CROSSING BOUNDARIES TO ACHIEVE DISRUPTIVE INNOVATION

Romano Del Nord

With the permission of:
DEEPAK AATRESH - Aditazz
FELICIA CLEPER-BORKOVI - Aditazz
CHRIS CROMBIE – Grimshaw Architects

ADITAZZ

ADITAZZ CONFIDENTIAL

Applicazione di strumenti e procedure evolute in una competizione internazionale negli USA: il concorso "Small Hospital, Big Idea"

KAISER PERMANENTE®
COMMITTENTE

OBIETTIVO

Sviluppo di **processi** e **progetti innovativi** con i quali attuare un programma di "community hospitals" mediante un "sistema costruttivo industrializzato" tale da **comprimere costi** e **tempi** di realizzazione delle opere

CONCORRENTI

108 concorrenti provenienti da tutto il mondo

FASI DI SELEZIONE

I°
18 gruppi selezionati

II°
9 gruppi semifinalisti

III°
3 gruppi finalisti

DIALOGO

3 gruppi finalisti
(8 mesi per approfondire la proposta sviluppando un dialogo con la committenza)

KAISER PERMANENTE®

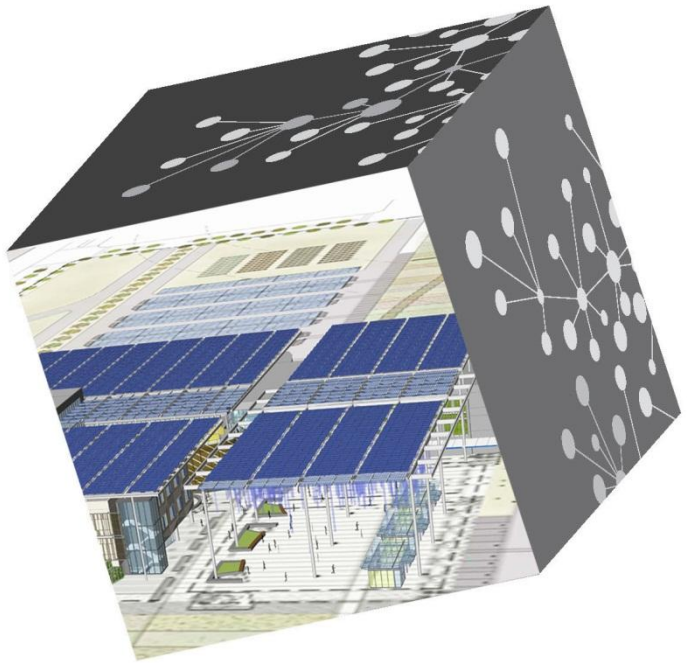
- Flessibilità documentata del sistema
- Basso impatto ambientale e sostenibilità
- Economicità conseguibili nel ciclo di vita
- Efficienza operativa

- Sofisticazione tecnologica delle soluzioni quale riflesso delle più avanzate potenzialità dell'elettronica e dell'automazione
- Concertazione consapevole della soluzione mediante simulazione comparata di costi e prestazioni tra opzioni alternative

2011 > **> 2013**

farmers market
KAISER PERMANENTE
thrive
KAISER PERMANENTE

EVERYTHING UNDER ONE ROOF



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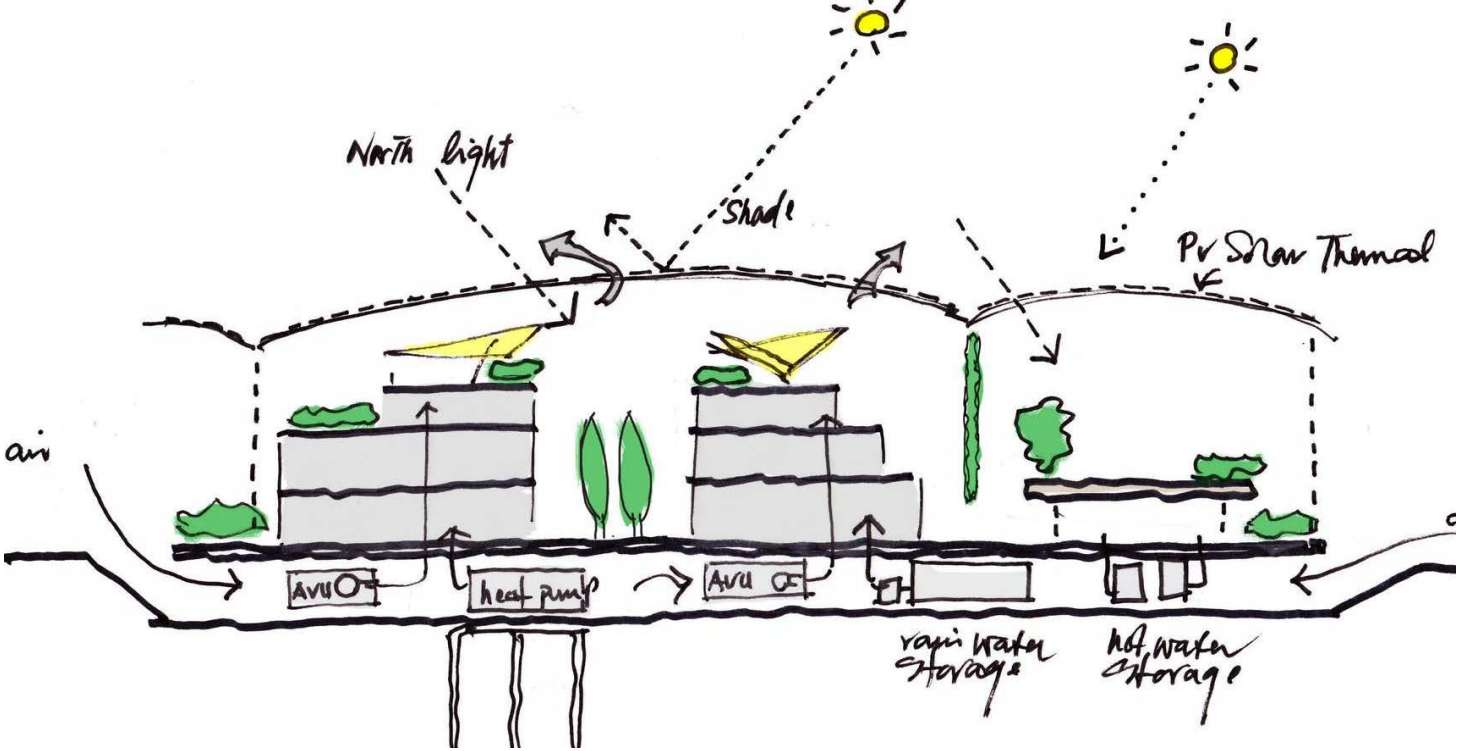
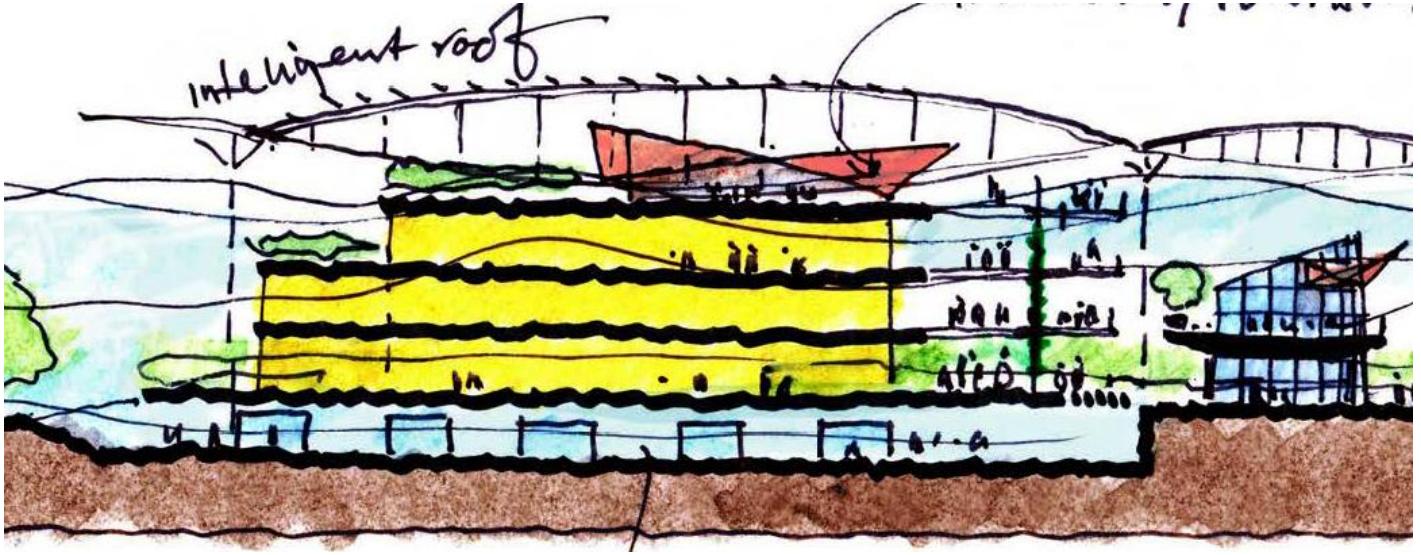
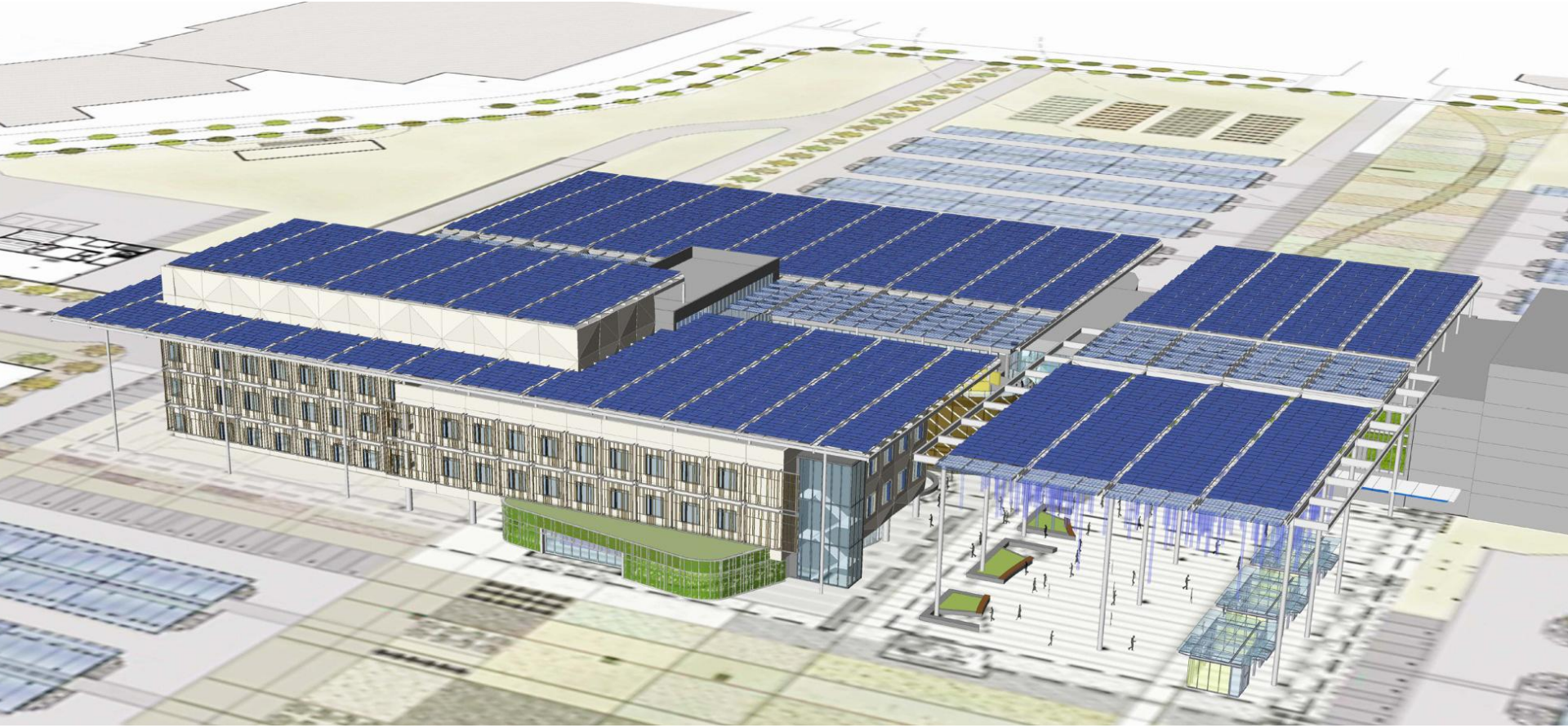
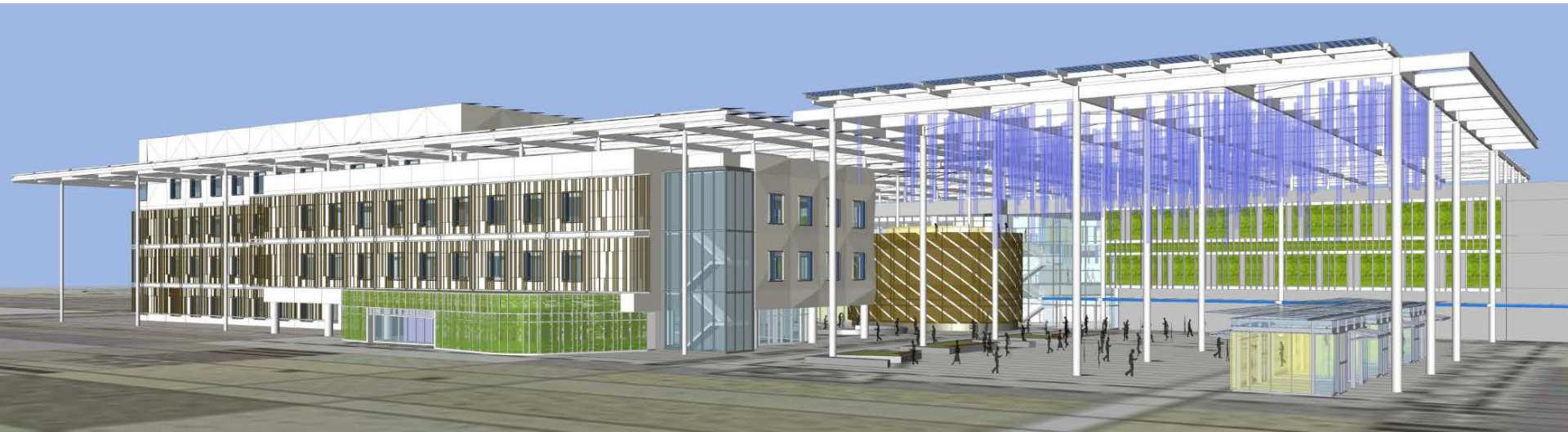

North light
Shade
Pv Solar Thermal
air
heat pump
rain water storage
hot water storage

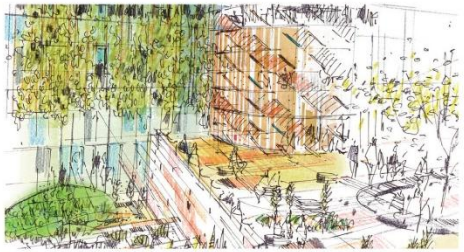

intelligent roof

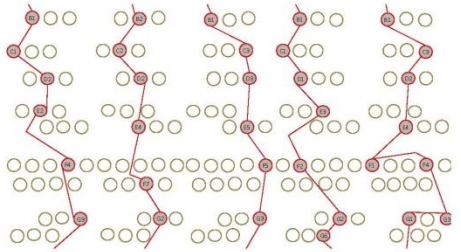
Improve your
Heart Health

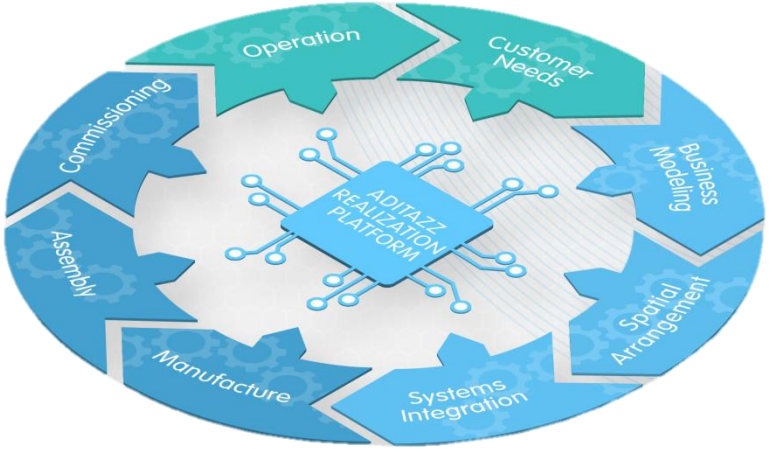


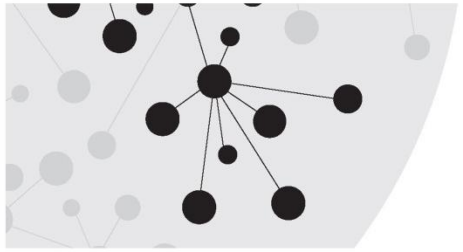
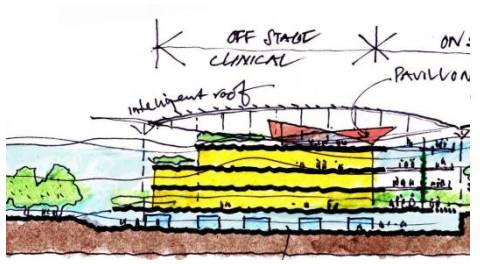


Reception
Healthcare
that keeps up







ADITAZZ ARP REALIZATION PLATFORM

ABOUT ADITAZZ

What is our vision?

Improved patient care through an innovative new approach to the design of the built environment.

Who are we?

We are a visionary AEC company:

We design and deliver next-gen healthcare facilities by integrating innovations in design, technology and manufacturing

(Our deliverable is a complete building - not just a design-tool, or even a design)

What is our core asset?

We have an automated platform that allows us to:

Architect

Engineer

Iterate through a multitude of design options, and optimize the design

Virtually Operate the building (with all structural, functional, financial attributes)

Manufacture and Assemble the building

We call this Aditazz Realization Platform, or ARP

ADITAZZ

WHY HEALTHCARE

The Basic Premise

A complex and dynamic interdependency exists between the built environment and the ability to deliver healthcare effectively.

This makes Aditazz a must-have.

Several Drivers for Complexity

Interplay between Clinical and Operational processes

Interplay between Technology obsolescence cycles over the lifetime of the building

Changing demographics – and increasing focus on prevention and wellness

Evolving models of care delivery – over full Continuum-of-Care

Evolving Standards-of-care

Growing cost pressures – need to optimize resource utilization (skills, financial)

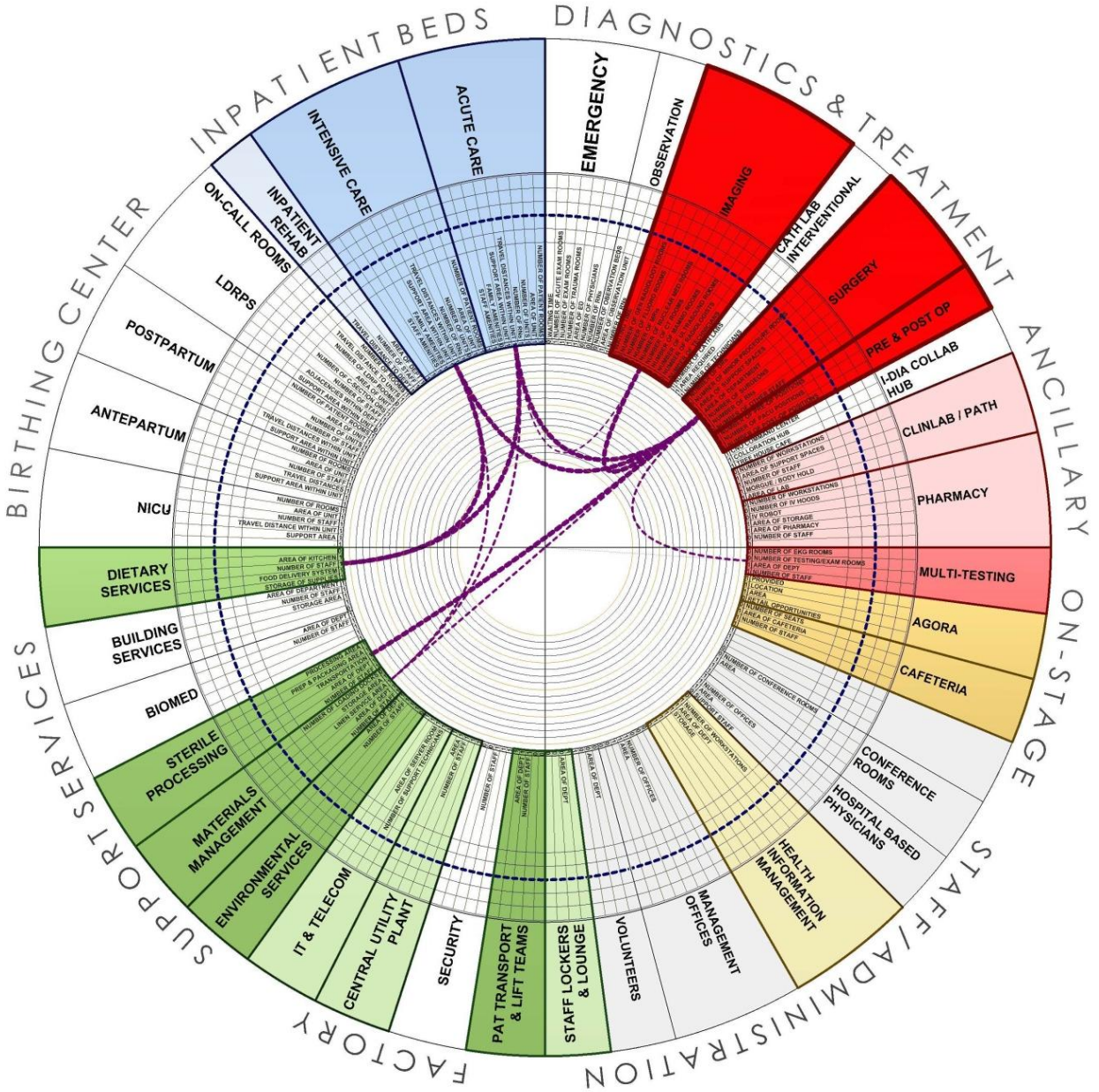
Growing emphasis on Sustainability

Why Aditazz?

The only way to address this complexity is through a platform that concurrently handles all levers and their interdependencies. That's what Aditazz does.

ADITAZZ

COMPLEXITY IN BUILDING DESIGN



THE IMPACT OF ADITAZZ

Qualitative

Aditazz approach triggers a broad-based disruptive innovation across many dimensions

- Cultural
- Technological
- Quality and Cost of Care Delivery

And it is Scalable….

- Applicable to a full range of models - from a Multi-hospital system, all the way across to a Clinic or MOB

Quantitative

10-30-10:

- Ten percent reduction in Capital Expenditure
- Thirty percent reduction in time to completion
- Ten percent reduction in Operating Expenditure

ADITAZZ

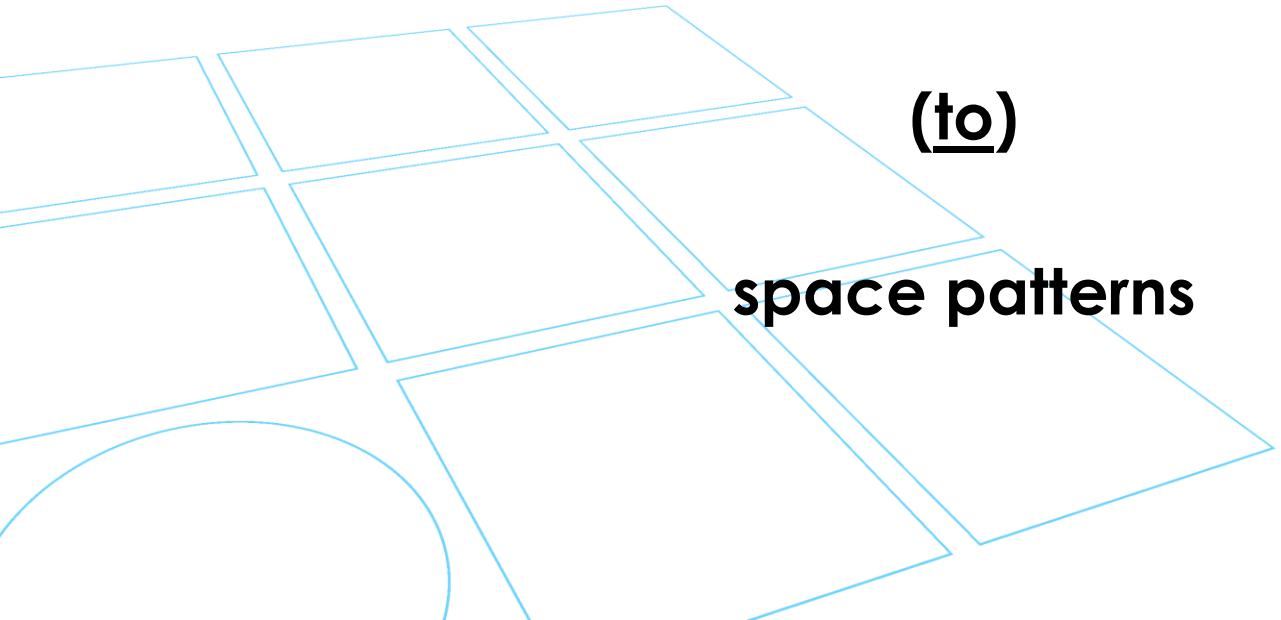
A complex pattern matching problem

(best) Match (of):

human movement patterns

(to)

space patterns



ADITAZZ

COMPLEXITY IN BUILDING DESIGN

Increasingly very complex pattern matching problem

(best) Match (of) [Advanced Algorithms]

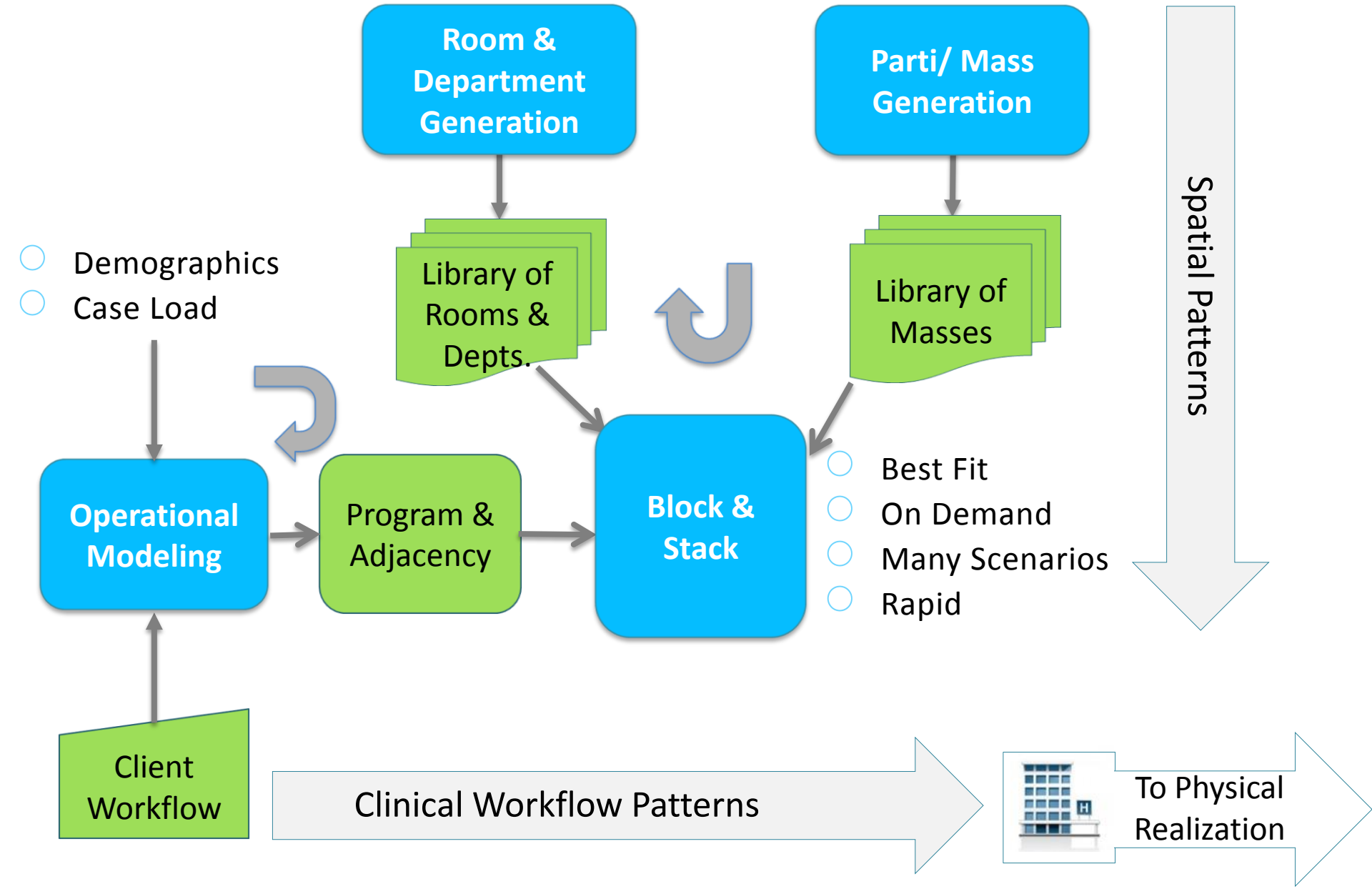
clinical care pathways

(to)

health care spatial design templates

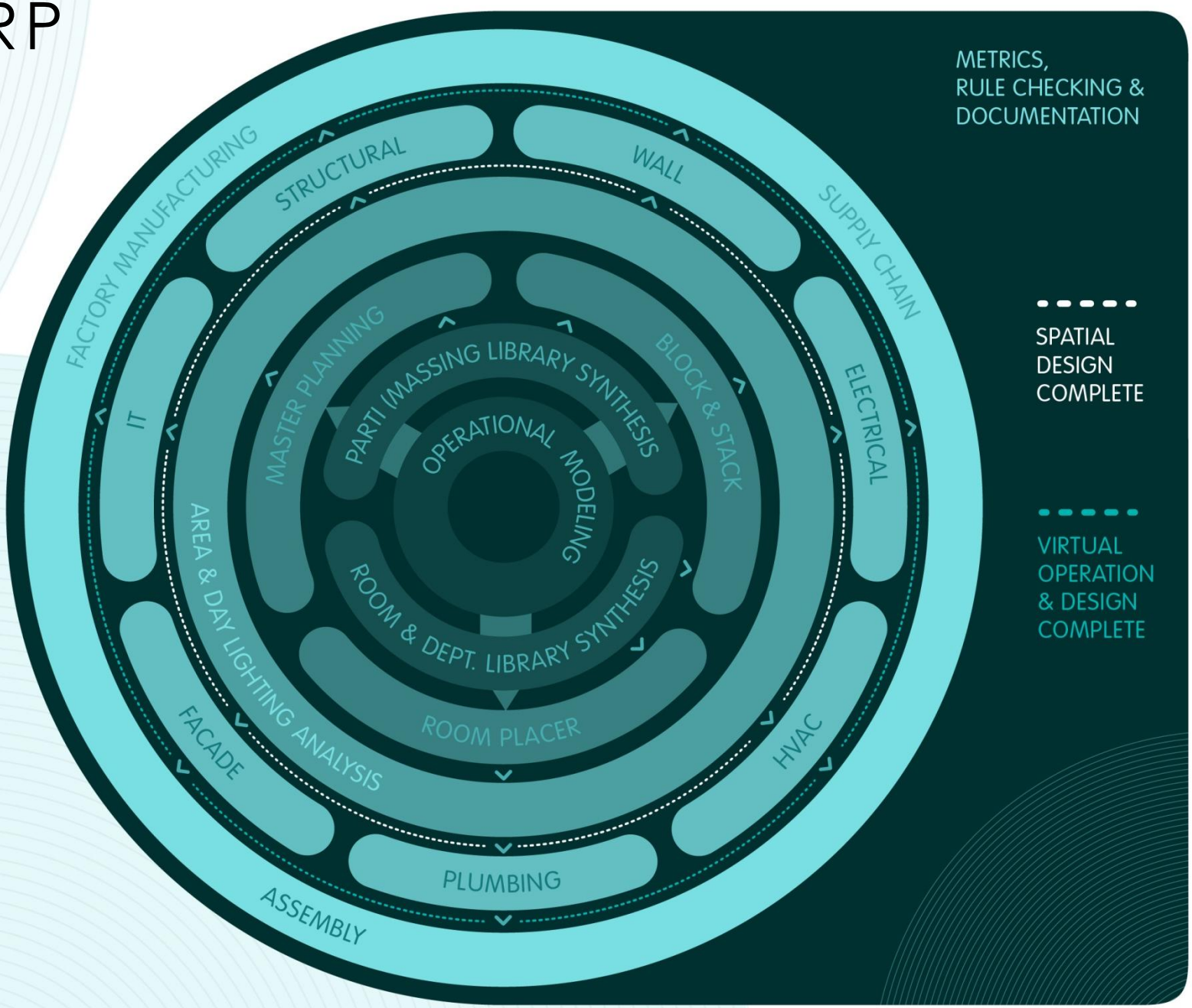
ADITAZZ

ITERATIVE DESIGN FLOW



ARP

NEXT



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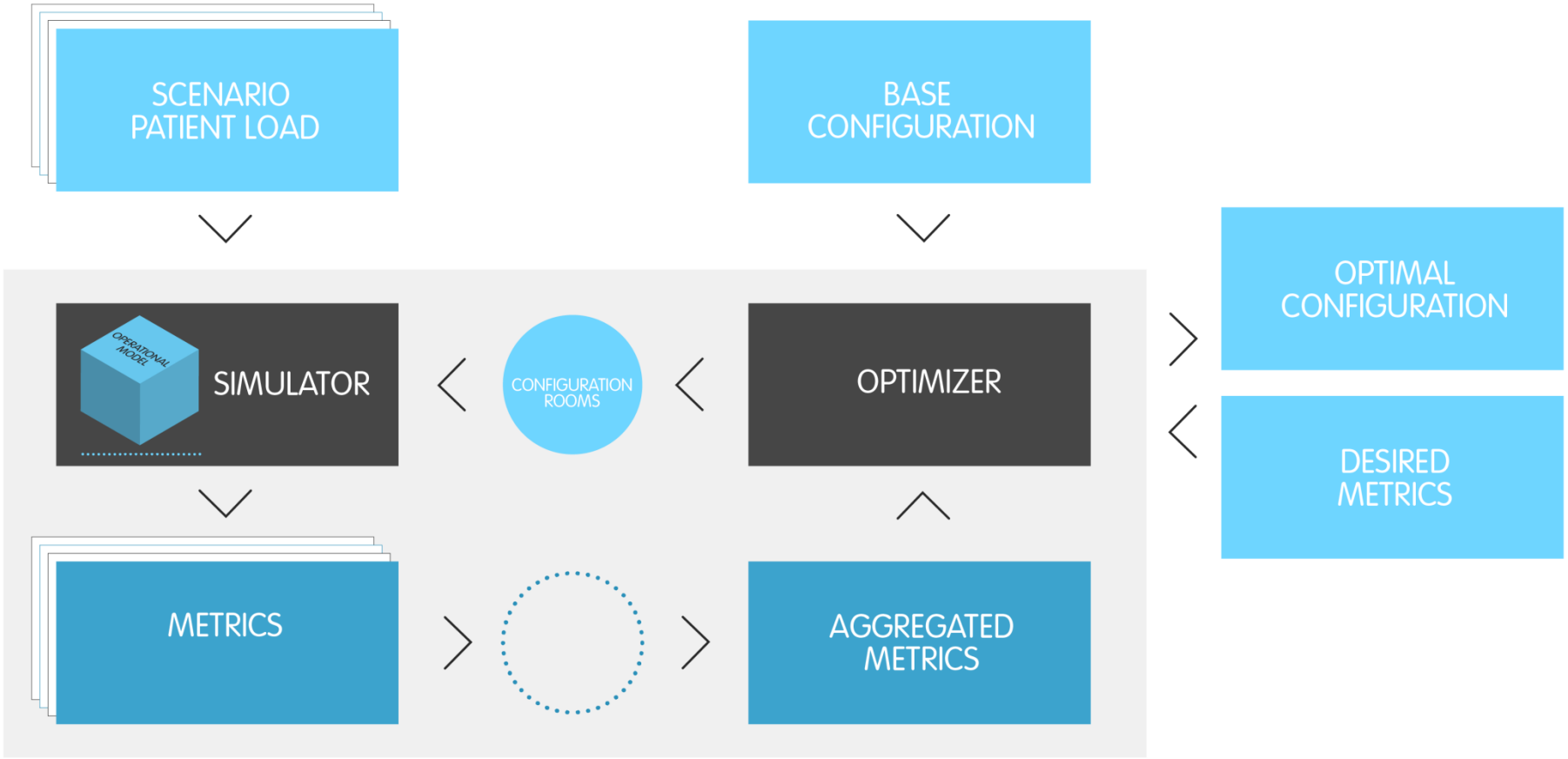
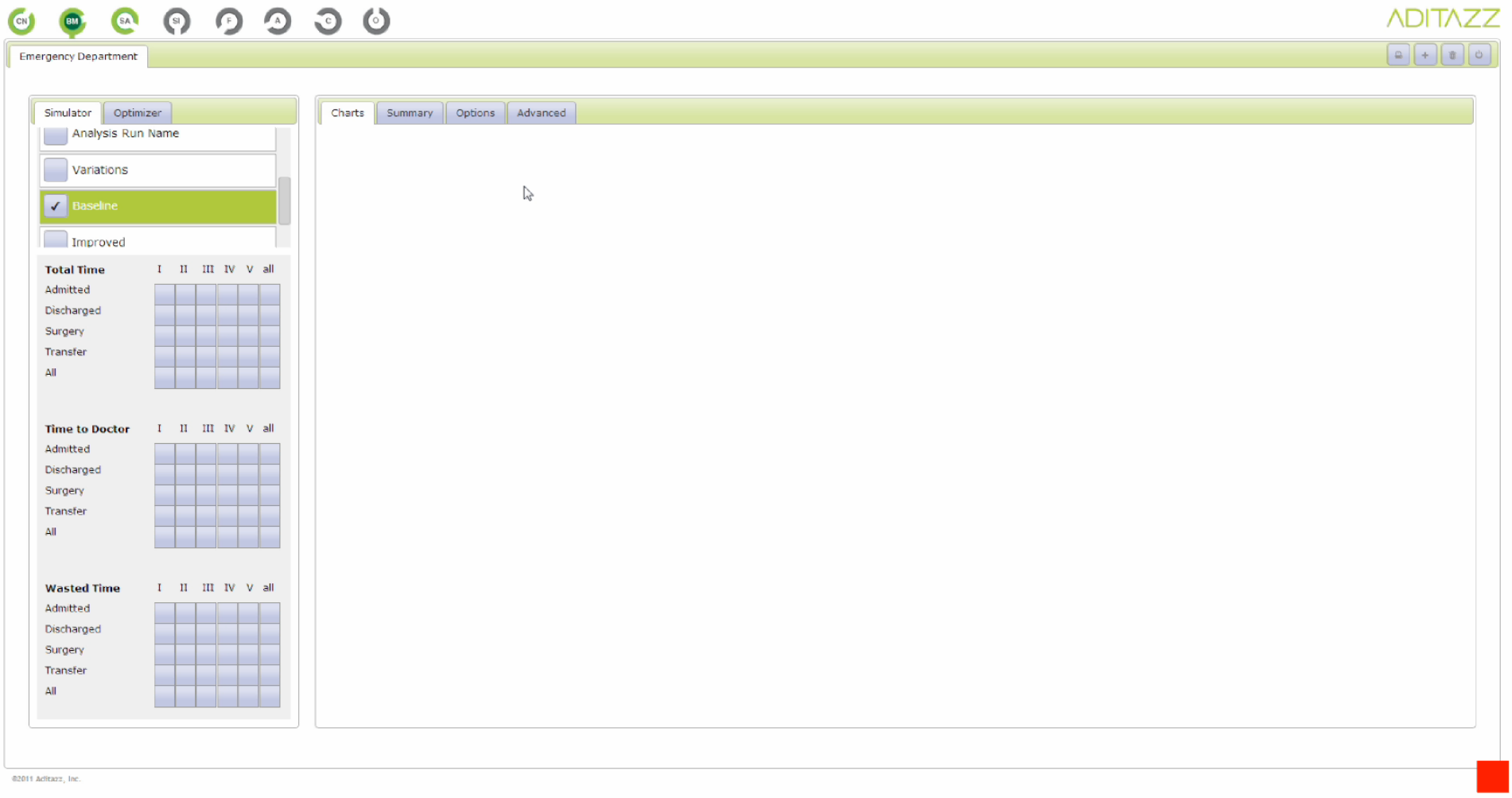
OPERTATIONAL MODELING



OPERTATIONAL MODELING



OPERTATIONAL MODELING

Scenario L3T2D25	Scenario L3T2D20
Required Spaces	*Required Spaces*
"numExams" : 5 ,	"numExams" : 6 ,
"numAcutes" : 6 ,	"numAcutes" : 8 ,
"numTraumas" : 2	"numTraumas" : 2
"numObs" : 4 ,	"numObs" : 4 ,
Required Staff	*Required Staff*
"numDR" : 2 ,	"numDR" : 2 ,
"numMA" : 9 ,	"numMA" : 9 ,
"numRN" : 9 ,	"numRN" : 9 ,
Resulting Metrics	*Resulting Metrics*
"WAIT_All_level_I" : 17 ,	"WAIT_All_level_I" : 11 ,
"WAIT_All_level_II" : 29 ,	"WAIT_All_level_II" : 35 ,
"WAIT_All_level_III" : 42 ,	"WAIT_All_level_III" : 36 ,
"WAIT_All_level_IV" : 39 ,	"WAIT_All_level_IV" : 35 ,
"WAIT_All_level_V" : 16 ,	"WAIT_All_level_V" : 24 ,
"WAIT_All" : 39 ,	"WAIT_All" : 35 ,
"T2D_All_level_I" : 5 ,	"T2D_All_level_I" : 5 ,
"T2D_All_level_II" : 10 ,	"T2D_All_level_II" : 10 ,
"T2D_All_level_III" : 25 ,	"T2D_All_level_III" : 20 ,
"T2D_All_level_IV" : 33 ,	"T2D_All_level_IV" : 34 ,
"T2D_All_level_V" : 35 ,	"T2D_All_level_V" : 36 ,
"T2D_All" : 31	"T2D_All" : 29

OPERTATIONAL MODELING

BACK

METRICS

ESI LEVEL	T2D	WAIT
1	10	10
2	20	30
3	40	60
4	90	90
5	120	90

T2D:

Maximum allowed time (mins) from arrival to first meeting with a doctor

WAIT:

Total wait time (mins) from arrival to leaving ED department caused by lack of resources

COSTS

Total Annual Cost
Capex & Opex

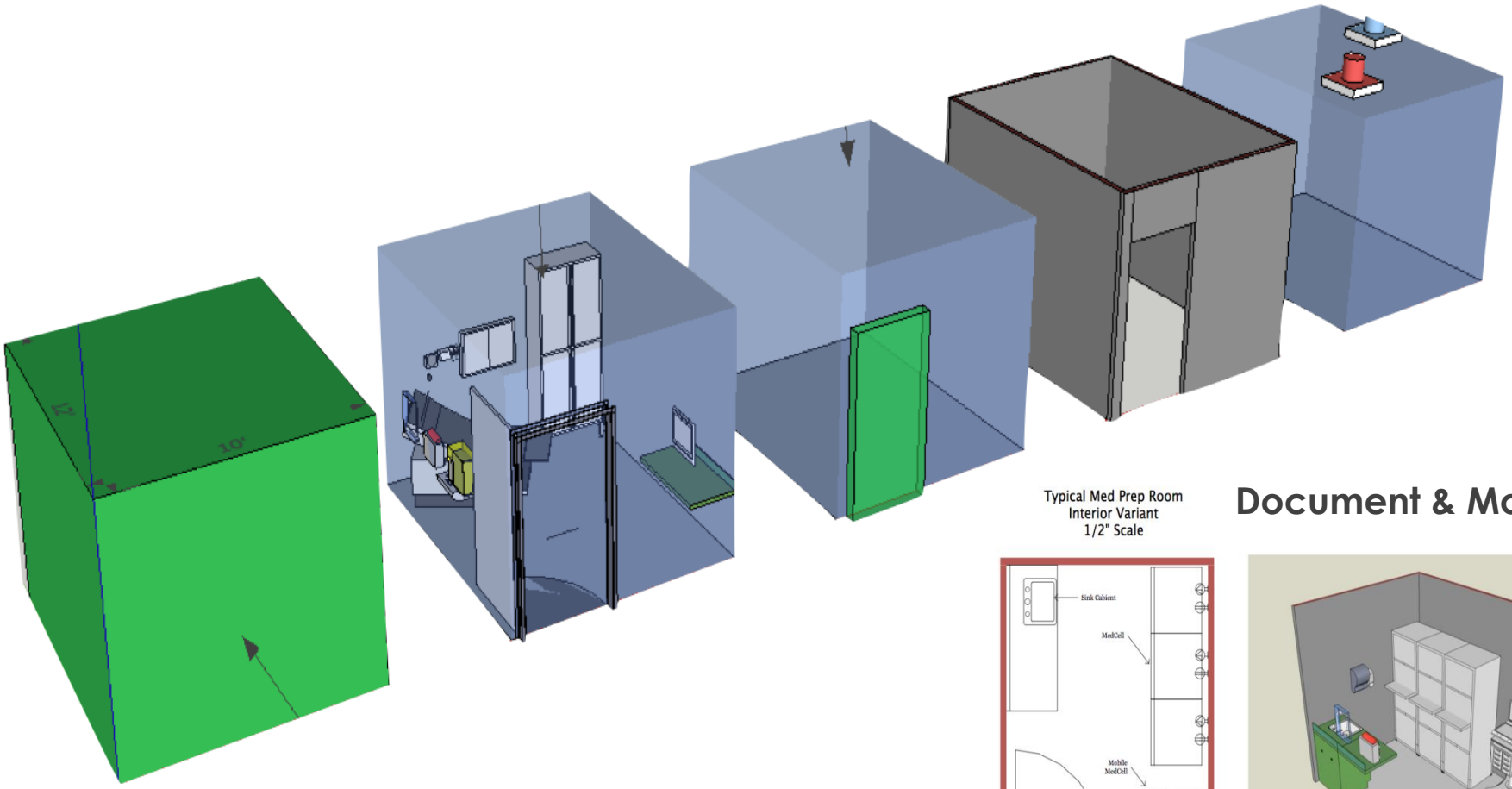
STAFF

Doctor	$325
RN	$110
MA	$60

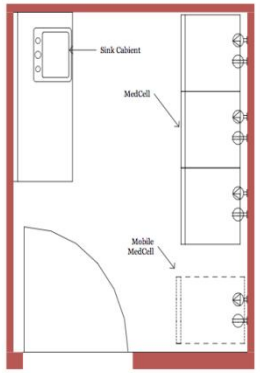
ROOMS

Exam	$30
Acute	$40
Trauma	$100
Obs	$30

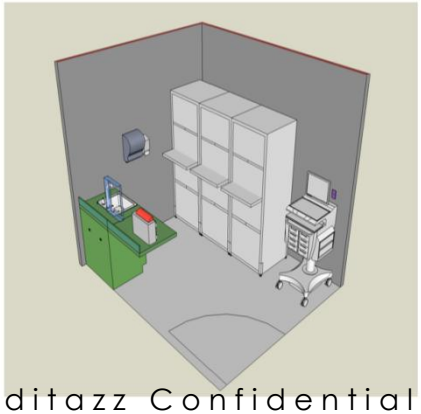
ROOM AND DEPARTMENT LIBRARY SYNTHESIS



Typical Med Prep Room
Interior Variant
1/2" Scale



Document & Models



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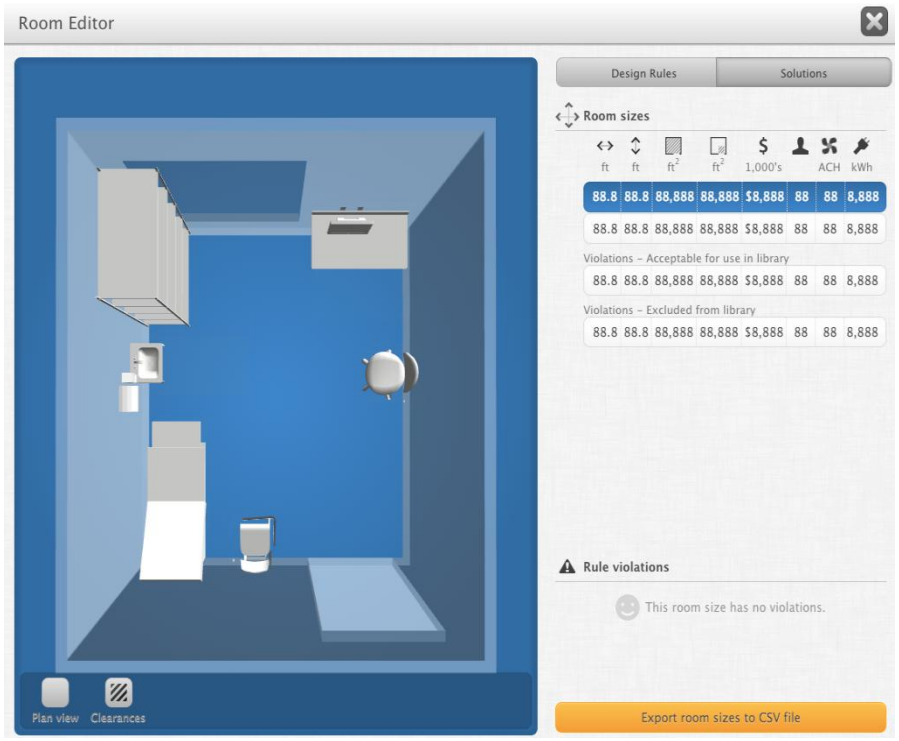
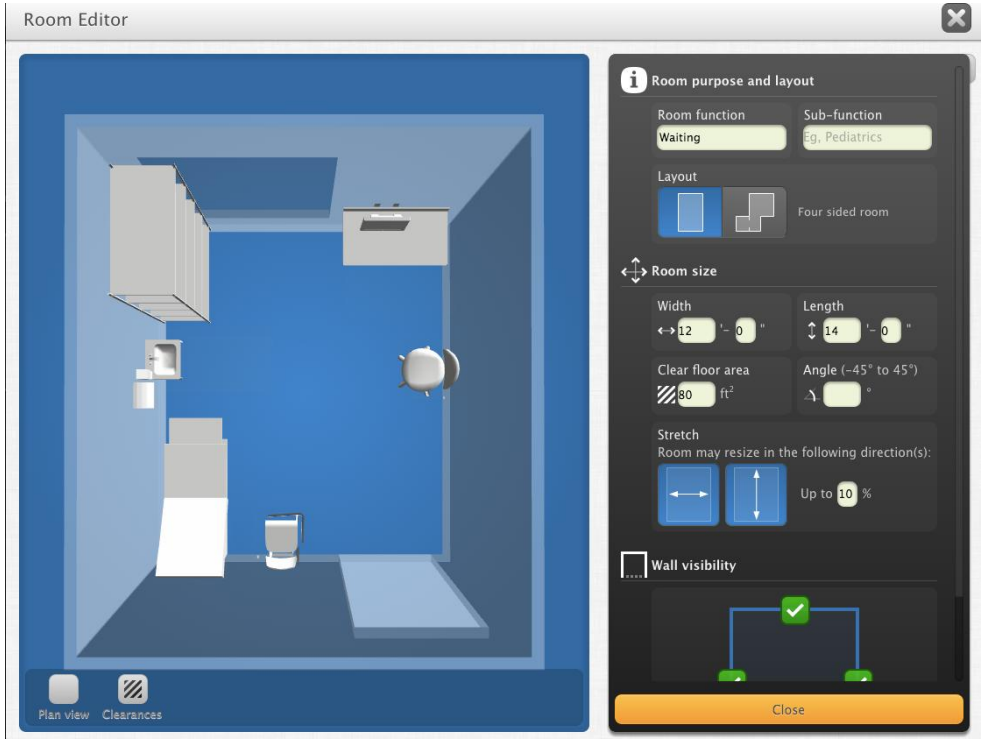
ROOM LIBRARIES Room editor view

BACK





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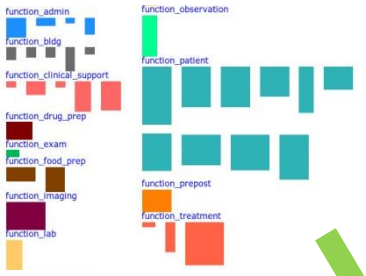
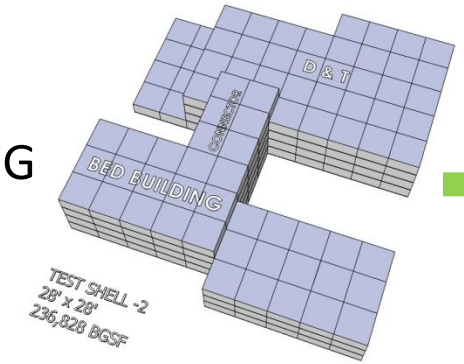
BLOCK AND STACK Aditazz Approach

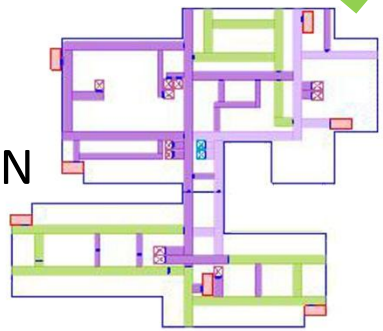
DEPARTMENT BLOCKS



BUILDING MASS



CIRCULATION PATTERN



BLOCK & STACK

ARP

LAYOUT TOOLS

FINAL LAYOUT

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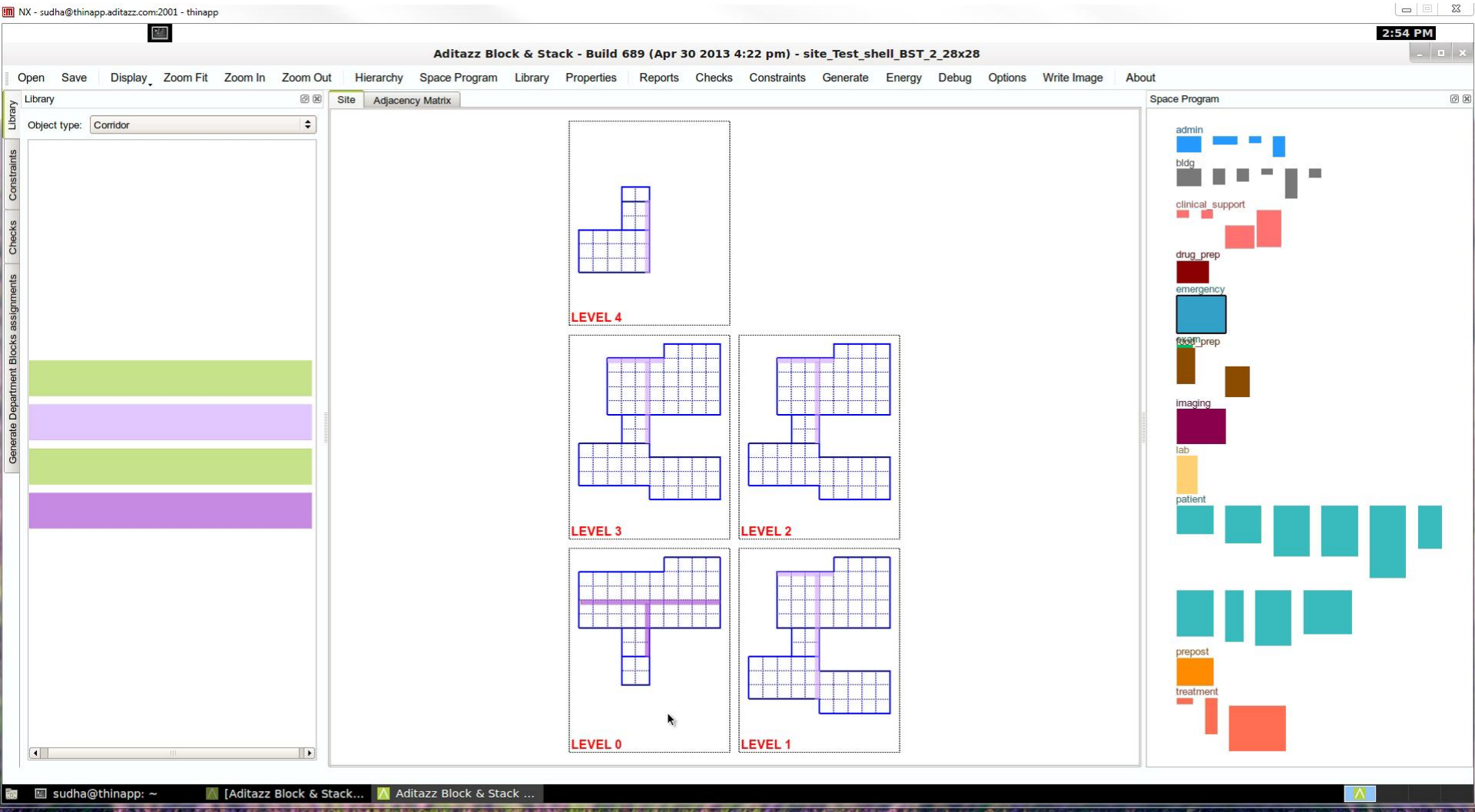
BLOCK AND STACK Aditazz Approach

BACK



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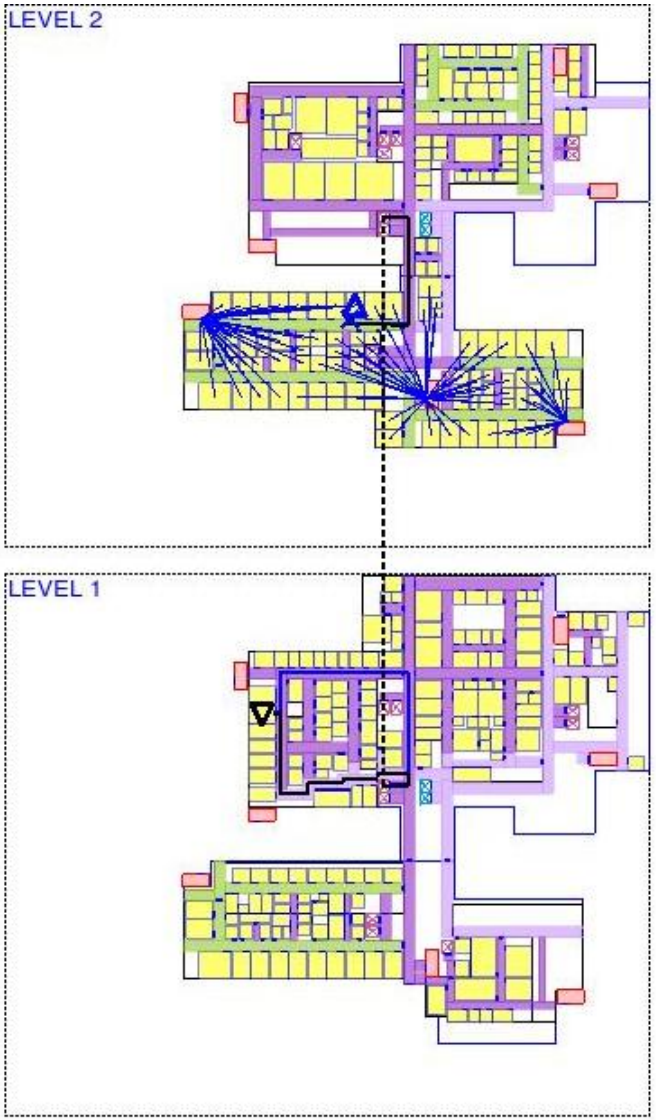
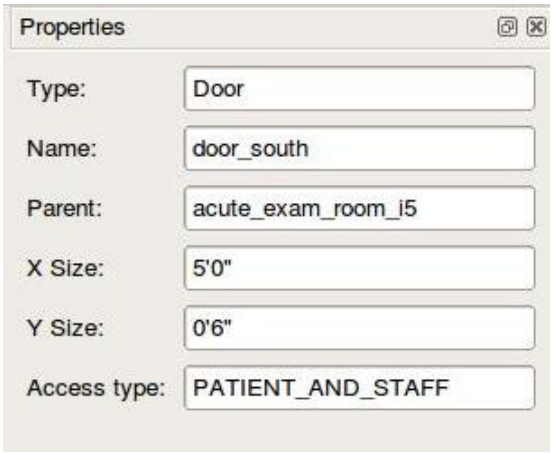
BLOCK AND STACK Aditazz Approach

BACK





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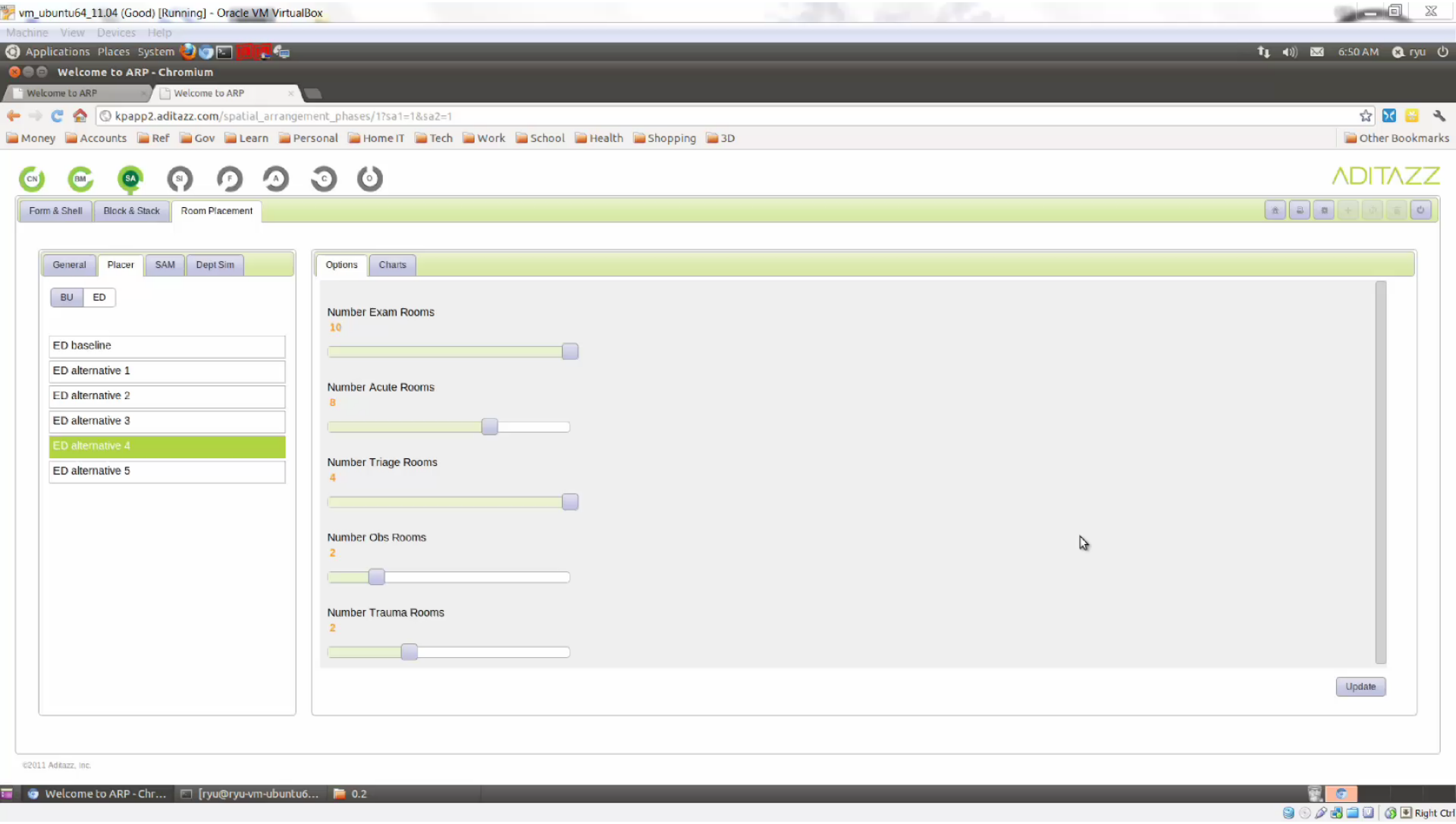
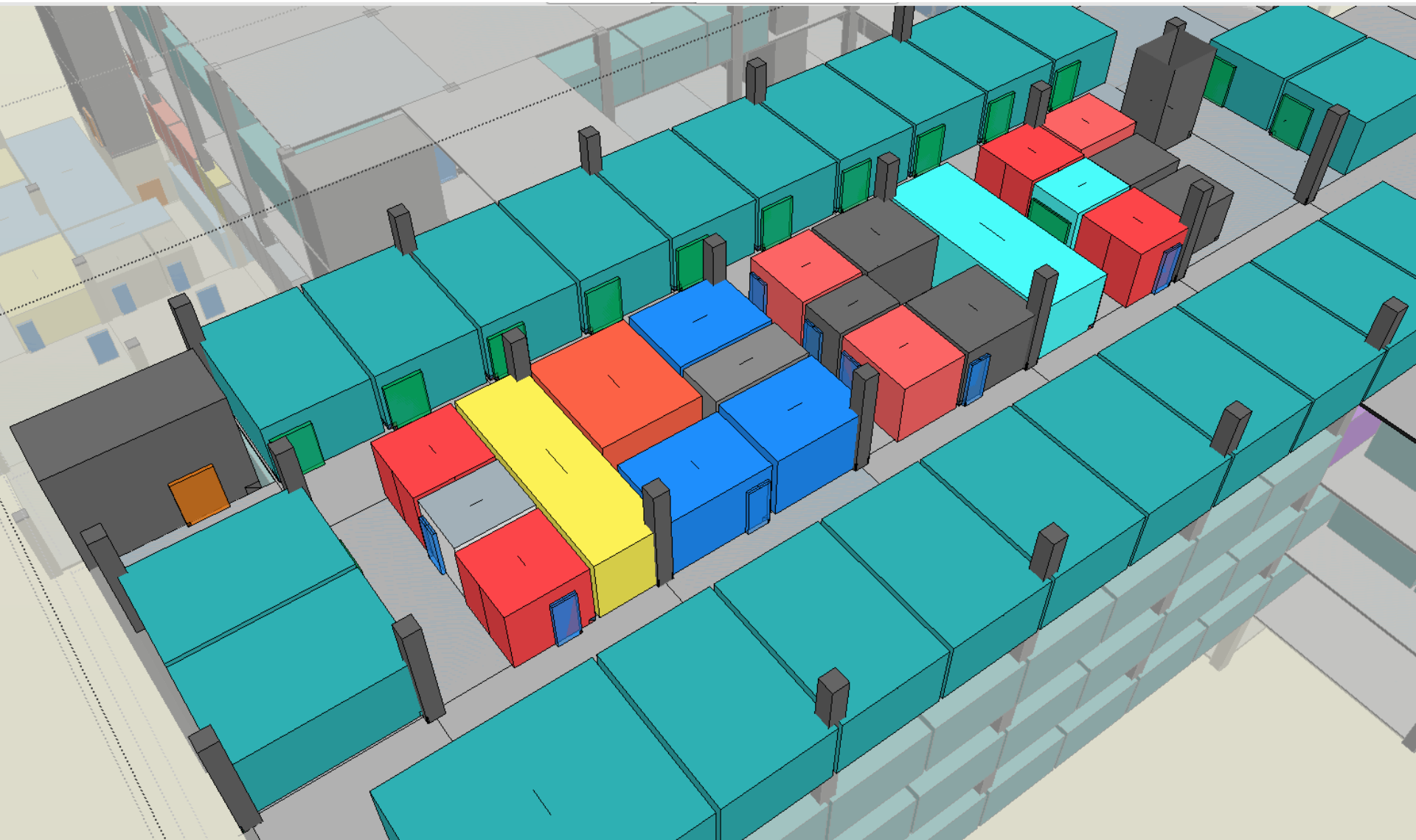
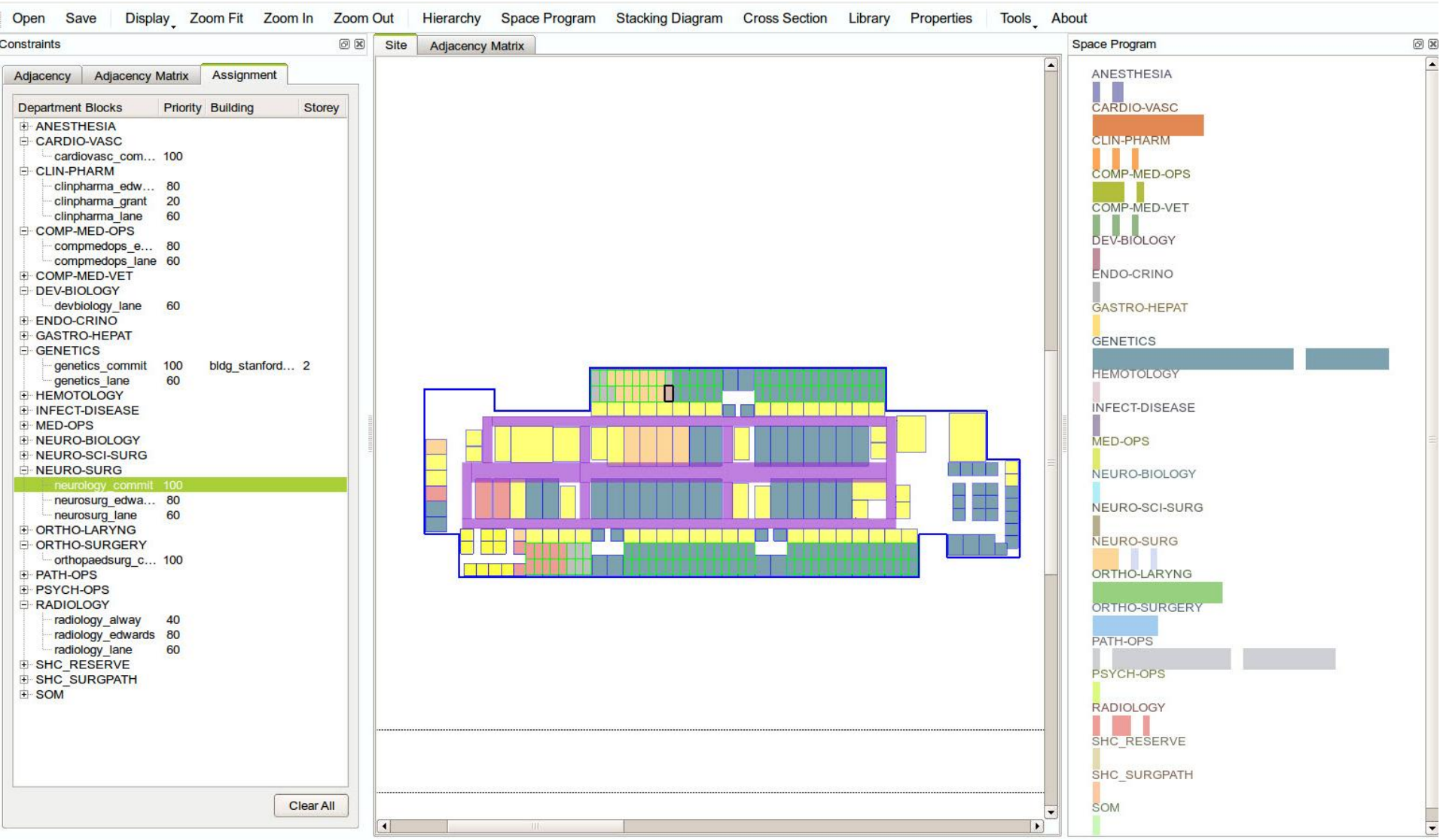
ROOM PLACER


vm_ubuntu64_11.04 (Good) [Running] - Oracle VM VirtualBox
Machine View Devices Help
Applications Places System
6:50 AM ryu
Welcome to ARP - Chromium
Welcome to ARP
Welcome to ARP
kpapp2.aditazz.com/spatial_arrangement_phases/1?sa1=1&sa2=1
Money Accounts Ref Gov Learn Personal Home IT Tech Work School Health Shopping 3D
Other Bookmarks
ADITAZZ
Form & Shell
Block & Stack
Room Placement
General
Placer
SAM
Dept Sim
BU
ED
ED baseline
ED alternative 1
ED alternative 2
ED alternative 3
ED alternative 4
ED alternative 5
Options
Charts
Number Exam Rooms
10
Number Acute Rooms
8
Number Triage Rooms
4
Number Obs Rooms
2
Number Trauma Rooms
2
Update
©2011 Aditazz, Inc.
Welcome to ARP - Chr...
[ryu@ryu-vm-ubuntu6...
0.2
Right Ctrl

ROOMS PLACED WITH CIRCULATION PLACER



FACILITIES PLANNING TOOL