

Holmenkollen Fyrar

A project exploring relationships between graphic design and architecture through the design of a **visual identity, wayfinding system & applied graphic pattern** for JDS Architects' new ski jump design in Holmenkollen, Norway

HDK

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at Gothenburg University

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INTRODUCTION

From the beginning of the masters course I have tried to contain my studies to those that will help me prepare for professional practice. This exam work continues with the aim of creating outward looking designs for real audiences.

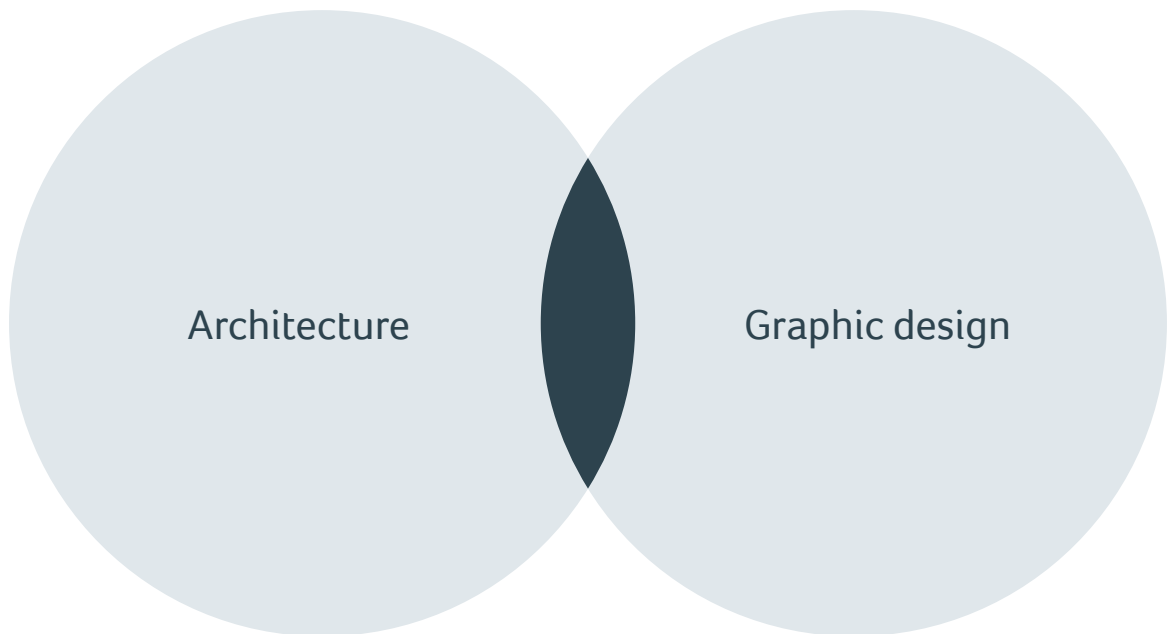
Previous to beginning the Masters course I worked as an information designer within city environments at the company City ID (www.cityid.co.uk). During my time there the majority of projects worked on were aimed at assisting visitors to navigate cities and other spacial environments through the design of graphic information systems.

This exam project continues the investigation of links between spacial environments and graphic design and expands upon extensive knowledge already gathered during my professional work. In this case the spacial environment I wanted to work on was a piece of architecture. My preference was to work on a building that was currently in development rather than work with an existing building that may already have a graphic design program associated with it.

The interest is in projects that successfully merge graphic design and architecture to create cohesive and dynamic design solutions. Usually graphic design and architecture are, rightly, considered separate areas of design. Each area of specialism requires a substantial degree of knowledge and skill.

There appears to be opportunities to create great design projects by successfully merging these two disciplines however successful projects like these seem to be the exception rather than a rule. In the majority of cases the final design solution lacks any substantial visual link between the architectural design and graphic design.

The wider aim of this exam work is to attempt to create a graphic design solution that in some way references the building it is connected with. In this regard the final solution (one that exhibits both architecture and graphic design) should display a cohesive appearance to its intended users (visitors to the building as one example).



INTRODUCTION

To investigate this link some of the more well known architectural offices in Scandinavia were contacted. The content of this correspondence was a request to work in collaboration with them to create a cohesive design solution that would feature graphic design and architecture.

It was a suggestion that this design solution could involve murals, signage projects, space enhancing graphics, exhibition graphics, visual identities and welcome signage.

JDS Architects based in Copenhagen were the company that seemed most interested in collaborating on a project like this and responded positively to the letter they received.

After an introductory meeting at JDS with the director Julien de Smedt an opportunity was offered to choose between two projects the studio currently had in development.

One of these projects was to work on a design concept for a wayfinding system for the architects' new 'Holmenkollen Fyr' (Holmenkollen Beacon) ski jump near Oslo, Norway.

This project seemed ideal as it could be based upon previous experience of designing complex information and wayfinding systems. The project also seemed the best of the two opportunities to explore links between graphic design and architecture.



BACKGROUND

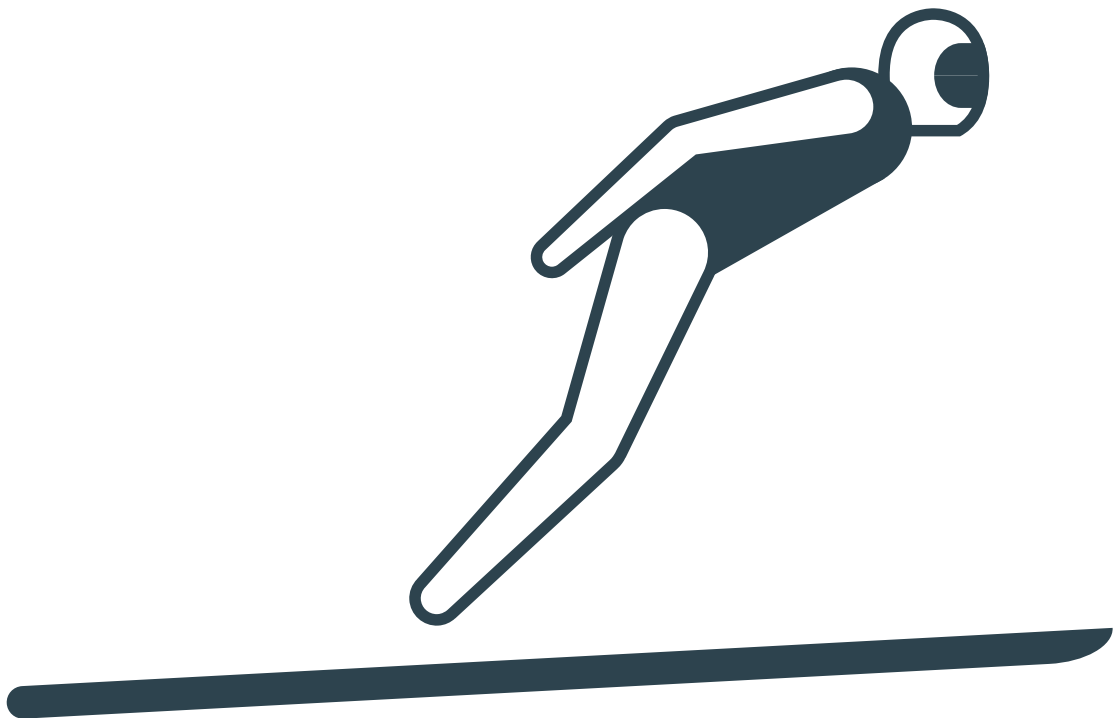
This project differs from my previous work within wayfinding systems for cities in the respect that they have been created for environments that are complete and already exist.

Due to the designer only being able to see plans, drawings and models of the final building the development of a wayfinding system for Holmenkollen will require substantial imagination and interpretation on the part of the designer. There will be a need to communicate with the architect to understand the purpose of the building, why it is being created and ultimately what their vision for the project is.

Although this is a new building there is also an immediate need to understand the history of Holmenkollen, its relationship to ski jumping and how ski jumping operates as a sport.

This project is likely to be highly analytical and based upon a lot of research. In regard to the structure of this report some of the research will be applied directly into this Background section. However a substantial amount of the research will be investigated directly in the results section alongside the decisions they are helping to make. This is being done to simplify the reports structure and to aid the reports continuity and flow.

In the end this report will also be submitted to the architects as one of the deliverable elements of the concept work. It is therefore important that any decisions in regard to the concept are easy to identify.



BACKGROUND

THE ARCHITECTURAL COMPETITION

Oslo's bid to host the World Ski Championships in 2011 was awarded on the condition that a new ski jump was built. Subsequently a brief was sent out by Oslo City Council to domestic and international architects to design the new jump. The brief was introduced as follows.

'In 2006 the International Ski Federation (FIS) awarded the World Ski Championships, Nordic disciplines, to Oslo on the condition that a new and modern ski jump is built. Holmenkollbakken (Holmenkollen ski jump) is one of the capital's and indeed the country's greatest symbols, even though the ski jump has undergone constant alterations over the last 110 years.

The new ski jump should be a place where the most spectacular of ski sporting events will be practiced into the foreseeable future.

The slope should be one of Oslo's main tourist destinations where tourists from near and far can experience sporting excellence and wonder at the courage of those who tackle the downhill jump. Holmenkollen should also be a place for sporting and cultural summer activities.

Architects from all corners of the world are invited to take part in this important task for Oslo city and Norway's national sport.'

JDS Architects eventually won the competition based on their 'Fyr' design, Visualisations of which are shown below. Their design features a new 50,000 seat amphitheater in addition to the Olympic standard ski jump which will also serve as one of the capital's most important visual icons.



BACKGROUND

WHO ARE JDS ARCHITECTS?

JDS Architects are a Copenhagen based architects office founded and directed by Julien de Smedt, a former director at PLOT (formerly based in Copenhagen). They work across architecture and other design projects and are described as follows on the company's own website.

'JDS is a multidisciplinary office that focuses on architecture and design, from large scale planning to furniture. Rich of multiple expertise the office is fuelled by talented designers and experienced architects that jointly develop projects from early sketches to on-site supervision. All of which, independently of scale outlines an approach that is affirmatively social in its outcome, enthusiastic in its ambition and professional in its process.

At the core of our architecture is the ability to take a fresh look at things through experienced eyes. Our approach aims at turning intense research and analysis of practical as well as theoretical issues into the driving forces of design. By continuously developing rigorous methods of analysis and execution, JDS is able to combine innovative thinking and efficient production.

JDS sees its position as the partner to its client, rather than only its consultant. The office is 30 people strong, has a wide portfolio of international work and the attitude of involving external consultants when required. The use of complementing teams ensures that the projects will never suffer from being too conventional nor too naive.'



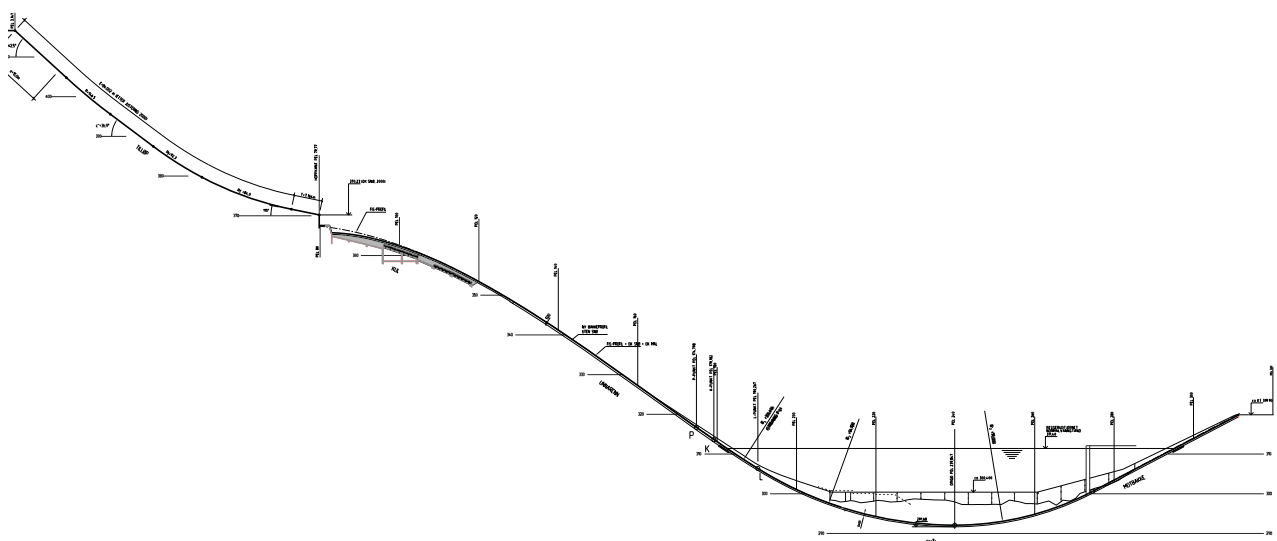
BACKGROUND

A BRIEF HISTORY OF HOLMENKOLLEN

Considered as being the birthplace of competitive ski jumping Holmenkollen is thought of as being the sport's spiritual home. The first ski jump ("Holmenkollbakken") was built there in 1892, because of the site's natural slope and positioning. In the years since then there have been many exciting competitions taking place.

However Holmenkollen is not merely a sports venue; it is also an important tourist destination. Drawing well in excess of one million visitors annually, the jump is one of Norway's most popular attractions.

The last starting platform at the top of the tower stood 60 meters from the ground and 417 metres above sea-level. It afforded a breathtaking view of the wooded expanse of Nordmarka, a paradise for ramblers and skiers as well as views of the capital, Oslo and the islands of the fjord that bears its name. A significant feature of the new building is that the viewing platform has been retained.



BACKGROUND

SKI JUMPING AND NORWAY



Ski jumping originates from Morgedal in Norway. Olaf Rye, a Norwegian lieutenant, was the first known ski jumper. In 1809, he launched himself 9.5 metres in the air in front of an audience of other soldiers. By 1862, ski jumpers were tackling much larger jumps and travelling longer.

The first proper ski jumping competition was held in Trysil in 1862, although the first widely known ski jumping competition was the Husebyrennene, held in Oslo from 1879. The annual event was moved to Holmenkollen from 1892, and Holmenkollen has remained the pinnacle of ski jumping venues.



Skiing and other associated winter sports are generally considered the national sports of Norway. However perhaps because of ski jumping's origins being related to Norway and Holmenkollen's proximity to the centre of Oslo causes ski jumping to stand out as one of Norway's most iconic sports.

There are two types of jumping competitions that are held all over the world, K-90 and K-120. The K designations relates to the distance to a visual line or mark on the landing strip. For K-90 and K-120 competitions, the K line is at 90 metres (300 ft.) and 120 metres (390 ft.) respectively. The new jump at Holmenkollen will be a K-120 hill although there is also a K-90 hill being built nearby alongside other ski facilities for the 2011 World Ski Championships. Not all jumps are the same however and Holmenkollen is often considered a small hill compared with other ski jumps that can be found in Europe.



Events are now also able to happen throughout the summer season as well. The current design shows that the new design for Holmenkollen will feature a porcelain jump and an artificial surface as the jumps landing area. The new jump will also be equipped with Snow Machines making jumping possible in poor snow conditions.

DEFINING THE PROBLEM

In its current state as a major international sports arena and Norway's most visited tourist destination the ski jump attracts over a million visitors per year. After its redesign visitor numbers are likely to be substantially increased.

Like most international sporting arenas the new building will require a fully functioning wayfinding system to assist visitors in moving around, in and through it.

Although not part of the brief from JDS the building will also require a new graphic identity to be created. At the time of writing there has been a brief conversation with the Norwegian Ski Association (the building's managers) in regard to this. Whether or not this identity will be used to market the building as a visitor destination in the end is up in the air at moment. However this project requires a visual identity to create the wayfinding system.

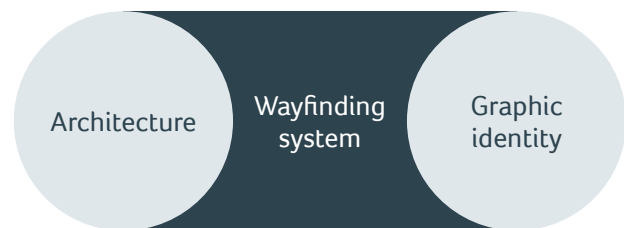
The best case scenario in this regard is that the visual identity for marketing publications (e.g. the website) and the visual identity created for the wayfinding system should be one and the same thing. From a user's perspective this solution should provide a more seamless visual experience.

Therefore the two parts of the final graphic design solution that need to be designed in collaboration with each other are as follows.

- 1 A wayfinding system that assists all associated users to move through the building with clarity and purpose
- 2 A graphic identity that supports both the wayfinding system and marketing material associated with the building

At present the brief is only to create concept work. The overall aim however is of eventually having the work realized. This is subject to the architects' final decision (and the Ski Association's) and whether they believe the work presented to be good enough.

In relation to this purpose of this exam project both parts of the design need to be related back to the architectural concept behind the building. The wayfinding system should act as the visual 'glue' between the architectural concept and the visual identity created for the building.



The main responsibilities that need to come with the final solution, including both the graphic design and design of the signage products themselves, are as follows.

- 1 To pay tribute to the architecture of the new building by creating a design that enhances a user's experience of the place rather than detracting from it
- 2 To identify Holmenkollen as a high quality international sporting arena by providing it with an outstanding visual identity and wayfinding system
- 3 To ensure that the system meets current disability compliancy and signage legibility guidelines wherever possible.

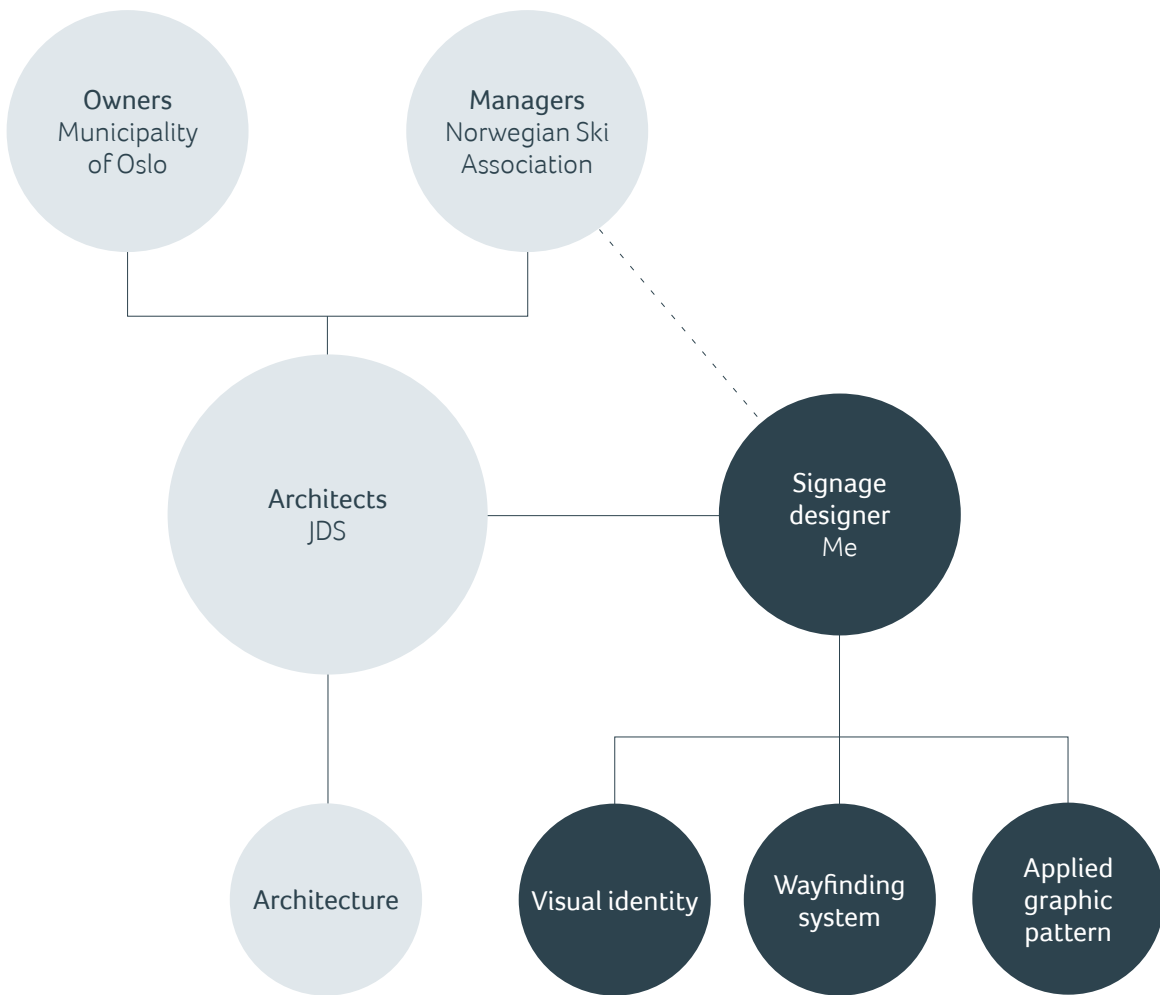
At the time of writing the new jump is due for completion in March 2010 and the wayfinding system must be in place by this time. At the current time I am the only designer working on the project. It is noted that this could change at a later date whereby I form part of a larger design team.

METHODOLOGY

The method that was used to create the design work is one of joint working. The design solution has been created by working closely with the architect in order to extract key information. This has been done at information gathering meetings and joint working sessions throughout the project.

I have answered directly to the project architects although I have had sole responsibility for the concepts provided here. Eventually the Ski Association will also need to have input in regard to the final designs and will provide information as to how they see any designs being implemented.

The diagram below shows a organisational structure of how this concept has been developed. If the project is taken beyond a concept the organisational structure will be much more complicated than this (referenced in the section 'Further developments').



Based upon experiences as an information designer for wayfinding systems the following design and analysis stages should be undertaken in order to create a solution that exhibits a clear rationale and is cohesive. All design decisions should be based upon a clear vision that has been developed through the thorough research and concept development stages that are shown here.

A lot of these stages refer to the wayfinding system only. This is the most complicated part of the project requiring a lot of analysis and planning as well as design.

Understanding of the architectural concept

Investigation of the original architectural concept to allow some interpretation of that into the wayfinding system.

Place analysis

What is Holmenkollen like as a place? An investigation into the building plans and characteristics of place that might affect the system.

User identification and user needs analysis

Understanding the different groups that will use Holmenkollen and their various needs as users.

Information building

Analysis of plans and deciding on the definitive naming for all locations and routes within the system. These names can be assembled into a hierarchy that helps to make decisions about what will appear on each sign within the system.

Understanding signage needs

Deciding what type of wayfinding system this is going to be and the elements and considerations that need to be taken into account.

Wayfinding concept

The design of a concept that gives the wayfinding system its sense of purpose. For example how people will use the system and how fast they should be encouraged to move through the site at dependent on their needs at any given time.

Information concept

The design of a concept that gives the wayfinding system its tone of voice, its purpose and level of detail it needs to work at.

Best practice inspiration

Selected wayfinding projects and visual identities that may provide inspiration for this project.

Design brief

A brief developed prior to detailed design that includes synthesized information about the visual aspects of the building, the architectural concept, the wayfinding concept and the information concept.

Development of graphical elements

The graphic design elements that will make up the system. Elements to explore include things like colour, typography, illustrative style and cartographic style. The end result is a set of graphic elements that can be applied to all the products within the concept.

Development of physical elements

Development of the physical elements that will make up the wayfinding system. Variables to explore include material, scale, form, shape, colour, build quality etc. The end result here will be a modular system that can adapt to all elements within the wayfinding system. All the products that exist (or might eventually exist) will be brought together into a cohesive typology within the Visualisation section so that they can be seen together as one.

Location planning

Basic planning of the position and orientation of the wayfinding products.

Visualisation (separate section)

Development of scale models, printed prototypes and 2D Visualisations of the visual identity, wayfinding system and applied graphic pattern.

Further development (separate section)

Recommendations of the design phases needed for the installation of the finished wayfinding system and a timeline for their implementation.



The above diagram shows the input stages that directly affect the design of the concept. All of the above influence how the concept has been developed, the visual appearance of the concept and ultimately how it might be understood by the end user at Holmenkollen.

METHODOLOGY

SCHEDULE & DELIVERABLE ELEMENTS

This schedule shows how the project stages overleaf have been put into practice and the various time that was taken for various stage.

It is also worth noting that as this project is based upon professional practice as well as the standard Masters

exam procedure there are presentation requirements for both the architects and the examination team (noted below). The deliverable elements for both presentations include a printed report outlining the project stages, scale models and full-scale print outs of the each part of the concept.

Feb	16 – 24	<ul style="list-style-type: none"> • Timetable development & planning • Investigation of original vision for the architectural competition • Understanding ski jumping events • Identifying user groups and their needs • Investigating opportunities for joint working
	25	<ul style="list-style-type: none"> • Visit to Copenhagen to gather information about the vision of ‘Holmenkollen Fyr’ and to collect basic resources
	26 – 01	<ul style="list-style-type: none"> • Development of a wayfinding concept • Development of an information concept
March	02 – 15	<ul style="list-style-type: none"> • Review of signage needs • Development of a basic product typology for Holmenkollen. • Develop design brief • Develop nomenclature lists
	16 – 22	<ul style="list-style-type: none"> • Read up on the most up to date compliancy guidelines • Revisit typology • Begin design phase
	19	<ul style="list-style-type: none"> • Visit to Copenhagen to make visual analysis of the new architecture
	23 – 29	<ul style="list-style-type: none"> • Continue design phase
	30 – 03	<ul style="list-style-type: none"> • Continue design phase & finalise report
April	03	<ul style="list-style-type: none"> • Hand in report to examination board (first draft)
	04	<ul style="list-style-type: none"> • Send report to JDS Architects (first draft)
	05 – 06	<ul style="list-style-type: none"> • Continue design phase • Prepare presentation for examination including models and Visualisations
	07	<ul style="list-style-type: none"> • Update session in & meeting with Ski Association in Oslo
	08 – 20	<ul style="list-style-type: none"> • Continue design phase • Prepare presentation for examination including models and Visualisations
	20	<ul style="list-style-type: none"> • Exam presentation & defence of work
	22	<ul style="list-style-type: none"> • Interim presentation at JDS Architects in Copenhagen
23 – 30	<ul style="list-style-type: none"> • Continue design phase following feedback 	
May	01 – 11	<ul style="list-style-type: none"> • Continue design phase following feedback • Prepare presentation including models and Visualisations
	12	<ul style="list-style-type: none"> • Present to Rohskka Museum exhibition team
	13	<ul style="list-style-type: none"> • Final presentation of concept to JDS in Oslo and delivery of final report
	18	<ul style="list-style-type: none"> • Hand over exhibit pieces to Rohskka Museum and final report to school
	30	<ul style="list-style-type: none"> • Exhibition opens at Rohskka Museum in Gothenburg
June	01	<ul style="list-style-type: none"> • Start of phase 2 (see future developments section)

RESULTS

In my experience wayfinding systems, when done well, provide for very complicated design projects. They require a lot of basic information to be obtained, understood and to be built upon prior to the commencement of building the final system.

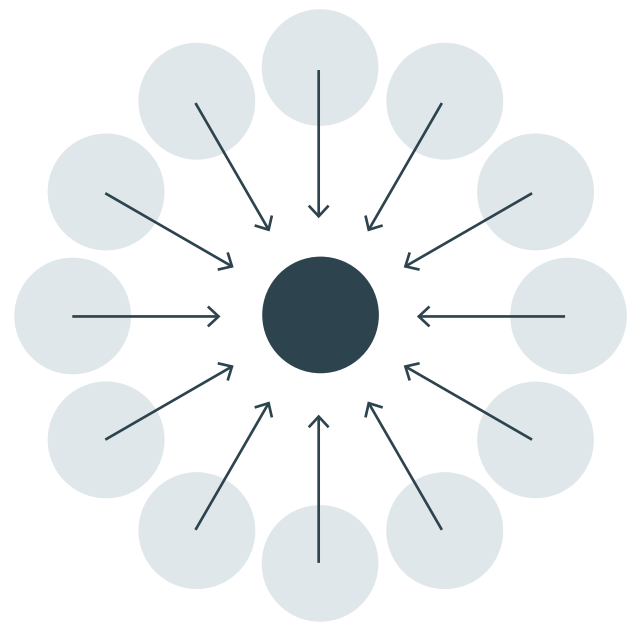
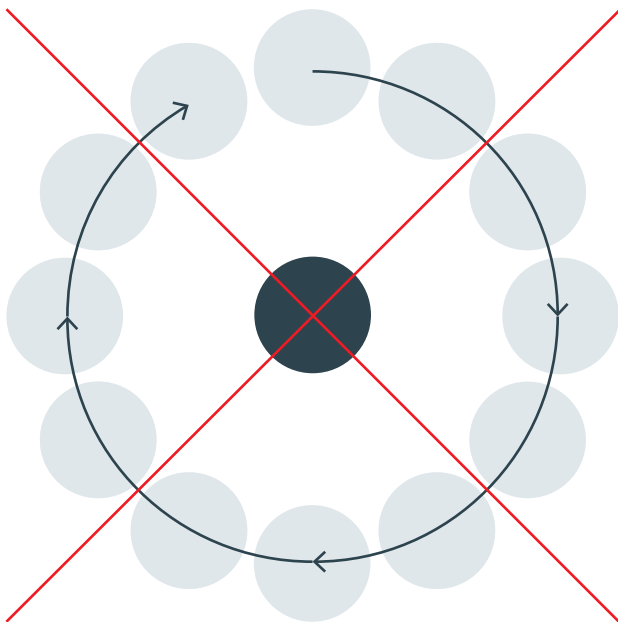
The results section reflects this and is perhaps longer than that of a normal Masters project. A decision has been made to disregard an appendix in preference of keeping all information gathered in the body of the report. This is partly due to the fact that the appendix could become very large indeed and also that each decision needs explaining directly. To do this via an appendix might result in a lot of page turning for the end reader. This report also must be made available as a digital document which makes an appendix difficult to access quickly.

Emphasis has been placed on using this report as a tool to communicate the design decisions that have been made. Its content reflects this as much as the working process.

The results section has been structured to reflect the project stages that are given in the Methodology section. This structure also continues to reflect the importance each stage has to the overall concept, another reason not to use an appendix. Although it is given in a particular order the work should not be viewed as a project that has been produced chronologically. It should be understood that each decision and project stage is as important as the next (see the diagrams below).

The content and the decisions that have been made are in part informed by the sources given in the bibliography toward the end of the report. They also are based upon my own design experiences of building wayfinding systems and visual identities.

In terms of the implementation of the real wayfinding system (to be installed around March 2010) the thinking behind the concept could be seen as more important than the visual appearance of the design work at this stage.



RESULTS

UNDERSTANDING THE ARCHITECTURAL CONCEPT



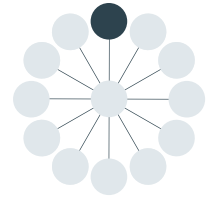
The word 'fyr' in Norwegian translates into English as beacon. The new building is based around this concept where the new design will act as a lit beacon above and around Oslo that will draw spectators and attention whenever there is an event happening.



Visualisations show that from a distance the structure will appear as a distinctive milky-white shape projecting into the sky. This shape will be further extended by a light beam that has the appearance of projecting outwards from the viewing platform at the top of the building and diffusing into the sky.

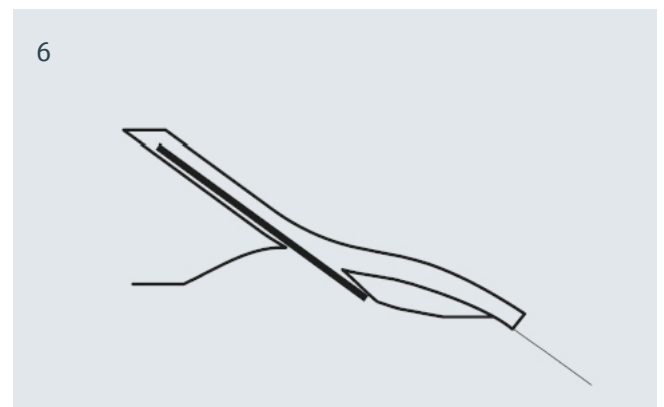
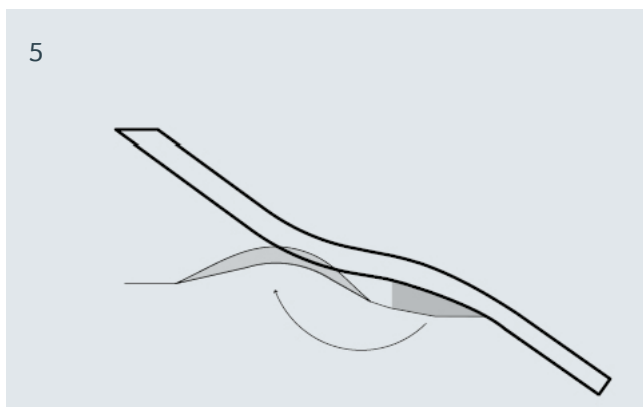
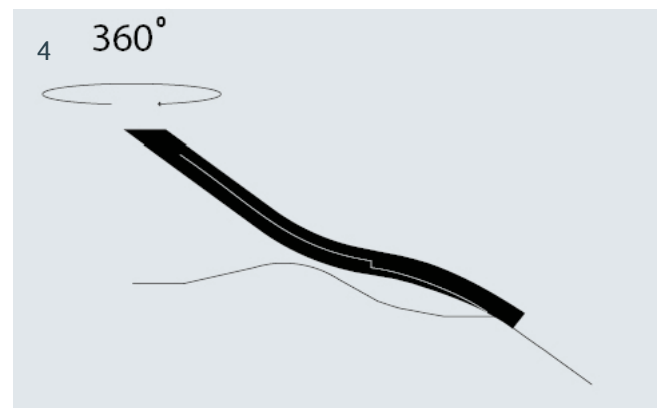
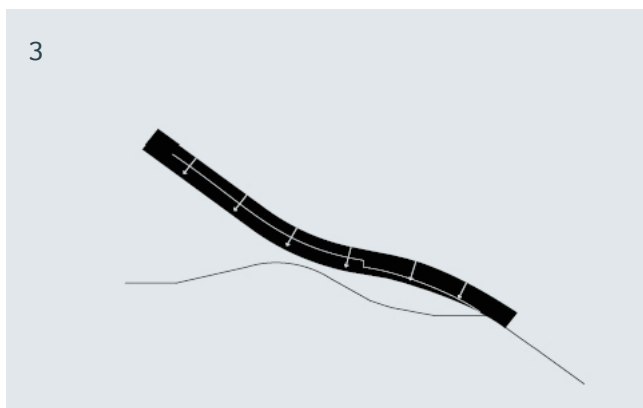
The new structure is visually clean. An existing, hidden building near the base acts as the main support point for the jump itself. This allows the jump part of the building to appear as if it is floating as it is able to exist without a cumbersome structure directly beneath it.

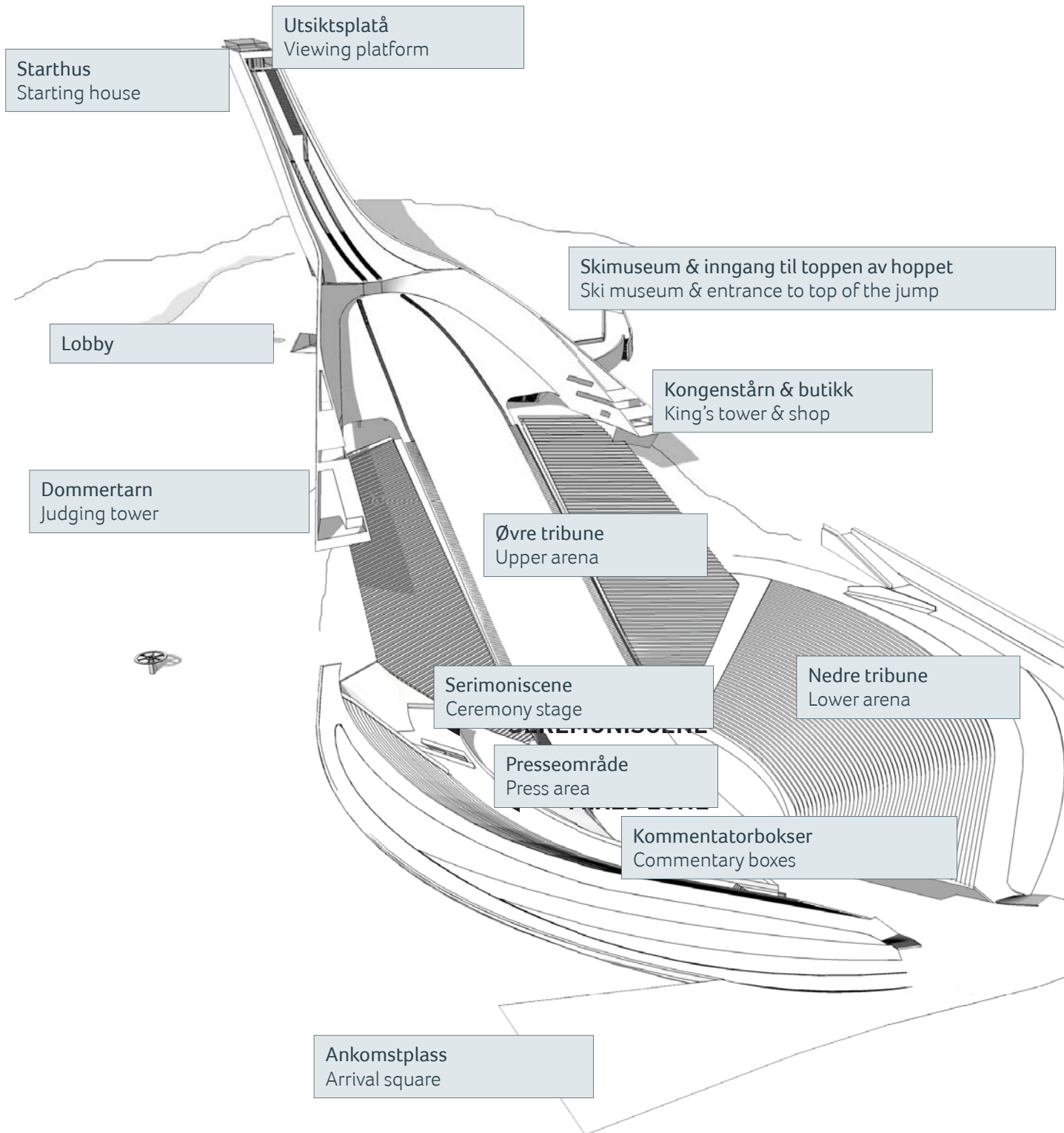


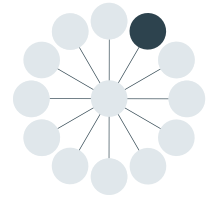


The original building concept by JDS is broken down as follows

- 1 The creation of an ideal jumping slope.
- 2 Offset building structure gives a graceful shape.
- 3 Wind shields created to protect the jumpers.
- 4 Viewing platform cut at top to allow 360° views.
- 5 Cantilever offers support w/out visual disruption.
- 6 Internal lift access to jump platform.



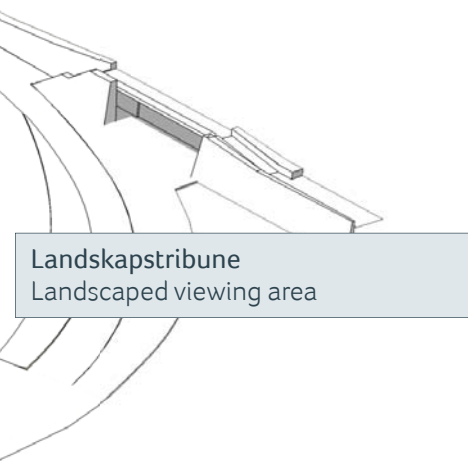




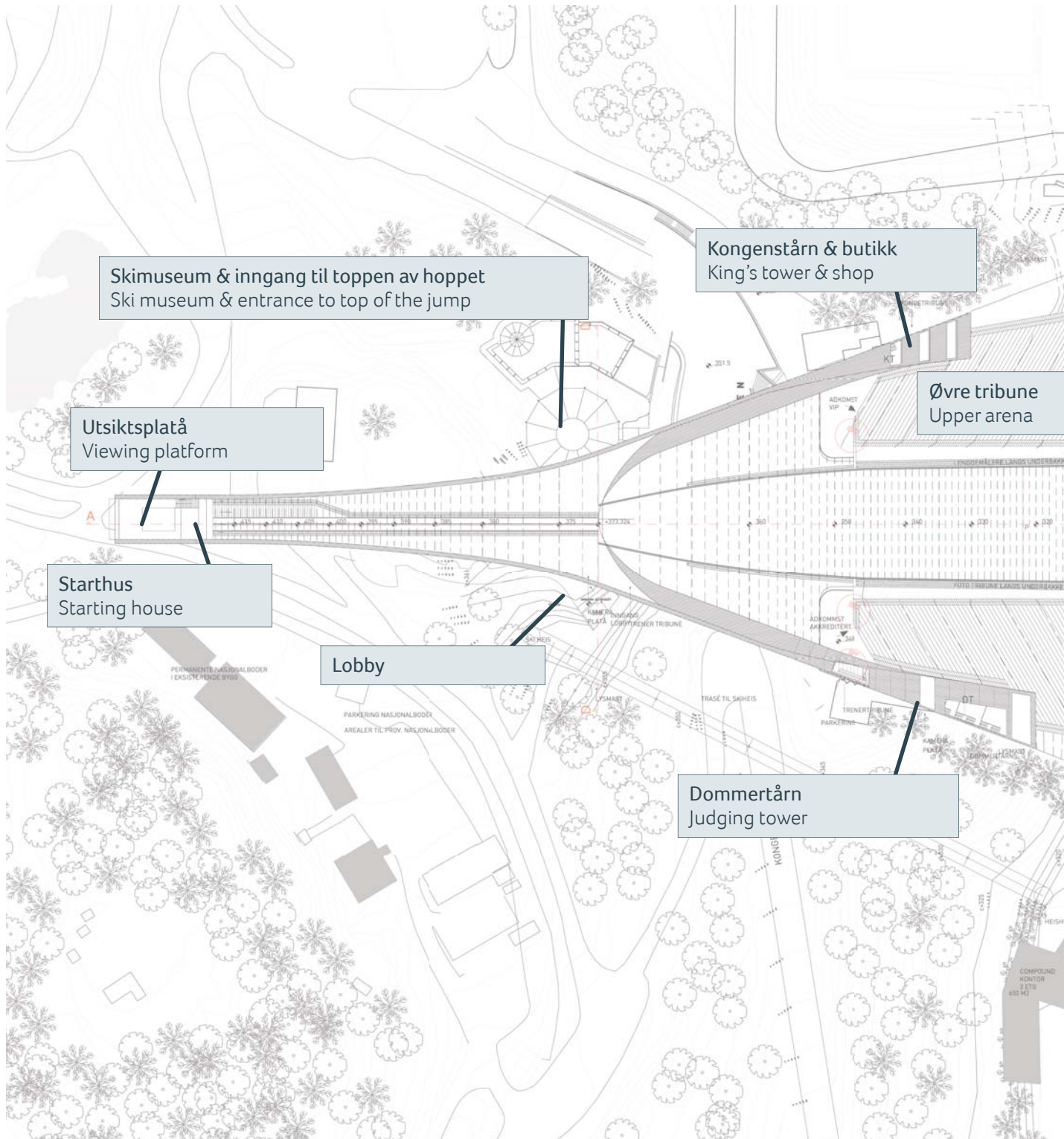
Holmenkollen itself is a reasonably complicated building to understand once you get past its most obvious features. The key buildings and features of the site are outlined in the pages that follow.

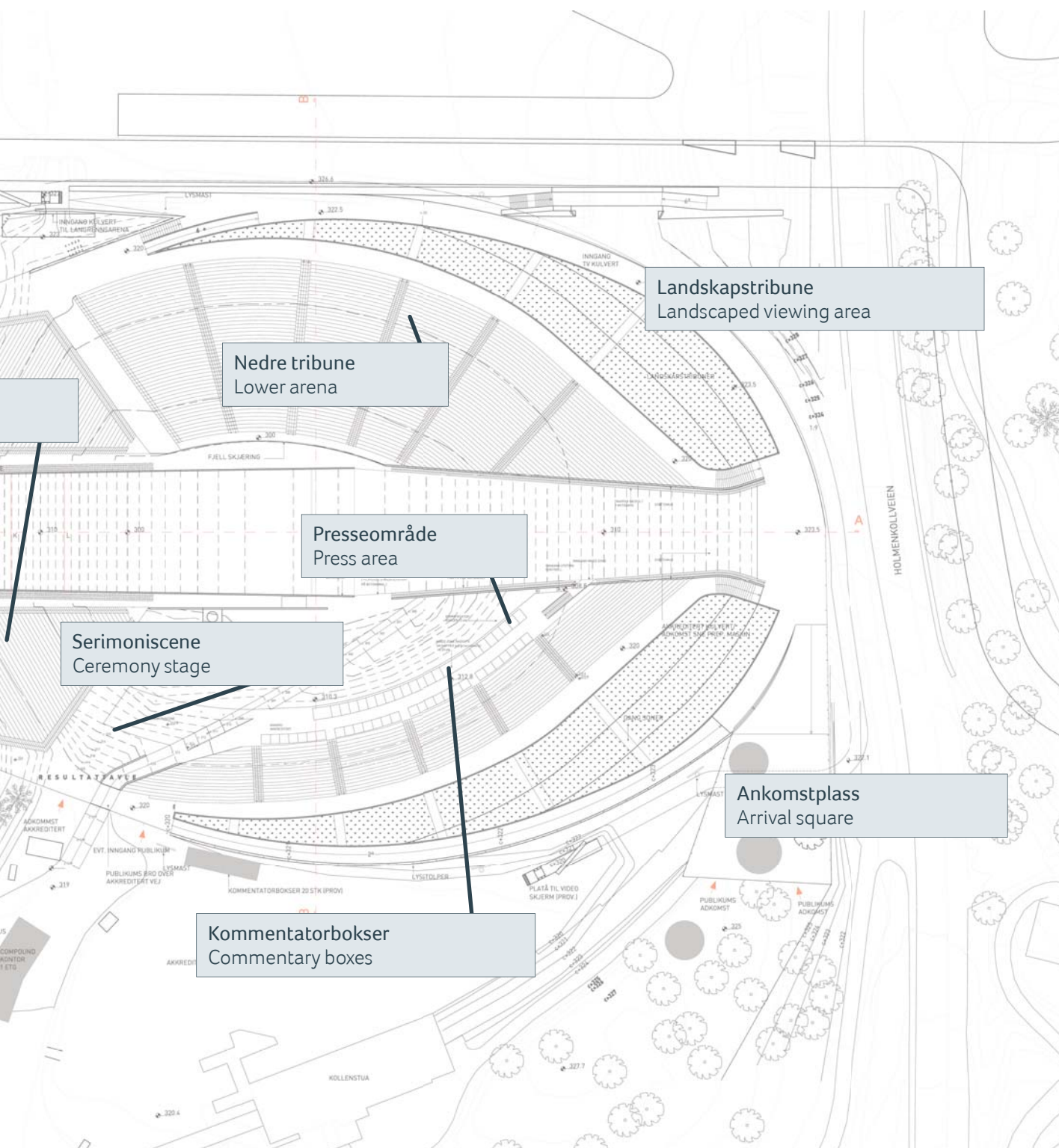
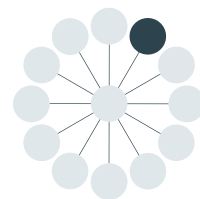
Part of my brief is to decide upon the fixed naming structure for all destinations within the site (see information building section on page ?). The names that are shown here are modified slightly from those that the architects are working with. These changes have been suggested in relation to consistency issues and wayfinding assistance.

It is worth noting that the site is also used both during the winter season and the summer season. Any system needs to be fit for purpose throughout the whole year and needs to stand up to the adverse weather conditions that this part of Norway experiences.



Landskapstribune
Landscaped viewing area





Landskapstribune
Landscaped viewing area

Nedre tribune
Lower arena




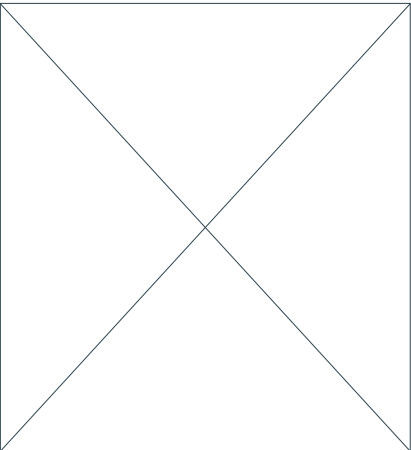
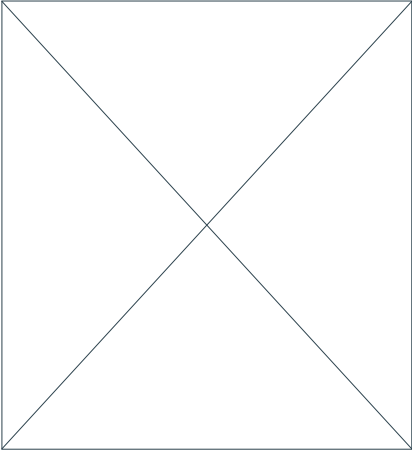
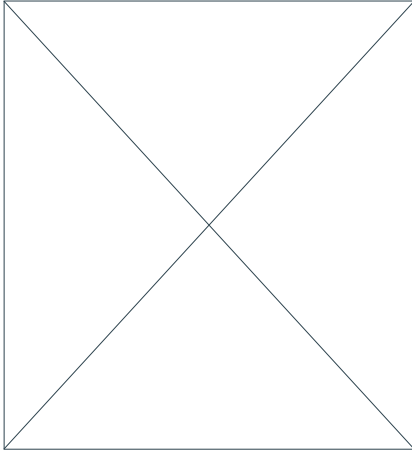
Presseområde
Press area

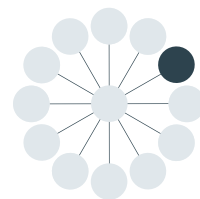
Serimoniscene
Ceremony stage




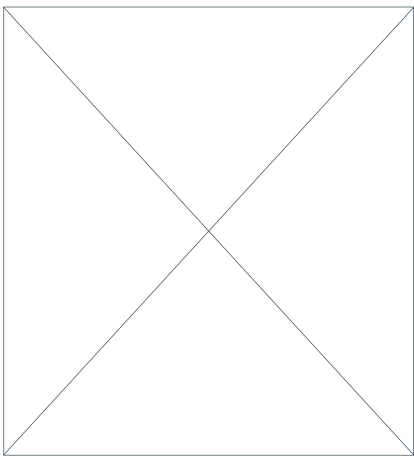
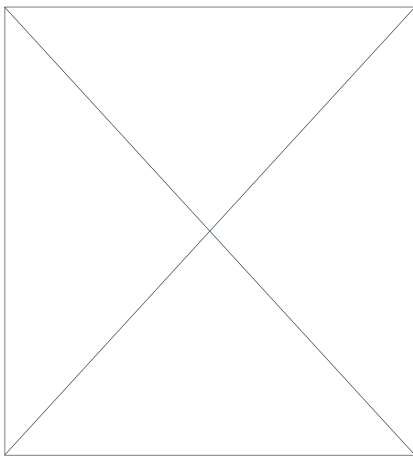
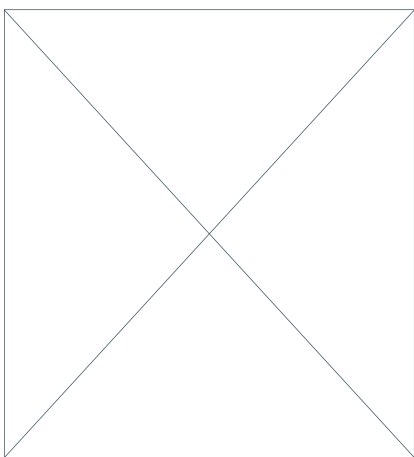
Ankomstplass
Arrival square

Kommentatorbokser
Commentary boxes

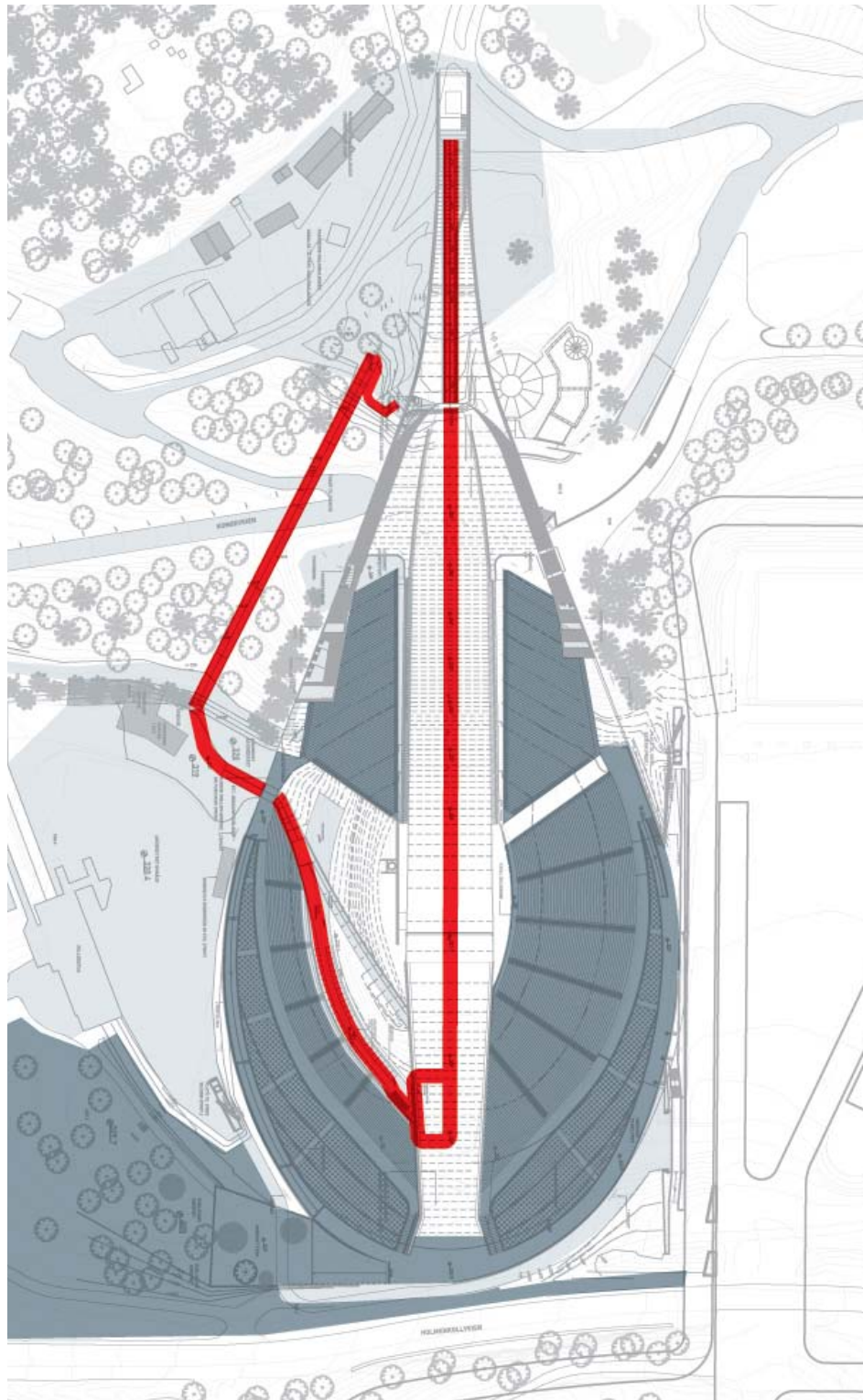
RESULTS
 USER IDENTIFICATION & USER NEEDS ANALYSIS

COMPETITION DAYS		
<p>Competitors</p>  <p>_ski jumpers _trainers</p>	<p>Spectators</p>  <p>_public _corporate guests</p>	<p>Event staff</p>  <p>_merchandising staff _catering _stewards _ticketing _sports event management</p>
<p>Multinational users</p>	<p>Multinational users</p>	<p>Mainly Norwegian</p>
 <p>The main journey for competitors after jumping is between the lobby via the ski lift, and the start house</p>	 <p>After arrival by car or public transport spectators need to get to their seats quickly</p>	 <p>Staff will be distributed throughout the site and need to understand where they should be working</p>
<p>ALL USERS NEED TO MOVE QUICKLY THROUGH THE SITE</p>		



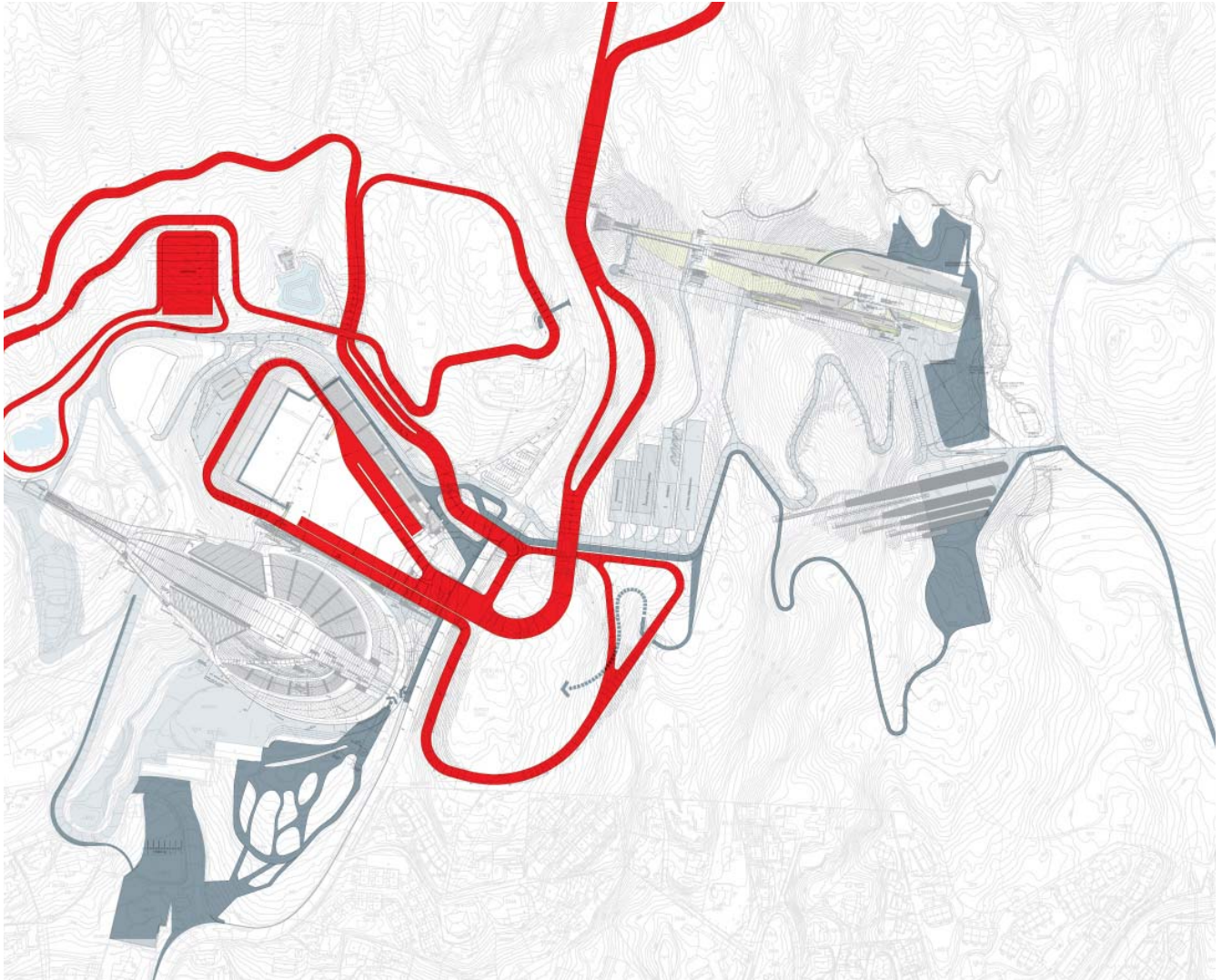
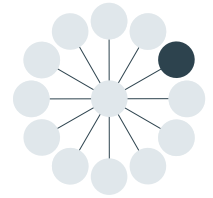
VISITING DAYS		
<p>Press</p>  <p>_tv crews _radio crews _journalists</p>	<p>Visitors</p>  <p>_day visitors _school groups</p>	<p>Site Staff</p>  <p>_maintenance staff _site management _ticketing</p>
<p>Multinational users</p>	<p>Multinational users</p>	<p>Mainly Norwegian</p>
 <p>The press and tv crews need to locate their specific positions within the site</p>	 <p>Visitors to the site will explore at a relaxed pace and need to identify how to access the viewing platform</p>	 <p>Many of these staff will be familiar with the site and will be moving around without the use of signs</p>
<p>USERS CAN EXPLORE AT A SLOWER PACE</p>		

RESULTS
USER IDENTIFICATION & USER NEEDS ANALYSIS



Holmenkollen
movement plan for the
2011 Ski Championship




- Public movement
- Staff movement
- Ski jumper movement



Holmenkollen Fyr will be the flagship building of a larger collection of ski orientated arenas for the 2011 Ski Championships. The two diagrams given here show how users within the different groups will move through the site during the competition. This is likely to be the procedure for future events also.

Although this project is presently just dealing with the ski jump itself there could also be an opportunity to explore how a wayfinding system for Holmenkollen might eventually be applied to the rest of the area.

Arena movement plan for the 2011 Ski Championship

-  Public movement
-  Staff movement
-  Competitor movement

RESULTS

INFORMATION BUILDING

To help the design team and eventual users understand the site better there needs to be a high degree of consistency throughout the wayfinding system. One of the ways of creating consistency is through destination naming. By building a nomenclature list of all the destinations at Holmenkollen a definitive set of names is built to ensure that each destination has only one name. This stops destinations appearing on two different signs with different names.

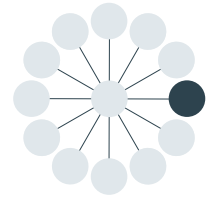
Shown only in part here these lists will be supplied as a separate file. They provide a hierarchal system of names with English and Norwegian translation, together with information on whether they are internal/external and other information that will help with the design of the wayfinding system.

Destination
Nomenclature V01

Category	Destination naming	Grouped under	Internal/External
	Norwegian name	English name	
A Super-primary	Holmenkollen Fyr	Holmenkollen Fyr	External
B Primary	Skimuseum & inngang til toppen av hoppet	Ski museum & entrance to top of the jump	External
B Primary	Øvre Tribune	Upper Arena	External
B Primary	T-Bane-Stasjon	T-Bane Station	External
B Primary	Nedre Tribune	Lower Arena	External
C Secondary	Starthus	Starting house	Internal
C Secondary	Utsiktsplatå	Viewing platform	Internal
C Secondary	Lobby	Lobby	Internal
C Secondary	Dommertårn	Judging tower	External
C Secondary	Kongenstårn & butikk	King's tower & shop	External
C Secondary	Seremoniscene	Ceremony stage	External
C Secondary	Kommentatorbokser	Commentators' Boxes	External
C Secondary	Presseområde	Press area	External
C Secondary	Ankomstplass	Arrival square	External
C Secondary	Viewing area A	Viewing area A	External
C Secondary	Viewing area B	Viewing area B	External
C Secondary	Viewing area C	Viewing area C	External
C Secondary	Viewing area D	Viewing area D	External
C Secondary	Viewing area E	Viewing area E	External
C Secondary	Skiheis	Ski lift	External
C Secondary	Utstyrlager	Equipment storage	External
C Secondary	Viewing area F	Viewing area F	External
D Tertiary	Viewing area C1	Viewing area C1	External
D Tertiary	Viewing area C2	Viewing area C2	External

Holmenkollen
Nomenclature V01
Chris Knox Design

Category	Destination naming	Grouped under	Internal/External
	Norwegian name	English name	
A Super-primary	Holmenkollen Fyr	Holmenkollen Fyr	External
B Primary	Skimuseum & inngang til toppen av hoppet	Ski museum & entrance to top of the jump	External
B Primary	Øvre Tribune	Upper Arena	External
B Primary	T-Bane-Stasjon	T-Bane Station	External
B Primary	Nedre Tribune	Lower Arena	External
C Secondary	Starthus	Starting house	Internal
C Secondary	Utsiktsplatå	Viewing platform	Internal
C Secondary	Lobby	Lobby	Internal
C Secondary	Dommertårn	Judging tower	External
C Secondary	Kongenstårn & butikk	King's tower & shop	External
C Secondary	Seremoniscene	Ceremony stage	External
C Secondary	Kommentatorbokser	Commentators' Boxes	External
C Secondary	Presseområde	Press area	External
C Secondary	Ankomstplass	Arrival square	External
C Secondary	Viewing area A	Viewing area A	External
C Secondary	Viewing area B	Viewing area B	External
C Secondary	Viewing area C	Viewing area C	External
C Secondary	Viewing area D	Viewing area D	External
C Secondary	Viewing area E	Viewing area E	External
C Secondary	Skiheis	Ski lift	External
C Secondary	Utstyrlager	Equipment storage	External
C Secondary	Viewing area F	Viewing area F	External
D Tertiary	Viewing area C1	Viewing area C1	External
D Tertiary	Viewing area C2	Viewing area C2	External



The site might also be best explored by means of clustering destinations together. This is given in the nomenclature lists however made more clear here. Once again a full list is not given here.

This method of planning relates to the concept of progressive disclosure as mentioned in the section 'Information concept'.

The first sign someone sees after leaving the Metro station/car park is a sign pointing in the direction of Holmenkollen Fyr.

The next sign someone might read will describe what area of the jump they need to head to. To assist in this endeavour pictograms may be used.

Once at that area they will be directed to the specific building or secondary area they need to be in.

Once in the building or secondary area they will be directed again through signposts or an overview map will be given.

Holmenkollen Fyr

Ski museum
& entrance to top of the jump

Starting house

Storage cupboard
Ski storage
Lift to lobby
Jump terrace
Stairs to lobby
Men's toilet
Women's toilet
Track setter

Viewing platform

Stairs to starting house

Lobby

Lift to starting house and viewing platform
Stair to starting house and viewing platform
Men's toilet
Women's toilet
Disabled toilet
Storage cupboard
VVS
Tavle
IKT

Take off area

Judging tower
King's tower & shop
Equipment storage

List continues here.....

....

....

....

....

....

Upper Arena

Viewing area A
Viewing area B

Lower Arena

Viewing area C
Viewing area D
Viewing area E
Viewing area F
Press area
List continues here.....

RESULTS

UNDERSTANDING SIGNAGE NEEDS

There are obviously many types of wayfinding and signage systems being used in the world. Some of which are archetypal examples that do most things people expect but nothing more. However there are also sign systems that are rightly treated as unique design projects in their own right and are not simply put into place as an afterthought.

As Holmenkollen is a ski jump it is therefore a fairly unique structure that should be catered for in a unique way. The information planning and design of the signs needs to be completely bespoke for this environment.

As the system at Holmenkollen needs to cater for a multitude of different users one type of signage product will not be enough at Holmenkollen. The system will need to use monoliths, finger posts, wall mounted signs and door signs to do its job properly. Examples of different types of signage products are shown here.

A walk through Holmenkollen Fyr would take you quickly from internal to external spaces. The signage needs to be equipped to work within both internal and external spaces.

Stadium system

It has already been established that during competition times people need to be directed toward where they need to be quickly and efficiently. The system needs to go from a destination finding system into a numbering system that is commonly used in sports stadia and arenas around the world.

This extends the amount of signs needed massively. Every row and area in the arena where people need to be positioned needs a number. This numbering system needs to be consistent, easy to understand and above all clear to avoid ticketing confusion.

11

12

13

21

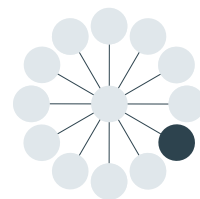
22

23

31

32

33



Language

A system that is commonly applied across Scandinavia, including Oslo and Copenhagen's main airports is one that combines the country's native language in conjunction with English. The recommendation is that this is the system that should be used at Holmenkollen where, like an airport, visitors from all over the world are expected.

The native language that will be used is Norwegian Bokmål with an English translation underneath. To make each language distinct either colour or weight of type will be used to differentiate the two.

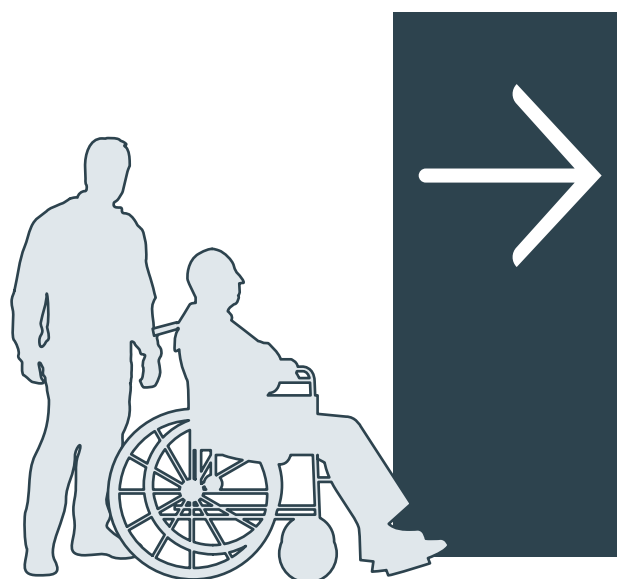
Øvre tribune
Upper arena
Nedre tribune
Lower arena



Inclusivity

The method that will be used is throughout the system should be called 'inclusive design' to improve signage for as many people as possible. The system will neither exclude or segregate potential users. The two main considerations that this system will take into account is the reading height of information for wheelchair users and adequate letter size and typographic choices to ensure high legibility.

Braille will not be used in the system due to the few amounts of people that use it effectively and the subsequent compromises that limit the usefulness of the wayfinding system that have to be made. For example Denmark with a population of 5 million people has only 1000 fluent Braille readers. Raised lettering may be used instead where appropriate.



RESULTS

WAYFINDING CONCEPT

The system needs to deal with two groups of people, event users at sporting competitions and normal users who visit the site as a tourist destination. The final design must accommodate both groups within one system.

On/off system

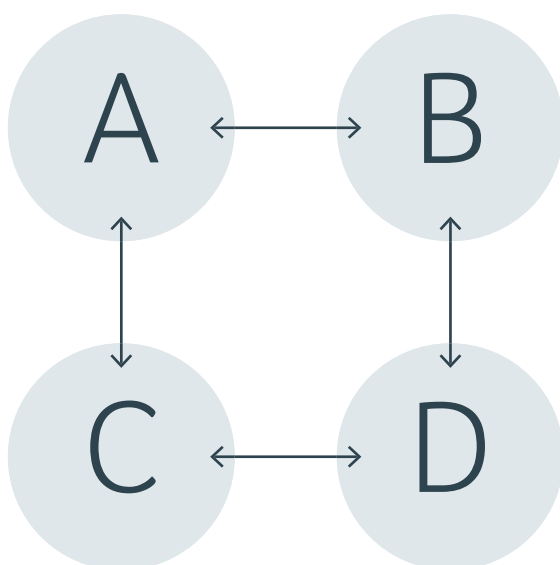
The users that will move around within Holmenkollen during days when events and/or competitions are happening need to be directed quickly to the places they need to be. There is little room to allow users to explore at their own pace. As many users will be arriving and departing at the same time they need to find their way to their destination quickly. This suggests a wayfinding system that is very conspicuous and easy to identify. The signage products should be located exactly where users expect to find it.

Conversely the wayfinding system also needs to be appropriate for the users that will visit the site during standard visiting days when the ski jump operates as a visitor destination. Users should be given more time to explore the site at their own pace. The wayfinding system should be there as an assisting system rather than directing system. Some users may not even feel the need to use any wayfinding system.

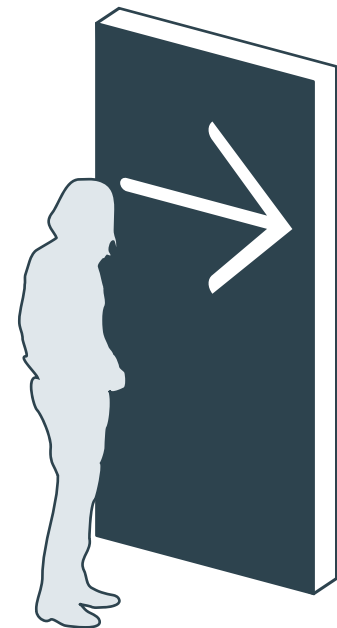
The signs could therefore work as an on/off system. Being 'on' (lit up) when there is an event happening (or at night) or being 'off' when it is a visiting day.

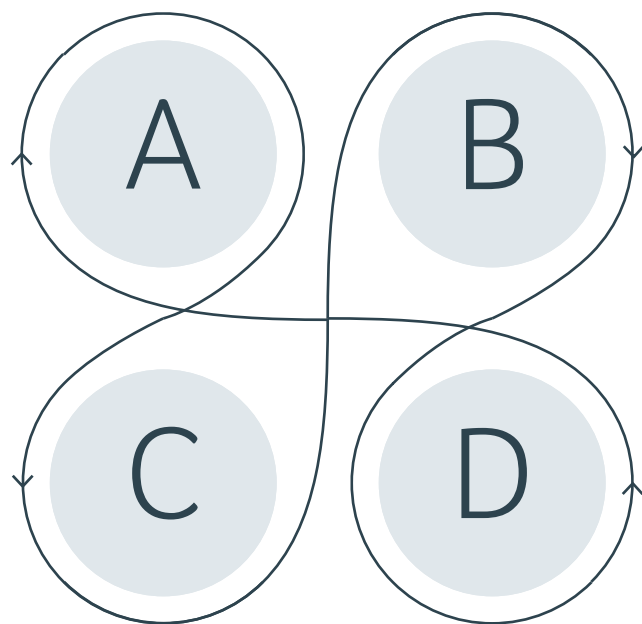
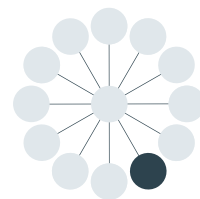
Signage as beacons

The original architectural concept surrounds the ideas of the building becoming a 'Fyr' (a beacon). The concept for the wayfinding system expands on this idea by improving visual linkage between signs by turning them into multiple 'Fyrar' (beacons). Visual linkage gives users confidence in moving forward. They should be able to see another sign in the distance before moving off.

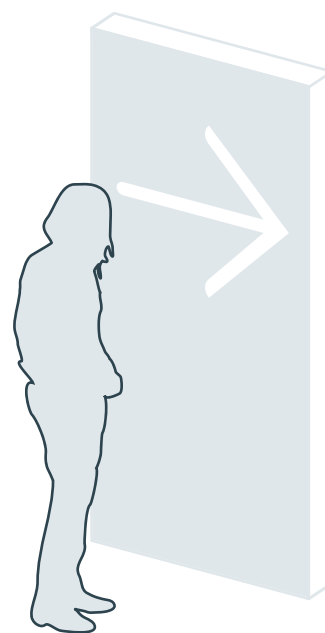


Users at competition times need a highly conspicuous system that is easy to identify and use taking them directly from A to B.





Users on normal visiting days need a system that is less conspicuous and is there for them only if they need. It should encourage them to explore all areas of the site as well as directing them to the ski museum and viewing platform.



Orientate, direct and mark

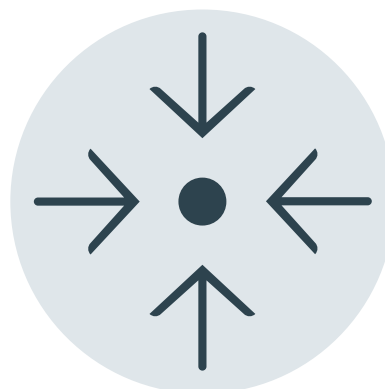
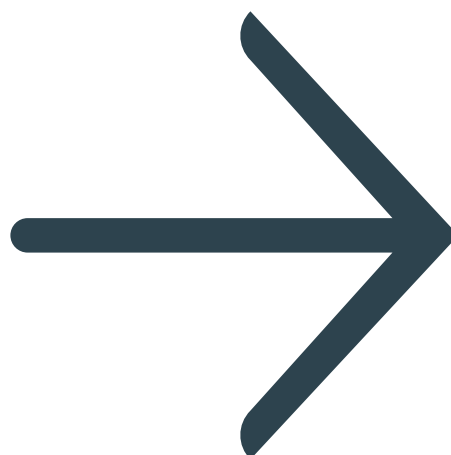
There are three requirements that the wayfinding system for Holmenkollen must fulfil for its users. The signs should be there to help users orientate themselves, to direct them to their destination and to mark when they have arrived there.

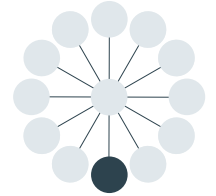
We know that not every user wants the same information as the next user when they approach a sign. Therefore the wayfinding products should be multi-purpose and flexible. Each product within the system might have to orientate, direct or mark.

To help people orientate themselves they need to be able to find out where they are situated in the jump. Holmenkollen Fyr is not as easy vvvh navigate as it first appears. It has a layer of complexity beneath its most obvious aspects. To help people orientate themselves a relationship to the building must be built into the signs. This suggests at some level a mapping system or simplified diagram that is rotated to the direction of travel could be used to reassure people of their position. This is referred to as 'heads up' mapping as what people see in front of them is reflected directly on the map they are looking at.

Secondly users needs to be pointed to their end destination that they are searching for. This can either be done through mapping or finger-posting (pointing the way). More than likely a combination of the two would be the most useful at Holmenkollen as the wayfinding system needs to provide information when the site is extremely busy (quick reads at distance) and quieter (slower reads up close).

The third level is to mark when a user has arrived at their destination. At these signs users may also be given onward journey information to find the next destination they need.





What you need, when you need it

Progressive disclosure

This is an underwritten principle that has been applied to a lot of signage projects that I have worked on. Progressive disclosure means more simply providing users with information by 'what they need, when they need it'.

By making critical judgements about the information content that should be applied to each sign the key information that people need at any given time can be provided.

There is a temptation to oversupply information, particularly amongst systems that involve mapping. This can often confuse users as they struggle to find the information they want amongst information that has no relevance to their current needs.

By reducing information to only what is needed by the user their experience of the wayfinding system is a positive one. Very often where a wayfinding system succeeds (or fails) is in gaining the trust of the user so they feel confident moving forward under its guidance. If a person has a bad user experience because of poor information planning at one sign this can affect their confidence in the system dramatically.

User friendly information

Two examples of user friendly information that should be applied within the wayfinding system for Holmenkollen are as follows.

The first provides users with a more understandable guide to judging walking distances. Instead of providing people with distances to destinations given in metres, distances can be given in walking times instead. This is a better system for Holmenkollen as it makes it easier to understand distances in the hilly environment surrounding the ski jump. 800m might take 5/6 minutes on flat ground but 10 minutes on steep ground. When 8 minutes walk is quoted it is always understandable as 8 minutes.

The second is about providing prior information to people. By giving people information about the route they will take (e.g stairs, steep gradients) users can make an informed decision about which route they will take to their destination.

RESULTS
BEST PRACTICE INSPIRATION – MARKS & GRAPHIC IDENTITIES

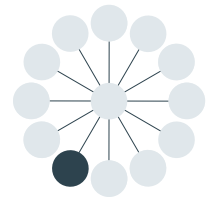
These projects are interesting because they represent visual identities that pay direct homage to the building they have been created for.

The logo for the Imperial War Museum North pays direct homage to Daniel Libeskind's iconic building. By incorporating the 'Shard' structure into the logo an immediate link is made between the two.

The Sage Gateshead Music Centre, designed by Foster and Partners, is a concert hall found in the North East of England. Its corresponding logo is a music note turned on its side that replicates the shape created by the side-on elevation of the building.

Renzo Piano's California Academy of Sciences features a living roof. The rolling hill shapes found on the roof were the inspiration for this dynamic logo.





CALIFORNIA
ACADEMY OF
SCIENCES



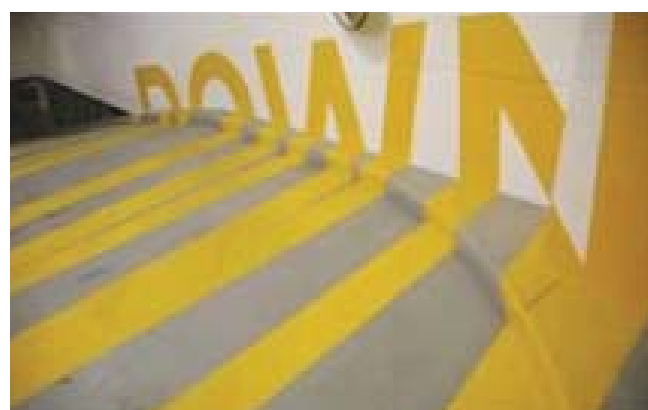
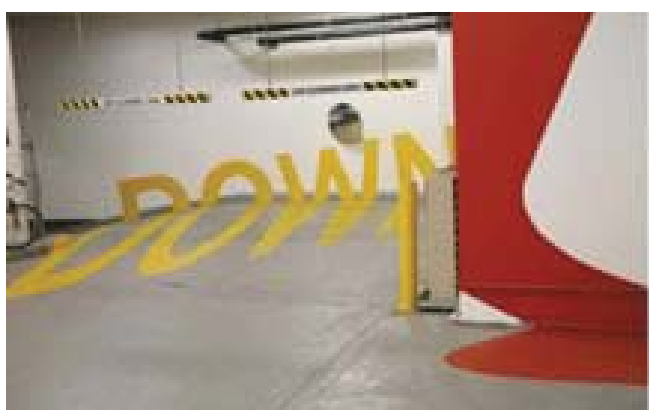
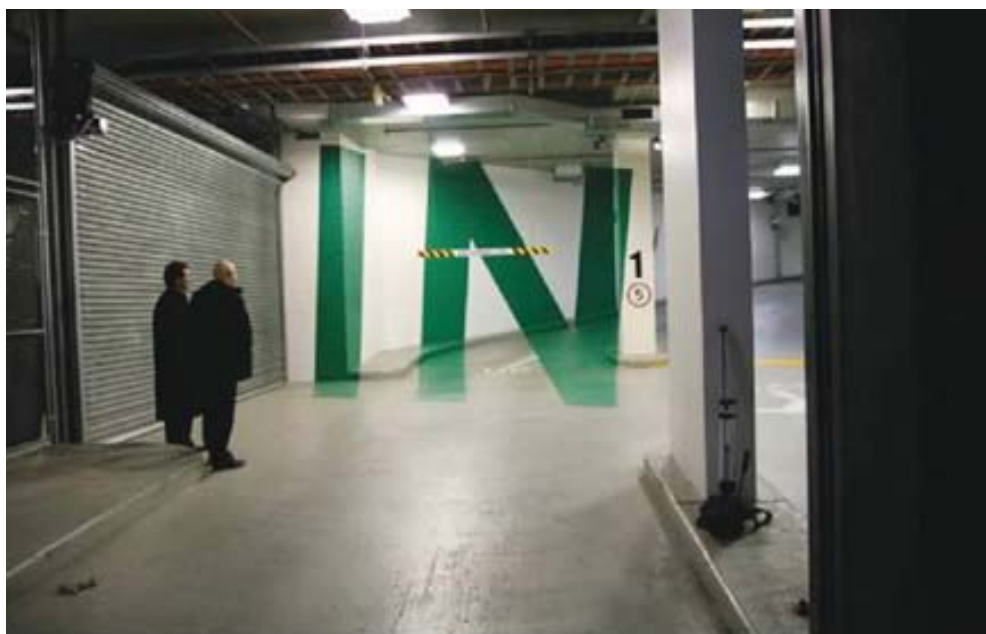
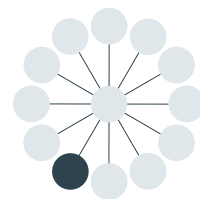
RESULTS
BEST PRACTICE INSPIRATION – EUREKA TOWER CAR PARK

This project is interesting because it creates a wayfinding system in a building without using a standardized system of signs. The design is one that connects more with the purpose of the building. This should be a principle used at Holmenkollen.

The Eureka Tower is a 90 storey residential building with one carpark solely dedicated to residents. The carpark is a typically robust and utilitarian environment experienced in motion.

The wayfinding system was designed by Emery Studio, Sydney. An opportunity was initiated by the project architect to exploit the potential of the vertical and horizontal surfaces of the entry, as a sequence of monumental messages that enhance the experience of arrival and departure through bold graphic illusions. When viewed in motion, the distorted words IN, OUT, UP and DOWN snap into alignment to convey information at key decision making points along the journey.





RESULTS

BEST PRACTICE INSPIRATION – BARBICAN ARTS CENTRE SIGNAGE

This project is interesting because it deals with every signage location in a bespoke way. Information and design is tailored to each specific spot. This principle should be applied wherever possible at Holmenkollen.

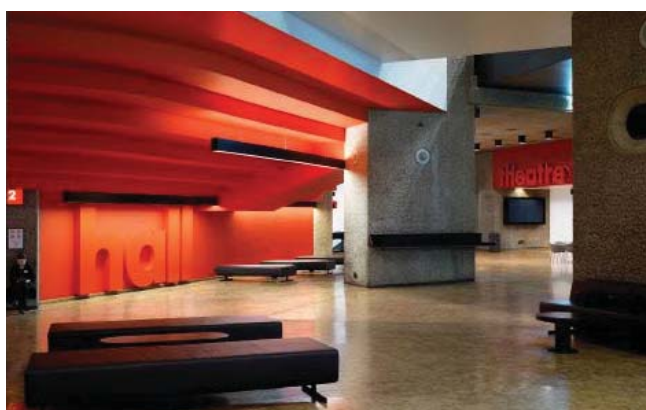
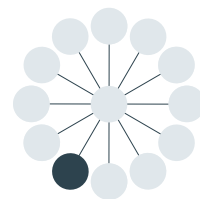
The Barbican Arts Centre in Central London is a notoriously difficult place to navigate. Planned in the late 1950's the area subverted architectural norms, doing away with things such as a main entrance into the centre. Whilst this has given the Barbican character it has made it difficult to explore.

Cartlidge Levene was appointed to solve this design problem and open up the centre for easier visitor access. Given Carte Blanche to do practically whatever they liked the team were able to use the architecture to their advantage.

Making use of the height of the interior and the long open spaces inside the centre the signage was developed at super scale to counter these problems. Each sign was created as a bespoke design to make best use of its location in the centre.

By choosing a vibrant orange colour for the system the signage is easy to identify as it stands out from the grey concrete the rest of the Barbican is known for.





RESULTS

BEST PRACTICE INSPIRATION – NEW YORK TIMES EXTERIOR SIGNAGE

This project is interesting because it deals with the problem of putting signs on buildings by applying the sign to existing material in a unique way. A method like this could be used at Holmenkollen where a lot of material choices are already made.

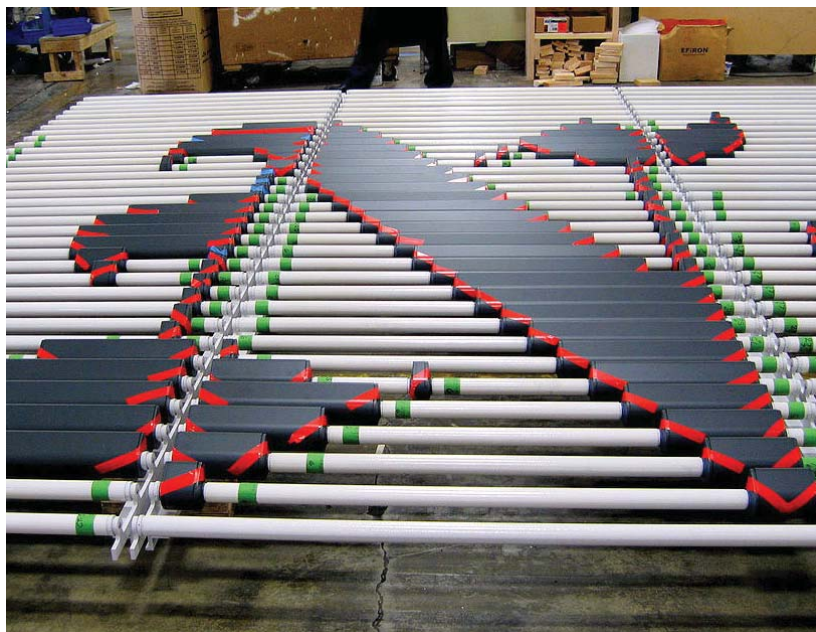
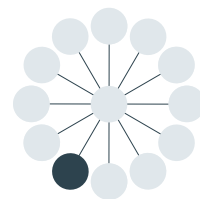
When the New York Times decided to leave the antiquated building three blocks to the north they had occupied since 1913, they held a design competition for its new headquarters. The Paris- and Genoa-based Renzo Piano Building Workshop won, beating submissions from Cesar Pelli, Frank Gehry and Norman Foster.

Meant to preserve the area's unique character, the zoning mandates around the Times Square area specified minimum size requirements for signs and displays, including that signs be large (based on ratios of sign area to overall elevation area) and applied (added to the building rather than subtly integrated).

The question, then, was: how do you add a block-long, 15-foot-tall blackletter logo to the front of a minimalist building without obstructing the view of the Times staffers working inside? The answer was to break the sign up into smaller pieces, 959 of them to be exact. Each letter in the Times logo was rasterized, that is, divided into narrow horizontal strips, ranging in number from 26 (the i in "Times") to 161 (the Y in "York").

Each resulting piece was then made into a three dimensional form that could be fitted over the building's ceramic sunscreen rods. Pentagram's designers ultimately decided on a shape they called a "beak". The result is a sign that is dramatically legible from outside, but that can barely be seen from the inside. It at once satisfies the area's signage requirements, while integrating perfectly with the structure's distinctive facade.





RESULTS

BEST PRACTICE INSPIRATION – MEXICO 1968 OLYMPIC GRAPHICS

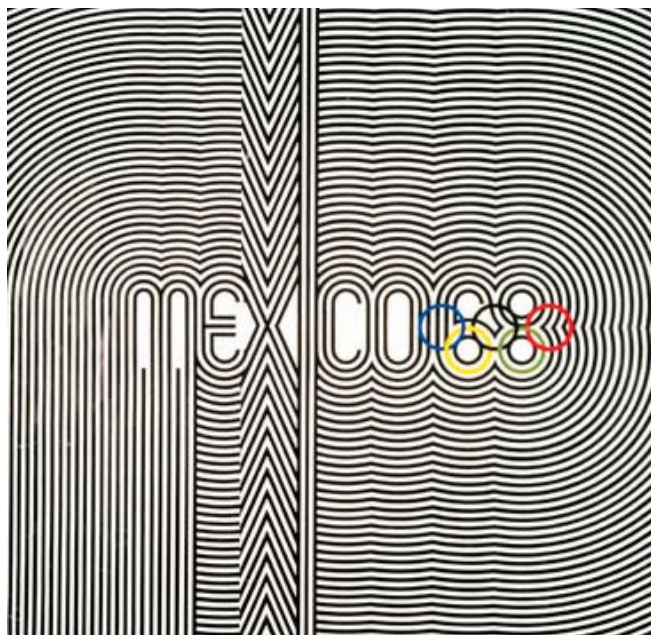
This project is interesting because it perfectly combines a graphic identity program into an applied system for architecture. The way graphic patterns have been created might be used at Holmenkollen in some way.

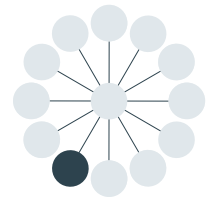
The team that formulated the design program was headed by Pedro Ramirez Vázquez, Chairman of the Organizing Committee and an important Mexican architect. His team of design directors included: Eduardo Terrazas, for urban design; Beatrice Trueblood, for Olympic publications; Manuel Villazon, for the student design team; Peter Murdoch, for special projects; and Lance Wyman, for graphic design.

Graphic design became an important visual ambassador for the 1968 Mexico Olympic Games, It was the first time the games were hosted by a Latin American nation. In planning for the games, Mexico, an emerging third world nation, could not afford to make the extensive architectural statement made in Tokyo four years earlier.

Graphic design contributed to the ambiance of the Mexican games and helped to make a meaningful visual impact for fewer pesos. Applications ranged from postage stamps to a two ton stadium entrance sculpture. An important kinetic application of the logotype was created by radiating its parallel lines outward, creating an image of Mexico as an emitting or expanding centre.

The image was applied as painted wall murals throughout Mexico City, as a cast pattern on the Olympic torch, as film titles, as a postage stamp, as the fabric used for the uniforms of the Olympic guides, as helium filled balloons that identified the Olympic venues from the roadways and as large scale patterns of pure parallel lines painted directly on the plazas of the sport venues radiating outward from the pedestrian entrance portals. These lines and use of vibrant colour became the overriding look of the Mexican Olympics.

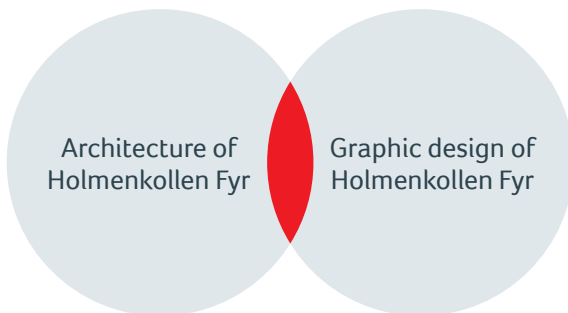




RESULTS

DESIGN BRIEF

The main purpose behind this exam work was to create a project that successfully combines architecture with graphic design. By working with JDS architects I have been given the opportunity to do this at their new ski jump design at Holmenkollen which will be completed around March 2010.



The three opportunities to create graphic design solutions that connect with the architecture of Holmenkollen are as follows.

Visual identity

The development of a visual identity for the Holmenkollen to help support the building through marketing material that a user may read before they decide to visit Holmenkollen.

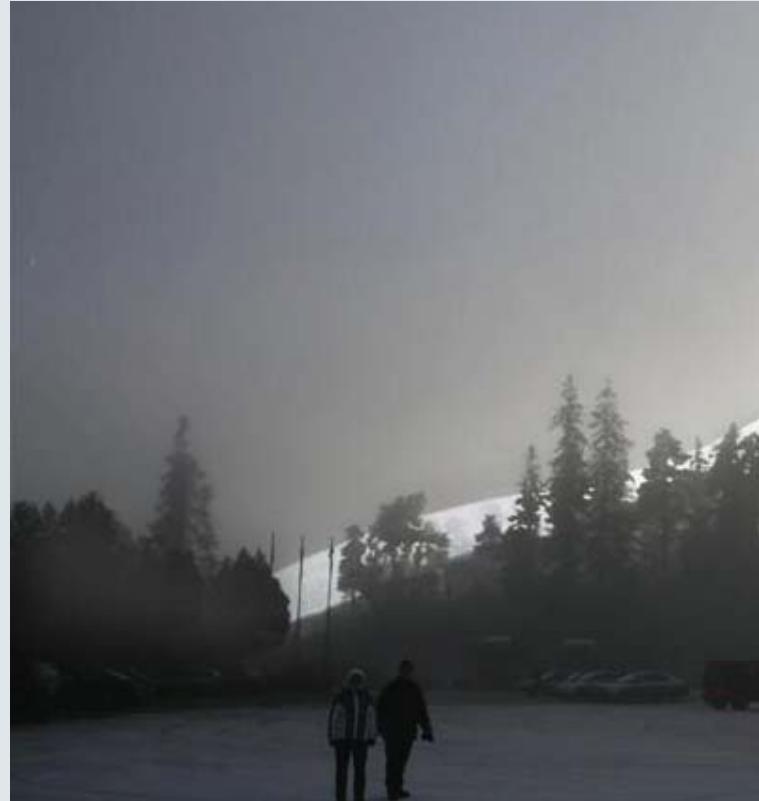
Wayfinding system

The development of a wayfinding system that allows users to find their end destination and explore the new building once they arrive at Holmenkollen.

Architectural graphics

A third opportunity has risen that might allow graphics to be applied to the concrete surfaces that surround the ski museum (came through communication with JDS later in the project but not part of the original brief).

The design work that follows on the subsequent pages should touch all of these areas. They should also be seen as being designed in combination with each other to achieve the best possible design solution. They should appear visually similar as if they have been designed as part of a consistent, creative process.



There appears to be five main ways that graphic design can be developed in conjunction with Holmenkollen's architecture. Key words that will influence the design process are extracted here.

Concept of the architecture

The building appear to levitate above the ground due to the cantilever supporting it. It will be visible like a beacon from Oslo and the surrounding area. Key words: **beacon, levitation**

Purpose of the building

There are two obvious purposes of Holmenkollen. Firstly to act as an arena for some of the World's most important ski jumping events. Secondly it must act as a tourist destination for over one million visitors per year.

Key words: **ski, flight, lookout**



Connection to place

Holmenkollen sits at the top of a hill. The site gets a lot of snow and ski jumping events are known for having windy conditions.

Key words: **cold (temperature), windy**

Visual appearance

The jump when lit, according to the architects, should appear like a glowing milky white colour. This light will extend upward into the sky paralleling the shape of the building (see picture).

Key words: **glowing, pointing**

Material

The materials being used are steel and concrete which are both cold. The jump itself appears visually light and like a reduction in material.

Key words: **light (weight), cold (to touch)**

In addition to the connection the graphic design must have to the architecture of the building the other requirements and responsibilities of the project are as follows.

- 1 Enhance users' experience of Holmenkollen by making their visit as easy and as pleasant as possible
- 2 Identify Holmenkollen as a high quality international sporting arena by providing it with high quality graphic design and products
- 3 Ensure that all different types of users are catered for when they move through the site
- 4 Make a wayfinding system that can help people both during Competition and normal visiting days
- 5 Ensure the wayfinding system provides users with consistent information to avoid confusion
- 6 Develop a wayfinding system that combines mapping and finger-posting to help orientate, direct and mark
- 7 Ensure that the wayfinding system meets current disability compliancy and signage legibility guidelines wherever possible.
- 8 Create designs that are respectful of the history of ski jumping and Holmenkollen
- 9 Make designs that are not subject to current trends and that might survive for many years.
- 10 Create designs that work from Summer through to Winter
- 11 Develop the wayfinding system to work across two languages, Norwegian Bokmål and English

RESULTS

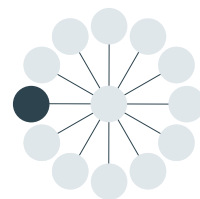
DEVELOPMENT OF GRAPHICAL ELEMENTS

Graphics at Holmenkollen need to be applied across the visual identity, the wayfinding system and the applied graphic pattern. This provides a challenge in that the mediums being worked upon are all different and have varying functional requirements. This suggests the development of graphical elements that are flexible and can be adapted to almost any medium.

At first glance the basic graphical elements that need to be created are a colour palette and a typographical system. For the visual identity there should be some illustrative elements added, and for the wayfinding system there needs to be some pictograms developed and a visual rationale of how to deal with cartography within the system. Proposals for all of the above appear over the next few pages.

As a gut instinct the system should feel wintery and have a high contrast feel to it like the image of the forest in snow on the right. It should not feel too dark and oppressive and should be brightened in some way. The purpose of the building as a ski jumping arena should also be brought through into the graphical elements.





Colour

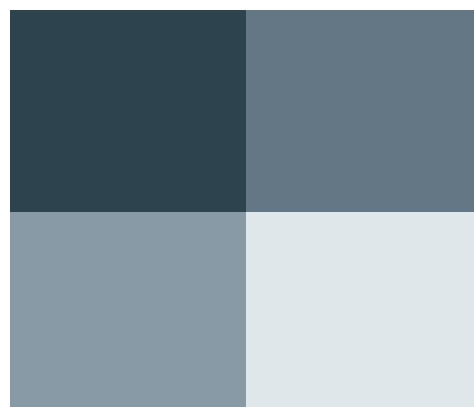
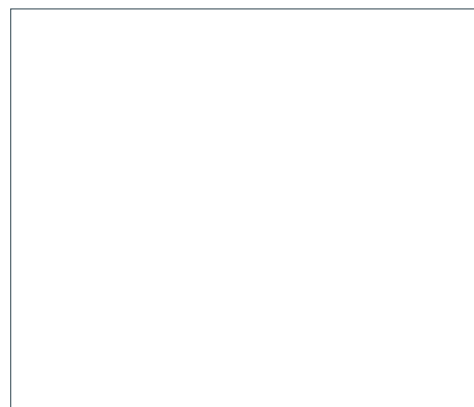
All of the concept images that show the jump are during competition times. In each picture the surrounding environment appears cold, stark and other-worldly. Although the jump will continue to be used throughout the summer months peoples mental picture, emotional connections and their imagination about Holmenkollen will be during cold, wintery conditions.

These are feelings that should be brought through into the colour palette for the visual identity and wayfinding system. This was preferred to the alternative route of creating a warm colour palette that contrasts with the cold reality. If warmth is to be brought into the system then it should be done via light rather than colour.

The palette chosen is one of stark contrast between darkness and light reflecting the concept of the beacon in the night. The ski jump's light system is made from LEDs which when lit are brilliant white.

To the human eye they often have a slight blue tinge which is reflected in choice of a midnight blue in replacement of a black colour for the system. The palette continues through graduations of this tone.

Red is also used as a final highlight colour that might need to be applied sparingly in exceptional circumstances. It has no connection to the building other than the Norwegian flag. It is chosen because it will stand out strongly against midnight blue and white.



RESULTS

DEVELOPMENT OF GRAPHICAL ELEMENTS

Typography

Without the possibility to go through a lengthy and expensive bespoke type design project for Holmenkollen (three to four months in its own right) a suitable substitute font had to be found. The typeface chosen to develop Holmenkollen's visual identity is called Foco, a font designed by Dalton Maag Type Studio.

Although not directly linked to the architectural shape of Holmenkollen it does seem to link back to the purpose of the building. At heavier weights it feels quite sporty where the terminals of the letterforms appear to have a relationship with skis. At lighter weights it feels quite floaty perhaps giving a suggestion of air and flight.

It has properties that are desirable in a signage typeface having a large x height ratio in comparison with the capital letters. When combined with relatively small ascenders and descenders the typeface exhibits reasonably good space economy, a feature that is important in wayfinding systems. The typeface also has similar height capital letters and numbers meaning combinations between the two are visually attractive.

ABCDEFGHIJKLMNOPQRSTUVWXYZØÆÅ
abcdefghijklmnopqrstuvwxyzøæå
1234567890.,!/?/ @ £ \$ % & () { } []

Foco Light

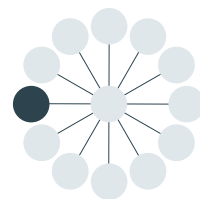
ABCDEFGHIJKLMNOPQRSTUVWXYZØÆÅ
abcdefghijklmnopqrstuvwxyzøæå
1234567890.,!/?/ @ £ \$ % & () { } []

Foco Regular

ABCDEFGHIJKLMNOPQRSTUVWXYZØÆÅ
abcdefghijklmnopqrstuvwxyzøæå
1234567890.,!/?/ @ £ \$ % & () { } []

Foco Bold





Right

The light version of the typeface is a little weak for a wayfinding system so it will be used mainly within printed applications. When combining two languages colour will be used to differentiate between the two.

Below

Bold will be used in very few situations to keep the visual identity feeling quite light and airy. One of these situations is the logotype for the building itself.

Øvre tribune

Upper arena

Nedre tribune

Lower arena

Starthus

Starting house

Utsiktsplatå

Viewing platform

Dommertårn

Judges tower

Kongenstårn & butikk

King's tower & shop

Holmenkollen Fyr

Holmenkollen Fyr

Illustrative elements

The colour palette and the typographical choices are both relatively cold in feeling. At first glance there is little life in the graphics in comparison with the energy of the building. There is an opportunity to give the graphic design more life through the use of playful illustrative elements that speak of the buildings visual appearance. These elements should be used sparingly in communications to retain the integrity of the building.

Right (next page)

There is difficulty at Holmenkollen is being able to describe where certain destinations are. For example 'top of the jump' could be interpreted as the viewing platform or the bottom of the inrun by the launch ramp.

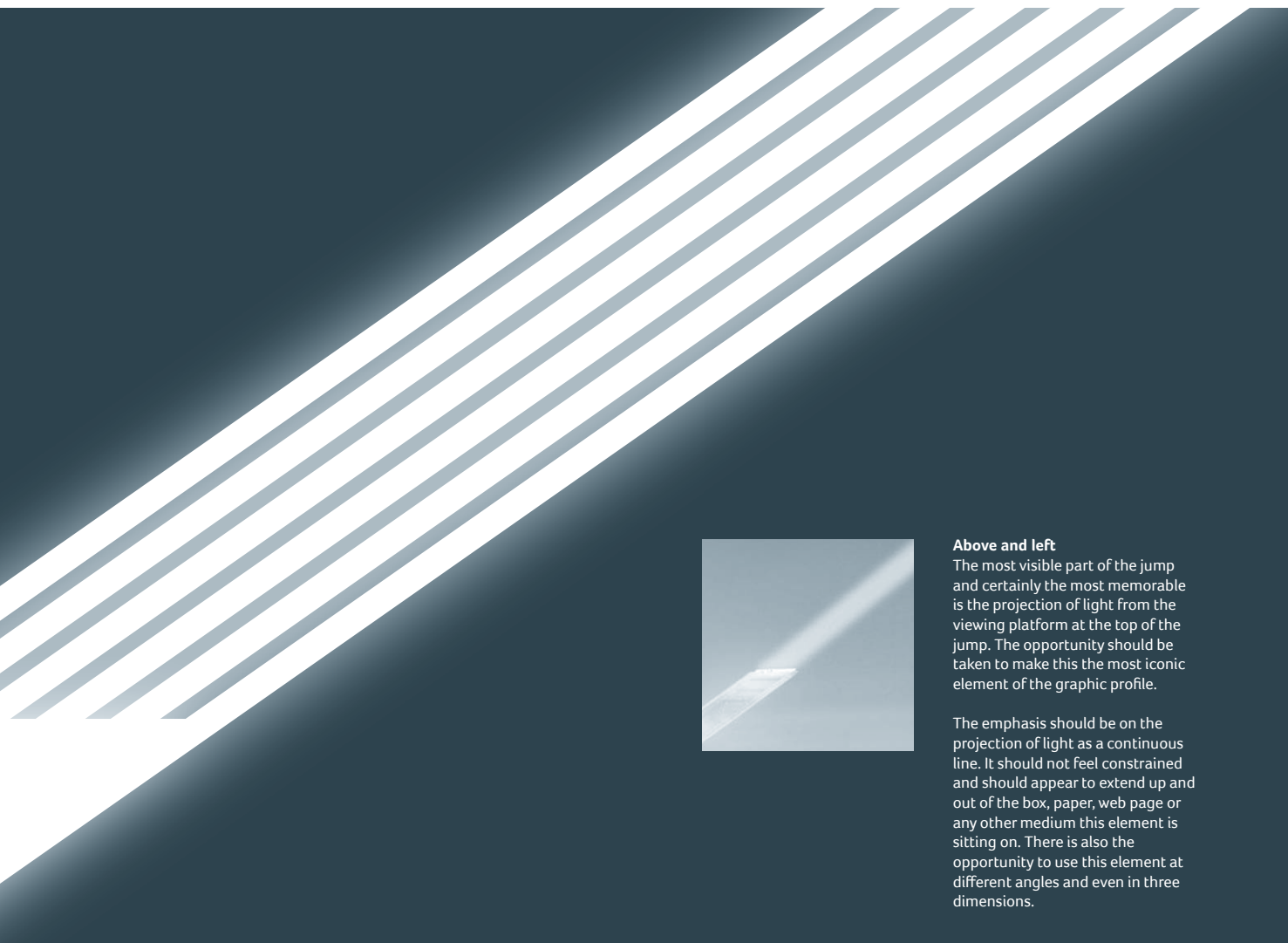
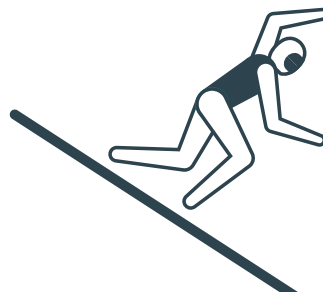
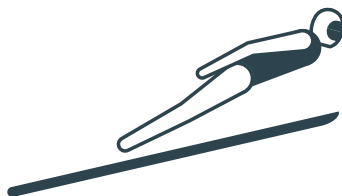
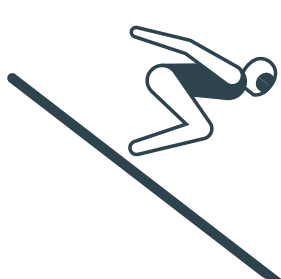
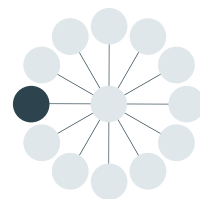
A theory is that people may prefer to understand destinations in relation to the position in take-off, flight and landing of the ski jumpers themselves. By backing up names of the major areas with the illustrations here people might feel slightly more confident about where they are going.

Holmenkollen Fyr

Holmenkollen Fyr

Above

The jump itself is most 'alive' when it is lit up and ready for competition and events. There is a need to replicate this energy in some way through the graphic material. By creating graphics that are also 'turned on' and lit up life is given to the system. This technique could perhaps be used in web or print applications to coincide with the lighting up of the jump itself.



Above and left

The most visible part of the jump and certainly the most memorable is the projection of light from the viewing platform at the top of the jump. The opportunity should be taken to make this the most iconic element of the graphic profile.

The emphasis should be on the projection of light as a continuous line. It should not feel constrained and should appear to extend up and out of the box, paper, web page or any other medium this element is sitting on. There is also the opportunity to use this element at different angles and even in three dimensions.

RESULTS

DEVELOPMENT OF GRAPHICAL ELEMENTS

Pictograms

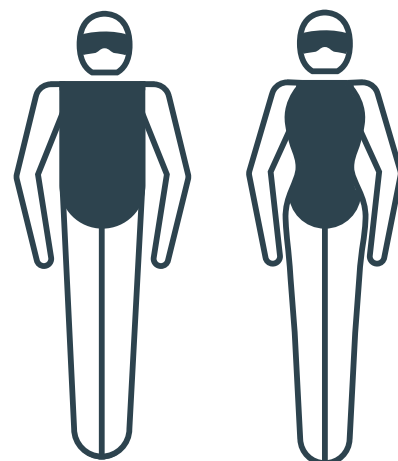
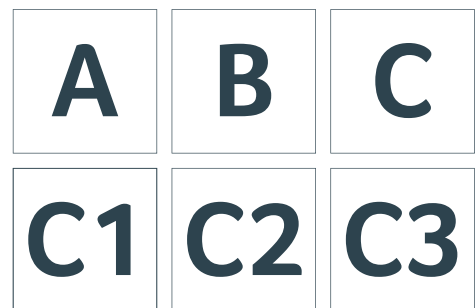
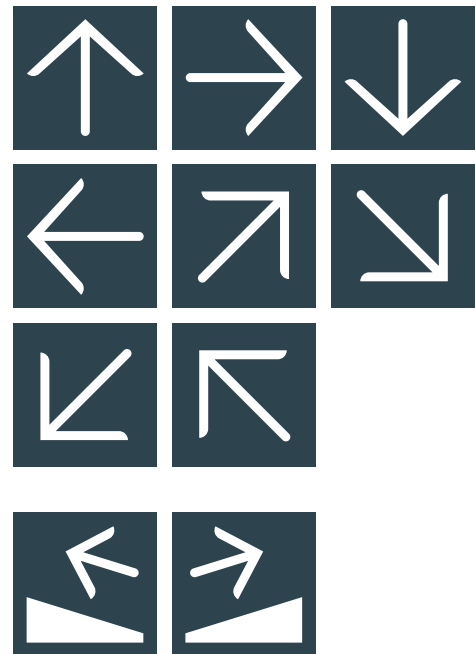
As the wayfinding system will use two languages the amount of text being used on maps and fingerposts could become slightly overbearing. One of the main ways to combat this is to use pictograms rather than words to help define destinations.

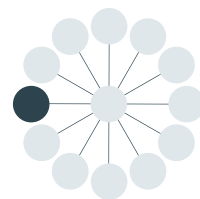
Pictograms are only useful when seen without adjacent text when they adhere to conventional understanding. For example there is international understanding that an upright man/woman facing front ways suggests a male/female toilet respectively.

The pictograms that could be used at Holmenkollen include the following:

- _directional arrows;
- _viewpoint;
- _male/female toilets;
- _disabled toilets;
- _access by stairs;
- _access by ramp;
- _access by lift;
- _ski lift;
- _parking;
- _t-bana; and,
- _ticketing zones, A, B, C, D, E, F and their subdivisions e.g C1, C2, C3...

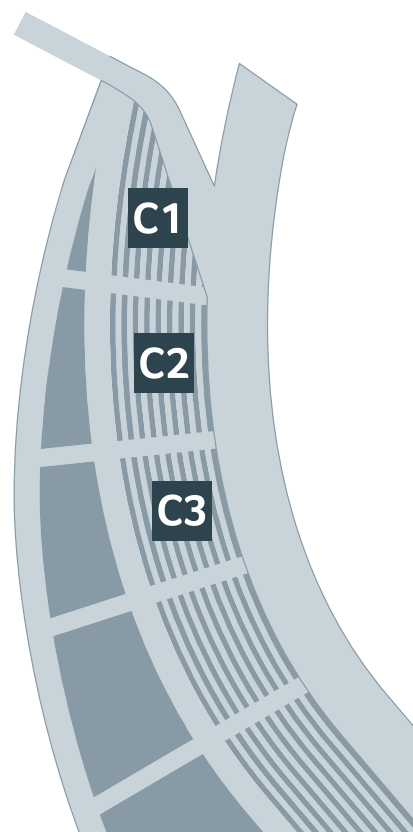
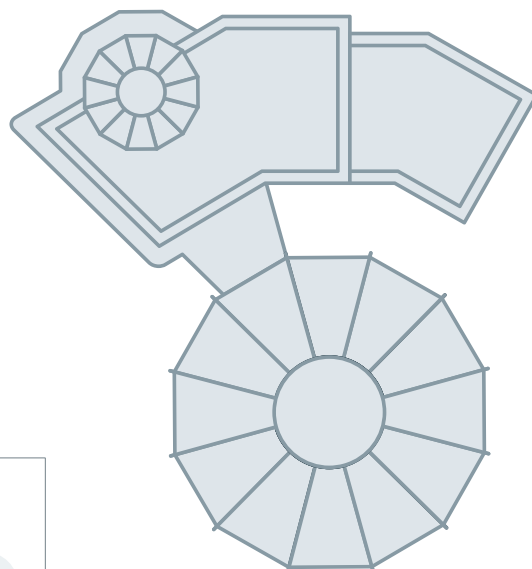
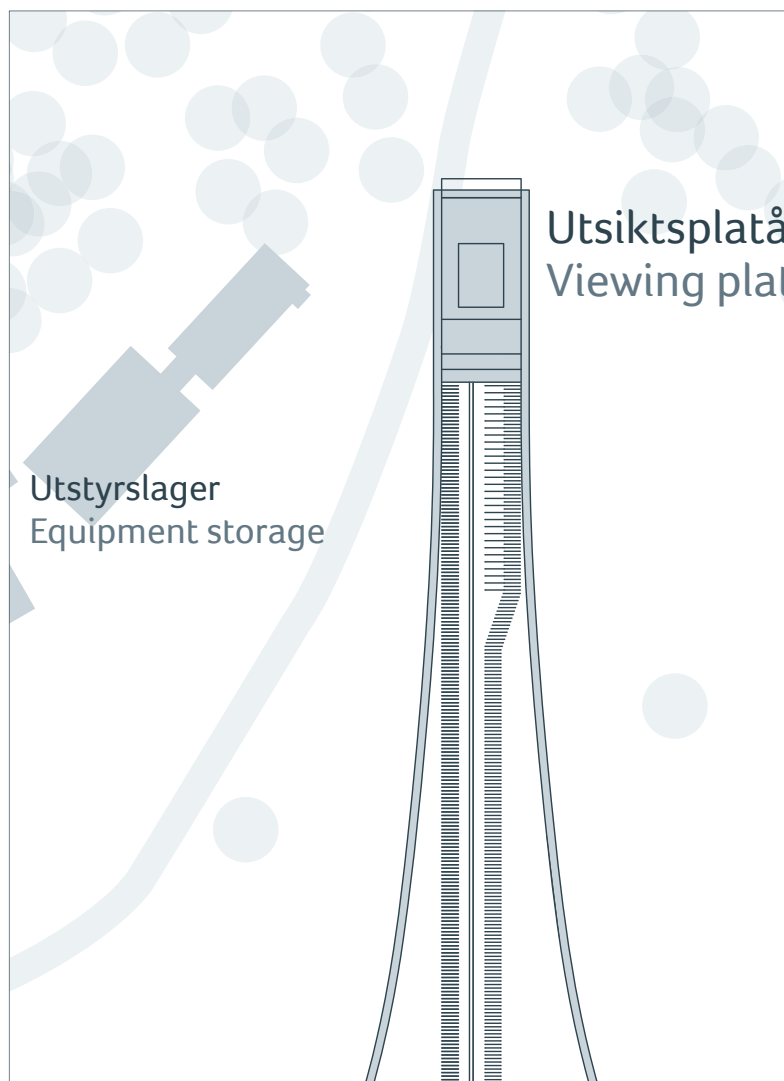
The pictograms are drawn to reflect the ideas of levitation, lightness, flight and skiing. They include where possible curved corners and chamfered edges that reflect the graceful curves of the building. Each pictogram should be able to be used with or without a box in both positive and negative. Also as with the illustrative elements there is an opportunity to be quite playful in the design of the elements.





Cartography

As the wayfinding system will use two languages the amount of text being used on maps and fingerposts could become slightly overbearing. One of the main ways to combat this is to use pictograms rather than words to help define destinations.



RESULTS

DEVELOPMENT OF PHYSICAL ELEMENTS

One part of a graphic designers job is to try to bring two-dimensional graphic elements to life through a three-dimensional medium. This would commonly be done through the influence over the choice of paper however it could also be other materials. The wayfinding system for Holmenkollen is one such example where the graphic designer should have influence over the form and feel of the products and the materials they are made from.

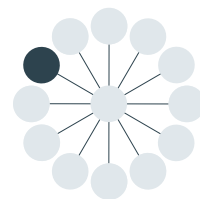
To develop this concept a direction relating to the wayfinding system's qualities, shapes and choice of material will be established over the next few pages.

In common with the development of the system's graphical elements emphasis will be on producing a products that feel light, both in weight and brightness. Other themes that should be represented in the products might be levitation and curves. Again there should be a degree of high contrast to the wayfinding system either between the products and the graphical elements (for maximum legibility as much as character), or between the products and the surrounding environment.

Although this project is about concept work any physical products that are designed should be able, in principle, to work in reality. This means taking into account manufacturing techniques and qualities of suggested materials. The eventual likelihood is that if this project is to be taken further than a concept and put into reality an experienced industrial engineer or product designers should be brought on board to oversee the manifestation of the wayfinding products.

In keeping with the theme of 'beacons' a lighted system is a possibility as there will be electricity available along routes and paths around the site.

It is important that the products have their own identity and that they do not become a pastiche of the architecture. They should feel complimentary rather than poor copies.



The materials that are suggested for the wayfinding system and applied graphic pattern appear here. They have each been selected for either their hardwearing quality, flexibility or visually appeal.

Concrete

Most of the hard landscaping and the construction of the arena areas at Holmenkollen will be made from concrete. This is a harsh material that fits with the cold concept of the graphical elements. The architects have suggested that they are investigating an opportunity to use 'graphical concrete' outside the entrance to the ski museum.



Graphical concrete is fabricated off site where patterns and images are applied using chemicals during the curing process of the concrete. Almost any pattern can be created by this process. This use of the material represents the main opportunity to create an applied graphic pattern at Holmenkollen.

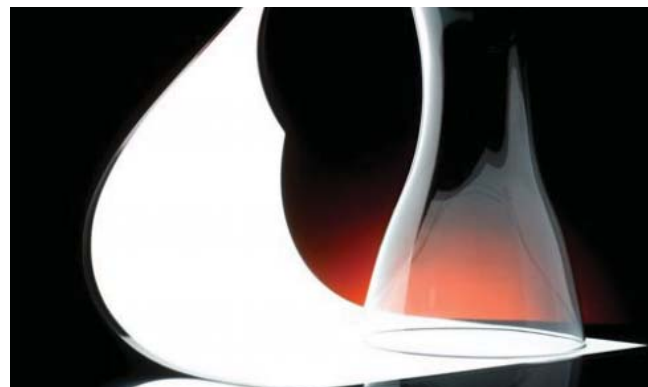
Steel

Most of the jump will be created from an underlying steel frame. The standing/seating areas of the arena will be also be made from a heavy duty steel mesh, normally used in walking gantries and platforms. Another mesh will be used to clad the structure to reduce the wind that affects the athletes' jumping performance. It seems natural then that steel should be represented somehow into the wayfinding system.

To improve the visual quality and lifetime of the signs a high quality steel should be used. Shot-peened, stainless steel is commonly used within signage systems for this purpose.

Flatlite

One suggestion of how to bring light to the signage system is through Flatlite, a product of e-lite technologies. The material is paper thin however when a current is passed through the product it glows bright weight. It could be useful here because of the desire to create a very light feeling wayfinding system (in shape and weight). Qualities that make it suitable for purpose include negligible heat output, its long-life, its flexibility, its even spread of light and the fact it can be manufactured (and lit) in lengths up to 300m long. In outdoor applications the material needs to be laminated for this purpose and sealed.



Backlit film

This material is commonly used in advertising spaces that are back lit such as those that might be found at bus stops. Modern printing techniques allow high resolution prints that are extremely dense in opacity.

Polycarbonate

Backlit systems need a transparent covering to protect and seal them from the weather and/or tampering. Polycarbonate lends itself as a good choice for this purpose due to its high impact and scratch resistance. It is also completely transparent allowing the underlying graphics to be read easily.

Polycarbonate sheets can also be treated with various coatings that improve their suitability for the wayfinding system. UV treated sheets improve the lifetime of the material and prevent yellowing. Anti-glare coatings will improve the signs readability. There are also new coatings that are referred to as 'self-cleaning' as they make water droplets roll directly off the surface.

RESULTS

DEVELOPMENT OF PHYSICAL ELEMENTS

Shape and qualities

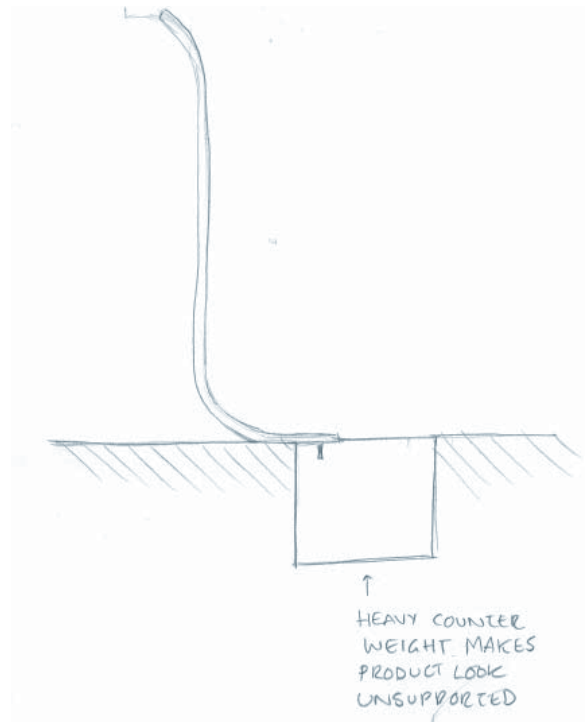
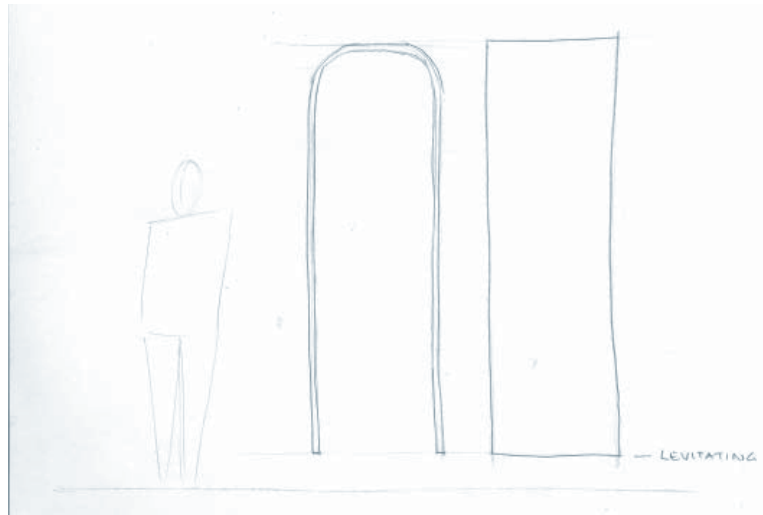
The character of the products should be reflective of the shapes and qualities that are found in the building and the overall concept behind the architecture.

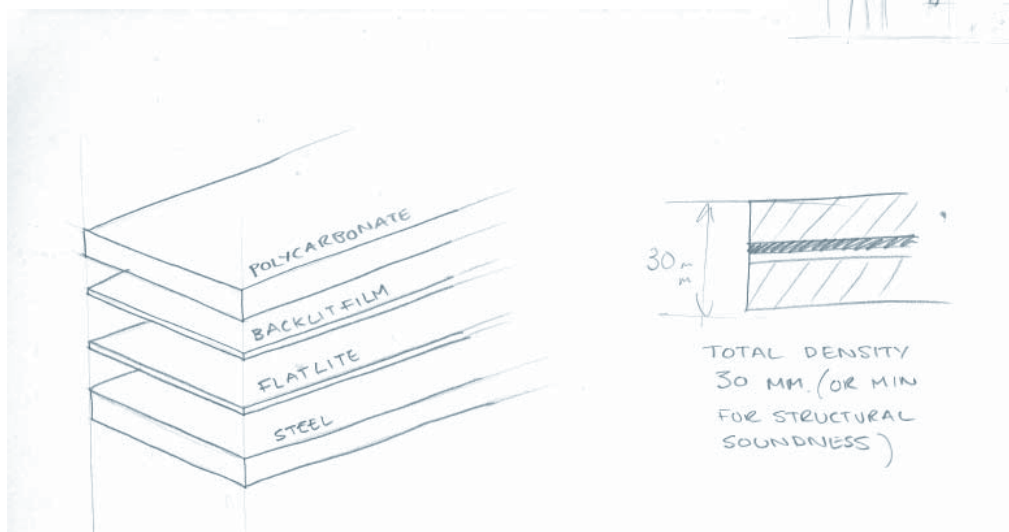
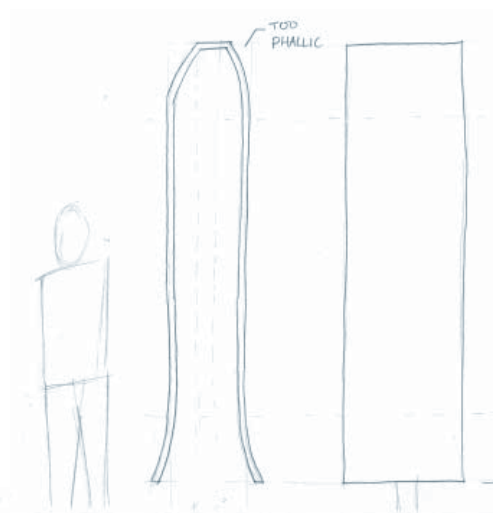
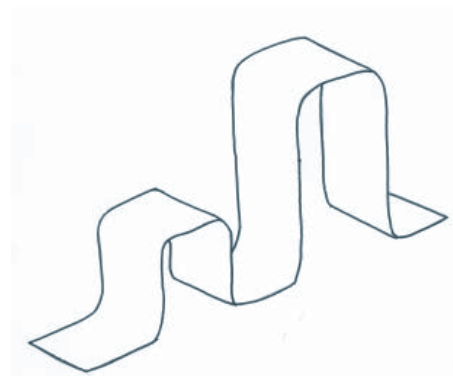
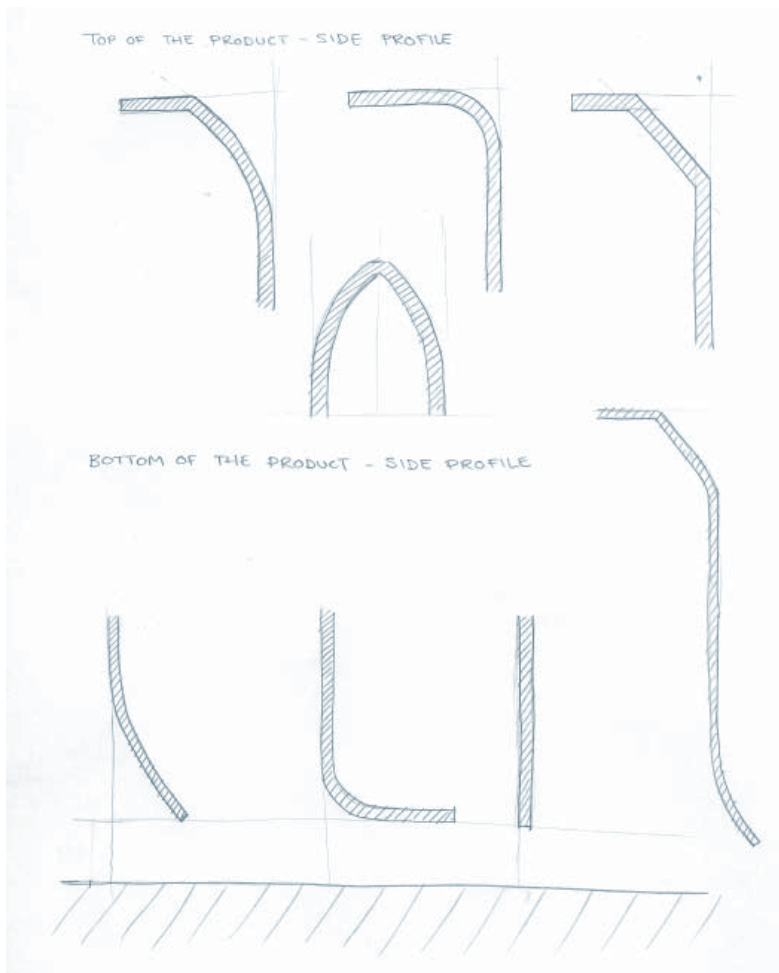
The side profiles of the signs should reflect the graceful curves of the jump inrun and the take-off area whilst the faces of the signs should reflect feels like it should be relatively straight and hard edged.

An important aspect of the signage system is that for inclusivity purposes the area of the sign that carry's information must be positioned perpendicular to the ground and vertically orientated. People with low-sight need to get close to signs to read them making unobstructed vertical surfaces very important. This means that the signs cannot be angled to do things like replicate the slope of the jump. However the products could hint at the idea of the jump by using curves at either end of the sign.

An interesting feature to use is to explore a continuous flow of light that connects back to the idea of Holmenkollen as a beacon that projects light up into the sky. Representing a continuous flow of light in a product could suggest that light passes up, over and through the product without breaking. It could even flow in and out of the ground.

One of the features that I like most about the concept of Fyr is that it is built on a cantilever design giving it an appearance like it is levitating or is unsupported. By setting the main part of the product off the ground or balancing it with a counter weight a similar idea could be achieved in the wayfinding system. One thing to be aware of is that people with sight difficulties who use sticks to guide them need something low down that the stick can connect with. This prevents people from walking into the sign so the base of the product if levitating should not appear too far off the ground.





FURTHER DEVELOPMENT

The main part of the project was to show creatively how architecture and graphic design might be combined to create collaborative projects. The concept work that is created here reflects this through a concept for a real world project. However it is worth exploring what will happen when the project is taken forward and actually built.

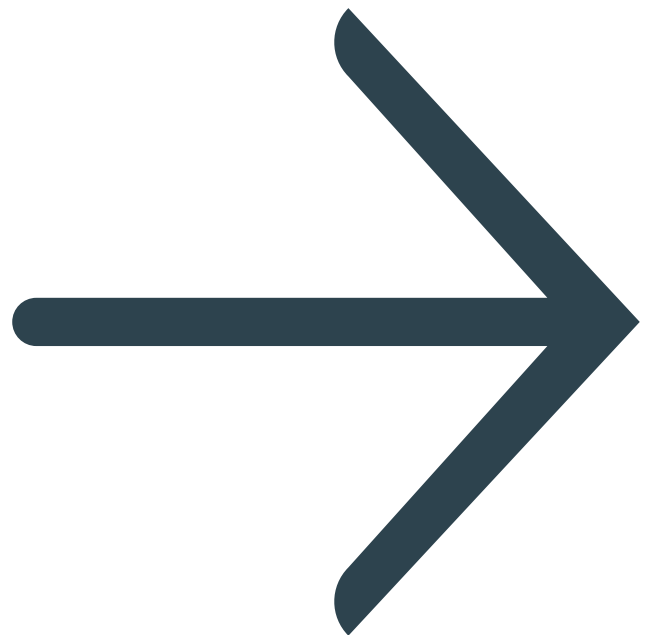
Obviously somebody will be developing the wayfinding system for Holmenkollen for real. Hopefully this concept work places me in a good position to take on this project in reality and be included in, or take charge of, the design team responsible for the wayfinding system's completion.

The next few pages show recommendations of how architecture and graphic design might be brought together in reality rather than in a concept.

The three main parts of these recommendations are describes as follows:

- _a recommendation for the project team structure to include the roles of the architects and the graphic designers;
- _a recommendation of phases leading up to and beyond installation of the system; and
- _a recommended timetable showing the beginning and end of these project phases.

These recommendations are based upon the way I would build the project should I be included as a senior member of the team that will put the project together. They may not be appropriate for other designers who would have their own ideas on how this should be done.

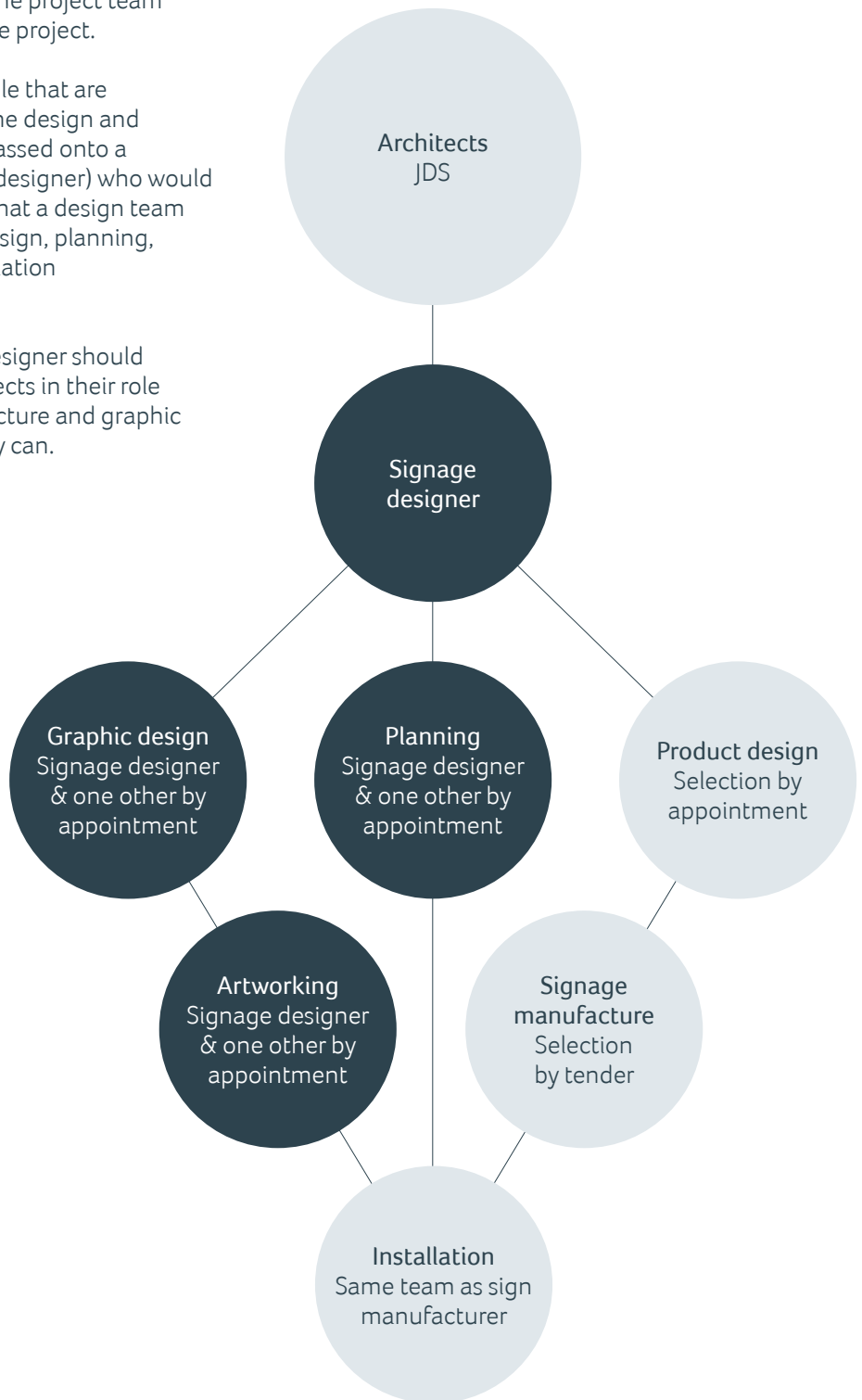


FURTHER DEVELOPMENT
RECOMMENDED PROJECT TEAM STRUCTURE

The following diagram shows how the project team might best be arranged to create the project.

JDS Architects will be the main people that are answerable to during the project. The design and organisation of the project will be passed onto a Signage designer (ideally a graphic designer) who would be selected by appointment. After that a design team should be created to oversee the design, planning, manufacture, artworking and installation of the whole system.

As mentioned above the signage designer should be answerable directly to the architects in their role so the relationship between architecture and graphic design remains as tight as it possibly can.



FURTHER DEVELOPMENT
RECOMMENDED PROJECT PHASES

PHASE ONE – CONCEPT AND VISION

Vision

- _Synthesizing original architectural vision.
- _User identification and understanding user needs.
- _Development of concepts for wayfinding and information provision.

Visual design

- _Analysis of visual appearance of area and new architecture.
- _Design of a concept for a graphical system.
- _Design of a concept for a product system.

Planning

- _Development of preliminary nomenclature lists in Norwegian and English.
- _Basic location planning.

Visualisation

- _Design of scale models and Visualisations.

Deliverable elements include a formal report on the above, dummy models of signage at scale and 2D graphic samples.

Delivered in early June 2009.

PHASE TWO – ADVANCED DESIGN

Project planning

- _Making written agreements including budget, time scales, formal constraints, contracts terms and conditions and fees.
- _Organizing signage team and client side team and formally allocating responsibilities.
- _Appointment product designer to oversee signage design.
- _Organizing meeting schedule

System design

- _Analysis of original wayfinding and information concepts from phase one.
- _Development of detailed design tools such as site and floor plans.
- _Walks through site for detailed analysis.
- _Development of product typology.
- _Creating system documents including traffic flow analysis, marked plans, nomenclature lists, signs database, coding system, product typology and sign types list.

Visual design

- _Analysis of phase one preliminary designs.
- _Advanced graphic and product design.
- _Development of design guidelines including charts for typography, colour, material, illustrative elements, sizes and layout and mounting heights.

Deliverable elements include a formal report on the above and dummy models of signage at real size.

Delivered at the end of October 2009.

PHASE THREE – REALIZATION

Artworking and testing

- _ Designing each sign type.
- _ Development of design drawings.
- _ 3D cardboard mock ups of most/all signs created and tested at site.
- _ User group testing for legibility and disability compliancy.

Procurement

- _ Design of bidding documents to include general conditions, location plans, elevation drawings, design intent drawings, manufacturing specs, nomenclature lists, art work, quantity lists and a bidding form.
- _ Documents sent out to bid.

Selection and supervision

- _ Selection of a manufacturer /installation team based on returned bids.
- _ Supervision of sign fabrication via shop drawings, prototypes and samples from the manufacturer.
- _ Supervision of sign installation using a sticker and numbering position system at the site.
- _ Submittal of completion/evaluation reports.

Deliverable elements include the finished wayfinding system and a report on the above.

Delivery in-line with jump completion date

PHASE FOUR – TESTING & MAINTENANCE

Testing and appraisal

- _ User testing at World Cup weekend.
- _ Appraisal document developed and redesign recommendations made.
- _ Redesign, manufacture and installation of missing/unsatisfactory signage.

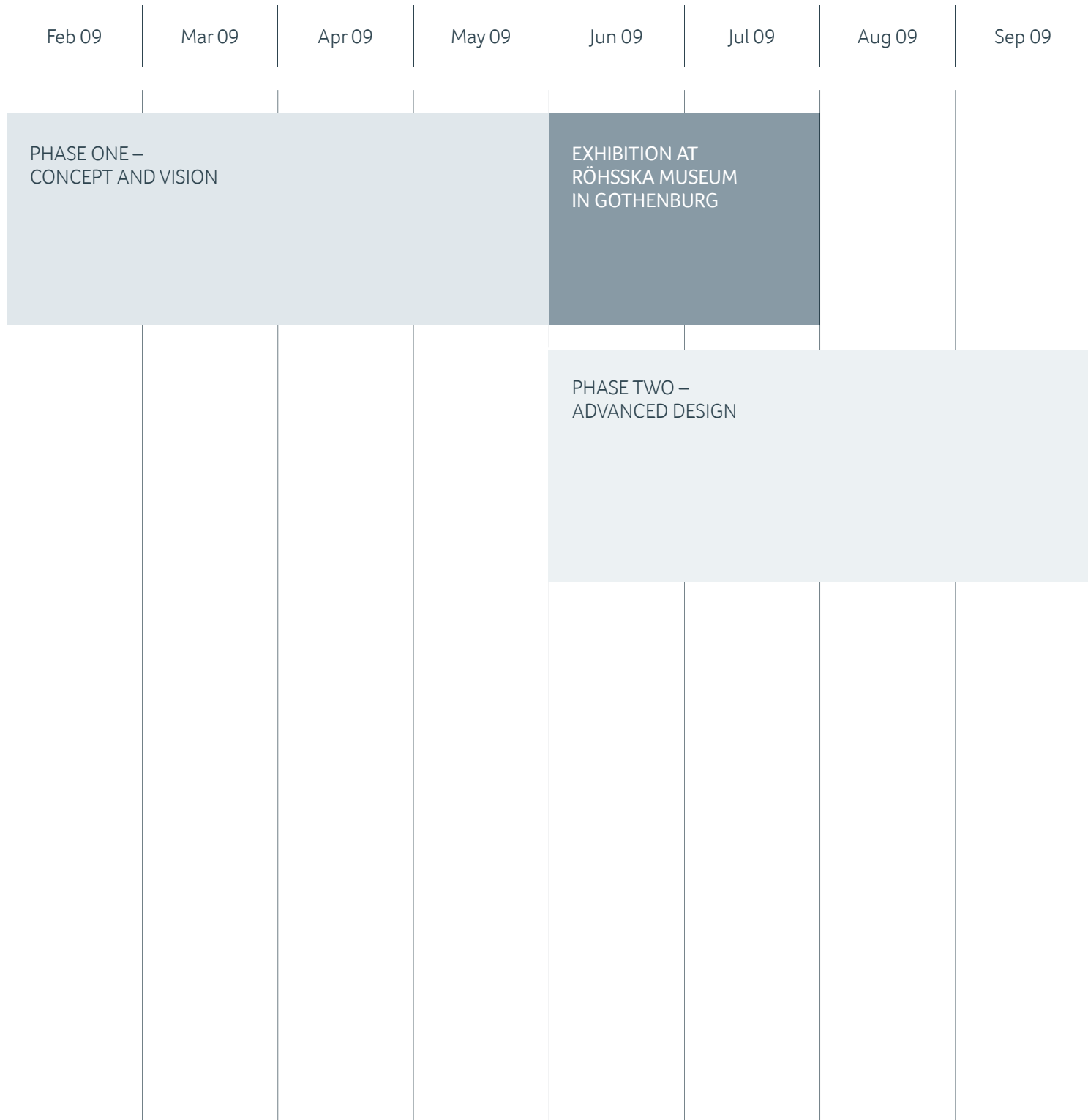
Maintenance system

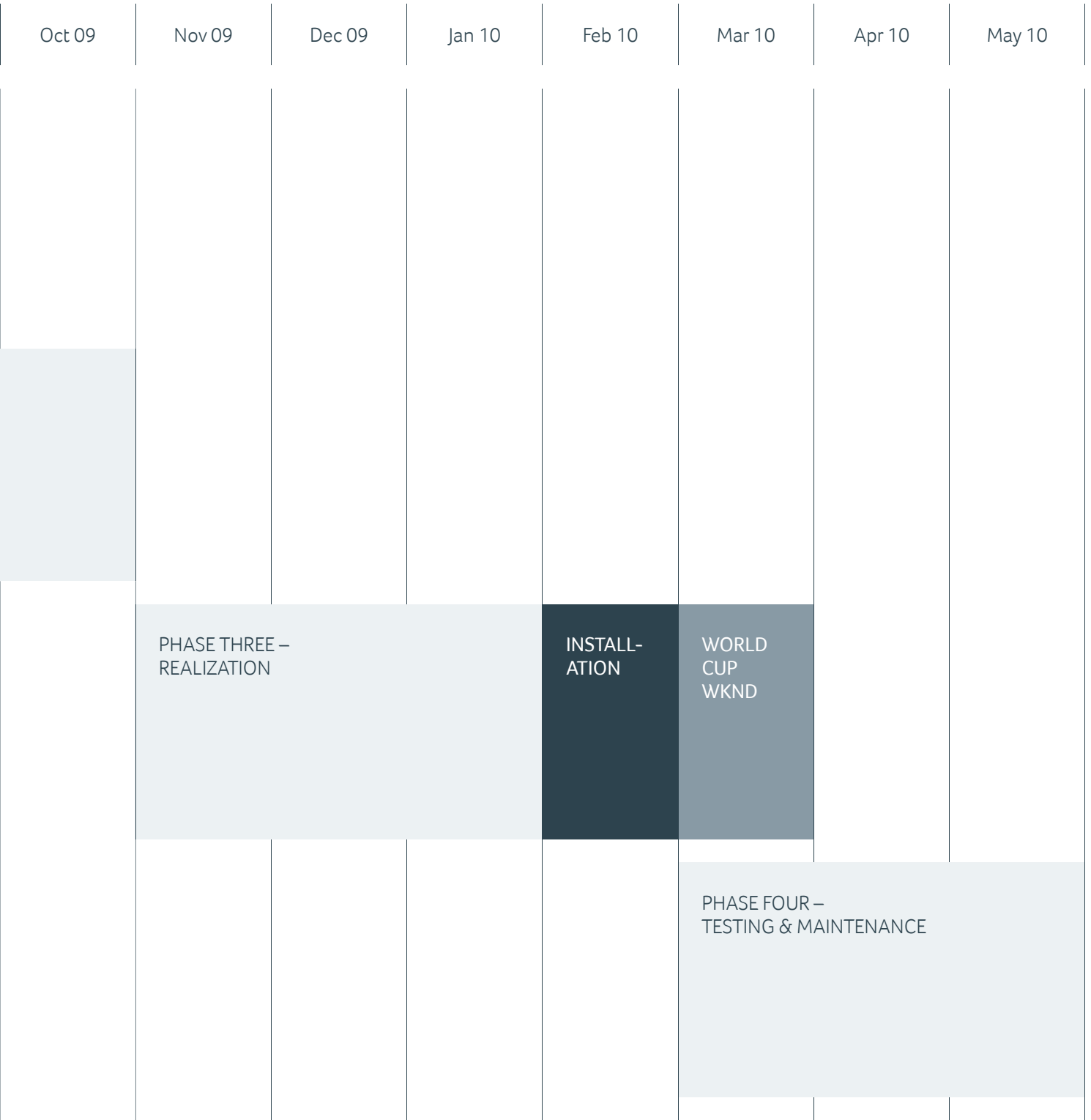
- _ Selection of a signage officer for the site.
- _ Development of signage manual and database.
- _ Development of a system for reordering and updating.

Deliverable elements include a formal report on the above, the signage manual and database and the reordering system.

Delivered at the end of May 2010.

FURTHER DEVELOPMENT
RECOMMENDED PROJECT TIMELINE





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Effort has been made to collect the research sources that have in some way contributed to the final design concept and this report.

In general concise and specific sources on cross-collaboration between architecture and graphic design have proved hard to come by. However there is a lot of good information on the planning and implementation of wayfinding systems and signs.

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Norske Arkitekters Landsforbund: Holmenkollbakken
Open International Architectural Competition
http://www2.arkitektur.no/page/Konkurranseside/Konkurranser_om_meny/7654/71086.html

Snohetta: New Holmenkollen
<http://www.snohetta.com/#/projects/18/true/all/image/126/>

Nye Holmenkollen
<http://www.holmenkollenfyr.com/>

Norwegian Ski Association
<http://www.skiforeningen.no/english/holmenkollen>

Destination Holmenkollen
http://www.holmenkollen.com/index.jsp?SDP_CHANGE_USERLANG=en

RNIB: Clear print guidelines
http://www.rnib.org.uk/xpedio/groups/public/documents/publicwebsite/public_printdesign.hcsp

NCBI: Working for people with sight loss
<http://www.ncbi.ie/information-for/architects-engineers/recommendations-for-signage>

Bruce Mau Design
<http://www.brucemaudesign.com/>

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contained in this report please contact;

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