LOST IN (space and time) TRANSLATION

Improving the quality of **WAY FINDING** is clearly a **DESIGN PROBLEM**

SIGNAGE DESIGN must be based on multidisciplinary approach of space,

a sum of **METHODOLOGIES** from other **DISCIPLINES**

regarding **IMPROVEMENT OF INDIVIDUAL** experience in space.

Can anyone imagine **AN AIRPORT, A SHOPPING MALL** or **CITY WITHOUT SIGNAGE**? Or can anyone imagine **A LARGE HOSPITAL WITHOUT ONE**?

AISo

Design projects have several levels of complexity and they demand a series of phases. From the conception up to the achievement, passing through study and experimental phases to development, Design confirms the level and the capacity of answer of the project to the **identified need**.

It is, therefore, necessary to use **scientific methodologies** to constitute the bases for the project action. An example of this methodology is being tested by studying the system of **way finding in complex buildings**.

AISO

FCT Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA E DO ENSINO SUPERIOR Portugal

The project interfere **sociologically in medical care buildings.**

For a group of rules/ norms that provide, in an ethical/ social point of view, an **environmental viability**, improving and creating a universal code language assuring its application and observation in a national level.

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the hospitals

As field of inquiry of this situation we choose **HEALTH CARE BUILDINGS** given their social impact.

the hospitals | SANTA MARIA'S HOSPITAL | lisbon

1950's building with an initial hospital program

Symmetrical building

Tree organization

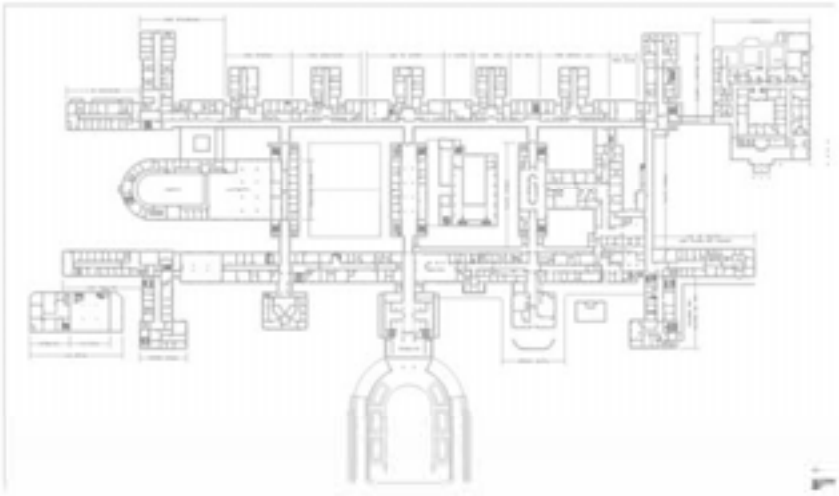
Without signage

Utents: Predominantly Urban

41 Medical specialties and services

University hospital

1300 beds



the hospitals | SÃO JOSÉ'S HOSPITAL | lisbon



Old building adapted since the 1830's from a XV century monastery

Asymmetrical building

Cluster organization

With partial sign system (without pictograms)

Utents: Predominantly Urban

31 Medical specialties and services

University hospital: Faculty use

314 beds

the hospitals | COVA DA BEIRA HOSPITAL | Covilhã



1990's building with an initial hospital program

Symmetrical building

Cellular organization

With signage (without pictograms)

Utents: Predominantly Rural

28 Medical specialties and services

University hospital: Faculty use

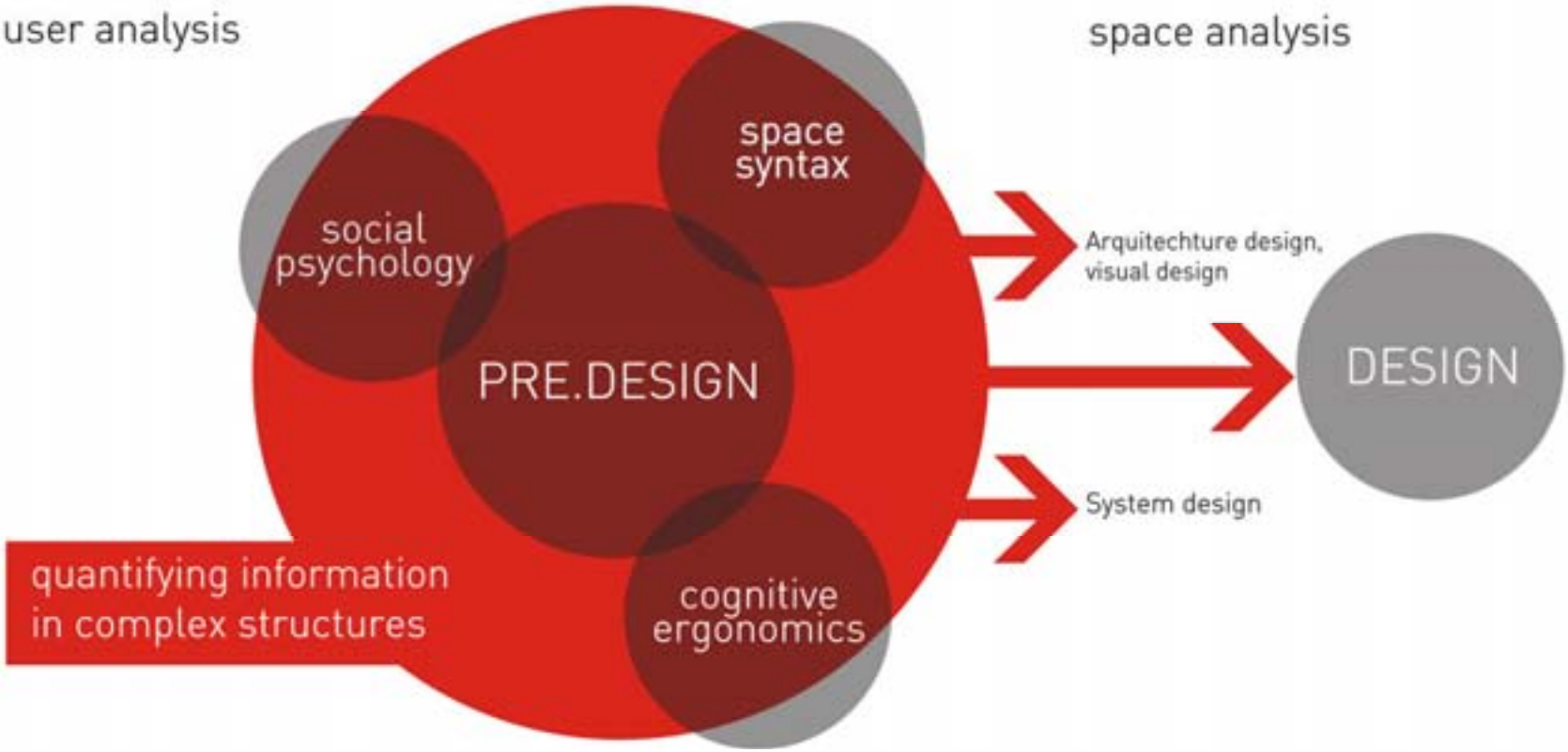
274 beds

multidisciplinary approach

SPACE IS LIKE A SECRET.

Unveiling that secret to "spacers" is the goal of information design. "Whispering" the appropriate "words" must be the result of careful translation.

We want to **TRANSLATE SPACE,** through the gains/increasing values of this multimethodological approach, to the language of hospital users.

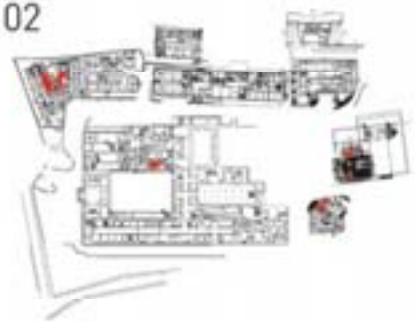

user analysis
space analysis
space syntax
social psychology
PRE.DESIGN
cognitive ergonomics
quantifying information in complex structures
Arquitechture design, visual design
System design
DESIGN

user analysis

THE QUERY [made at destination points]

01

02



03

user analysis

THE QUERY [made at destination points]

_Group 1
analyses the previous experience of each agent before the present visit to the hospital. Such experience can consist, for example, in previous visits to the hospital.

_Group 2
The second group is a established and certified method to measure anxiety.

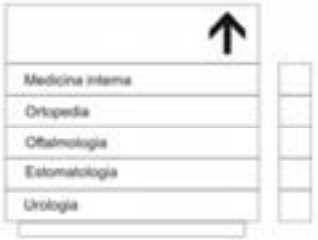
_Group 3
measure the difficulty and mistakes while walking a path "A to B".
That must be made at B after the path is completed.

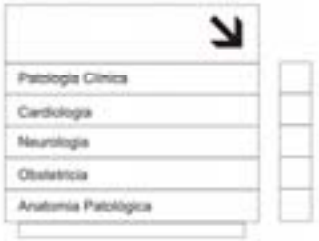
_Group 4
studies the orientation methods used by people.

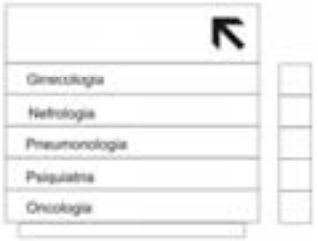
_Group5
studies the impact and use of the sign system.

user analysis

THE QUERY [made at destination points]







The last two groups analyse the capacity to interpret visual and written information and willingness to read and interpret the signs in a limited time interval.

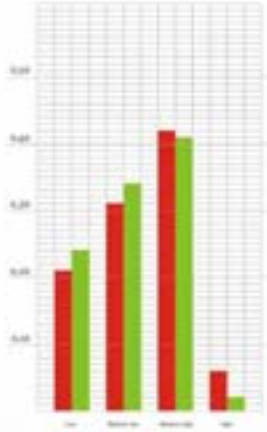
user analysis

capacity to interpret written and visual information / anxiety

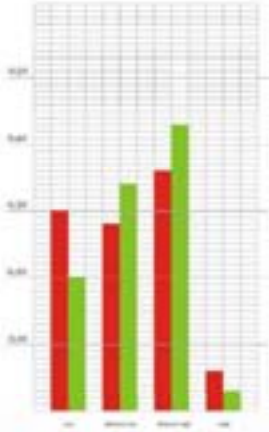
+2 errors in 5 questions
-3 errors in 5 questions

SANTA MARIA'S HOSPITAL

text info test

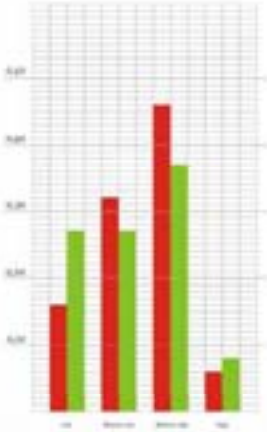


visual info test

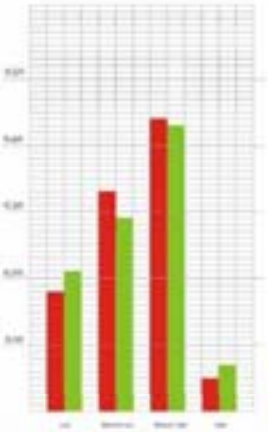


SÃO JOSÉ'S HOSPITAL

text info test

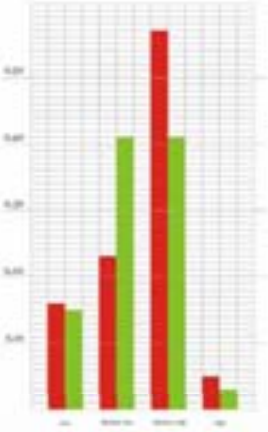


visual info test

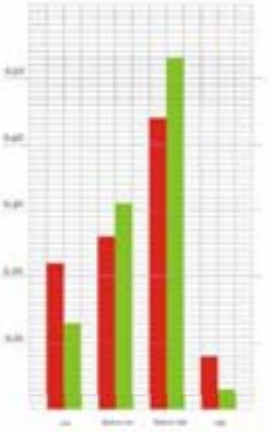


COVA DA BEIRA HOSPITAL

text info test



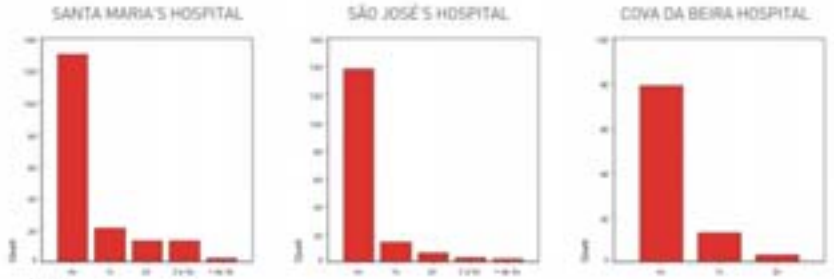
visual info test



anxiety: low . medium low . medium high . high

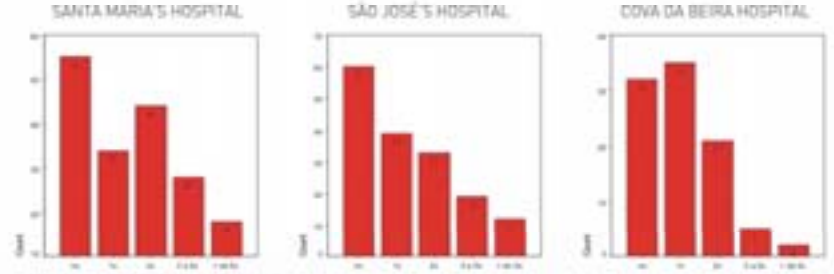
user analysis

questions 8,9,10 from the query

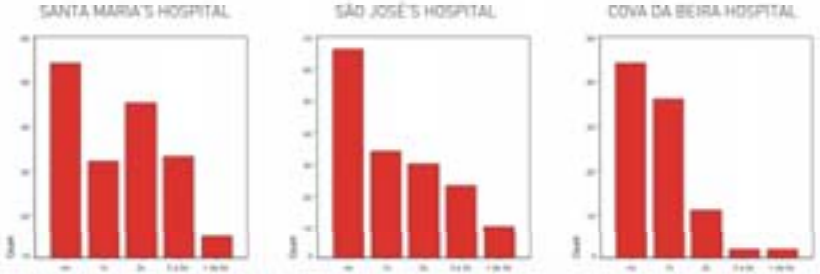


08_got lost?

no 1x 2x 3 to 5 +5x



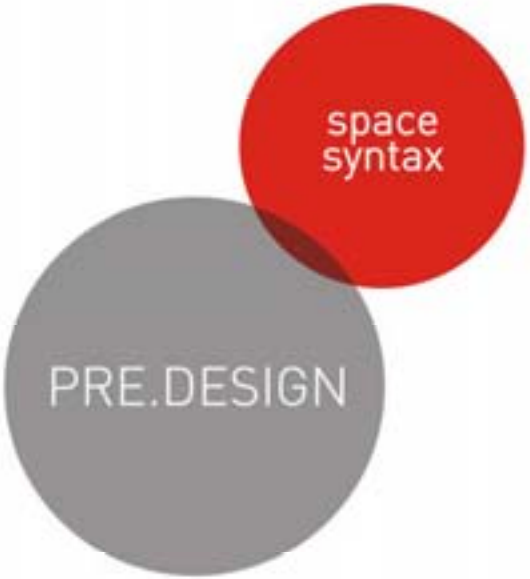
09_ask for directions



10_stops for orientation

space analysis

The Bartlett
Faculty of the Built Environment



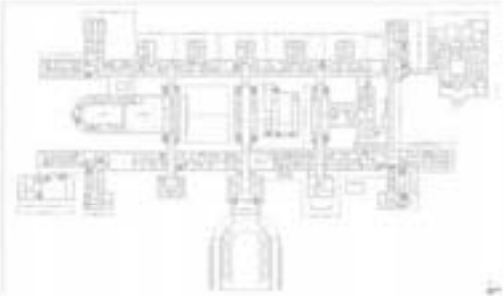
space syntax analysis of integration and connectivity of the buildings

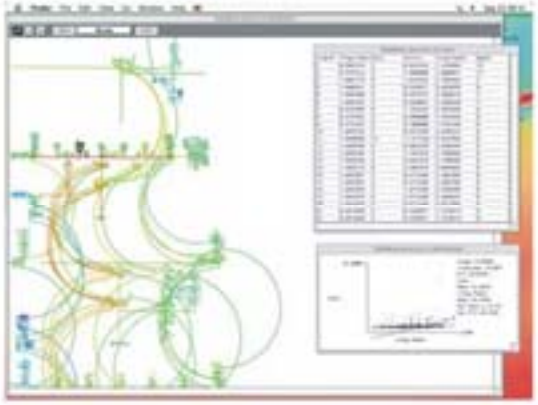
Space syntax has provided the basis of the spatial and structural analysis of hospitals, which has permitted us to determine the paths characteristics and the users way finding behaviour, as well as the decision points and the more or less segregated areas.

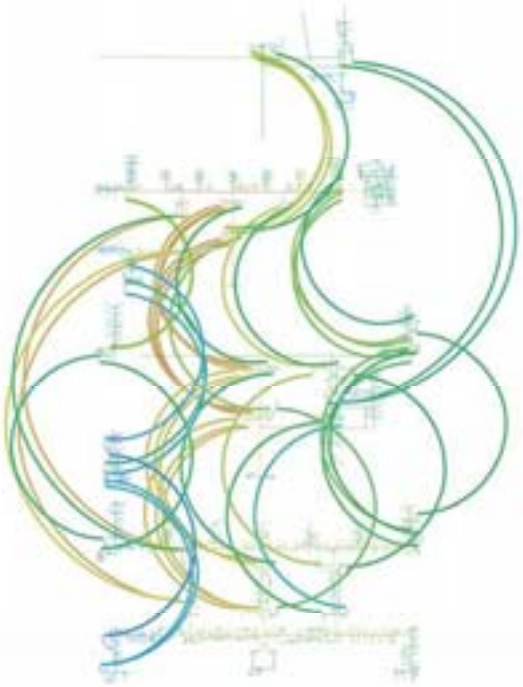
space analysis . SANTA MARIA'S HOSPITAL . lisbon

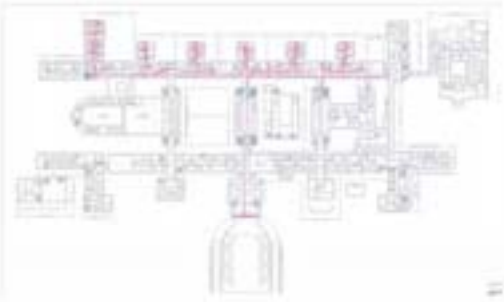
space syntax

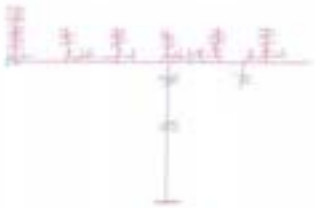
PRE.DESIGN





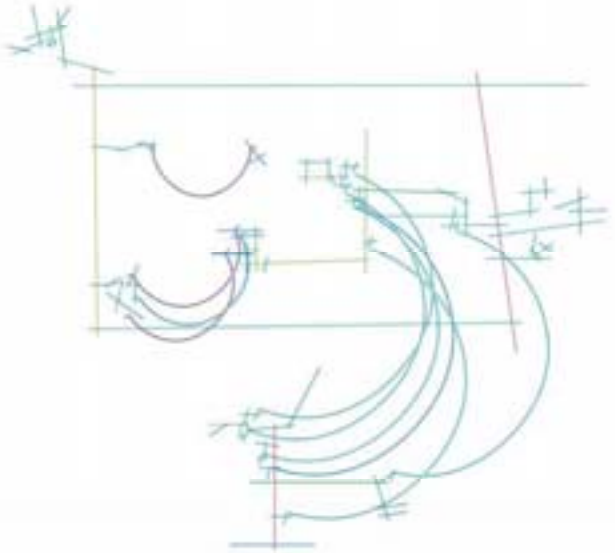






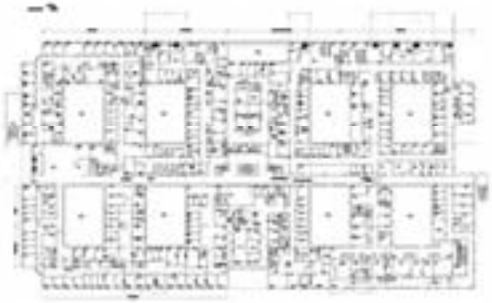
space analysis . SÃO JOSÉ'S HOSPITAL . lisbon

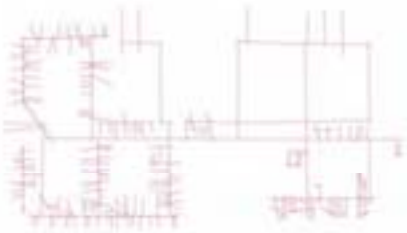
space syntax
PRE.DESIGN

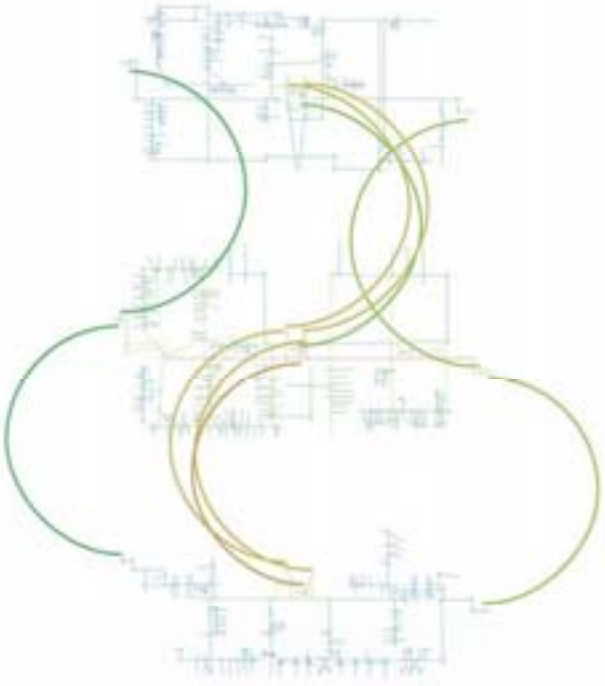


space analysis . COVA DA BEIRA . Covilhã

space syntax
PRE.DESIGN







} viscosity

quantifying information in complex structures

$$F/A = \eta . v_o / d$$

Classical Physics, provides a formula (viscosity) that can be compared to the phenomena of comfort in way finding

Viscosity relates stress, velocity (space vs. time) and weight on a fluid. Stress resulting from the calibre of the path is substituted by integration values resulting from Space Syntax analysis. Distance is the result of connectivity (sections with no decision making) also from Space Syntax analysis. Time are the average difficulties declared by users. Weight is the average ability/disability to interpret written or visual information. This formula is used to measure present situations and quantify alterations determined by the placing of information.

viscosity

quantifying information in complex structures

$$\text{Viscosity} = \text{mass} \times \text{velocity}/\text{integration}^2$$

In this formula, the mass of the average user, mrel, is obtained by, for each medical service:
mrel = (error in visual information test+error information write info test) + 1

The stoppage times due to several reasons, which we refer to as "error" in a general sense, is obtained by the sum of:
error = number of times lost + number of stoppages to ask for directions + number of stoppages for orientation

For the "caliber" of the path determination we use the medium integration value of each path (drel = Ipath/Imax) by analogy between width and hierarchy of spaces inside a route structure:
drel = (line integration)/(maximum line integration value)

The definition of viscosity here used relates weight and speed (distance/time) with the "caliber" of a corridor, and will be useful as an indicator for comfort in way finding.

viscosity

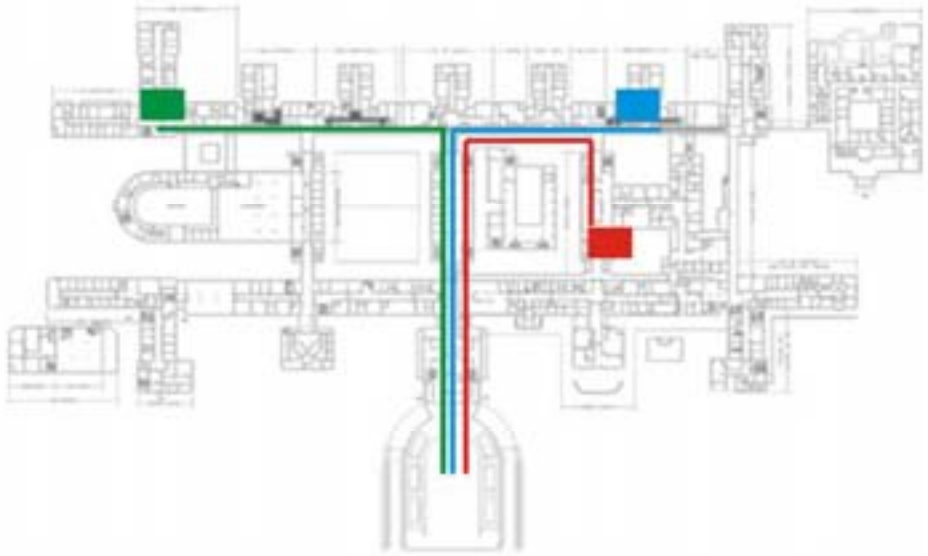
quantifying information in complex structures

WEIGHT

TIME

DISTANCE

test . placement of signage in SANTA MARIA'S HOSPITAL



1st floor_low viscosity
1st floor_medium viscosity
2nd floor_high viscosity
} 3 different paths without signage