

How does VR improve Healthcare Design?

Aysu Unal

Architectural Designer @CannonDesign

aunal@cannondesign.com



Learning objectives

- Discover the opportunity to use **VR** for **interactive reviews of different case types and scenarios in clinical spaces**
- Understand **at which phase to develop VR models** during a project
- Discover the importance of **VR in identifying and solving design issues, such as sight lines in clinical environments**
- Discover **different techniques for using VR modeling** for both design and user review

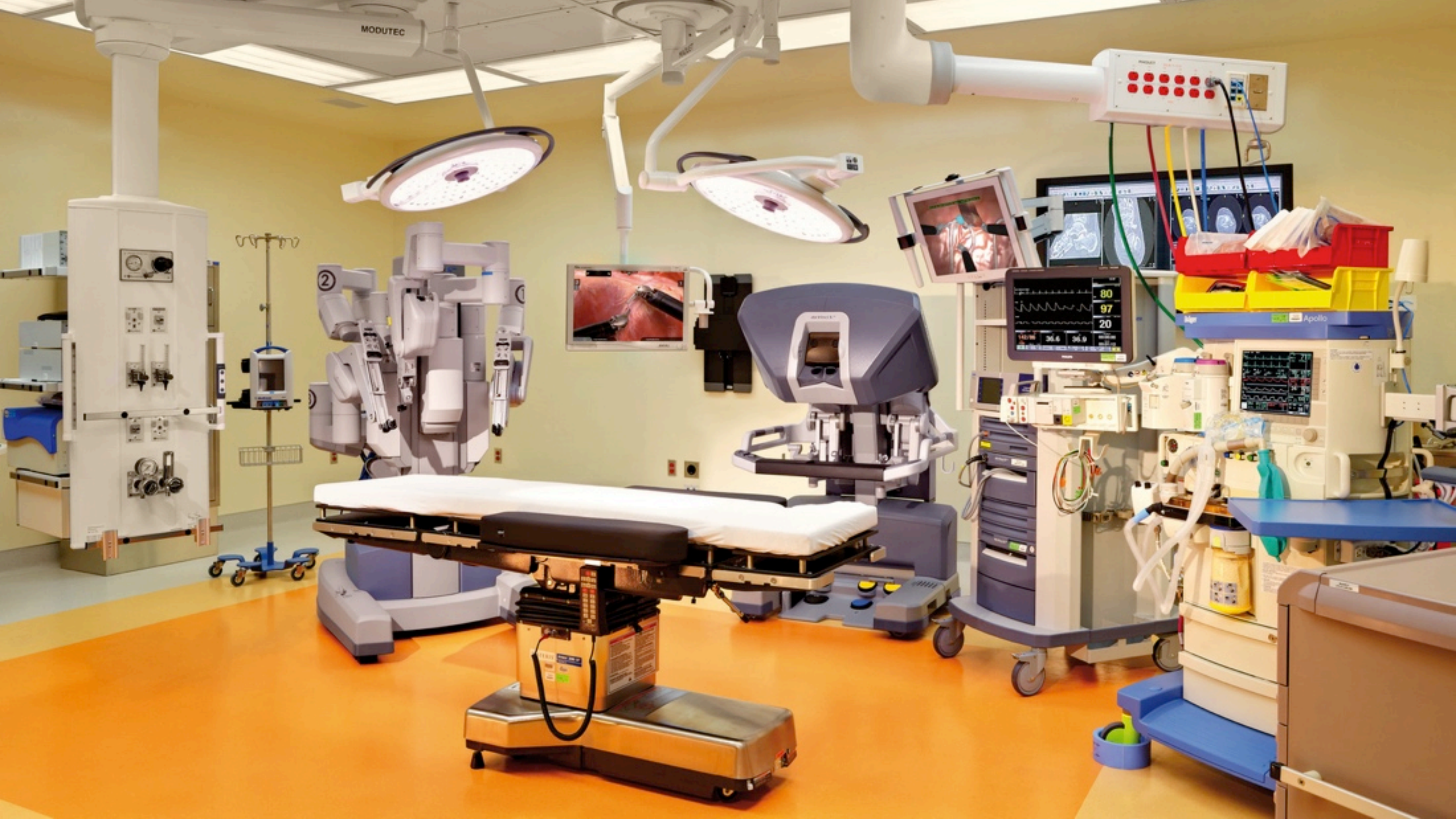


Aysu Unal

I am an architectural designer who is passionate about integrating technological innovations into the design challenges

WHY VR + HEALTHCARE?





GAME BOARDING

CLEAN CORE

23'-2 3/8"

M58

SURGICAL FLUID
COLLECTION WASTE
DISPOSAL
20.5" X 27"

M37

GENERAL
PROCEDURE
CART
24.5" X 31.5"

M44

GENERAL
PROCEDURE
CART
24.5" X 31.5"

M14

OR CONSOLE
SUPPLY CABINET
24" X 24"

OR CONSOLE
SUPPLY CABINET
24" X 24"

M13

DOUBLE BASIN
STAND
29" X 15"

DOUBLE BASIN
STAND
29" X 15"

SPECIALTY PROCEDURE
CART
36" X 26"

RESUSCITATION
PROCEDURE CART
25" X 33.5"

SHARP'S
DISPOSAL
CART
14.5" X 16.5"

BIO-HAZARD
WASTE CAN
16" X 16"

GENERAL
ANESTHESIA
MACHINE
33.5" X 31.5"

ANESTHESIA
CONTROLLED
ACCESS
CART
20.5" X 32"

ANESTHESIA
5-DRAWER
CART
22" X 32"

GENERAL AUTO
TRANSDUCER
23" X 19"

INSTRUMENT TABLE
48" X 24"

INSTRUMENT TABLE
60" X 24"

SE5

M37

STACKABLE
STEP
STOOL
20" X 15"

STACKABLE
STEP
STOOL
20" X 15"

BIO-HAZARD
WASTE CAN
16" X 16"

M33

FOOT-OPERATED
MAYO
STAND
16" X 22"

FOOT-OPERATED
MAYO
STAND
16" X 22"

INSTRUMENT TABLE
30" X 16"

M56

SHARP'S
DISPOSAL
CART
14.5" X 16.5"

M20

M46

SINGLE
BASIN
STAND
15" X 15"

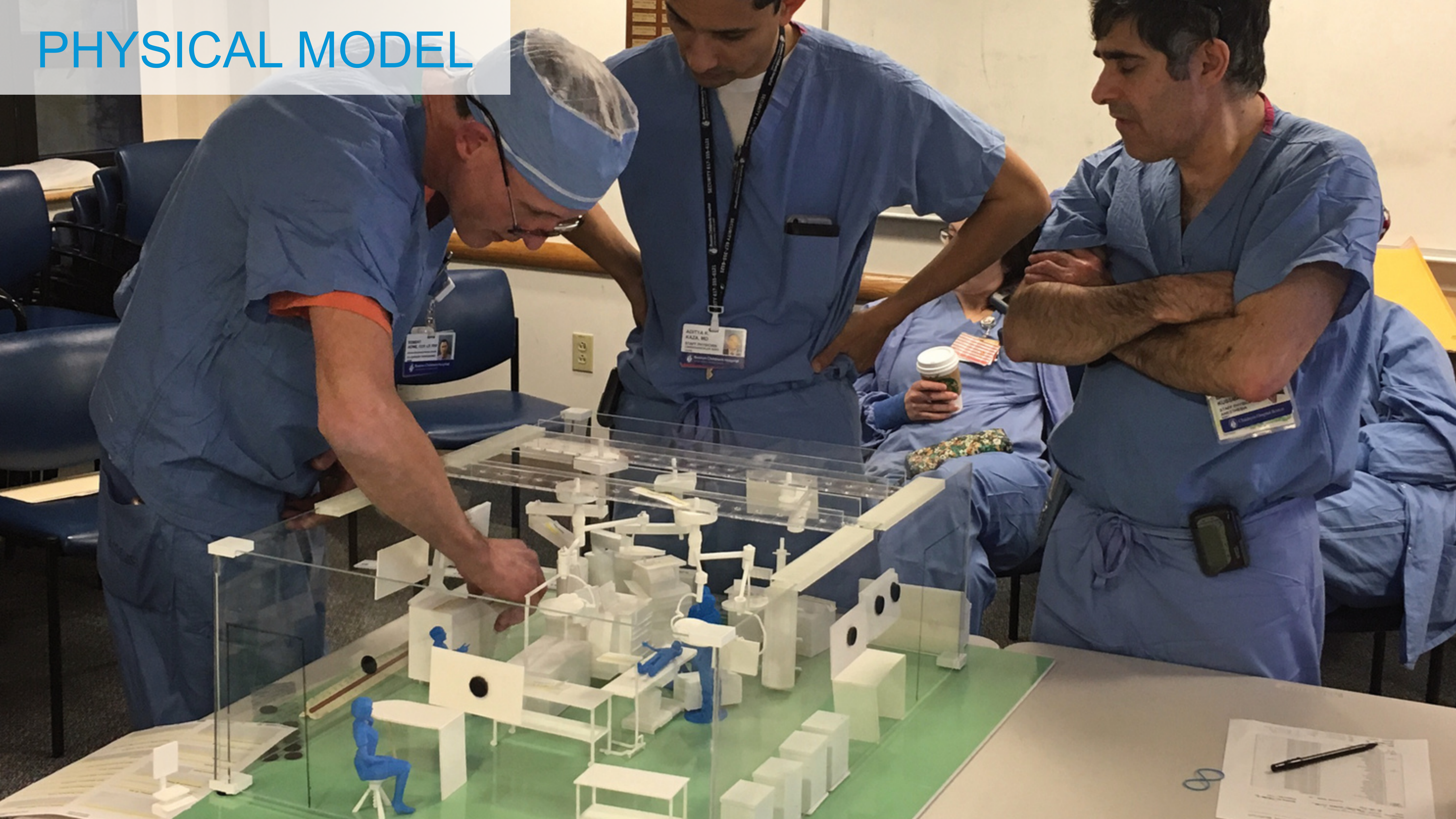
STRETCHER

SCRUB

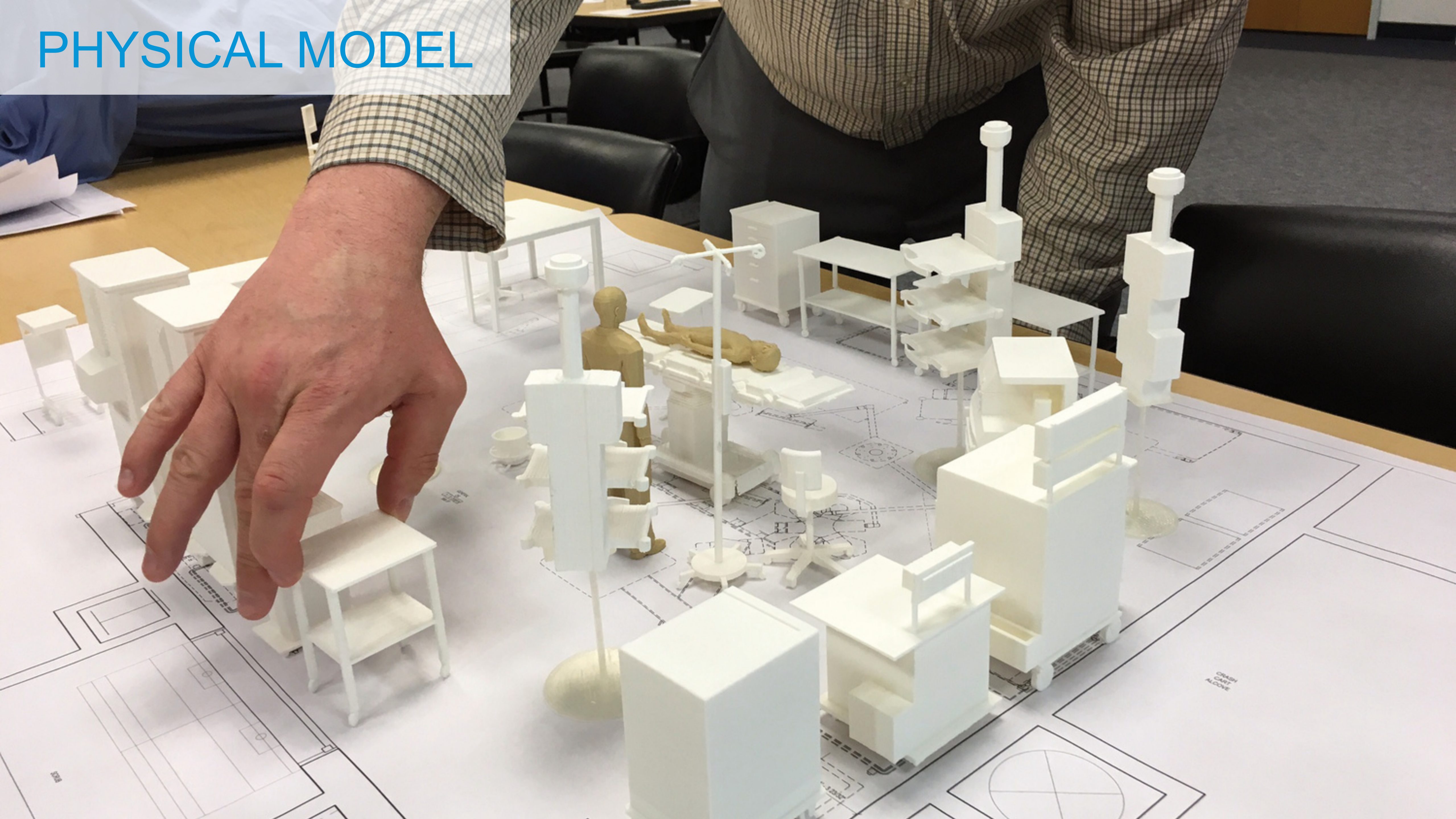
CORRIDOR

OR 14

PHYSICAL MODEL



PHYSICAL MODEL



MOCK UP



MOCK UP



MOCK UP



Total time: 2-3 weeks
Total cost: \$35K

MOCK UP



ALTERNATIVE SOLUTION?



HOW IS CANNON DESIGN PUSHING THE INNOVATION FORWARD?



TOOLS THAT WE ARE USING



Cardboard



Homido mini



Samsung GearVR



Northstar Project
Leap Motion



Microsoft Mixed Reality



HTC Vive

SOFTWARE THAT WE ARE USING



I WILL TAKE YOU ON
A JOURNEY

PANORAMIC VR RENDERING



WHAT IF WE ADD
INTERACTIVITY?

WALKTHROUGH + INTERACTIVE VR RENDERING

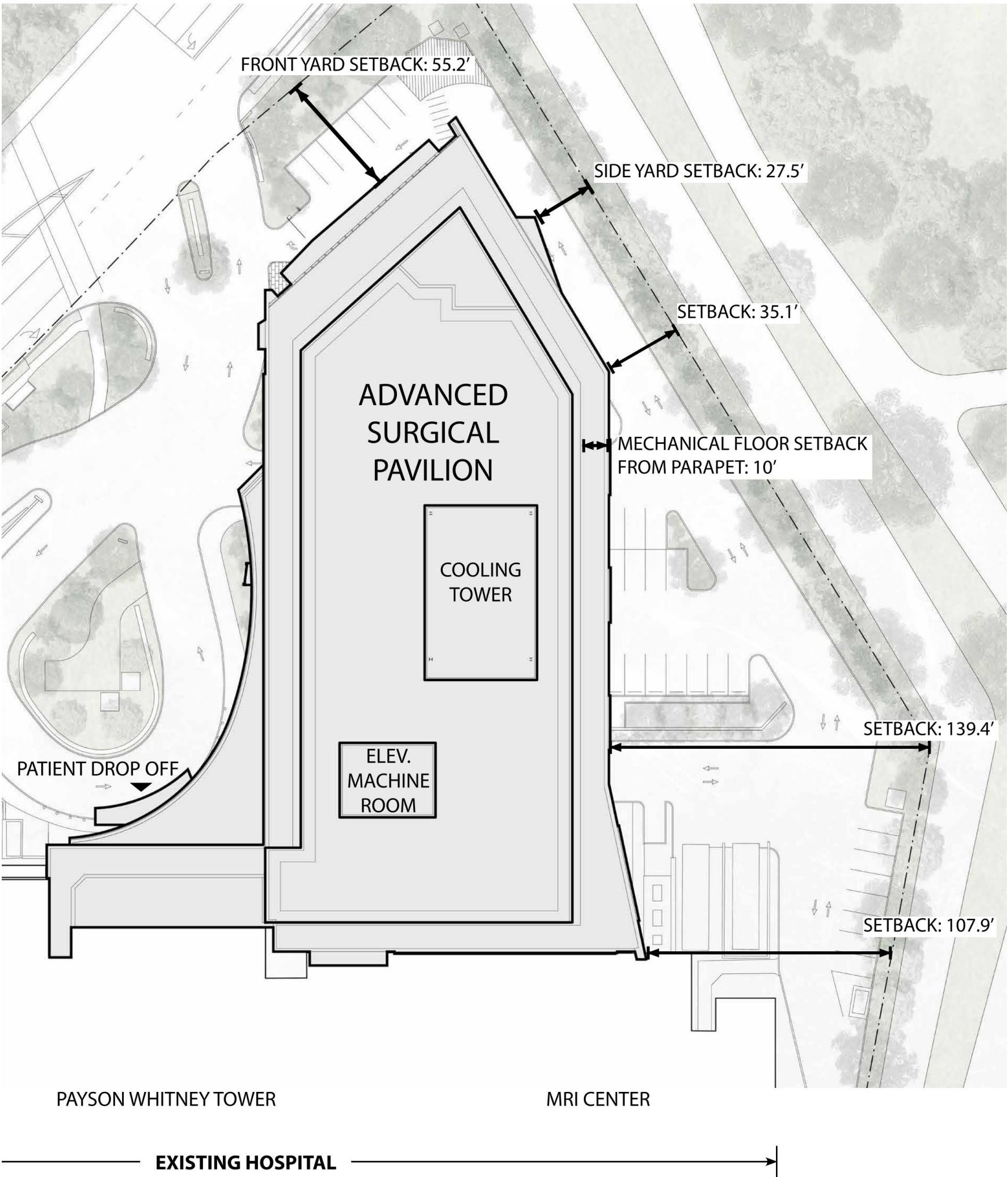
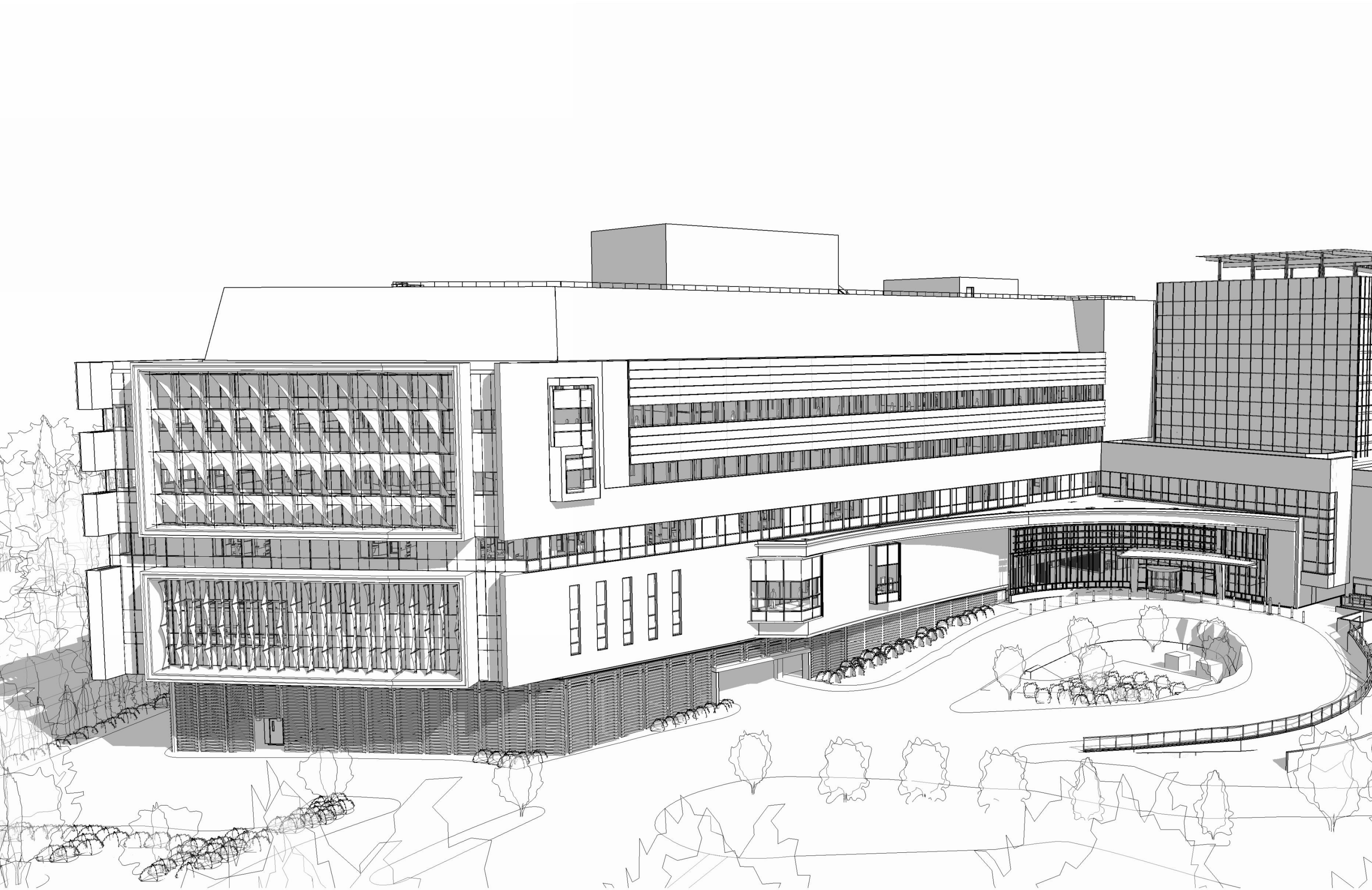
HOW TO APPLY VR EXPERIENCE TO A REAL PROJECT?





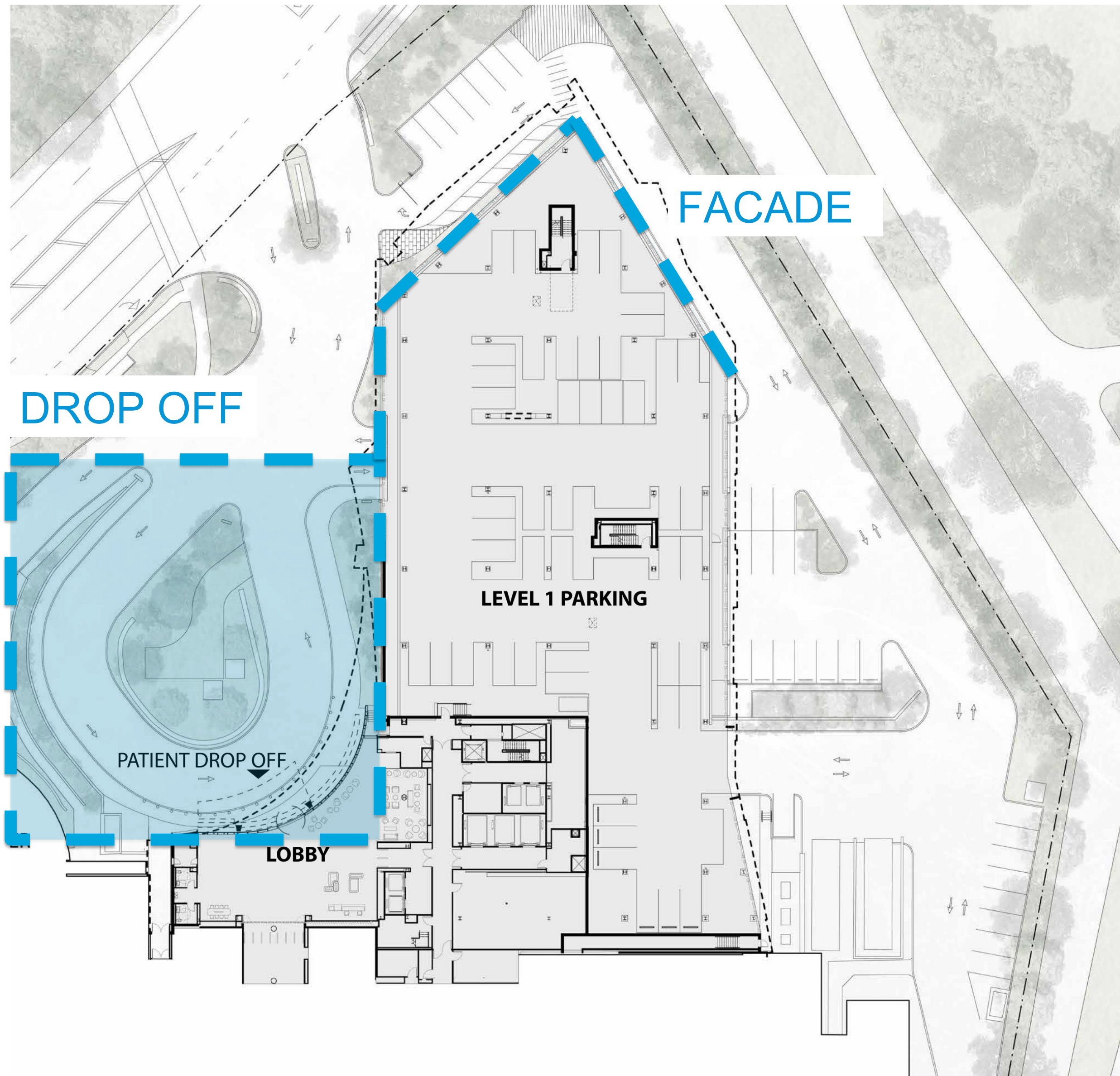
NORTHWELL HEALTH ADVANCED SURGICAL PAVILION

PROJECT INFO



DROP OFF AND FAÇADE STUDIES

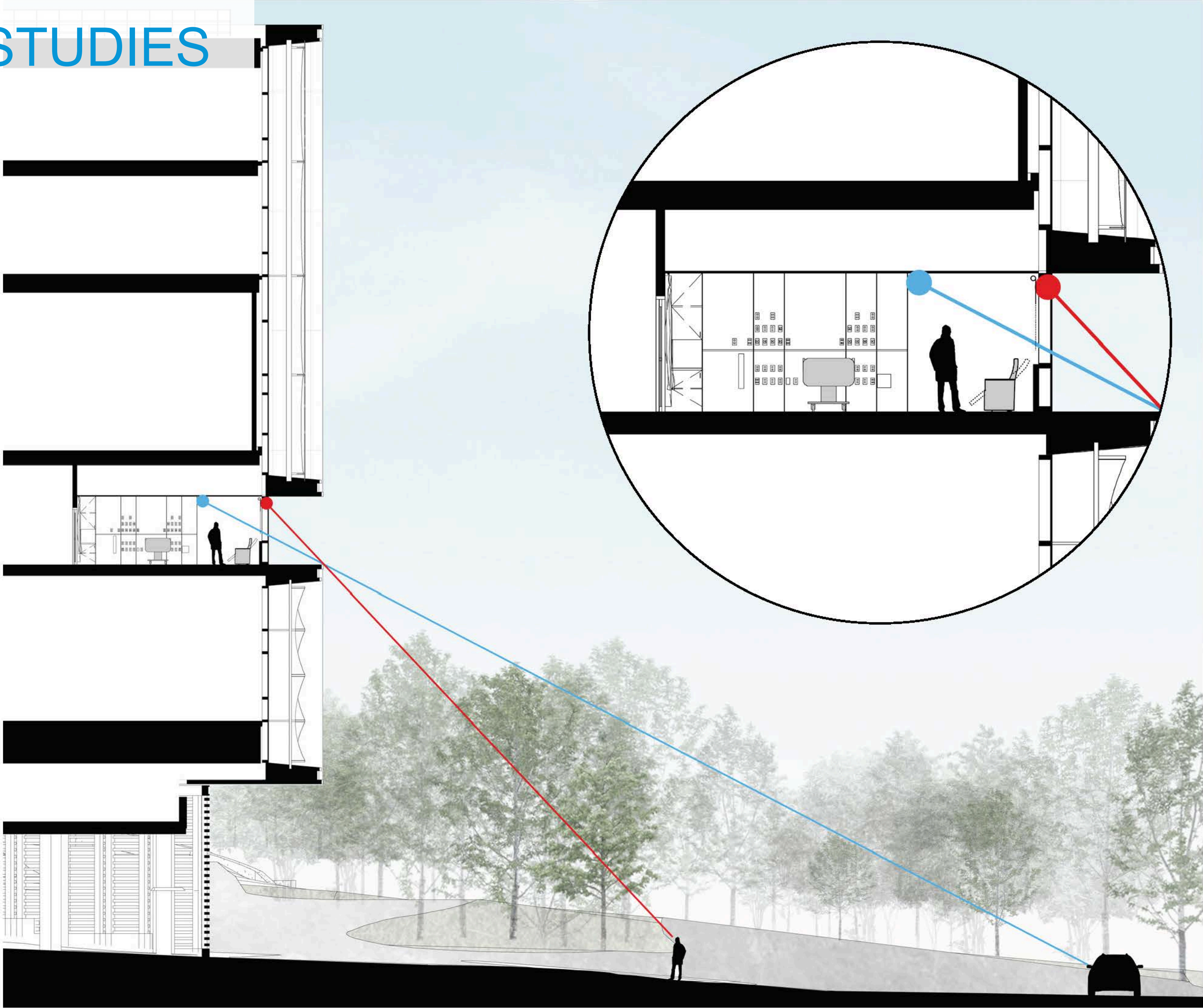
DROP OFF AND FAÇADE STUDIES



STUDIES

- PRIVACY
- VISIBILITY

SECTION STUDIES



VIEW QUALITY STUDIES

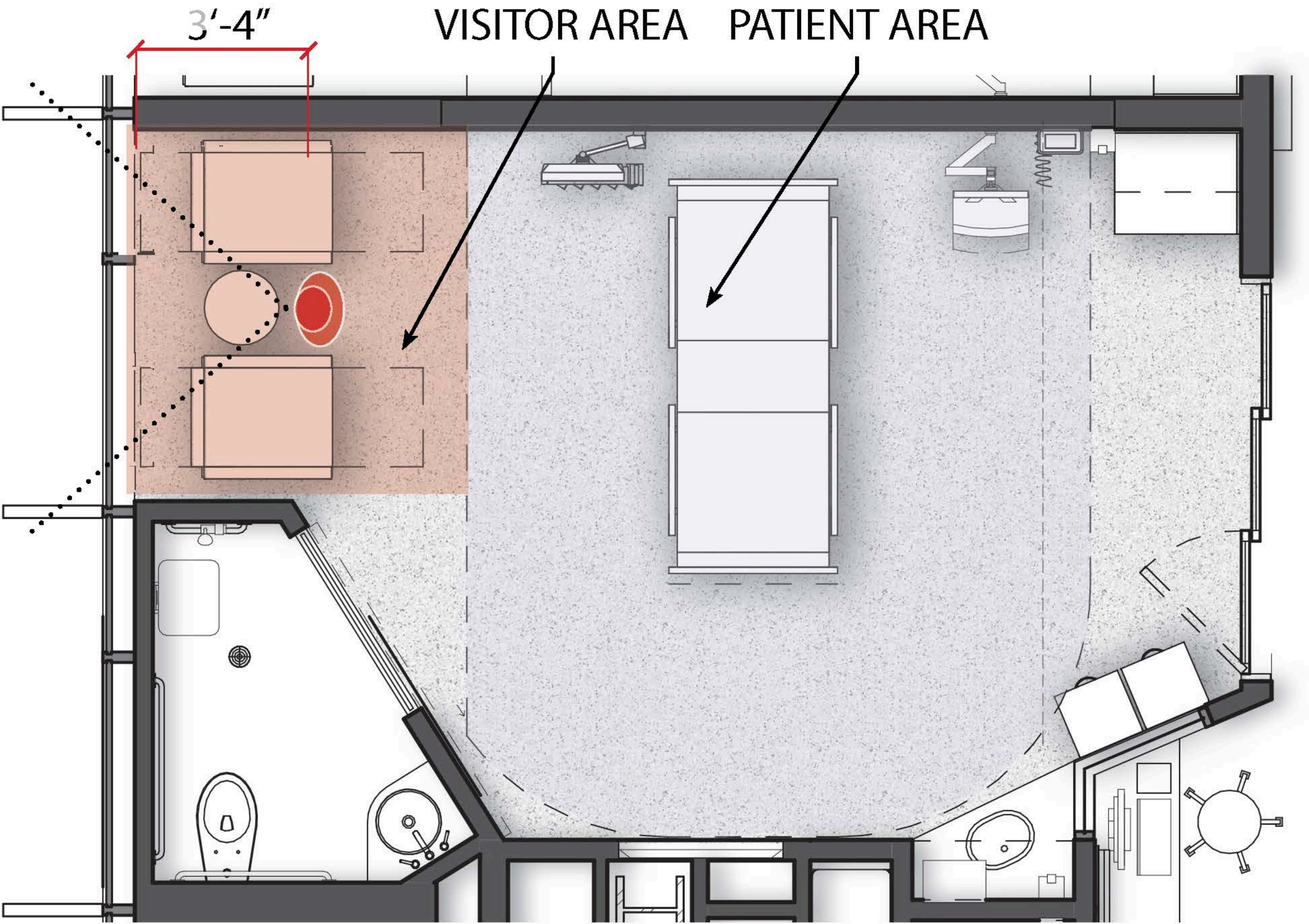
ARCHITECT SUGGESTS:



CLIENT ASKS FOR:



ICU ROOM PLAN



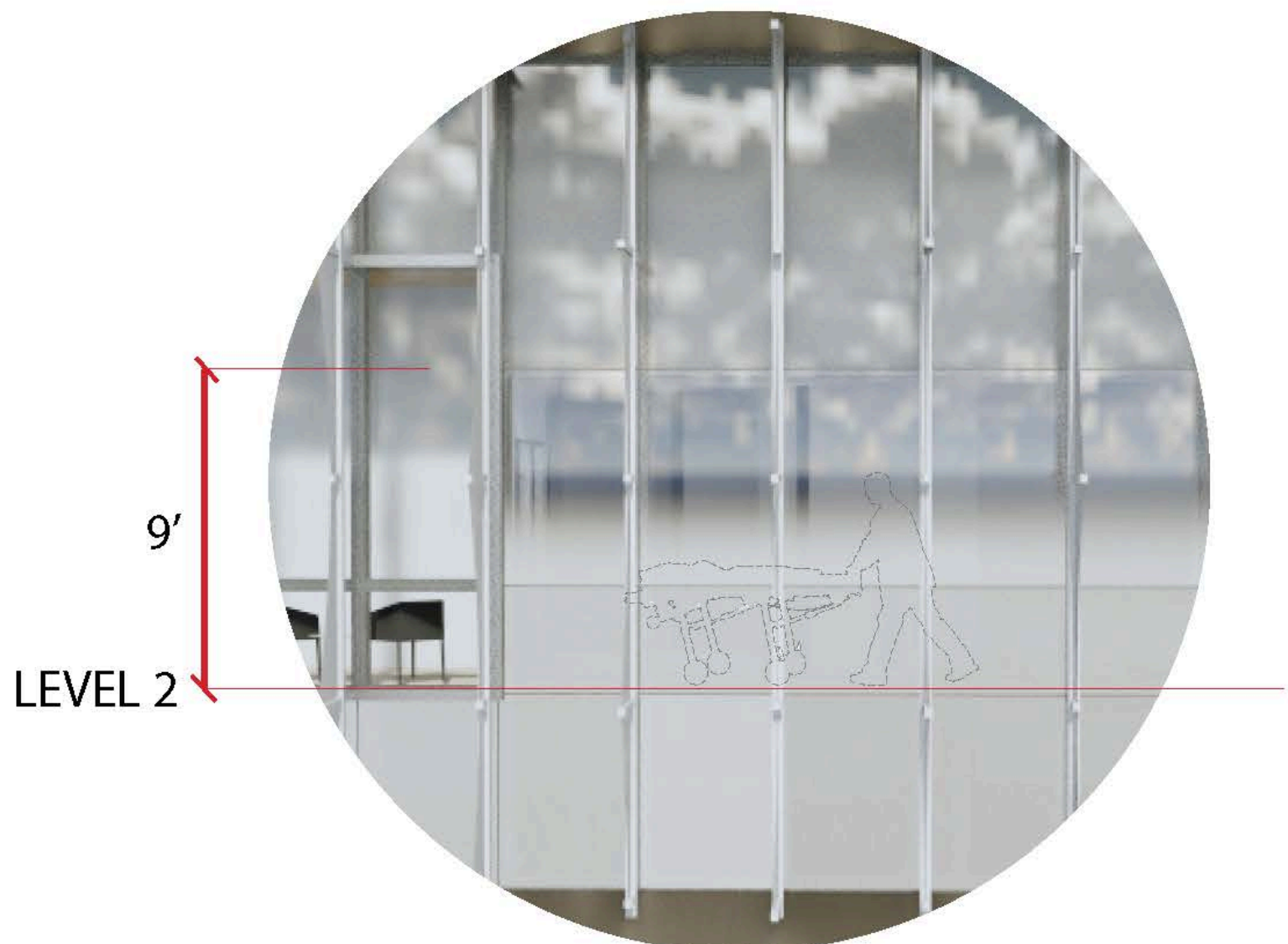
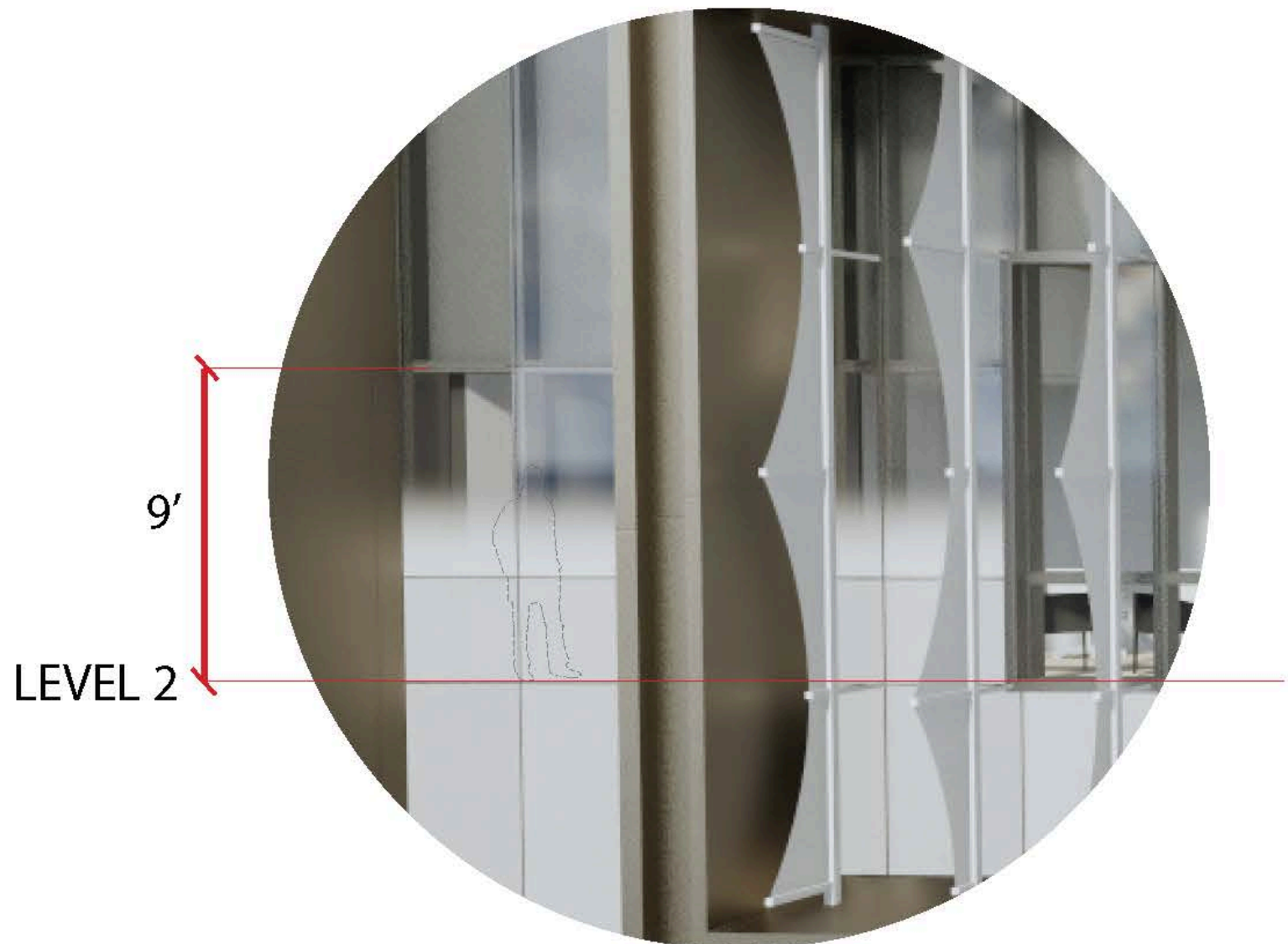
CLIENT VR MEETING



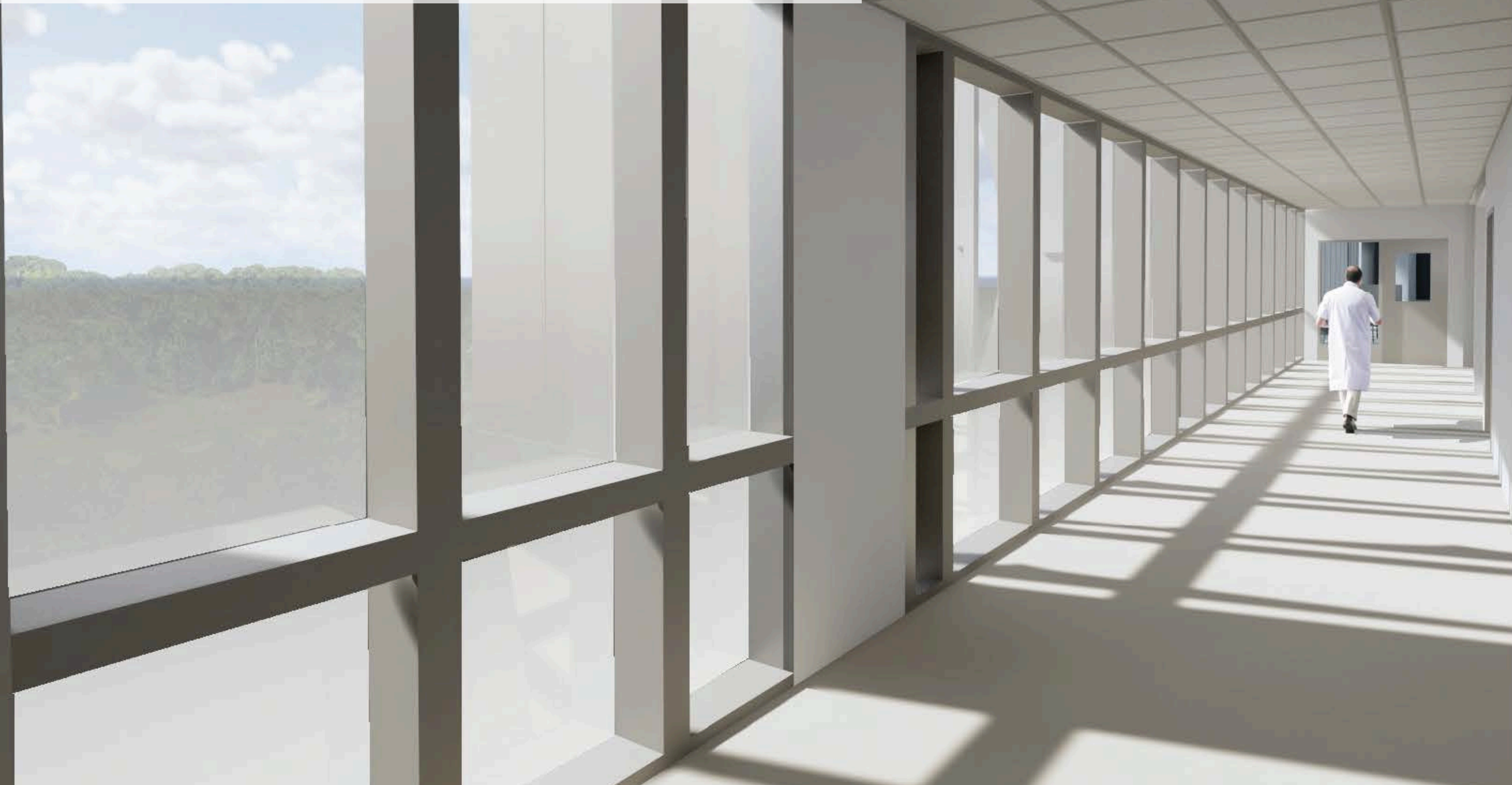
VR WALKTHROUGH – DROP OFF AREA



NORTH FAÇADE PRIVACY ADD-ONS



FRIT APPLICATION IN THE CORRIDOR

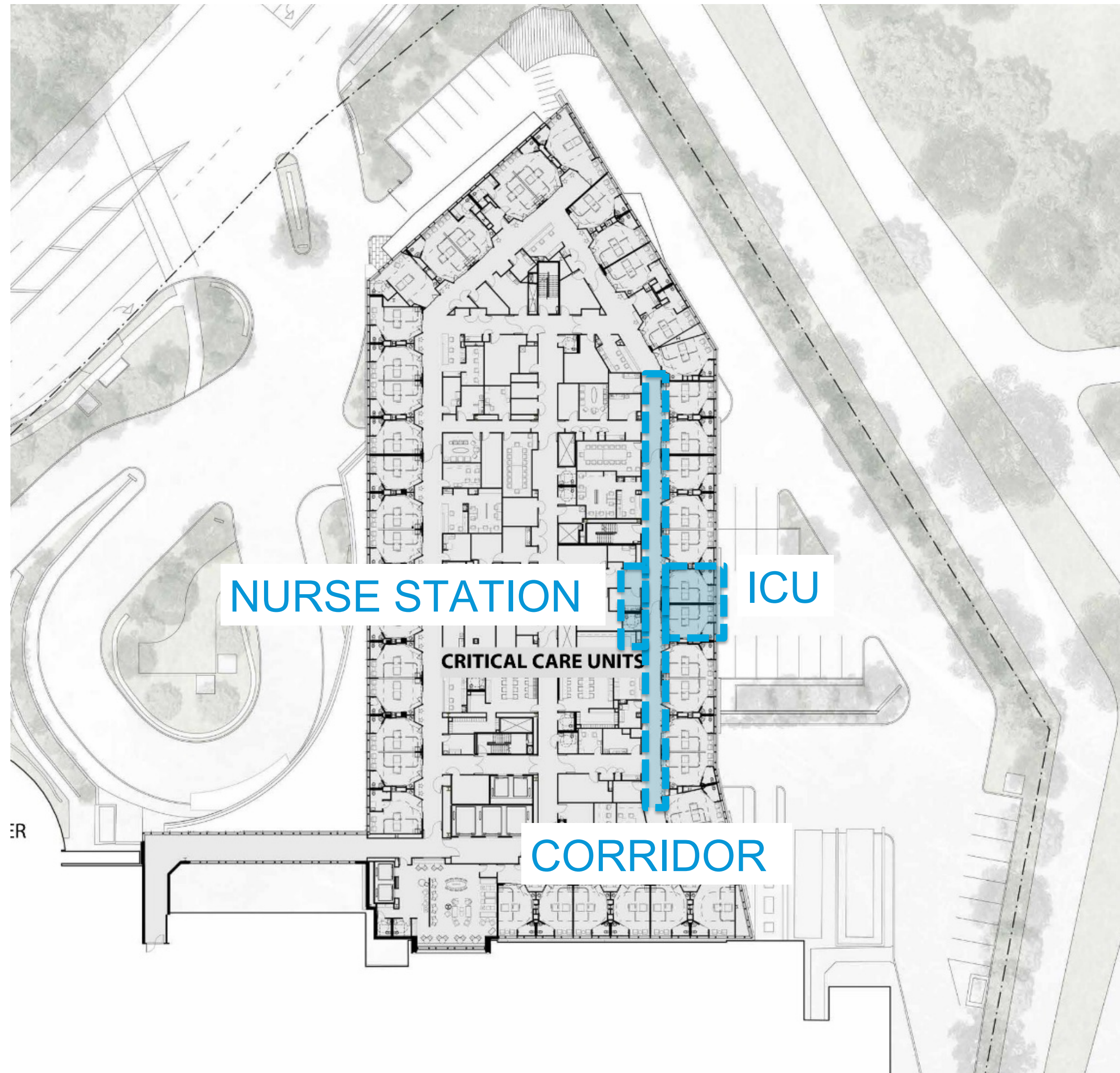


VR WALKTHROUGH – NORTH FACADE



INTENSIVE CARE UNITS (ICU)

INTENSIVE CARE UNITS (ICU)



STUDIES

- MATERIALITY
- NURSE STATION VISIBILITY
- CORRIDOR LENGTH

ICU ROOM PANAROMIC RENDERING – DD PHASE

Advanced Surgical Pavilion
ICU 41 - ENTER INTO ROOM

SHARE



ICU-SUBSTATION PANAROMIC RENDERING – DD PHASE



Advanced Surgical Pavilion
ICU 41 - NURSE SUBSTATION

SHARE



ICU ROOM PANAROMIC RENDERINGS – DD PHASE



ICU ROOM PANAROMIC RENDERING - DD PHASE - RAW



ICU ROOM PANAROMIC RENDERING - DD PHASE - **EDITED**



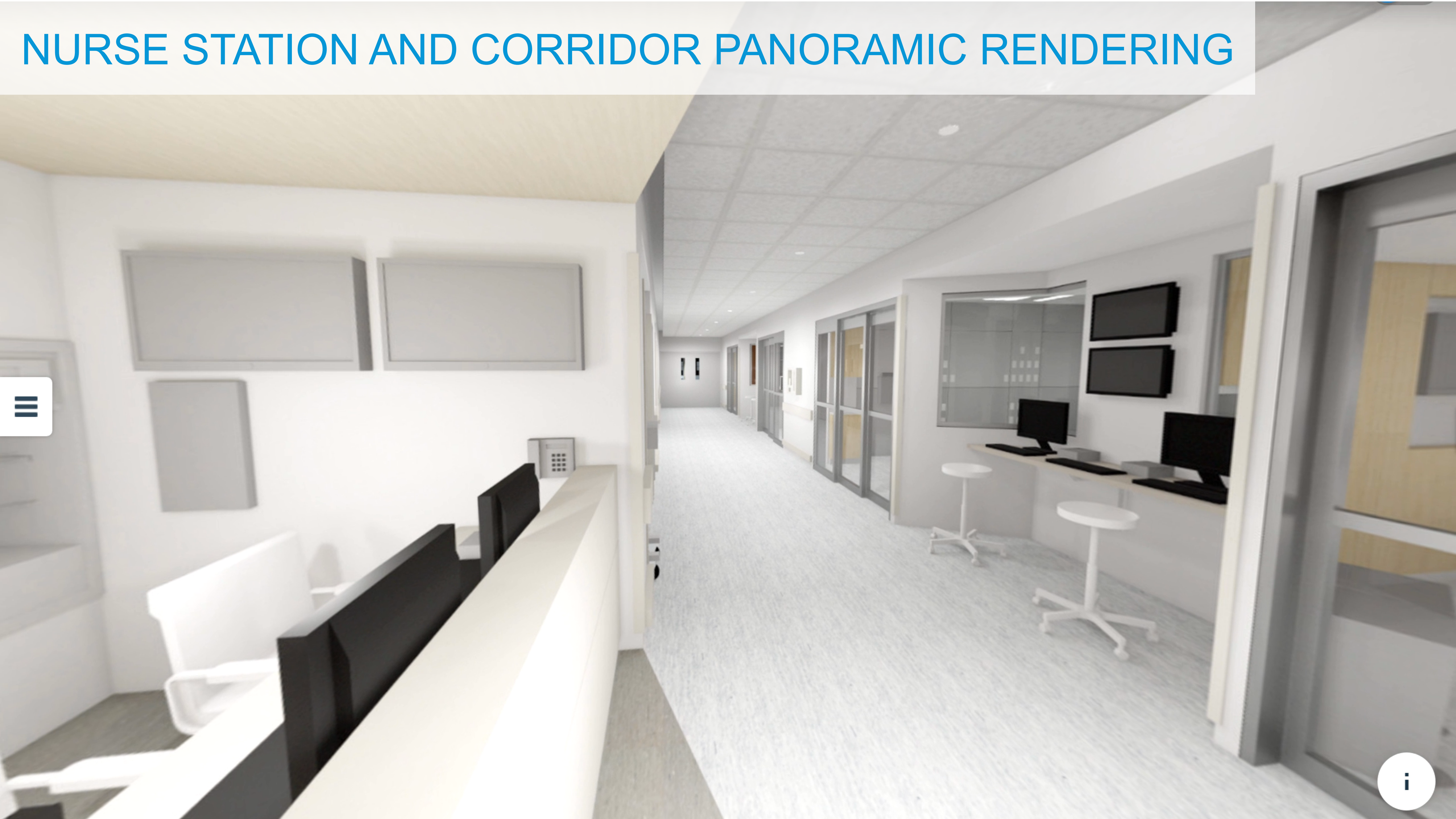
ICU ROOM PANAROMIC RENDERING - DD PHASE - EDITED



ICU ROOM PANAROMIC RENDERING – CD PHASE - **EDITED**

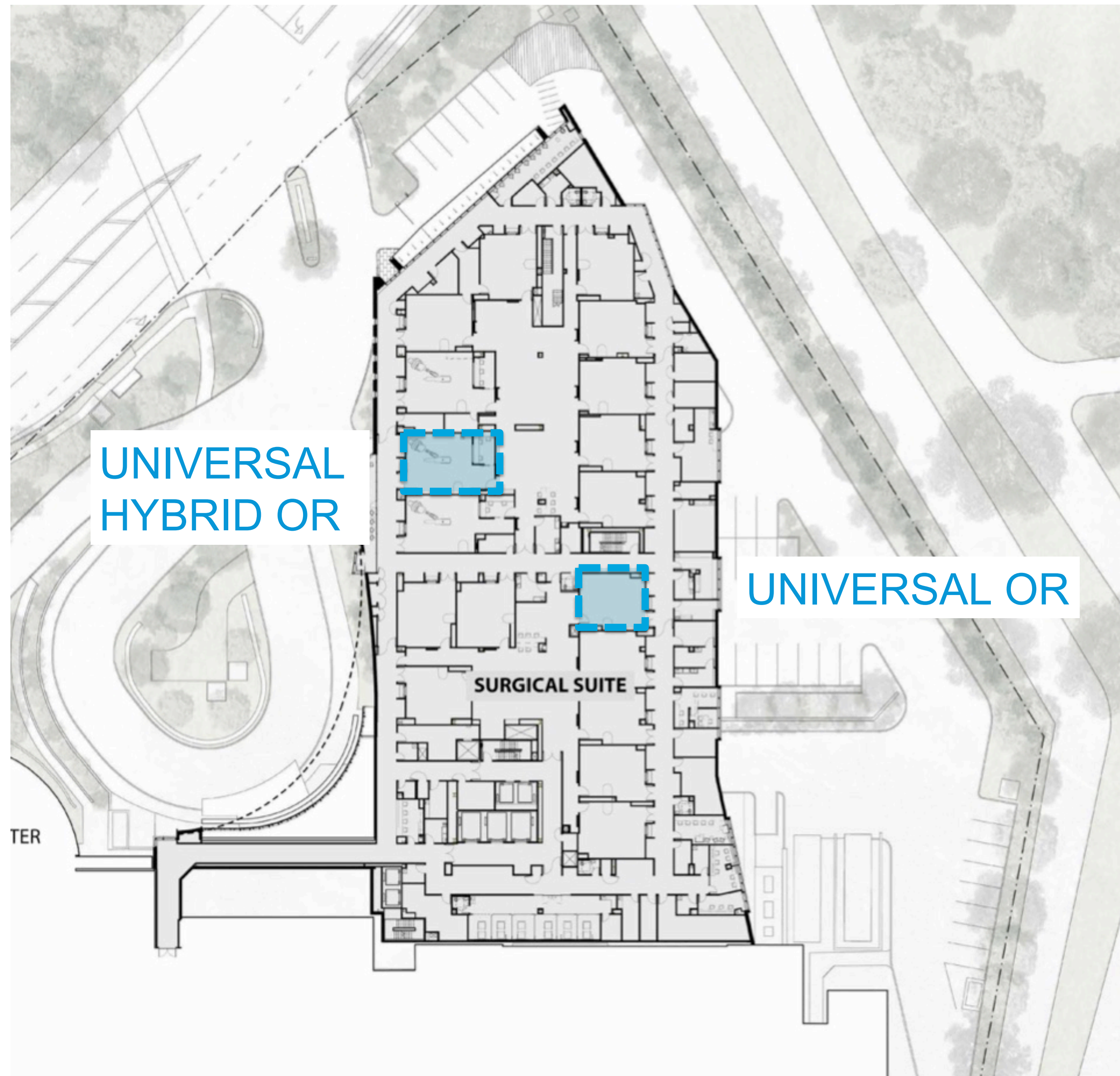


NURSE STATION AND CORRIDOR PANORAMIC RENDERING



OPERATING ROOMS (OR)

OPERATING ROOMS (OR)



STUDIES

- EQUIPMENT LOCATIONS FOR VARIOUS SERVICE LINES
- CONTROL ROOM VISUAL CONNECTION

OPERATING ROOM LAYOUT FOR SPINE CASE



Advanced Surgical Pavilion
OR 8 - SPINE - FROM NURSE DESK

SHARE



OPERATING ROOM LAYOUT FOR CARDIAC



HYBRID OPERATING ROOM LAYOUT OPTIONS



NEURO



VASCULAR

HYBRID OPERATING ROOM LAYOUT OPTIONS



NEURO



VASCULAR

HYBRID OPERATING ROOM LAYOUT OPTIONS



NEURO



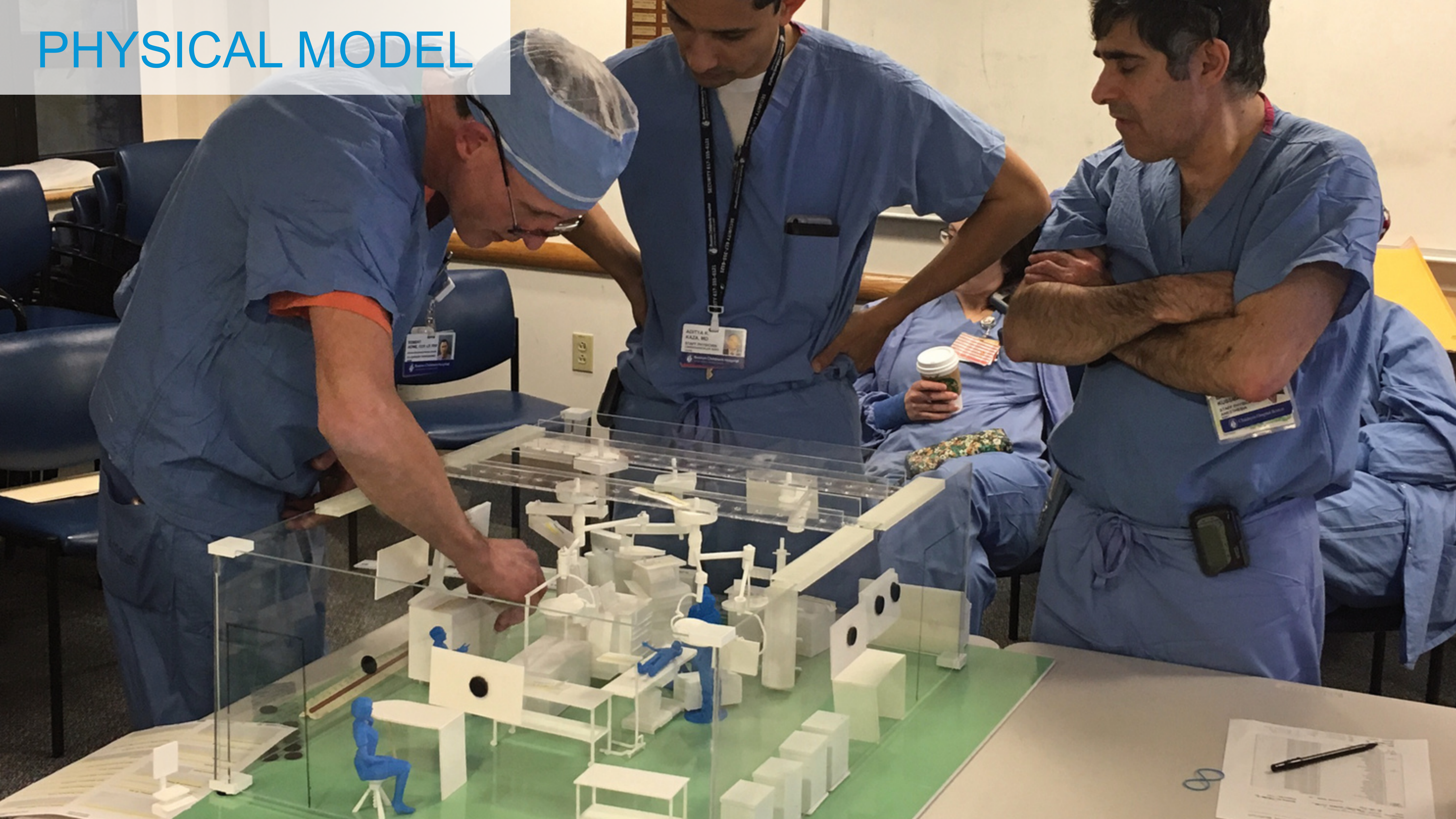
VASCULAR

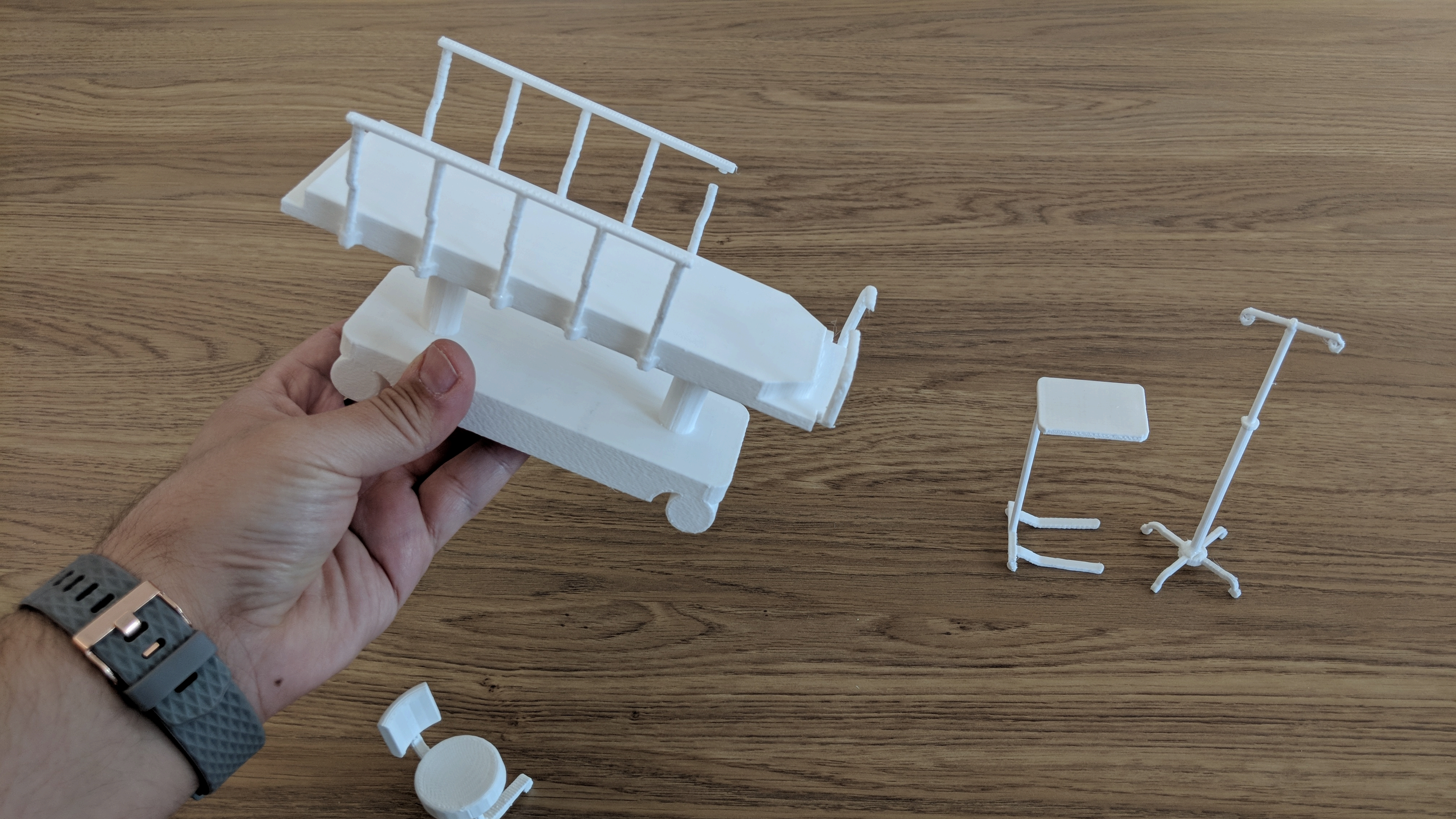
MULTI USER AND INTERACTIVE VR





PHYSICAL MODEL







MOCK UP



User Calibration

Stand up and press calibrate to
continue

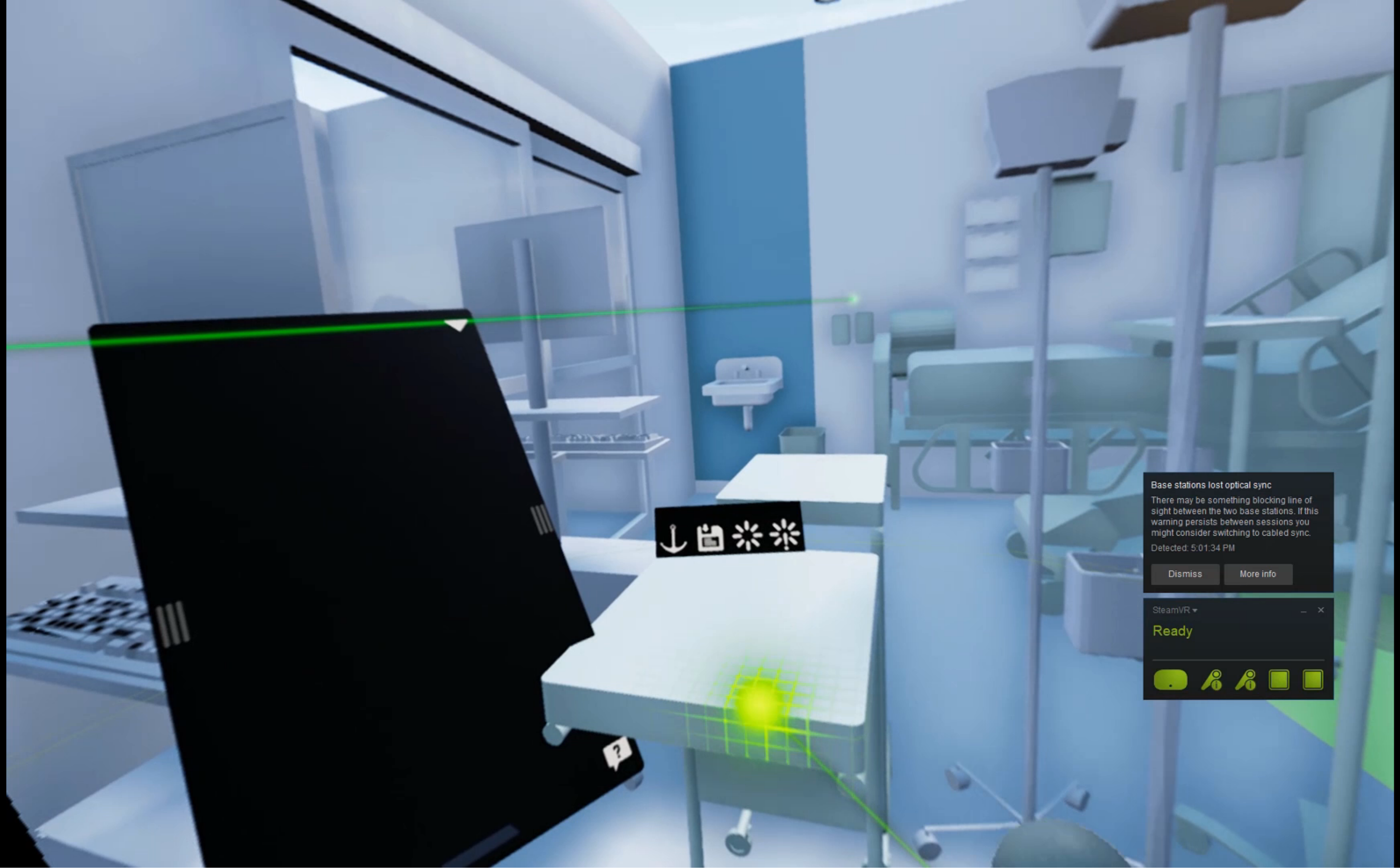


SteamVR

Ready

NVIDIA® Holodeck

A row of five small, semi-transparent icons: a VR headset, a person icon, a person icon, a square icon, and a square icon.



Base stations lost optical sync

There may be something blocking line of sight between the two base stations. If this warning persists between sessions you might consider switching to cabled sync.

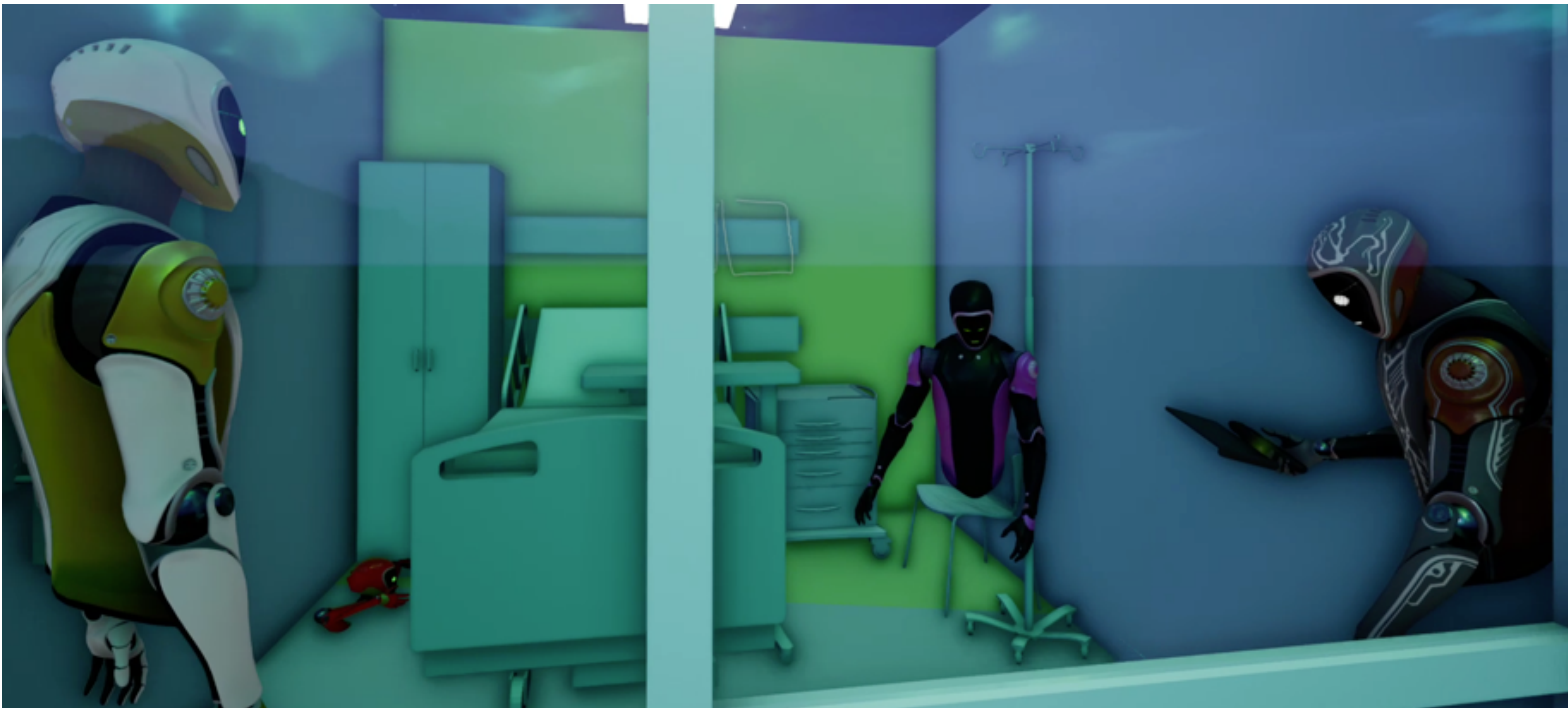
Detected: 5:01:34 PM

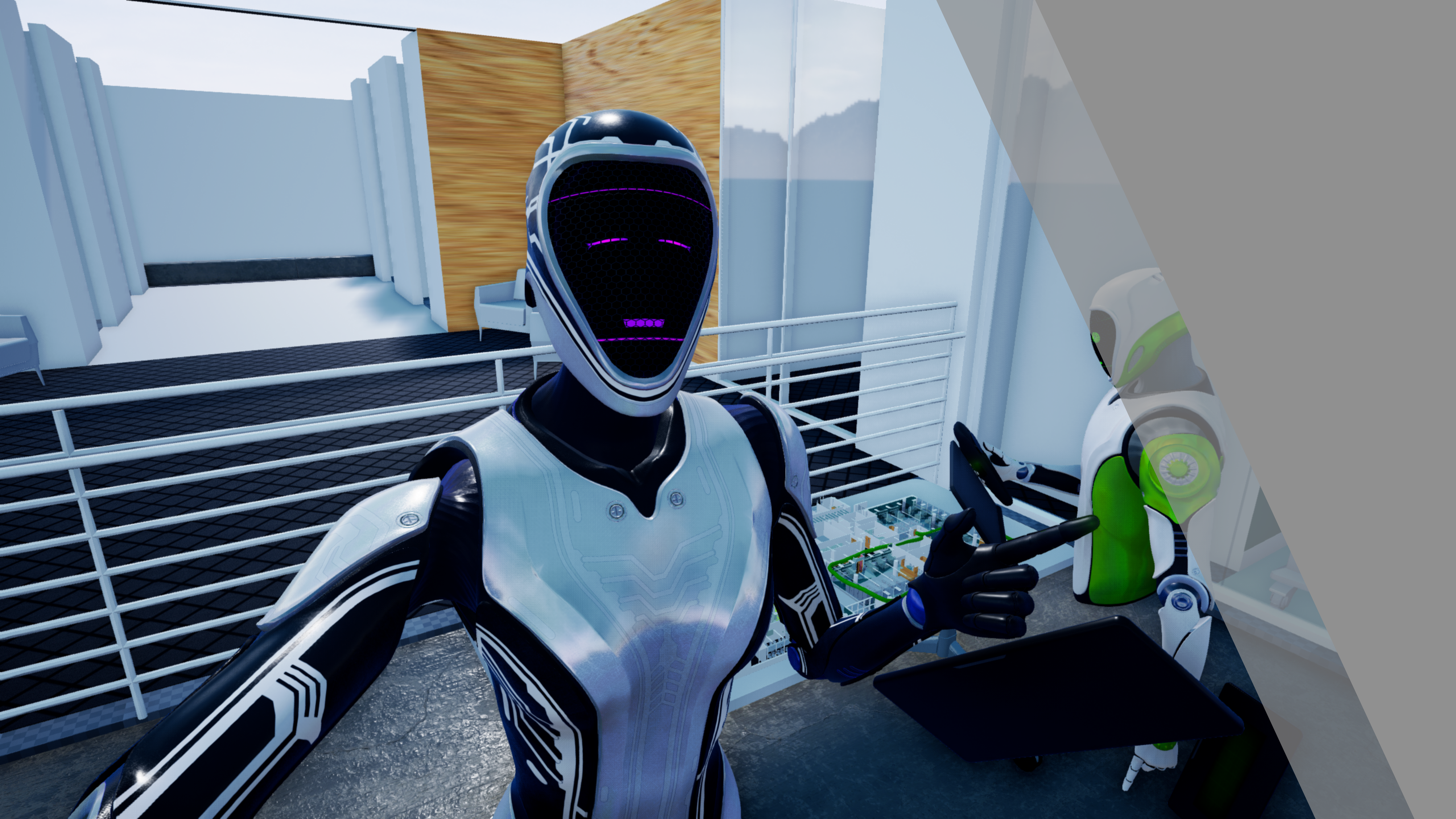
Dismiss More info

SteamVR

Ready

VR icons





Q & A

Aysu Unal

Architectural Designer @CannonDesign

aunal@cannondesign.com

