

# Parametric Hospital Research

A model for all cases.

**Luis Gotor, Architect partner at PMMT**

European Healthcare Design 2019 Congress, Awards  
& Exhibition  
17th-19th June, Royal College of Physicians, London

# PMMT

—  
FORWARD  
THINKING  
HEALTHCARE  
ARCHITECTURE









Bechar Hospital-Algeria



## Health Center in Oviedo-Spain



















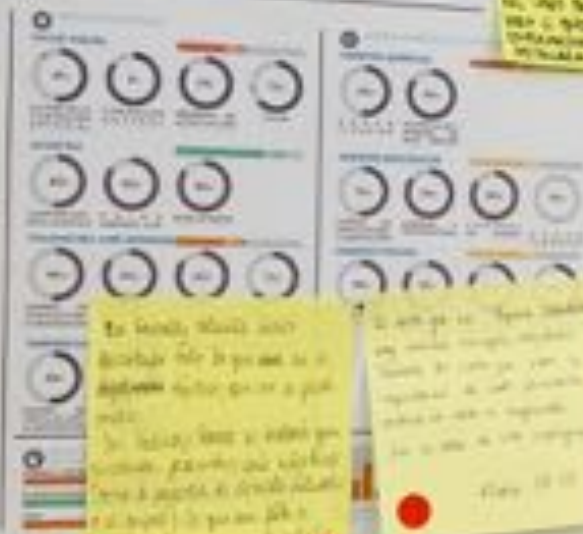
LA

Handwritten notes on yellow sticky notes at the top left.



Handwritten notes on yellow sticky notes at the top right, some enclosed in a pink dashed circle.

FRIENDLY MATERIALS  
SPACE ALGORITHM (PROCESO)



Handwritten notes on a yellow sticky note, partially overlapping the grid diagram.

Handwritten notes on a yellow sticky note, positioned above the circular diagram.



Handwritten notes on a yellow sticky note on the left side of the grid.

Handwritten notes on a yellow sticky note below the left-side note.

Handwritten notes on a yellow sticky note at the bottom left of the grid.

Handwritten notes on a yellow sticky note at the bottom right of the grid.

Handwritten notes on a yellow sticky note below the circular diagram.



Handwritten notes on a yellow sticky note at the bottom right, partially overlapping a photograph.



63

Un verde pulcro  
Civiltà di domani





# MEJORA DEL MES IMPROVEMENT OF THE MONTH



MILLORA DEL MES PMMT

DE PROPOSTA

FITXA DE PROPOSTA

TITOL: **GRANDES EN GRAN MES PROPOSTA A E.E.**

AUTOR: **LAUREN GOM**

DATA DE PRESENTACIÓ: **15/02/2018**

PROBLEMA IDENTIFICAT: **La millora contínua és el punt clau per al desenvolupament dels processos de qualitat, però no sempre s'apliquen de manera efectiva.**

DESCRIPCIÓ DE LA PROPOSTA:  
 Aplicar de manera sistemàtica i estructurada el mètode de la millora contínua a tots els processos de treball de la PMMT, per aconseguir una millora constant en els processos i, per tant, una major eficiència i qualitat dels serveis que ofereix la PMMT.

OBJECTIUS PRINCIPALS DE LA PROPOSTA:  
 - Aplicar el mètode de la millora contínua a tots els processos de treball de la PMMT.  
 - Aconseguir una millora constant en els processos i, per tant, una major eficiència i qualitat dels serveis que ofereix la PMMT.

IMPACTE O RECURSOS ESTIMATS: **0 €**

IMPACTE O RECURSOS ESTIMATS: **0 €**

IMPACTE O RECURSOS ESTIMATS: **0 €**



# PMMT Innovations:



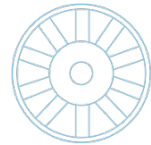
**FSB  
HANDLE**



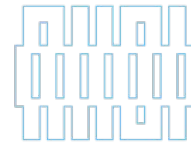
**FLUID  
HOSPITAL**



**CONCRET  
SCREEN**



**SMART  
HOSPITAL**



**PARAMETRIC  
HOSPITAL**



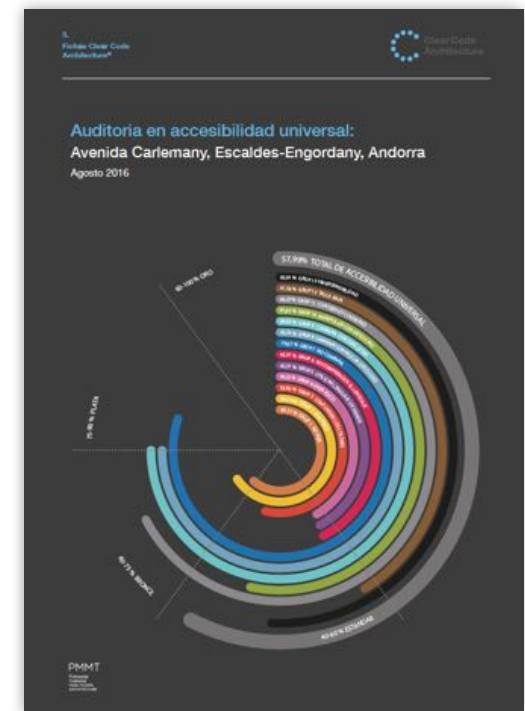
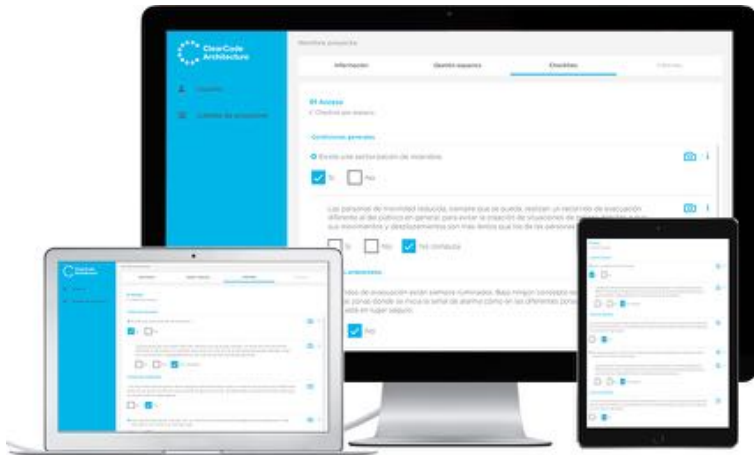
**PARAMETRIC  
WINDOW**







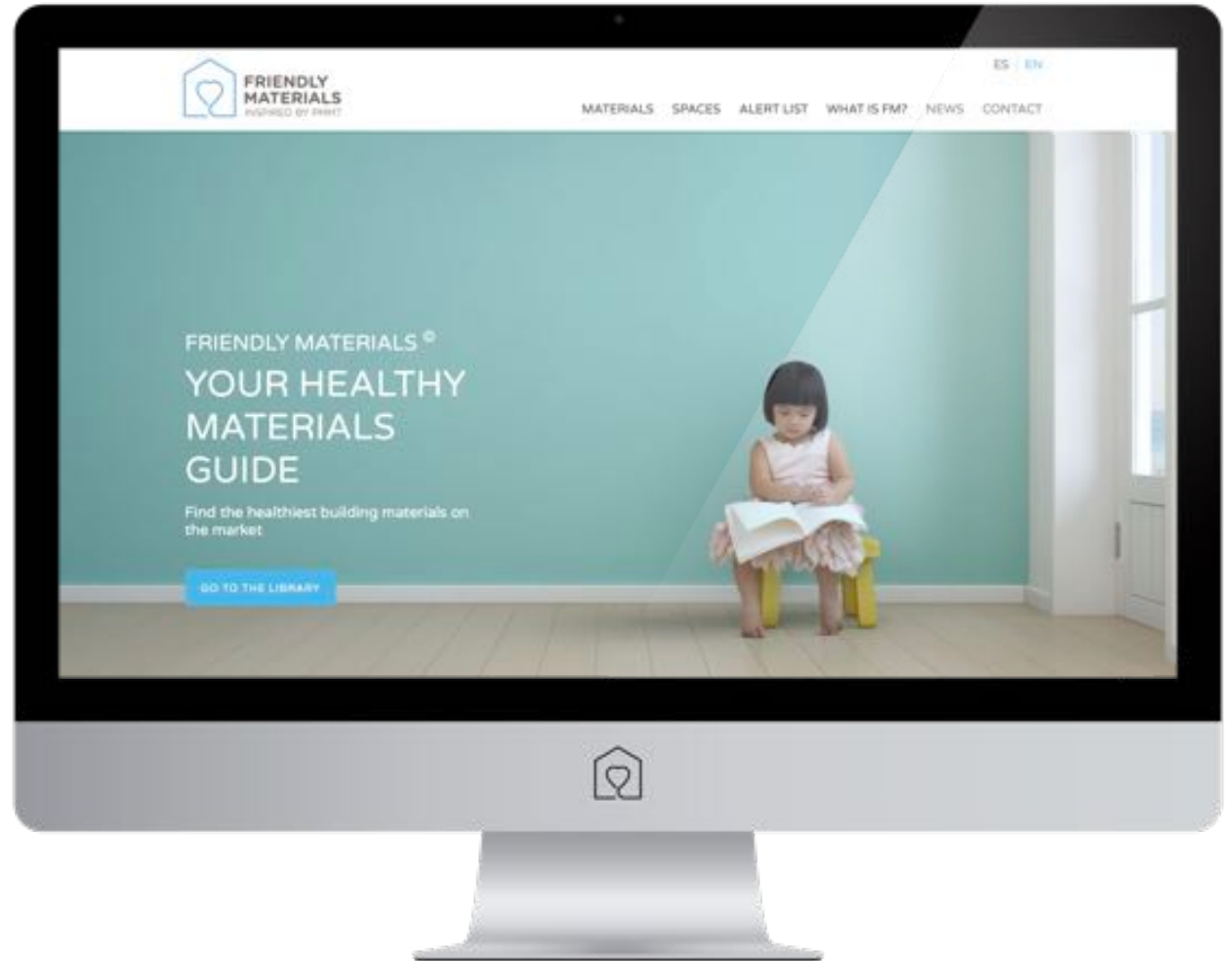
# A place for all, a place Clear Code





**FRIENDLY  
MATERIALS**

INSPIRED BY PMMT



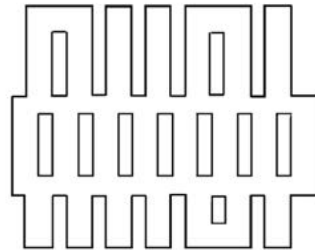


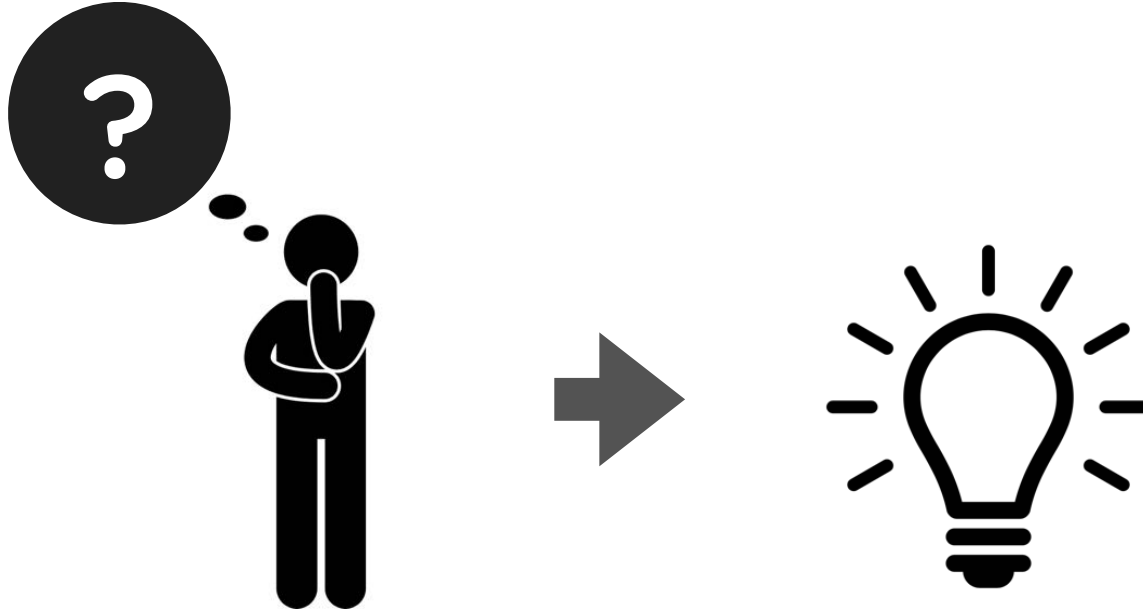
# PARAMETRIC HOSPITAL

PATENT

—  
P201331795  
MAKIBER/PMMT

—  
PARAMETRIC  
HOSPITAL

















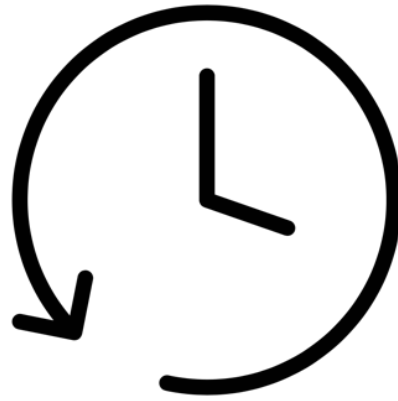














HOW CAN WE BUILT  
HOSPITALS IN THE  
SHORTEST TIME  
POSSIBLE?



## MILITARY CAMP HOSPITAL

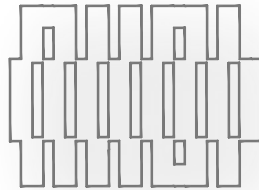
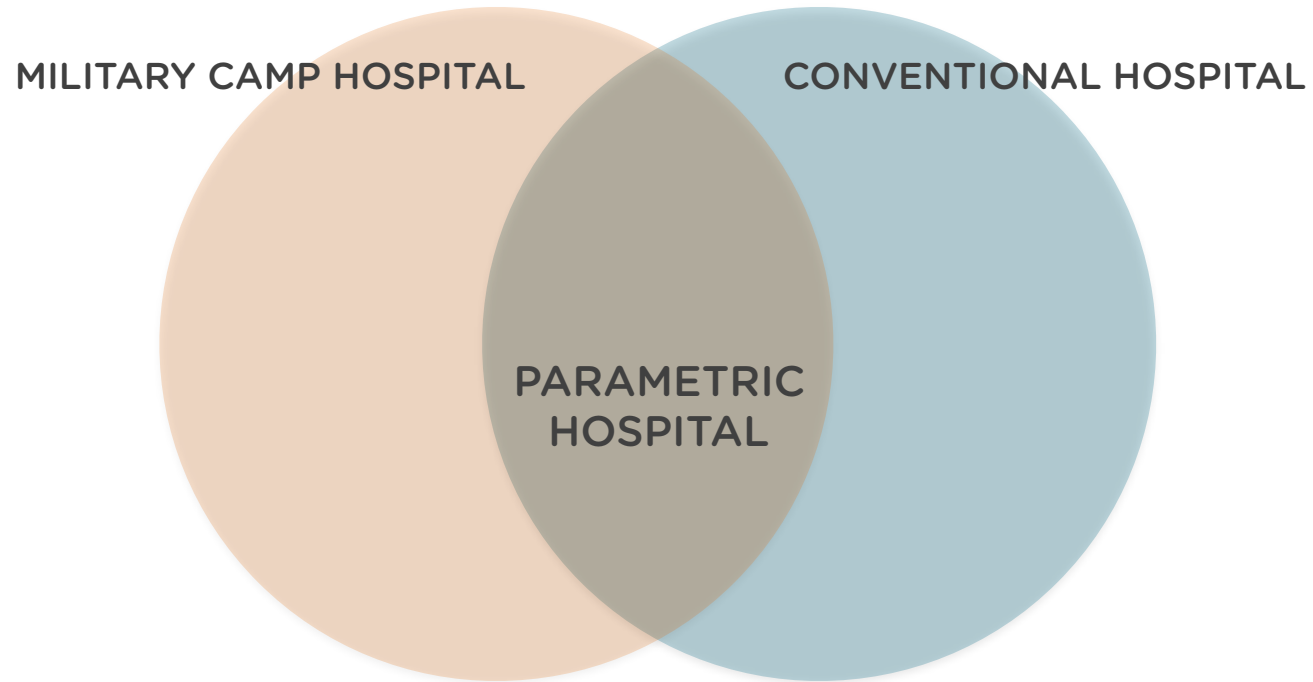


- FAST EXECUTION
- FIXED PROGRAM
- TEMPORARY BUILDING

## CONVENTIONAL HOSPITAL



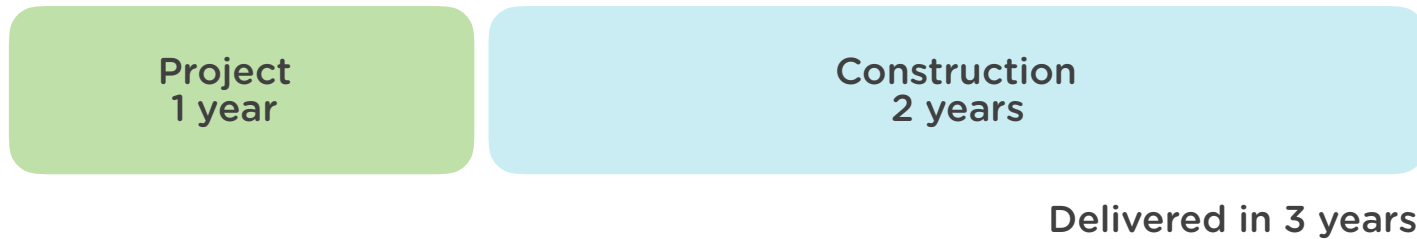
- SLOW EXECUTION
- CUSTOMIZED PROGRAM
- BUILDING FOR MANY YEARS



- FAST EXECUTION
- CUSTOMIZED PROGRAM
- BUILDING FOR MANY YEARS

# THE PARAMETRIC HOSPITALS NEED TO NOTABLY REDUCE THE TIME OF DESIGN, CONSTRUCTION AND EQUIPMENT USED FOR CONVENTIONAL HOSPITALS.

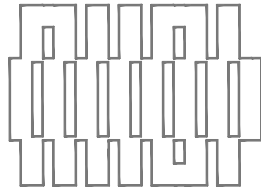
## CONVENTIONAL HOSPITAL



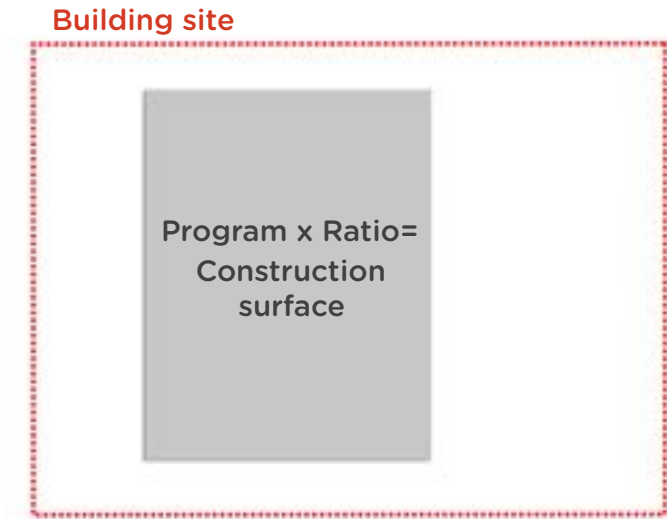
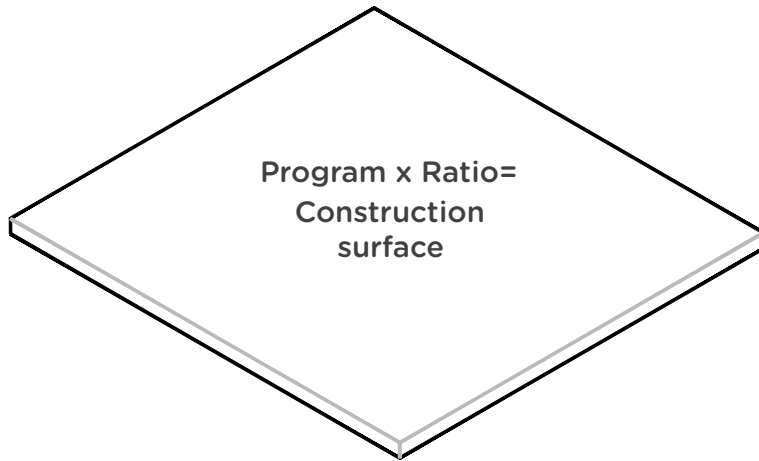
## PARAMETRIC HOSPITAL





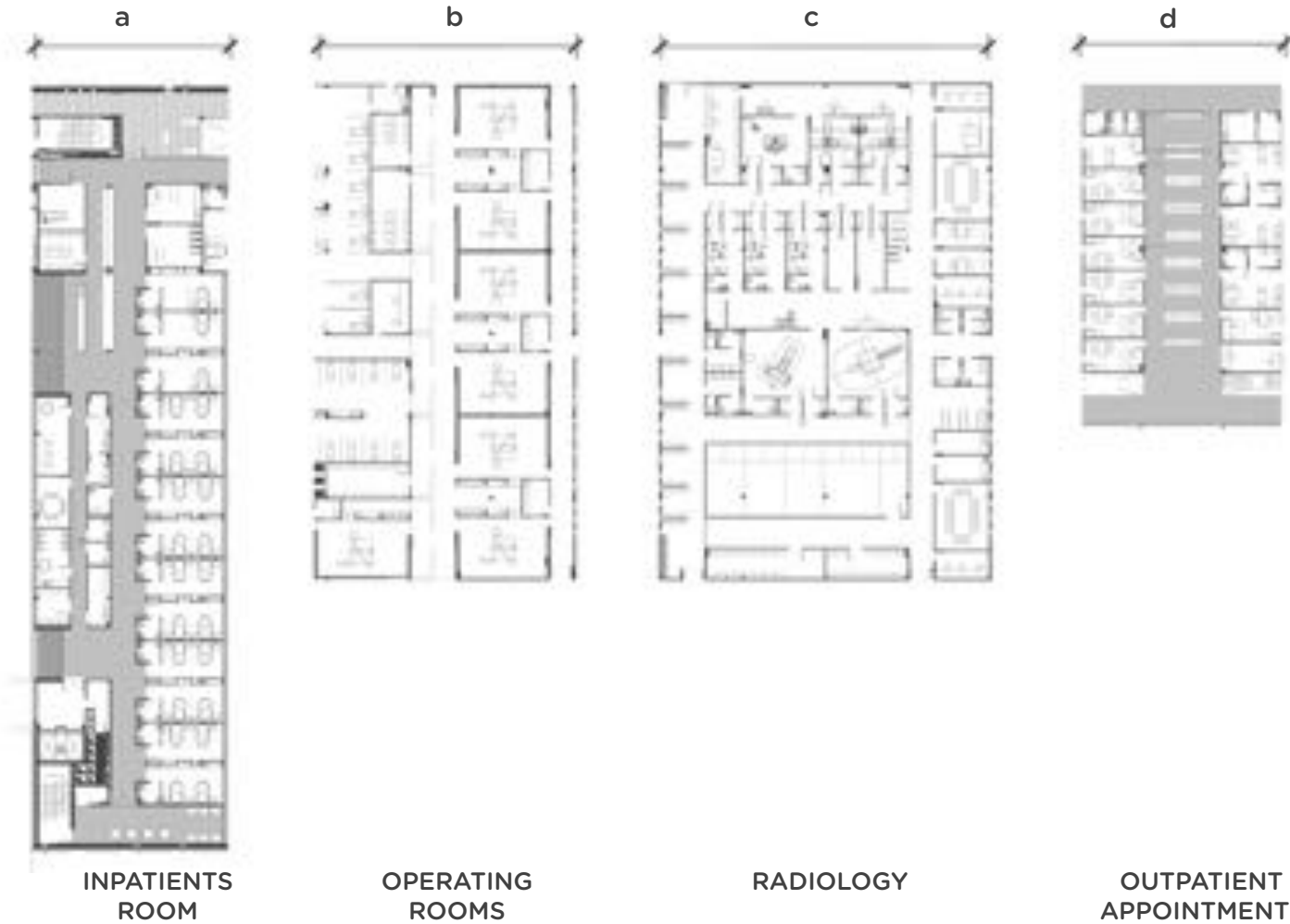


**HOW IS THIS ACHIEVED?**



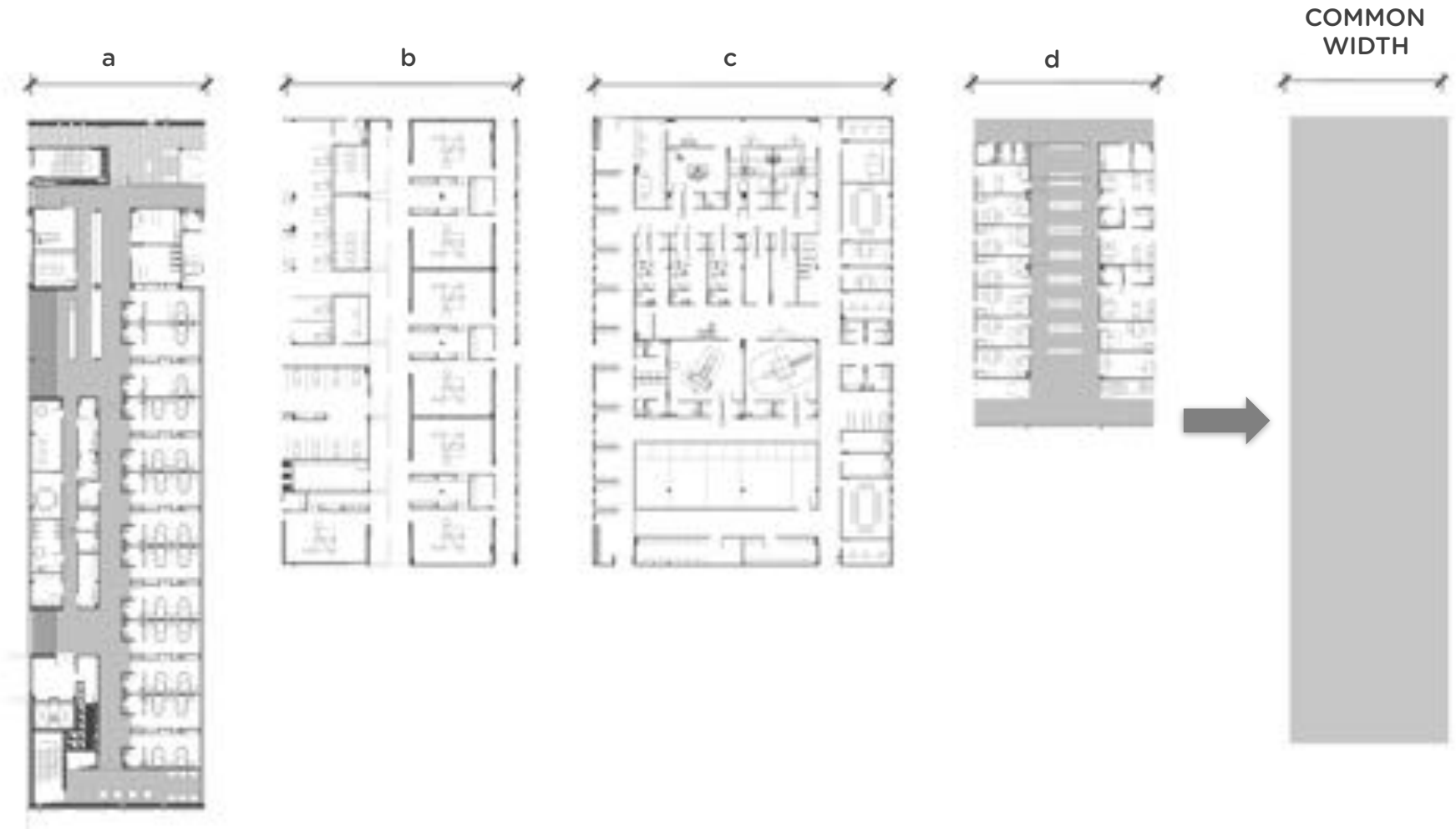
EVERY ARCHITECTURAL PROJECT STARTS  
WITH A BUILDING SITE AND A SURFACE TO  
BUILD ON

**NORMALLY, EACH HOSPITAL AREA HAS A WIDTH BASED ON ITS DISTRIBUTION AND PURPOSE**





WE LOOK FOR A SUITABLE WIDTH THAT ALLOWS US TO PLACE ANY HOSPITAL SERVICE



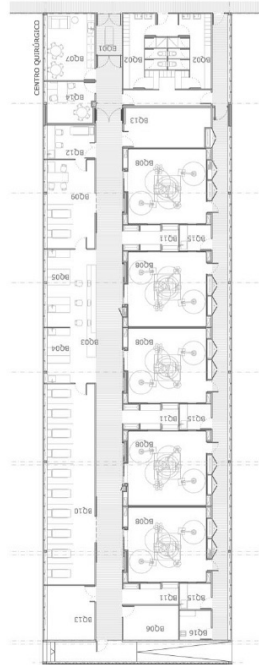
# WE LOOK FOR A SUITABLE WIDTH THAT ALLOWS US TO PLACE ANY HOSPITAL SERVICE

PARAMETRIC  
 WIDTH



INPATIENTS  
 ROOM

PARAMETRIC  
 WIDTH



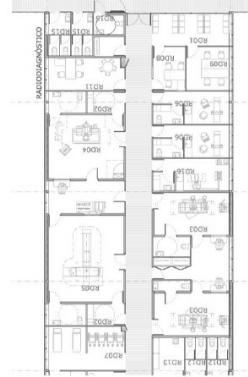
OPERATING  
 ROOMS

PARAMETRIC  
 WIDTH



INTENSIVE  
 CARE  
 UNIT

PARAMETRIC  
 WIDTH



RADIOLOGY

PARAMETRIC  
 WIDTH

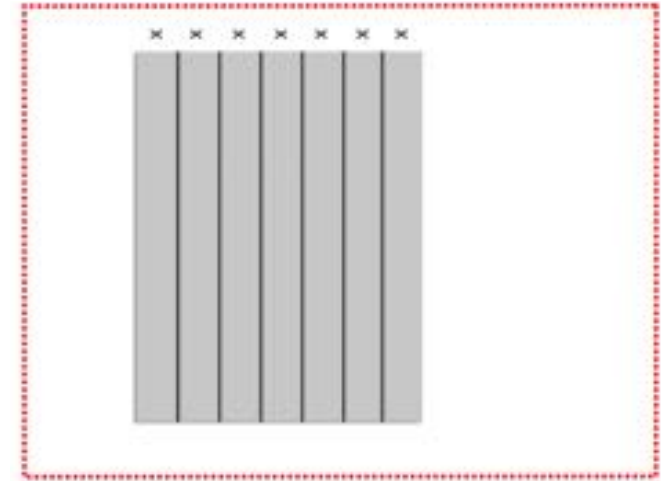
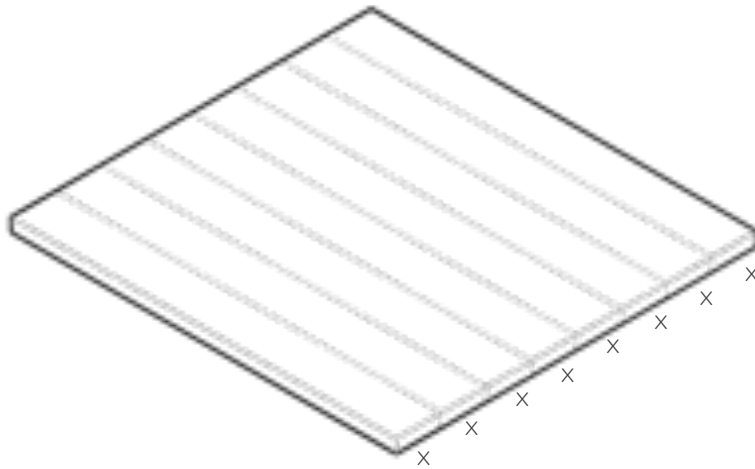


OUTPATIENT  
 APPOINTMENTS

PARAMETRIC  
 WIDTH



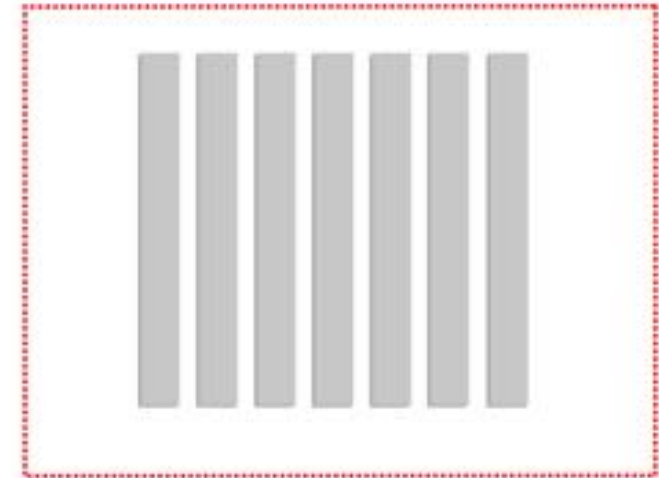
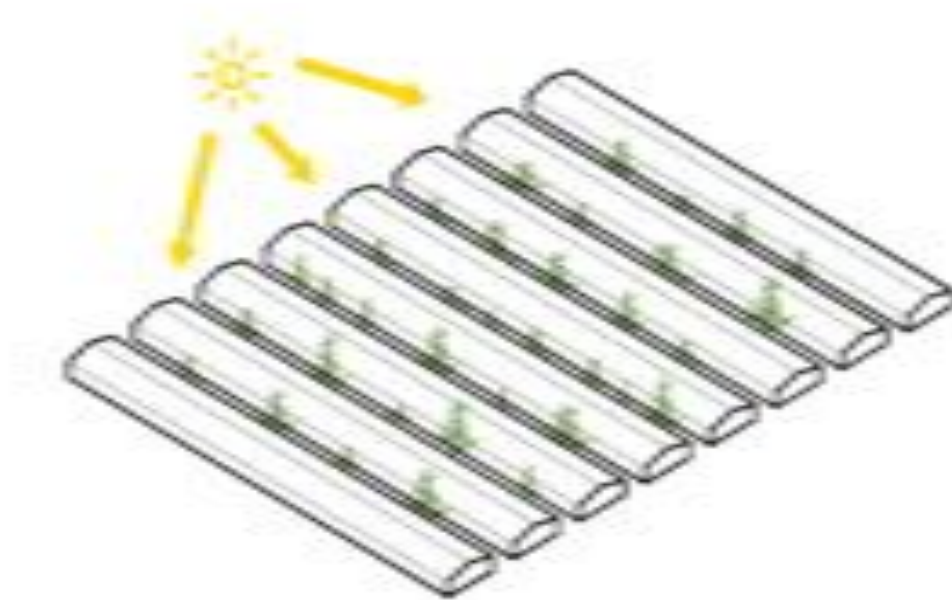
## DIVISIONS ACCORDING TO PARAMETRIC WIDTH



ONCE THE PARAMETRIC WIDTH IS  
DETERMINED, WE CAN DIVIDE THE TOTAL  
SURFACE OF THE HOSPITAL ACCORDING TO  
THIS MODULE



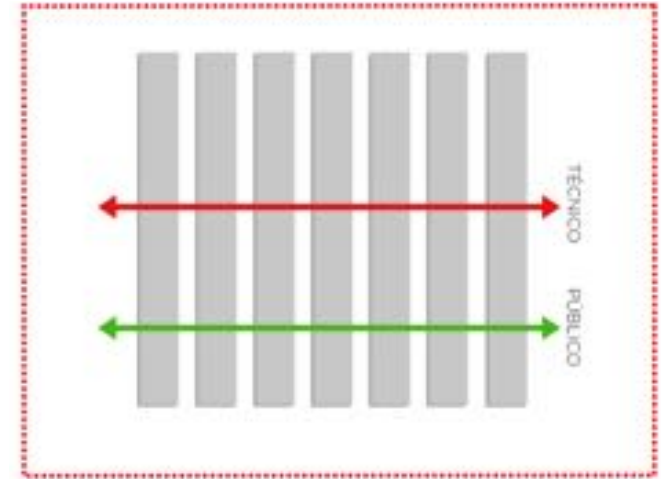
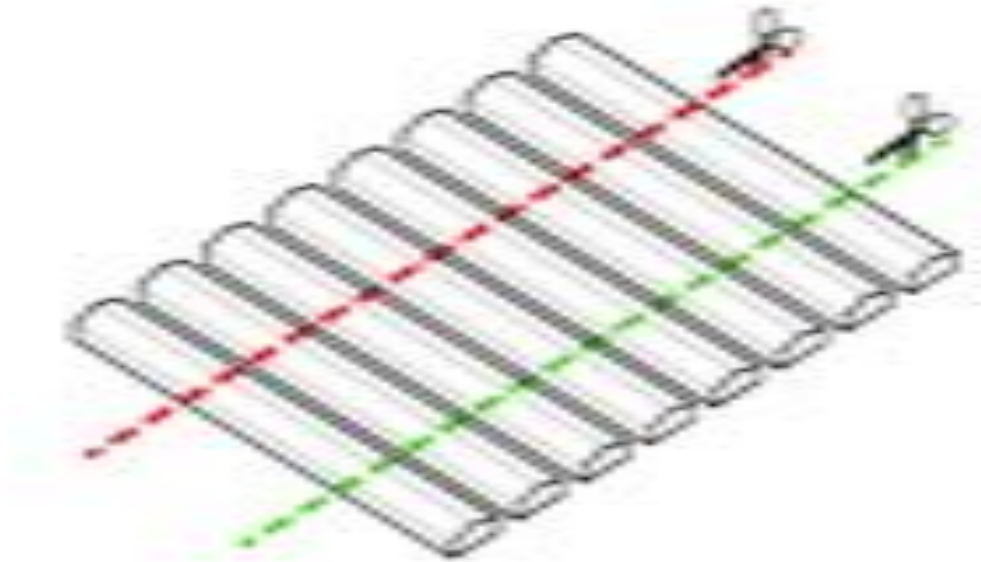
## NATURAL ENVIRONMENT AND LIGHT



THE BLOCKS ARE SEPARATED GENERATING PATIOS TO GUARANTEE OPTIMAL LIGHTING AND CREATING A NATURAL ENVIRONMENT



## ORGANIZED CIRCULATIONS



THE BLOCKS ARE CONNECTED BY TWO MAIN  
CORRIDORS, ONE PUBLIC AND THE OTHER  
TECHNICAL



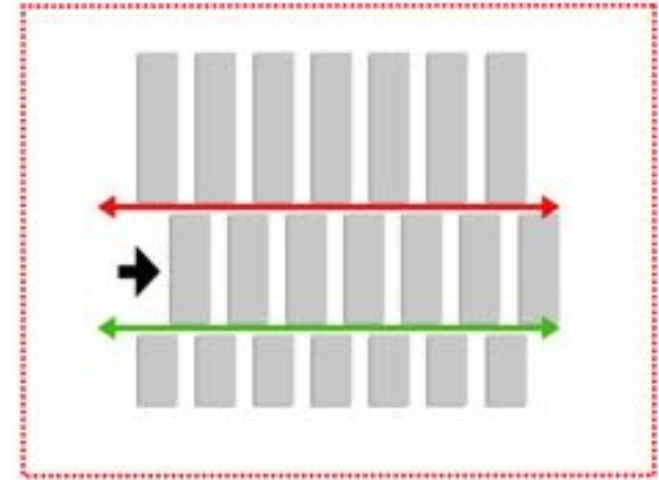
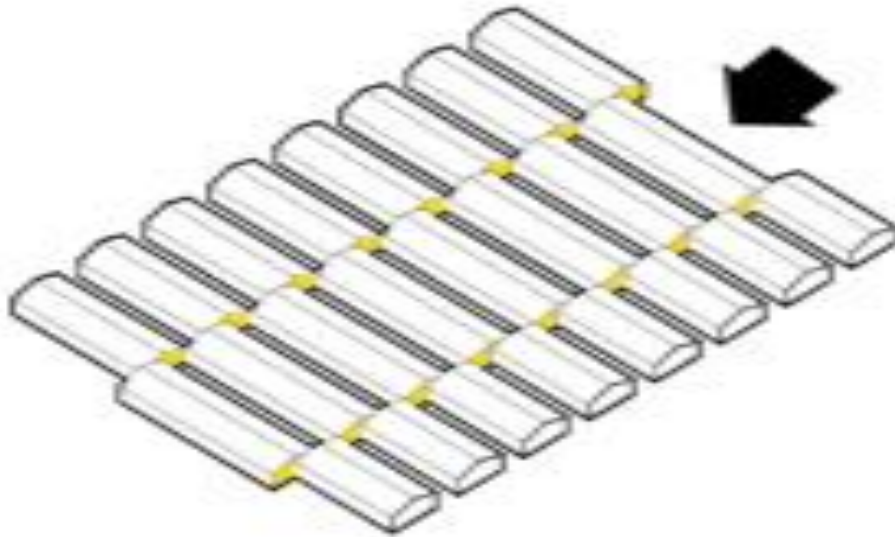
REABILITAÇÃO  
BLOCO  
OPERATÓRIO



CONSULTAS  
EXTERNAS  
E GABINETES



## PARAMETRIC BLOCKS ARE SHIFTED



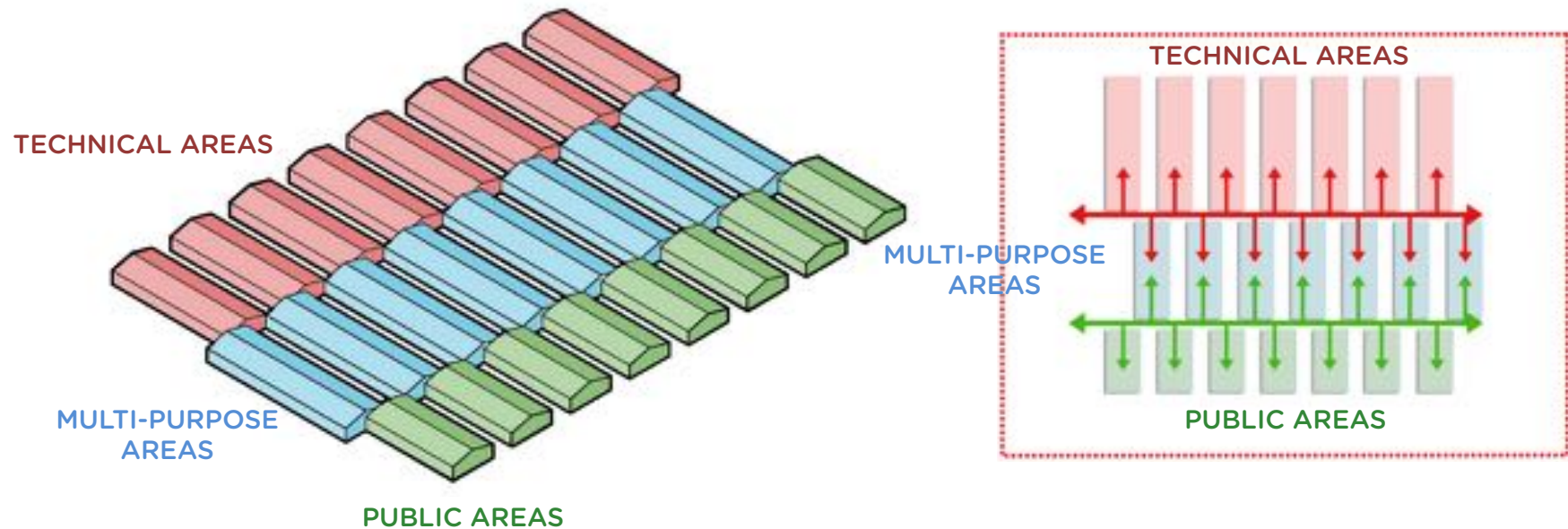
THE CENTRAL BLOCKS ARE SHIFTED TO GIVE  
HOMOGENEOUS ILLUMINATION TO THE MAIN CORRIDORS  
AND TO AVOID SERVICE DOORS FACING EACH OTHER



Informational poster or notice on the wall to the right of the courtyard.



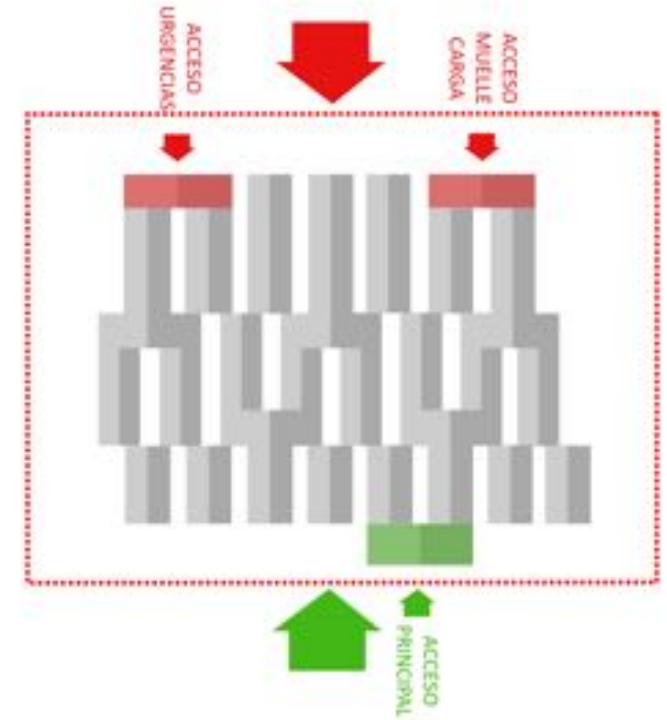
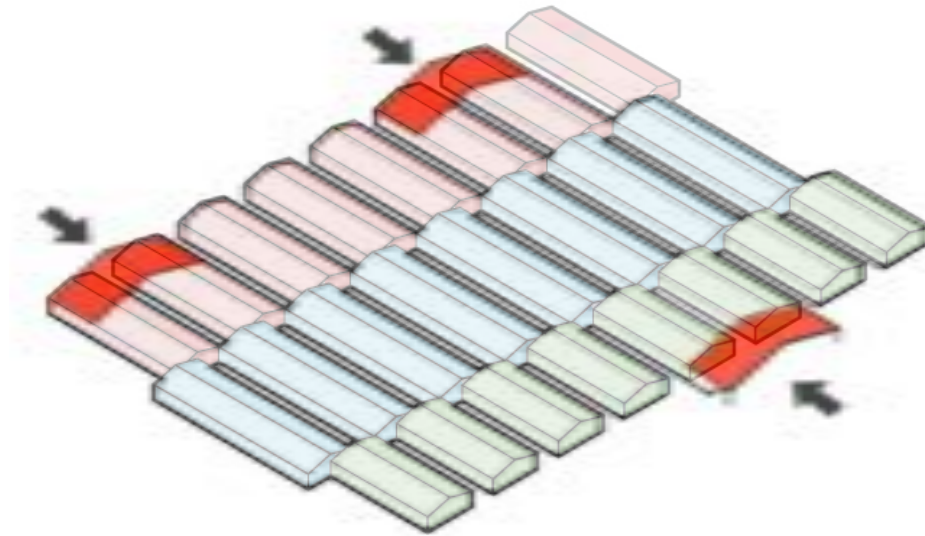
## HOW ARE HOSPITAL SERVICES ORGANIZED?



THE HOSPITAL IS DIVIDED INTO THREE AREAS: ON ONE SIDE THERE IS AN AREA EXCLUSIVELY FOR TECHNICAL PURPOSES, AND THE OTHER IS EXCLUSIVELY FOR PUBLIC PURPOSES. HOWEVER, THE AREA IN THE MIDDLE CAN BE USED FOR BOTH TECHNICAL OR PUBLIC, DEPENDING ON WHAT IS NEEDED.



## MAIN ENTRANCES

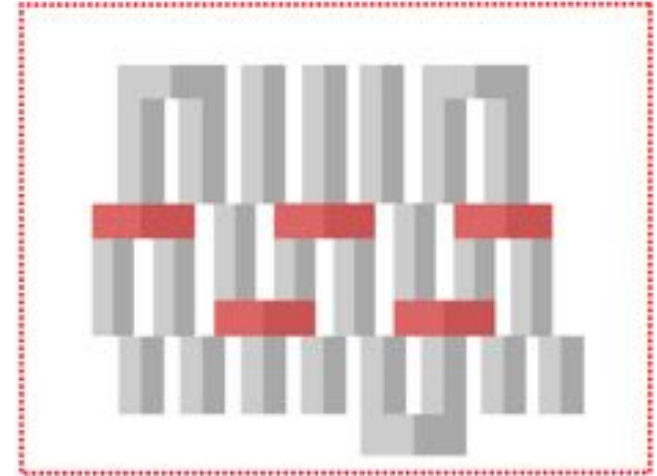
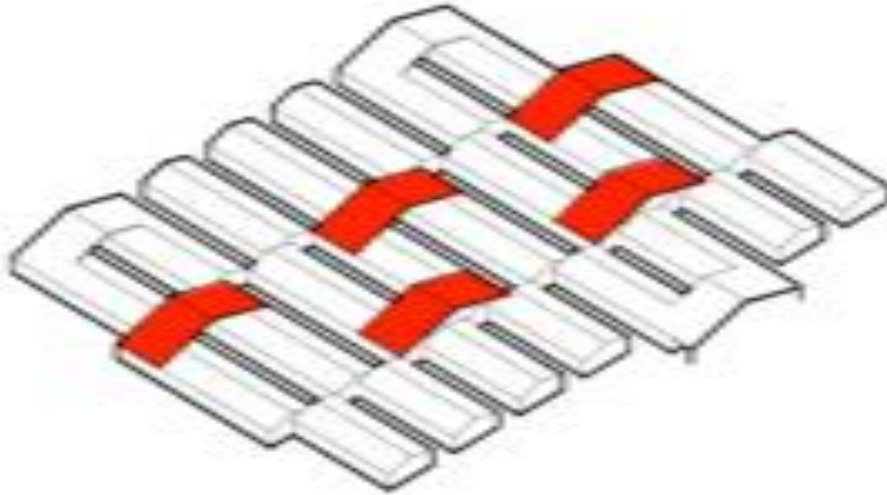


THE ROOFS OF VARIOUS BLOCKS ARE  
EXTENDED HIGHER TO GENERATE THE MAIN  
ENTRANCES





## FACILITIES



THE ROOFS OF VARIOUS BLOCKS ARE  
EXTENDED HIGHER TO CREATE FLOORS FOR  
FACILITIES

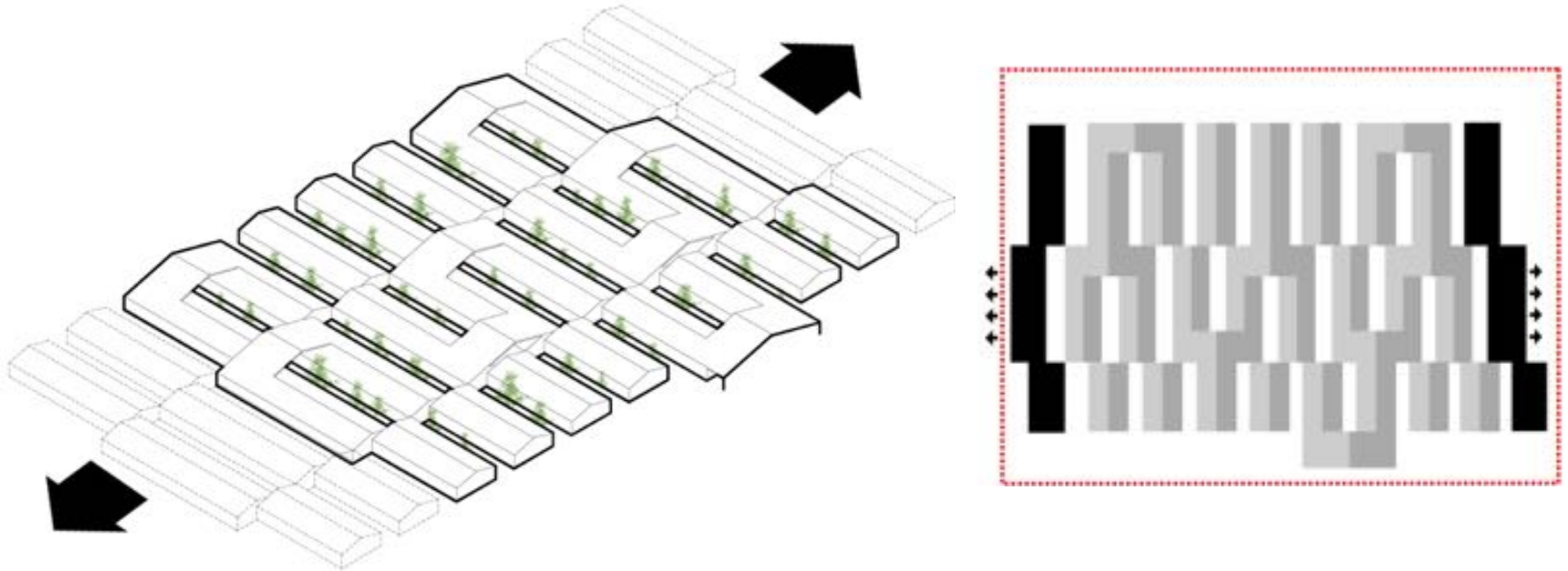








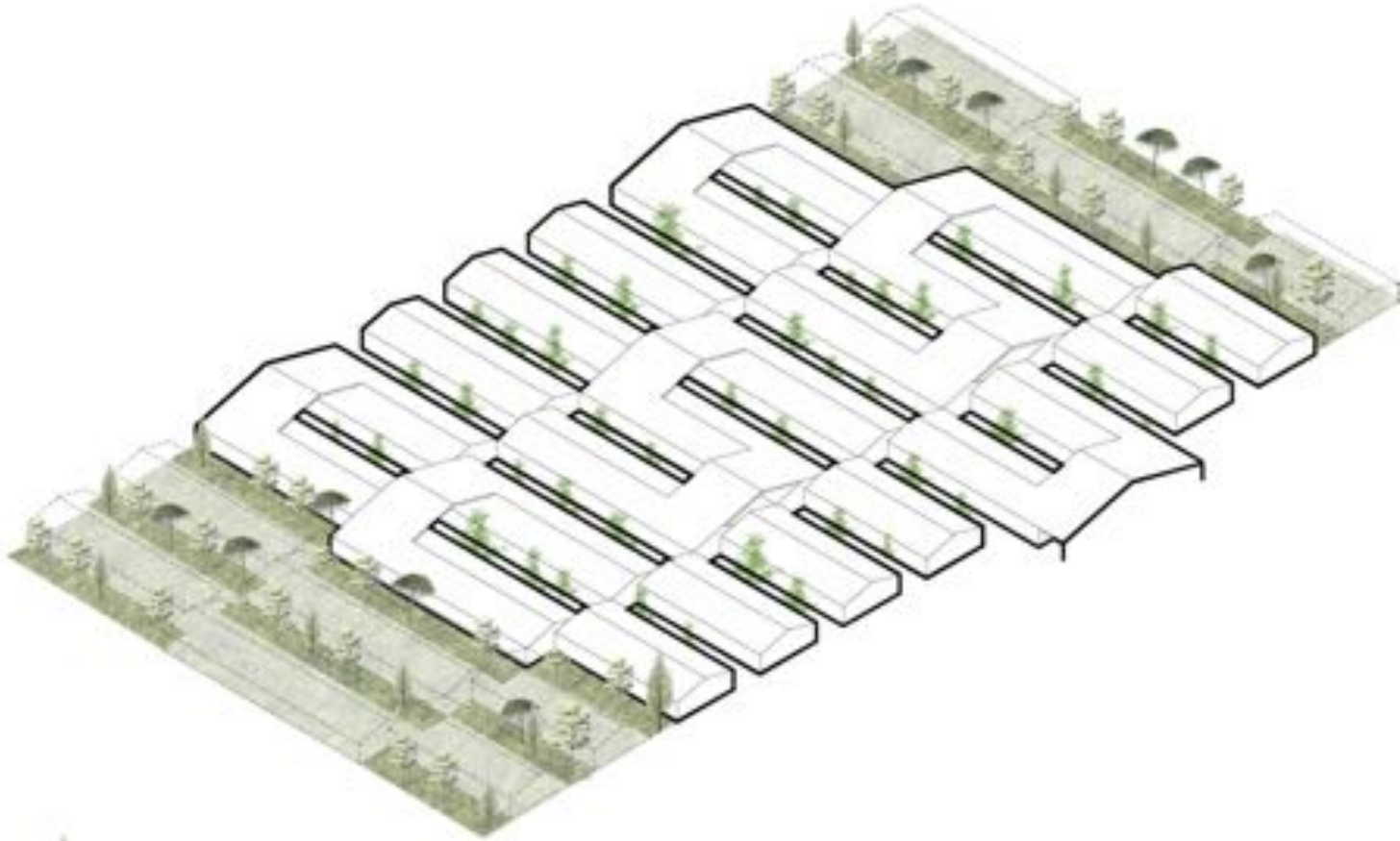
## EASY EXTENDED TYPOLOGY



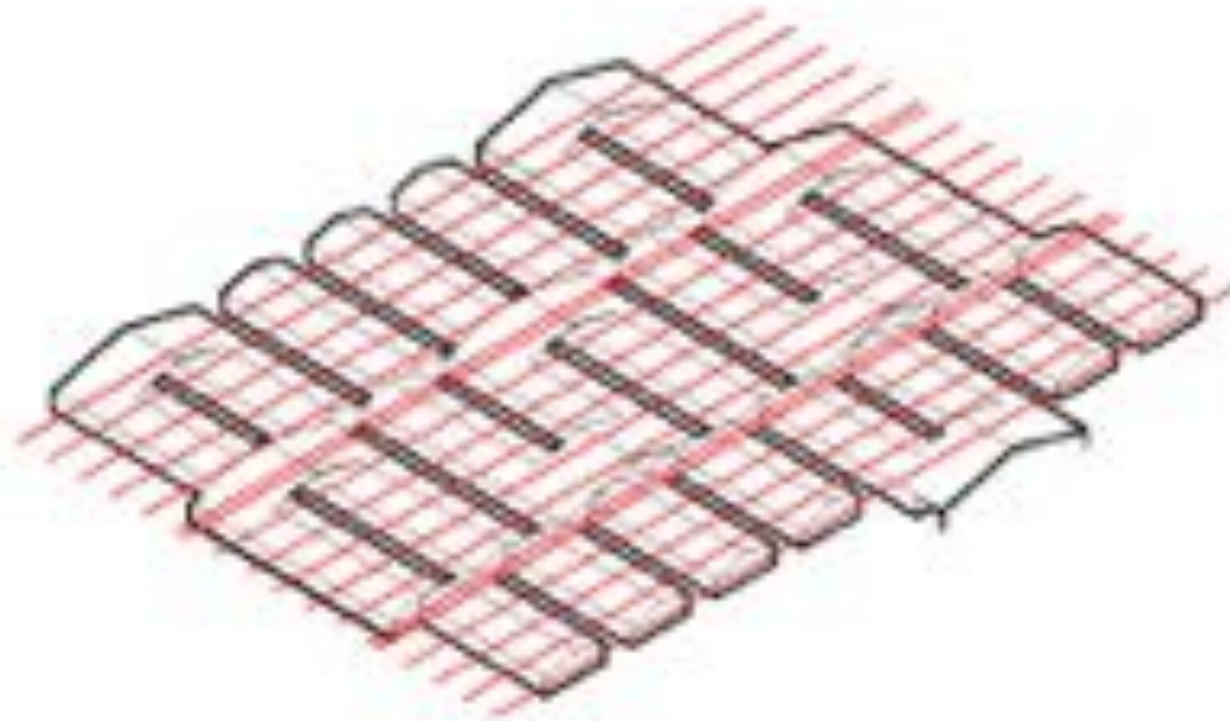
THE TYPOLOGICAL CONFIGURATION OF THIS DESIGN  
MAKES IT EASY FOR ADDITIONAL BLOCKS TO BE ADDED  
AND CORRIDORS EXTENDED







**WE CREATE DIFFERENT STRATEGIES TO  
START CONSTRUCTION WHILE STILL  
DESIGNING SPACES**

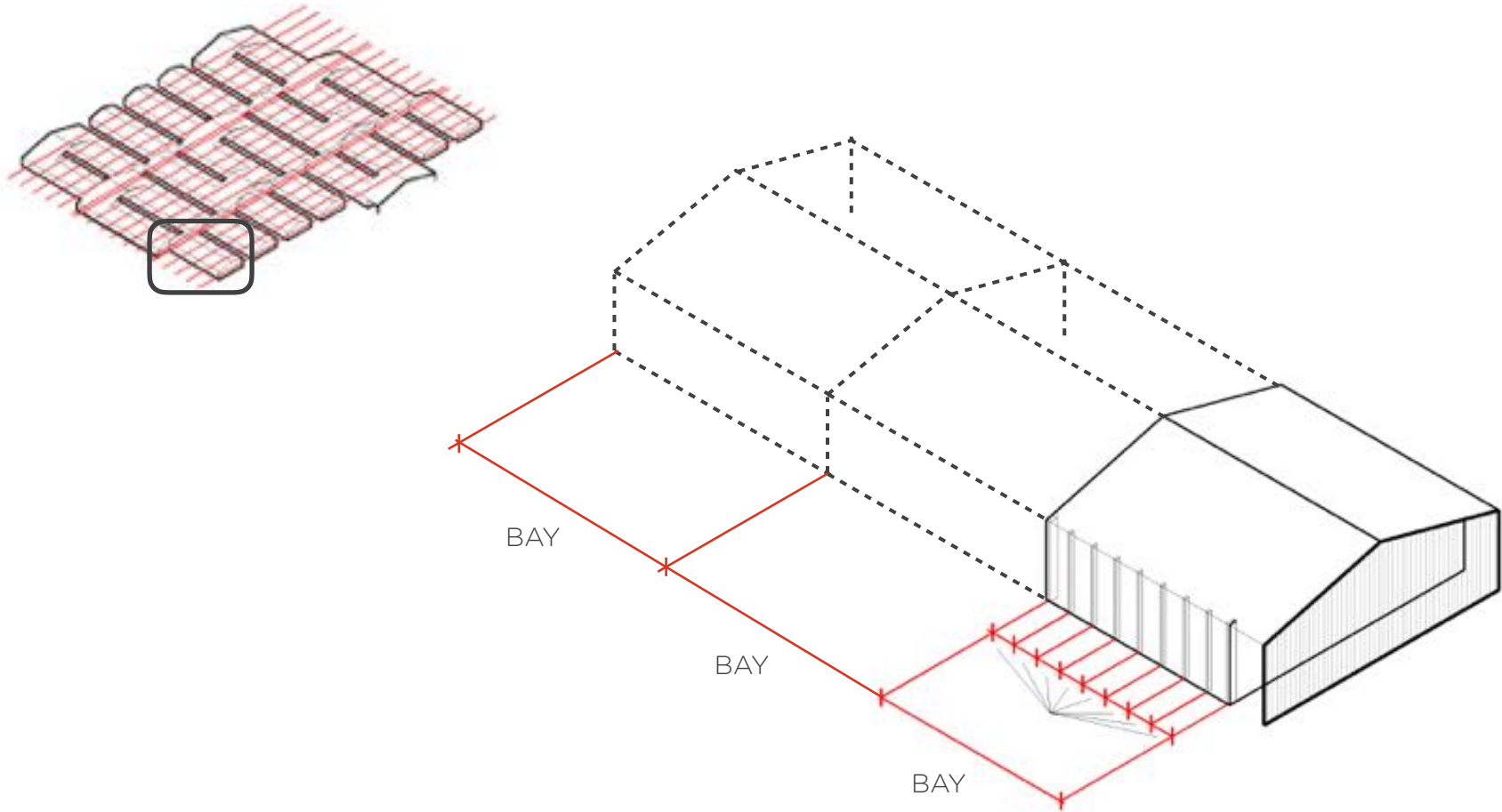


**AN ORGANIZED AND REPEATED  
STRUCTURE**





THE FACADES OF EACH BLOCK ARE MODULATED TO HOLD ALL THE HOSPITAL SPACES.



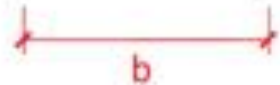
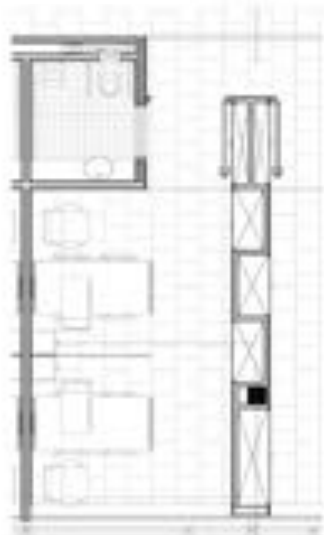


# EACH HOSPITAL SPACE HAS A PARTICULAR WIDTH DEPENDING ON WHAT IT IS USED FOR

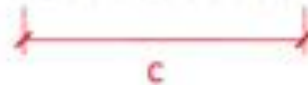
CONSULTANCY



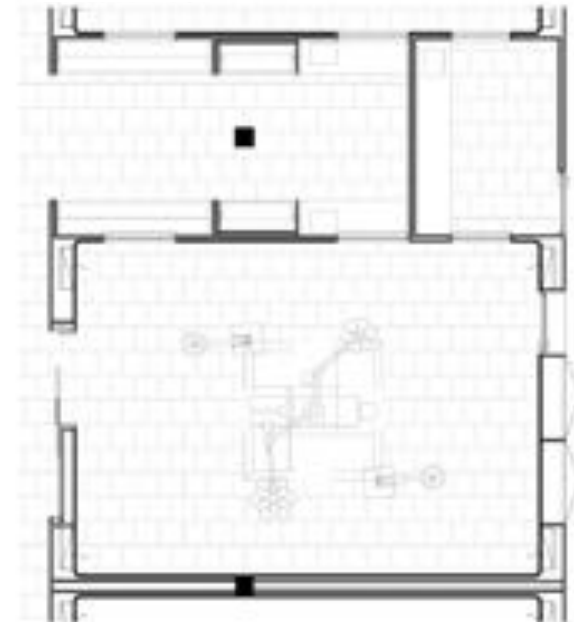
INPATIENT ROOM



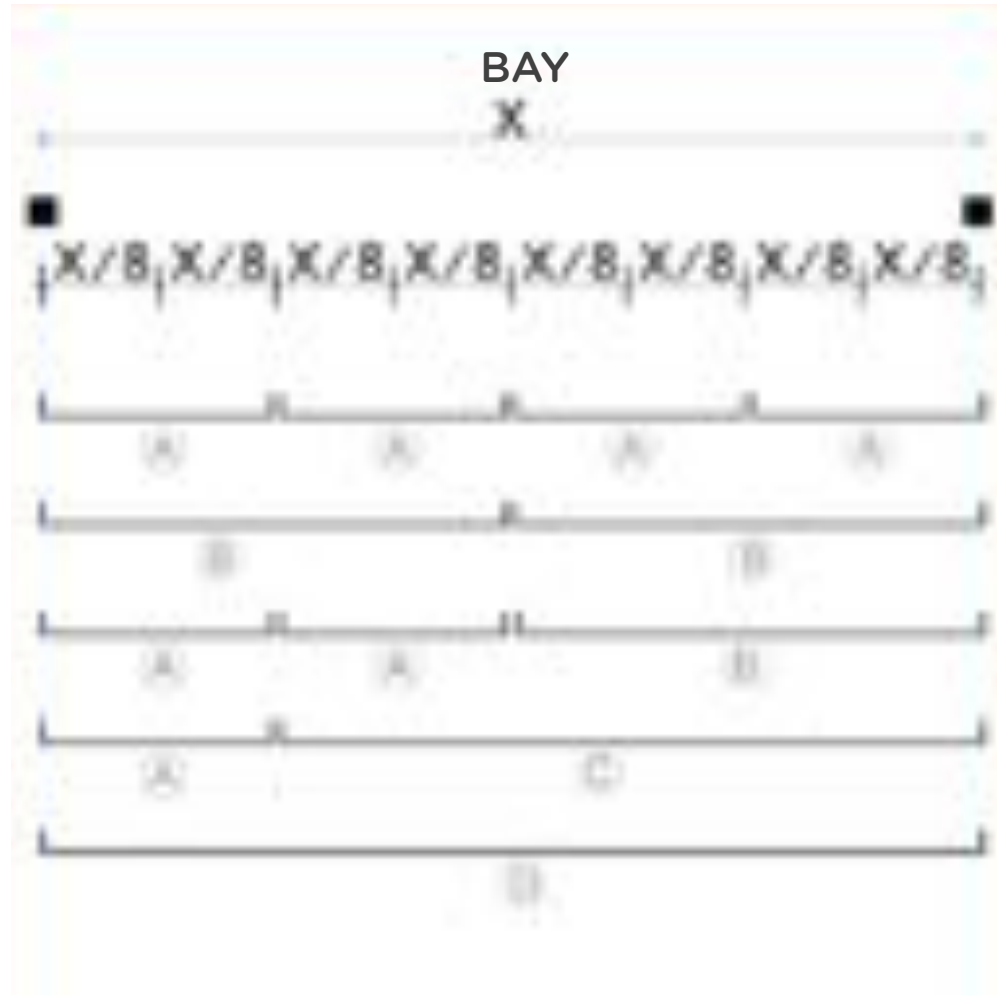
X-RAY ROOM



OPERATION  
THEATRE



# LOOKING FOR A WIDTH THAT ALLOWS THE MODULATION OF THE STRUCTURE AND THE FACADE WINDOWS TO GUARANTEE THE CORRECT DIMENSIONING OF THE ROOM

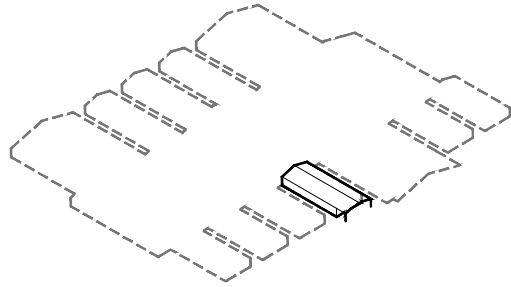




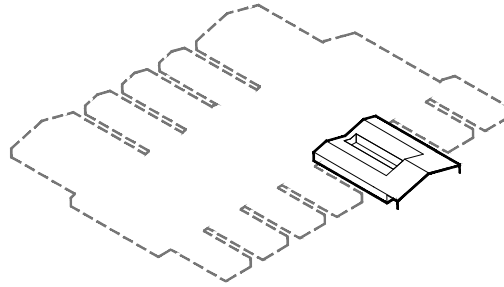




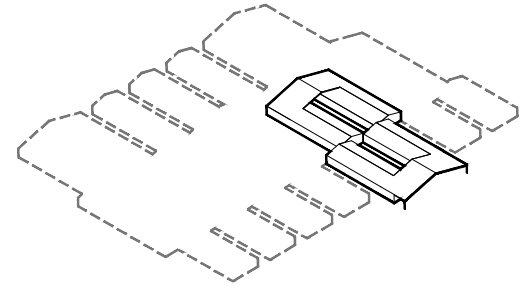
500m<sup>2</sup>



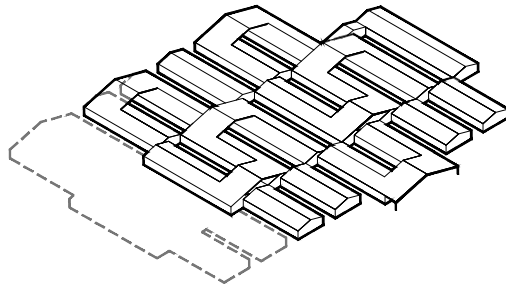
1.000m<sup>2</sup>



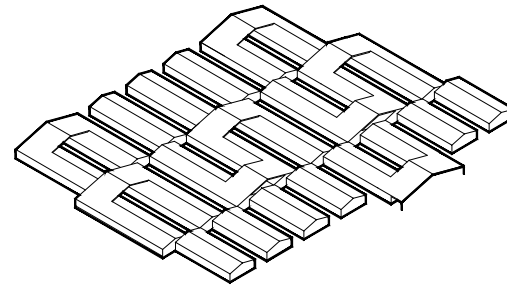
2.000m<sup>2</sup>

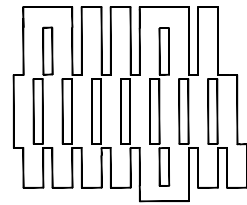


10.000m<sup>2</sup>



15.000m<sup>2</sup>





**PUYO HOSPITAL, ECUADOR**  
**14.000 M2**



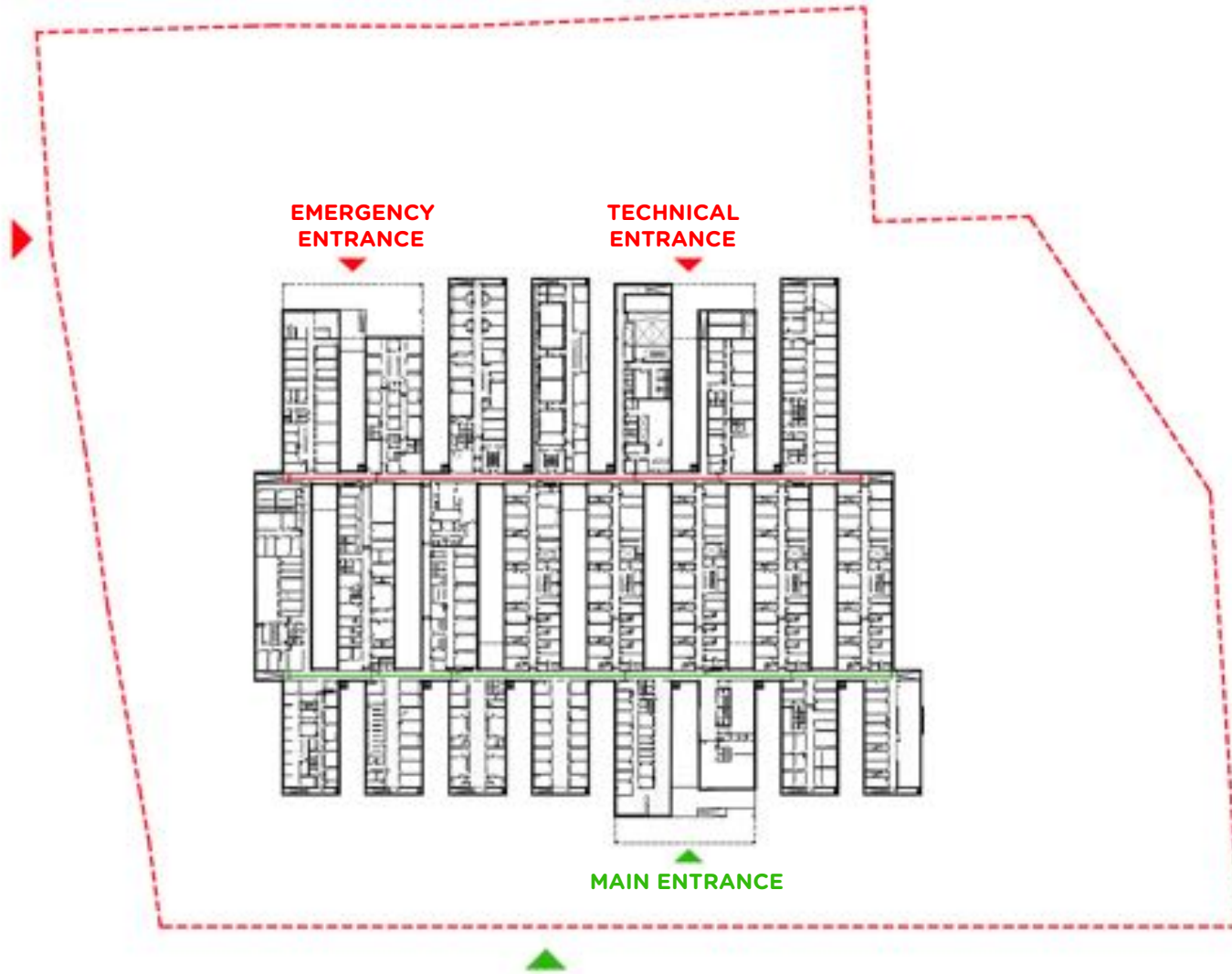
**FAD  
Award  
2014**



**BIAU  
Award  
2014**



**ArchDaily  
Best Building  
of the World  
2014**







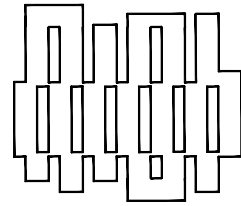


CONSILIA  
EXTERNA







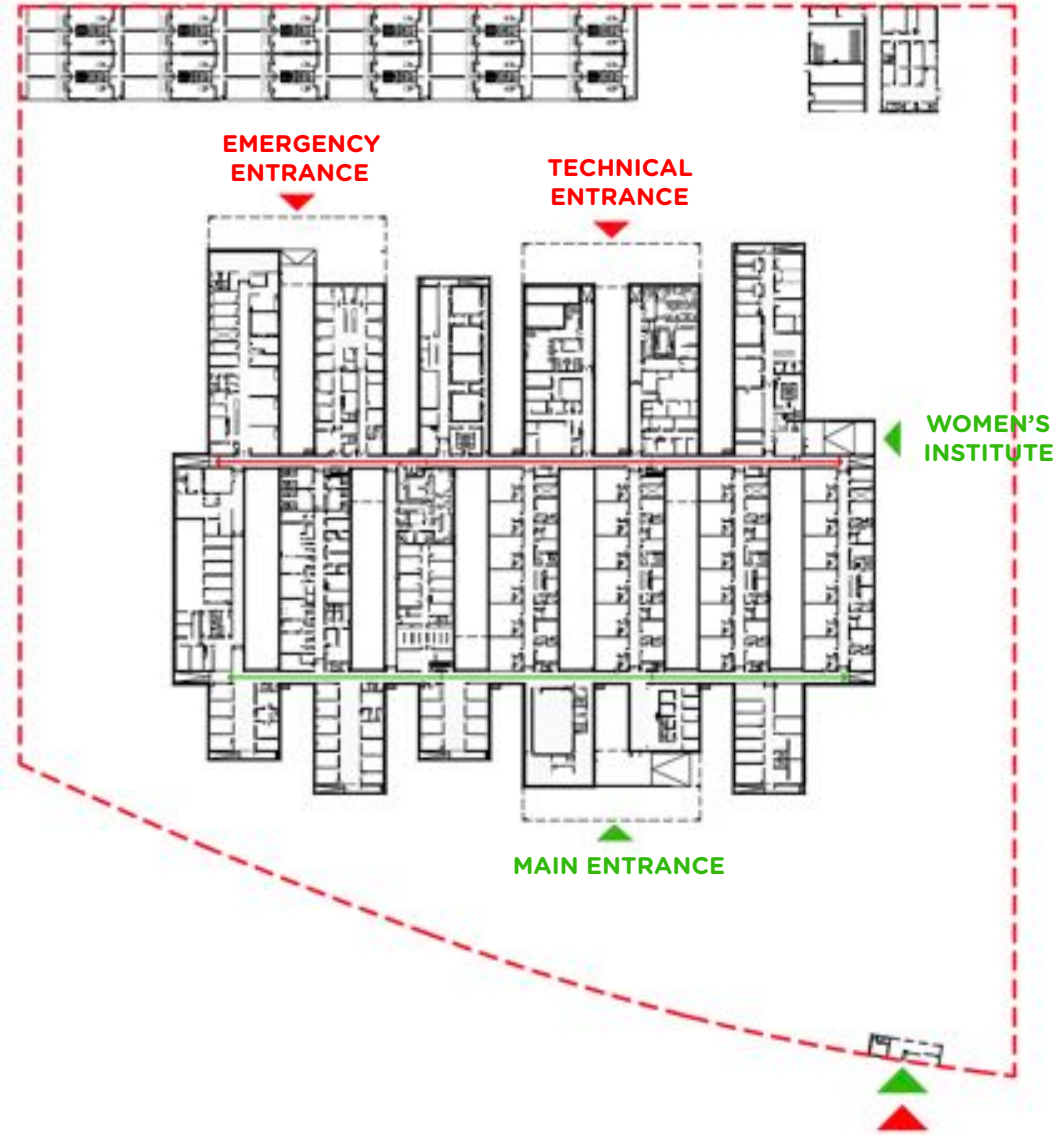


**MENONGUE HOSPITAL, ANGOLA**  
**11.000 M2**



**Honorable Mention of International Architecture of the  
Superior Council of the College of Architects of Spain**





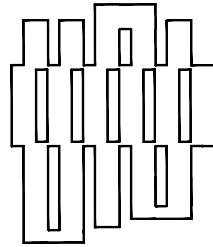




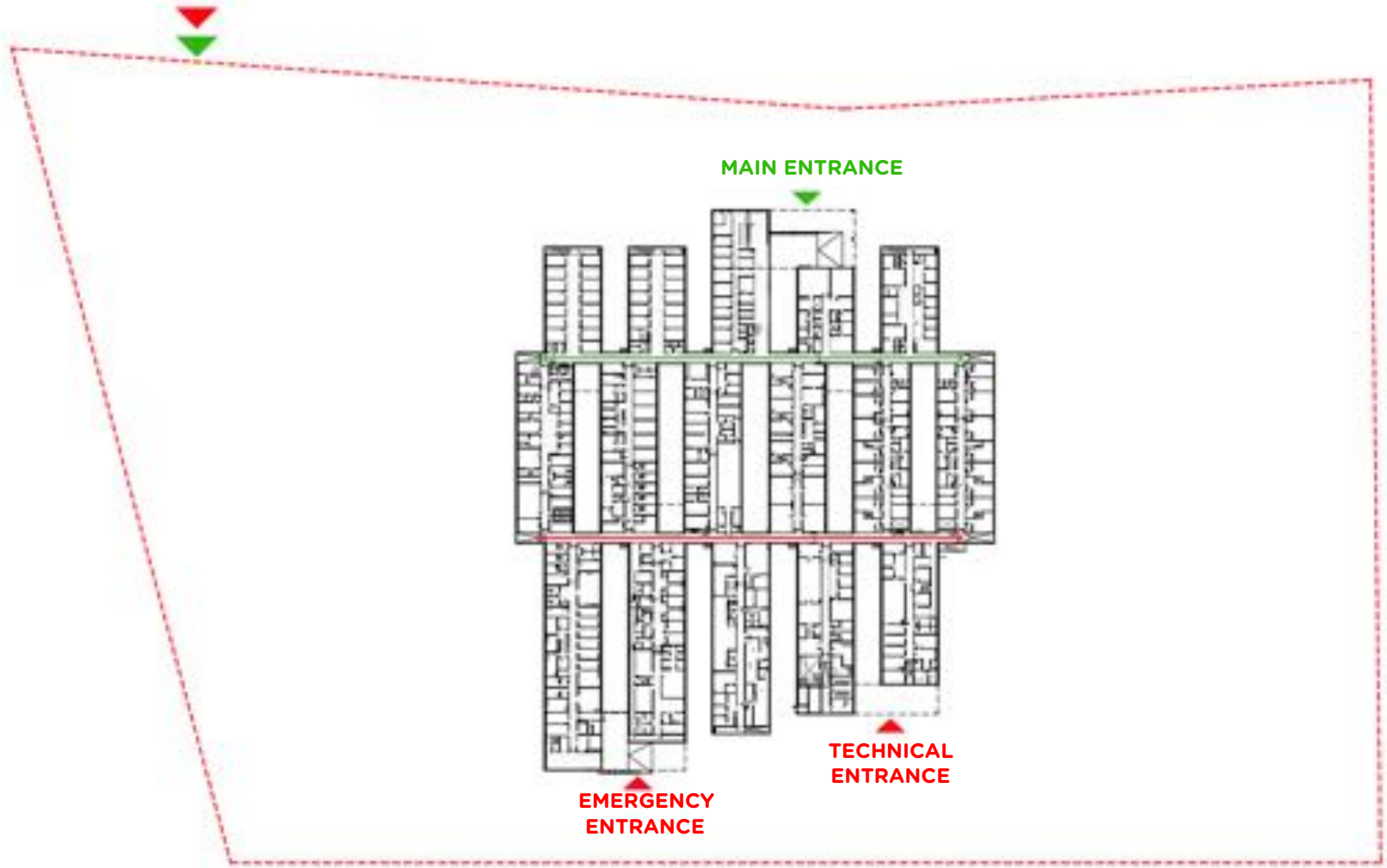








**MALABO HOSPITAL, EQUATORIAL GUINEA**  
**10.000 M2**



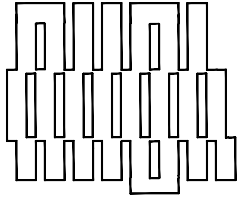




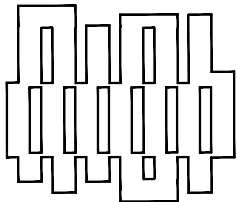




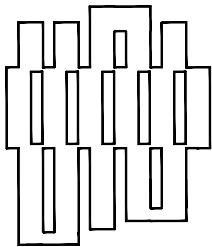




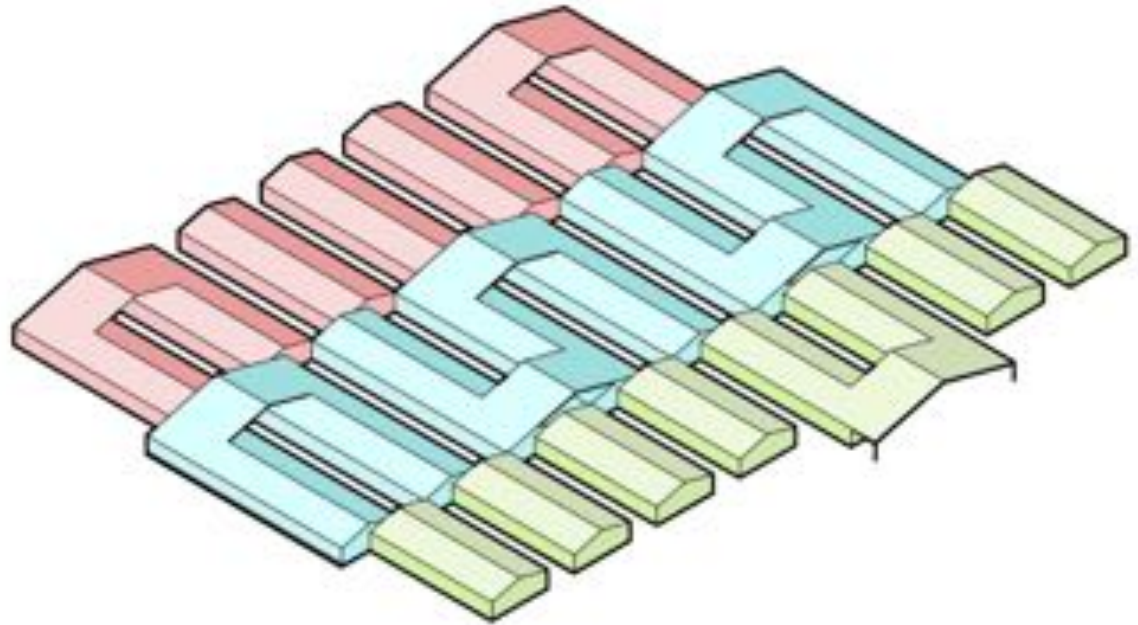
HOSPITAL DE PUYO



HOSPITAL DE MENONGUE

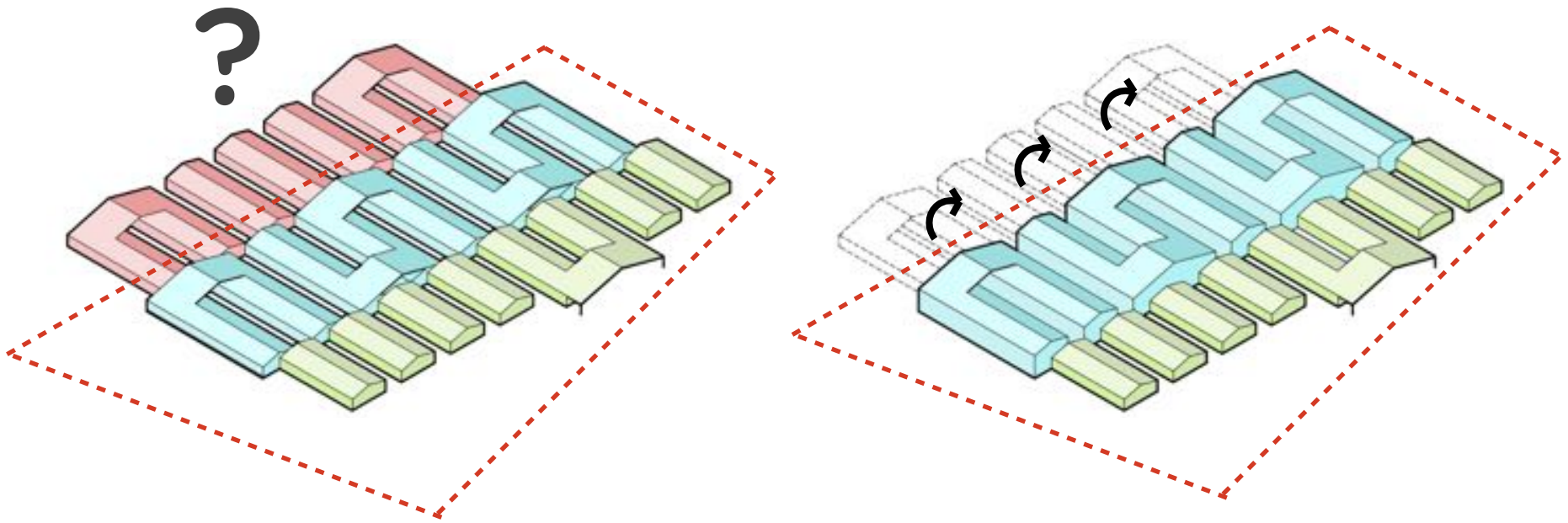


HOSPITAL DE MALABO

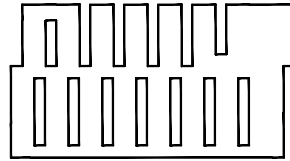




# THE SYSTEM EVOLVED ALLOWING MORE FLOORS AND SMALLER BUILDING SITES







**MACHALA HOSPITAL, ECUADOR**  
**25.000 M2**





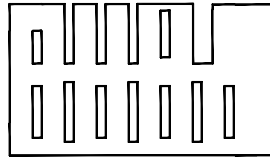












**MANTA HOSPITAL, ECUADOR**  
**25.000 M2**













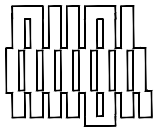
 **HOSPITAL GENERAL DE MANTA**

## PARAMETRIC HOSPITAL IS A MODEL FOR ALL CASES



### PUYO

ECUADOR, 2013



14.000 m2

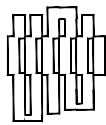
Designed, build and  
equipped in

**11 months**



### MALABO

GUINEA ECUATORIAL, 2014



10.000 m2

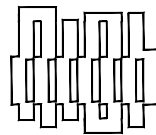
Designed, build and  
equipped in

**11 months**



### MENONGUE

ANGOLA, 2015



11.000 m2

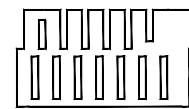
Designed, build and  
equipped in

**11 months**



### MACHALA

ECUADOR, 2017



25.000 m2

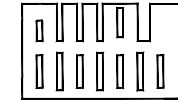
Designed, build and  
equipped in

**14 months**



### MANTA

ECUADOR, 2017



25.000 m2

Designed, build and  
equipped in

**15 months**





PMMT

—  
FORWARD  
THINKING  
HEALTHCARE  
ARCHITECTURE

Thank you very much!