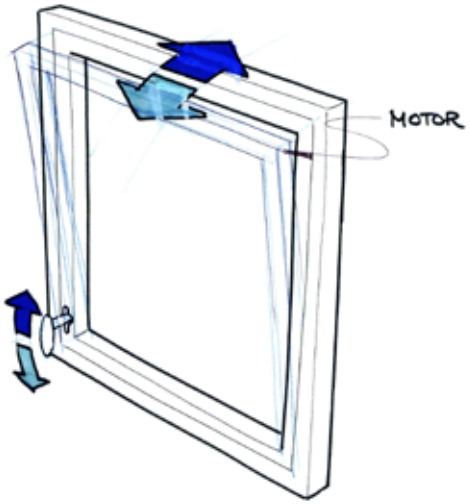
Closed

Motorised Tilt
- Activated by tilting handle
- Motor on top opens the window

Manual Turn
- Activated by rotating handle
- Manual opening mechanism (practical in case of emergency)

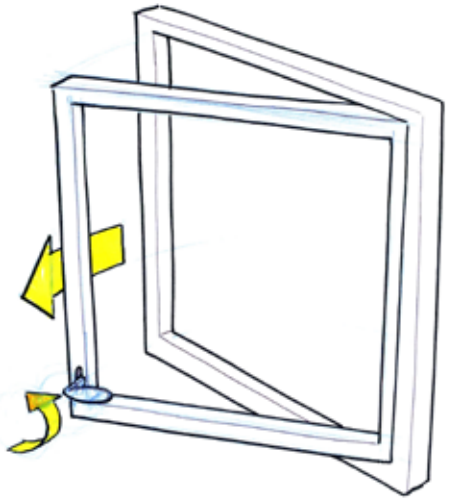
OPEN & CLOSE **Design Concepts**

Motorised tilt ’n’ manual turn



With motorised tilt you can...

... automatically open and close the window during the night
... automatically close all windows in case of rain
... close all windows at once when you leave from home
... open all windows at once when you need to air out
... automatically open the windows in case of gas leakage
... etc

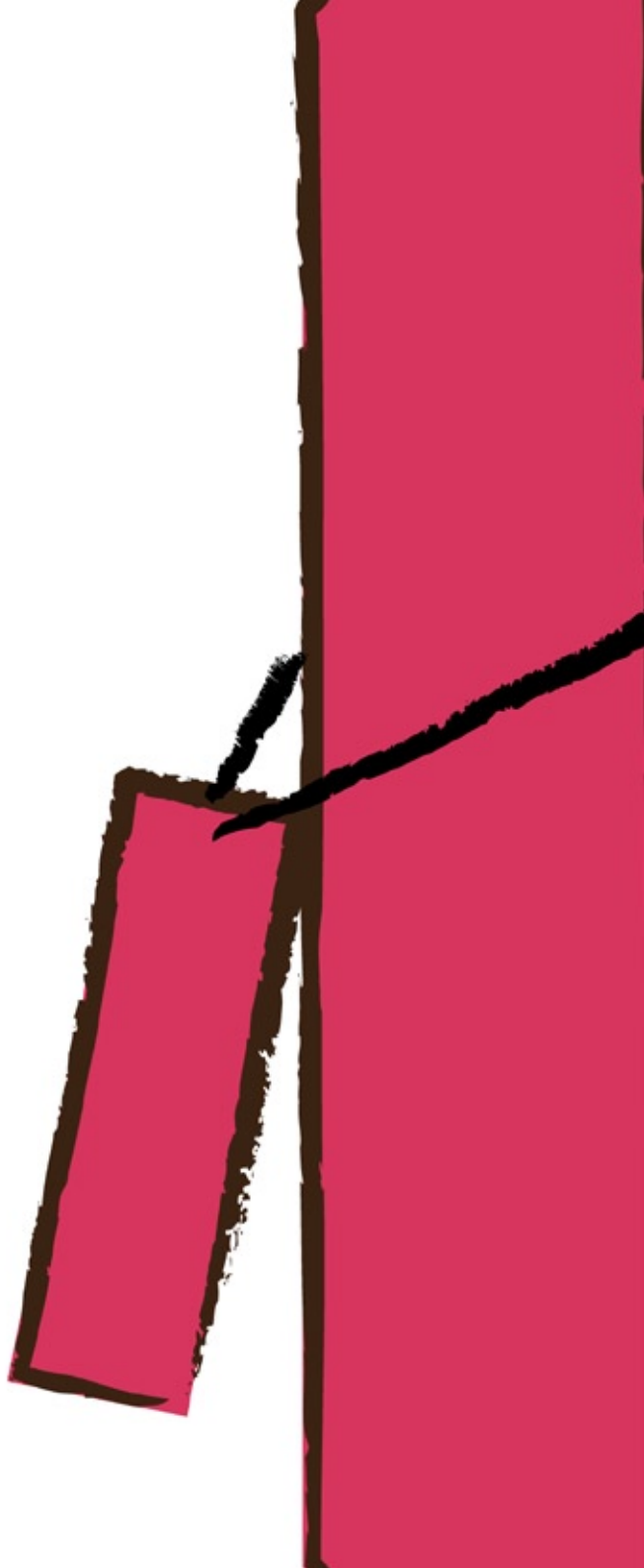


With manual turn you can...

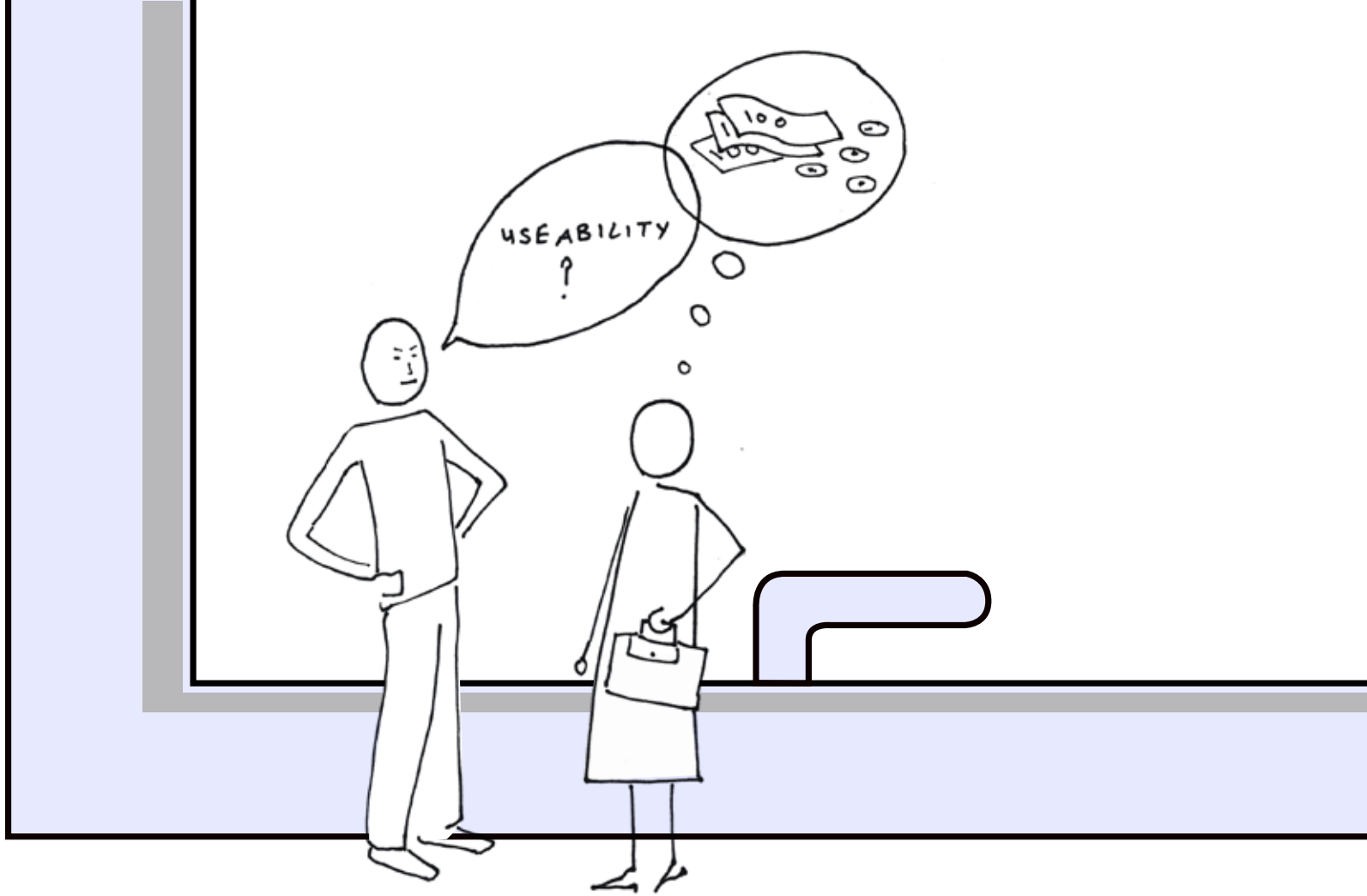
... open the window completely to let the day in
... always get out in case of emergency (no matter if the electricity is out)

EXPERIENCE

Insights & Recommendations



EXPERIENCE **Insights**



1. People don't know where to find out about windows.

When they need to get new windows people will ask their builder or architect to recommend a brand to them.

2. What are the benefits?

People are aware of the need for energy efficiency but in reality they are more interested in the cost benefits over time. They want proof of how much money
Nordan windows will save them in energy bills and other ways.

3. Architects want more specs.

The production date of the window is available within the gasket, but architects want to know more. It would be of value to them to have more specs such as u-value or safety rating included as well.

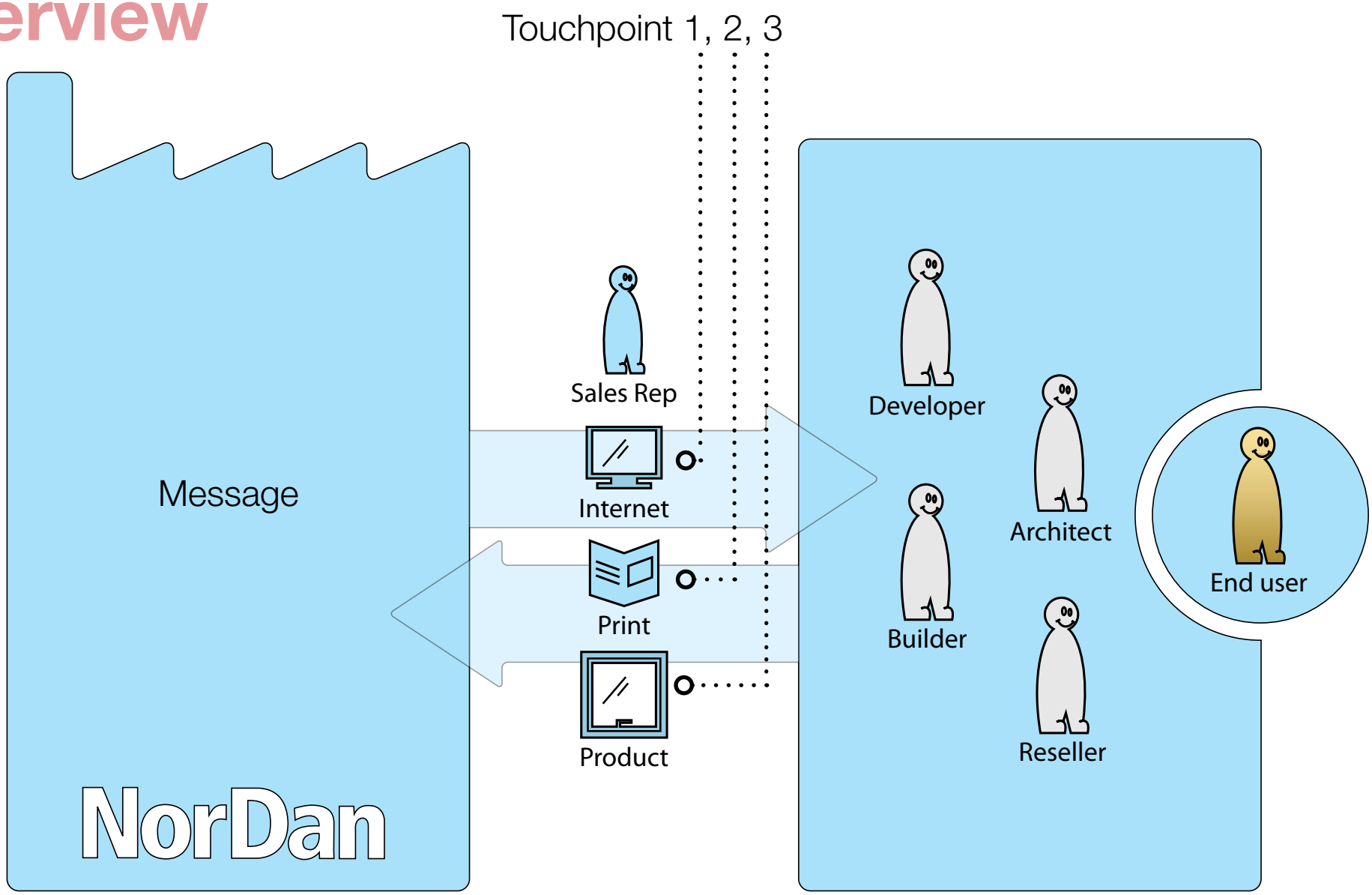
4. Architects need more arguments.

Architects choose a window on the basis of its aesthetics, efficiency and usability. Nordan provides strong arguments for efficiency but fails to communicate the other two things.

EXPERIENCE **Key Points**

EXPERIENCE **Design Concepts**

Overview



EXPERIENCE **Design Concepts**

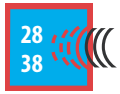
Message


Innbrudds-sikret


Barne-sikret


Sikker rømningsvei


Brann-hemmende

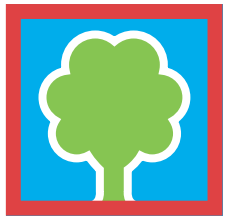


Lyd-demping

Isolerings-evne

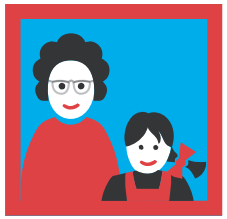

Alu


Vask innenfra



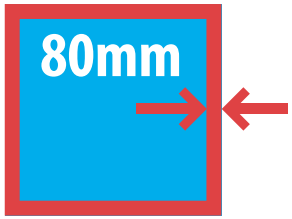
Clean materials

- Nordan uses materials with small eco footprint.
- Nordan knows where all components come from.



Life time homes

- Installing a Nordan window guarantees a window for life.
- Inclusive design of opening operation.



Aesthetics

- Thin, simple and unobtrusive frames.
- Large light opening.
- The architects favorite! Nordan answers to the exigencies of modern architecture.

EXPERIENCE **Design Concepts**

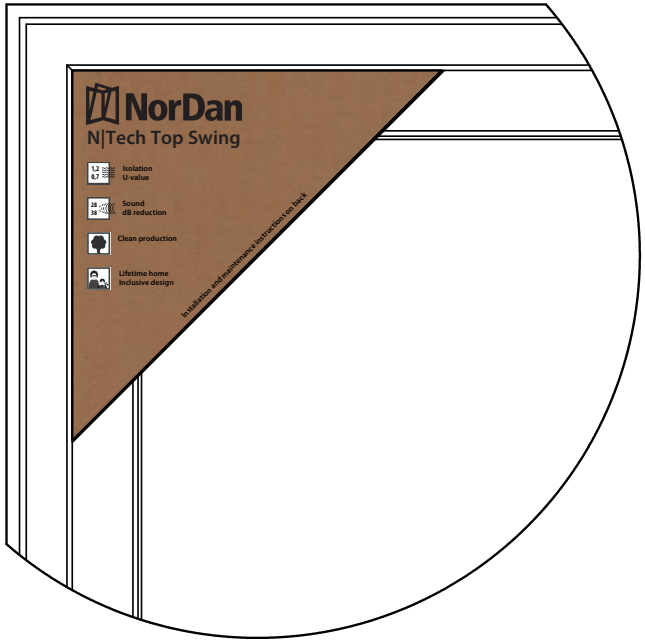
Touchpoint 1: Internet

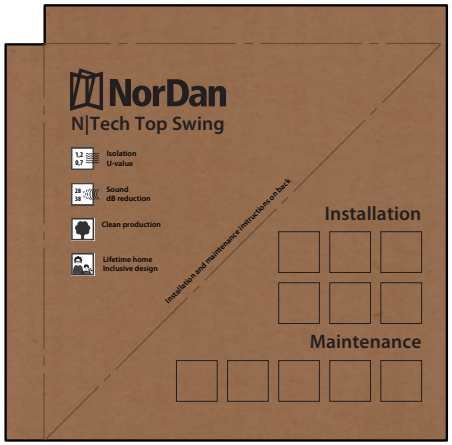
Website functions

- Choosing new windows
- Upgrading old windows
- Information about YOUR window (enter serial number)
- End user feedback through forum

EXPERIENCE **Design Concepts**

Touchpoint 2: Folder





Brochure from recycled paper

- What materials and where they come from
- Performance
- Installation instructions
- Care instructions
- Guarantee

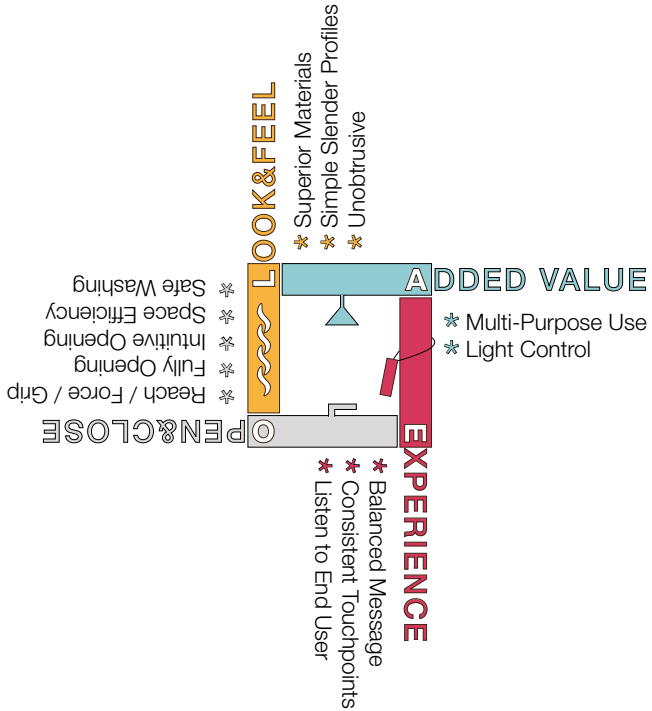
EXPERIENCE **Design Concepts**

Touchpoint 3: Spacer

Spacer info

- All information required by builders, architects and users.
- A unique tracking number for further information.
- A place to communicate the Nordan Brand.

SUMMARY **Success criteria**



OPEN&CLOSE

* Reach / Force / Grip
* Fully Opening
* Intuitive Opening
* Space Efficiency
* Safe Washing

LOOK&FEEL

* Superior Materials
* Simple Slender Profiles
* Unobtrusive

ADDED VALUE

* Multi-Purpose Use
* Light Control

EXPERIENCE

* Balanced Message
* Consistent Touchpoints
* Listen to End User

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