

Hurtigruten 14. April 2012



[www.ratioark.no](http://www.ratioark.no)



**Ratio: The relation  
between people and  
buildings**

1

## **Ratio arkitekter as**

Drammensveien 130 C

0277 Oslo, Norway

[www.ratioark.no](http://www.ratioark.no)

[post@ratioark.no](mailto:post@ratioark.no)

+47 41521111

Org.nr: 962 959 407

Healing environments and organization in a number of Healthcare Buildings

The Rikshospital, Norwegian National Hospital, Norway

Jena University clinic, Thuringen, Germany

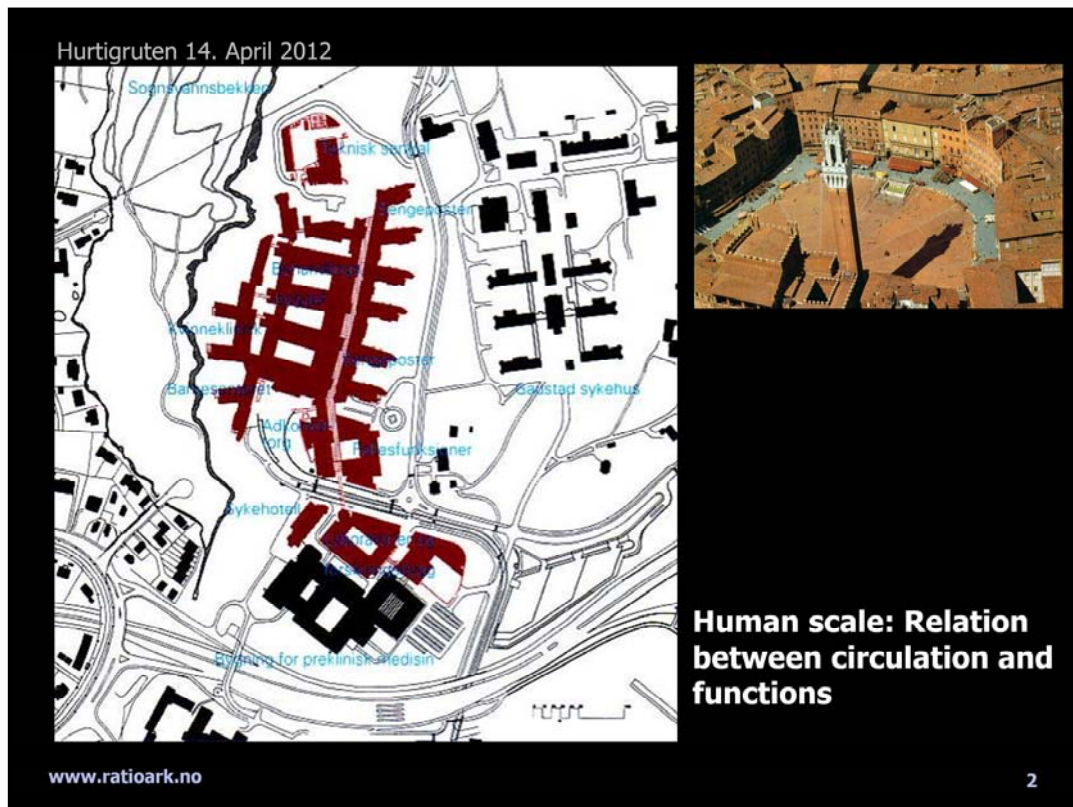
St. Olav University Hospital, Trondheim, Norway

Nordlandssykehuset, Bodø, Norway

Landspítali, Icelandic National Hospital, Iceland

When designing the Rikshospital University Hospital in Oslo and St Olav in Trondheim our architectural focus was on the humanistic hospital, a hospital built by people for people.

In the lecture we will elaborate on this theme, using illustrations from our hospital projects.



### Hospitals and town planning:

The design of a large hospital depends on principles of town planning as much as architecture

Orientation and comprehension is dependent dividing the hospital into comprehensible building volumes, with a human scale and with identifiable functions

There is increasing documentation that the environment of the hospital is of great significance to patient care.

Ratio Arkitekter bases its theories about architecture on the relationship between people and their built surroundings. One can go as far as to say that a patient's will and ability to be cured is greatly influenced by their physical environment.

This was a founding theory in the development of the University Hospital in Oslo, where the individual was the focus of the project.

Based on this philosophy, we believe that the main object for architects designing hospitals should be to create good architecture, focusing on design based on the human needs for daylight, ease of orientation, views to nature and variation in space and design.

Simultaneous to changing perceptions about patients, relatives and employees, there have been great technical developments in recent years, changing the parameters for the architect.

Hurtigruten 14. April 2012



**Relation between  
buildings and  
surroundings**

[www.ratioark.no](http://www.ratioark.no)

3

We all agree that our environment influence us.

Research has already proven that daylight and sound has an impact on patient care.

This means that good architecture, through humane scale , variation in design, color, materials and integration of art and nature, is important assets in patient treatment.

Hurtigruten 14. April 2012



**Multiple use of general spaces**

[www.ratioark.no](http://www.ratioark.no)

4

**Within the “hospital town” architecture should:**

Induce feeling of safety through scale and ease of orientation

Have equality in ownership to turf between patient and staff in patient and treatment areas

Create a platform for dialogue between patient and staff

Inspire the patient to wish to return to life

At the Rikshospital glass covered streets, open arcades and bridges tie the different building volumes together climatically to one “hospital town”.



Hurtigruten 14. April 2012



[www.ratioark.no](http://www.ratioark.no)



**Relation between  
buildings and art**

5

To feel safe in an environment we need to:

Know where we are

Understand where we are going

Feel certain that we can find our way back out

Experience belonging.

An institution does not necessitate institutionalized architecture.

Institutionalized architecture is alienating

Good architecture is not institutionalized

Good architecture is including and open

Good architecture visualizes more than function

Good architecture visualizes architectural intentions

Hurtigruten 14. April 2012



[www.ratioark.no](http://www.ratioark.no)



**Finding your way in  
unique spaces**

6

Good architecture gives good hospitals

Ratio believes that:

Good hospitals should appear through architecture, design art and contact to nature as buildings built by people for people.

Because:

The essence of the hospital is mutual space for people caring about people

Hurtigruten 14. April 2012



**Applying Ratio's  
principle in a different  
master plan**

[www.ratioark.no](http://www.ratioark.no)

7

At St. Olav the hospital is divided into building volumes representing clinical centers in an urban town plan

Helsebygg Midt-Norge defined that their goal for St Olav's Hospital should be 'The patient in focus' and they have to a certain point, succeeded.

Ratio believes its philosophy must apply equally to any given situation.

In Trondheim, an original Campus plan has evolved to an urban setting, integrating the roads and infrastructure of the town to an efficient, lively and high quality hospital and university complex.

The urban block schemes gives ample opportunities for flexibility.

In the course of time, any block can be renewed, partly or totally without disturbing the rest of the organism.

With free sites, new centers can be built independently before transferring departments from the old to new facilities.

Hurtigruten 14. April 2012



**Relation between the urban block inside, street pattern and efficient plan**

[www.ratioark.no](http://www.ratioark.no)

8

In this urban situation the internal courts becomes the soul of each clinical centre, the unique space to which patient and traffic areas relate.

Ratio believes in putting both the patient, the staff and the patients family in focus.

The patient is the most important person in the hospital.

For the patient to get good care, the staff must be heard and seen in the design process.

The staff needs an environment that does not create additional stress.

A successful workplace attracts the best staff, thus creating the best possible care.

An environment that meets the people surrounding the patients family in the best possible way, adds to feeling of relief and security when the patient is most vulnerable.

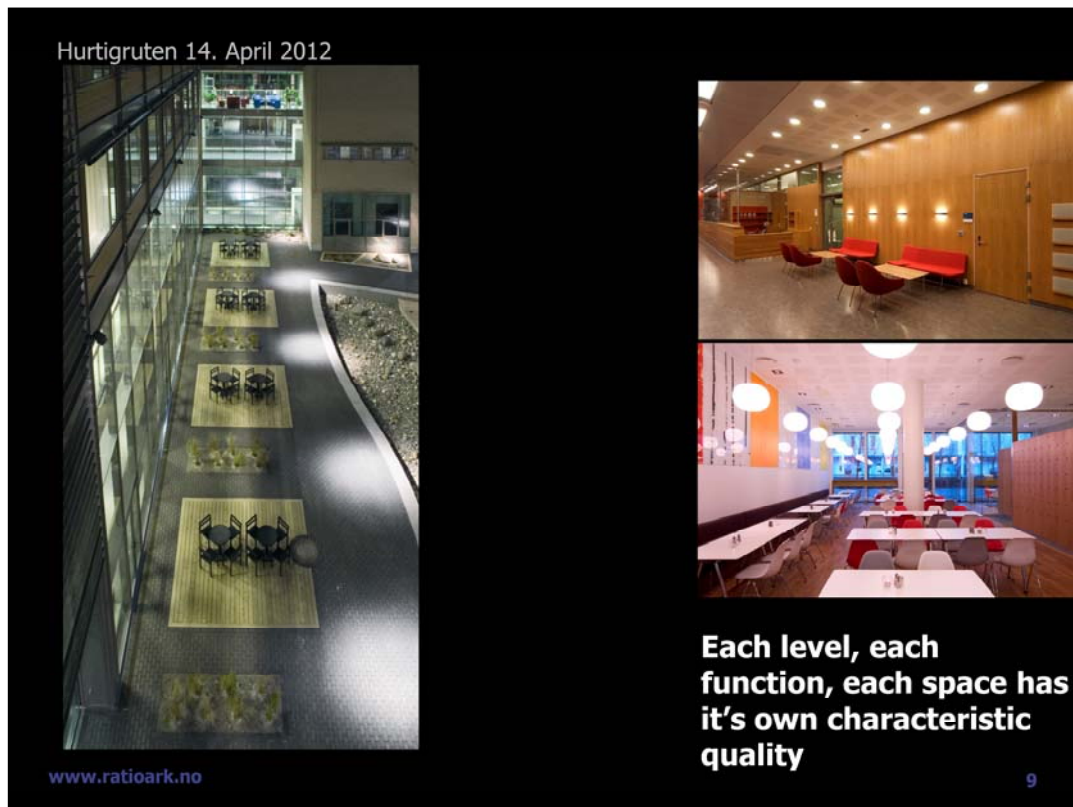
All solutions must be moored in the staff group.

Good solutions don't work if misunderstood, sabotaged or forgotten.

The client must be strong and clear in his or her vision if changes shall be implemented.

New technology gives shorter stay in the hospitals, but the mental process still needs time.





The upper 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> floors contain the bed areas.

Groups of 8 beds are centered around nursing

Stations, ensuring patient – staff contact.

Color and art give uniqueness to help orientation and identification .

The rooms are all single bed rooms with possibility for overnight stay for relatives.

Good aesthetic solutions are not more expensive.

Flexibility in the building mass gives stability for staff when technology and needs change.

Good design prepares for changes.

Additions must not destroy the whole.

The design should be more like jazz music with possibility of improvisation for the participants than classical music with just one interpretation.

Taylor stitching must be done for movement, not static.

The Rikshospital serves today twice the number of patients that it was planned for only ten to fifteen years ago.

A modern design when planned will necessarily be dated already at the opening day.

This applies equally to aesthetics as technology.

Let change and flexibility be your guides.

Hurtigruten 14. April 2012



[www.ratioark.no](http://www.ratioark.no)



**Relation between highly specialized and fully general spaces**

10

The laboratory center does not have much patient visits.

Still, it needs to create a stimulating and inspiring environment for those who spend their workdays there, searching for new cures, educating new health workers, perform exact diagnostic treatment.

Hurtigruten 14. April 2012



**Relation between  
integrated art,  
landscaping and  
architecture**

[www.ratioark.no](http://www.ratioark.no)

11

Art and architecture creates a stimulating whole.

Visitors, the casual by passer or the visiting post graduate or doctor, will never mistake this facility for any other in the world.

Identity in a successful work environment breeds pride and diligence.



**Intelligent planning  
ensures careful balance  
between centralized and  
individual departments**

Six clinical centers spaced around a central town square

It provides a comprehensive building volumes

The challenge is to interconnect functions as surgery and intensive care used by all.

Bridges interconnect surgical areas and main radiology

Patients are moved from their bed areas to treatment by one lift movement



Hurtigruten 14. April 2012



[www.ratioark.no](http://www.ratioark.no)



**Strong visual markers  
for important functions  
adds security and sense  
of place**

13  
13

The acute center is combined with heart and lung center to make a strong, high class, efficient and safe treatment block for emergency and life saving procedures.

Hurtigruten 14. April 2012



**Finishing the  
composition with center  
of knowledge and skill**

[www.ratioark.no](http://www.ratioark.no)

14

Kunnskapssenteret, the Knowledge Center.

The final piece in the ring, bringing together the composition, unifying the functions, bringing knowledge and experience to future generations of students as well as sharing with high qualified researchers, doctors, hospital owners all over the world.



The heart of the hospital is not the administration, but a gathering place. The plaza, piazza or plass (in Norwegian) is a green and lush meeting place for the hospital as well as the university and city.

Hurtigruten 14. April 2012



[www.ratioark.no](http://www.ratioark.no)



**Ratio philosophy meets  
central European culture  
in Jena, Germany**

16

Jena\_Klinikum Friedrich-Schiller-Universität

Jena, Thuringen, Germany

Ratio (then Medplan) won the competition in 1995 with a scheme based on much of the same as Rikshospitalet, but with a distinct central European touch



Hurtigruten 14. April 2012



**Relation between old facilities and new needs and functions**

[www.ratioark.no](http://www.ratioark.no)

17

In Bodø the existing hospital is to be rebuilt

The original beautiful hospital building with its park becomes the new entrance.

Almost like a heart transplant, a new modern treatment building is inserted centrally, between the original building and the existing bed tower which is to be modernized.

Hurtigruten 14. April 2012



**People in focus in a truly stunning environment**

[www.ratioark.no](http://www.ratioark.no)

18

Nordlandssykehuset, Bodø,

Human environment in a stunning landscape north of the arctic circle

A glass covered street and court separate the original building and the new treatment building.

Together with the new open vestibule and glass elevators facing the hospital garden it creates a unique space, gives identity and self explanatory traffic .

Hurtigruten 14. April 2012



**Daylight, flexibility and  
integration in Reykjavik,  
Iceland**

[www.ratioark.no](http://www.ratioark.no)

19

Landspítali  
Reykjavik, Iceland  
1st price competition 2010

Hurtigruten 14. April 2012



**Relation between user,  
art and architecture:**

**RATIO**

[www.ratioark.no](http://www.ratioark.no)

20

At Ratio we believe that the hospitals environment, through good architecture, design and art, can contribute significantly to the patients healing process as well as staff satisfaction.

Through our projects we believe to have proved that there are no functional reasons why hospitals can not be good architecture.

Last, but not least, we do not accept that good architecture and design need to increase building costs.

In our experience from the Rikshospital, good architecture, only reduces maintenance costs.

For Ratio there are no excuses for poor architecture in hospitals, only lack of architectural competence

Non-health projects (some examples):

Stavanger Concert Hall,

Tangenten – School at Nesodden

Various combined dwelling/commercial centers

[www.ratioark.no](http://www.ratioark.no)