

SESSION #E87

8-9AM | November 14, 2017

» **INTENT**

IMPACT «

Tying Strategy to Outcome in the Built Environment

Sheryl Valentine

RN, BSN, MBB, MBA, MBOE,
Lean Six Sigma Deployment
Leader

Kate Renner

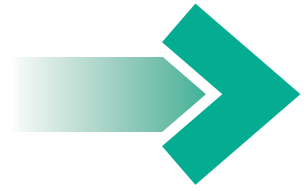
AIA, EDAC, LSSCE,
LEED AP BD+C

Lindsay Todd

Associate AIA, EDAC

Rebecca Soja

Associate AIA, WELL AP



CONTINUING **EDUCATION**

ARCHITECTS:

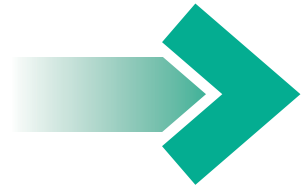
Have your conference badge scanned by the room monitor at the start of each session you attend. Complete the AIA verification form (be sure to check off the sessions you attend) and retain it for your records. CE credits will be uploaded to the AIA transcript system within 6-8 weeks of the close of the conference.

INTERIOR DESIGNERS:

Have your IDCEC verification form STAMPED by the room monitor at the start of each session you attend. This is the ONLY proof of attendance that will be accepted. You will self-submit your credits to the IDCEC system at the conclusion of the conference. If you have questions about reporting your credits, contact the interior design association that is responsible for monitoring mandatory continuing education to fulfill membership requirements.

EDAC:

Complete the EDAC verification form and retain it for your records. You will self-submit your CE credits to Castle Worldwide at the time of your EDAC renewal. Renewal notices with login instructions will be sent from Castle Worldwide six months and three months prior to the candidate's renewal date. The verification form is your proof of attendance in case of an audit.



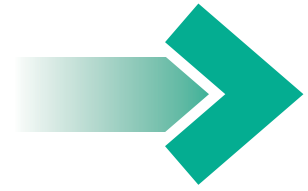
SESSION **EVALUATIONS**

SESSION EVALUATION – HCD MOBILE APP

All session evaluations will be done through the new HCD Mobile App. If you have not done so already please download the app through your device's app store. If you have any questions or need assistance please visit the help desk.

INDIVIDUAL SESSION EVALUATION INSTRUCTIONS

- On the home screen, click **Show Schedule**
- Find the session you are attending
- After selecting an individual session, a navigation bar will appear on the left. Click the clipboard icon and evaluation/survey will begin.



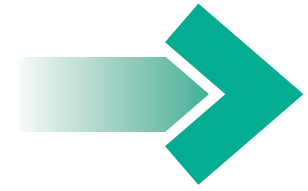
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(**@HCDCON**)

USE **#HCDCON**

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(**WWW.FACEBOOK.COM/HEALTHCAREDESIGNMAG**)

TELL US SOMETHING YOU'VE LEARNED OR A
UNIQUE PRODUCT YOU'VE SEEN AT THIS YEAR'S
HEALTHCARE DESIGN EXPO & CONFERENCE.



LEARNING OBJECTIVES

participants will...

1

understand the importance and benefits of **defining, documenting, and reporting meaningful metrics** from 'day zero'.

2

define the **steps of the Intent to Impact process** as it correlates with the design process (concept, SD, DD, CD, CA, post-occupancy).

3

explore the **key findings and lessons learned** from Akron Children's Hospital Kay Jewelers Pavilion.

4

integrate and apply the Intent to Impact approach to the design process of future projects.

.....

How do we design
responsibly and leave
the world **better**
than how we found it?

.....

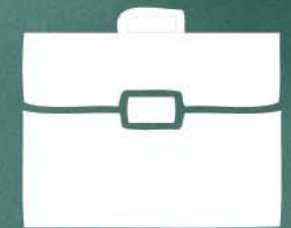
BETTER



people &
communities

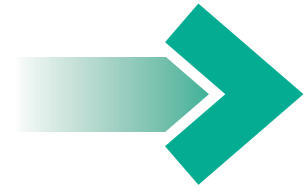


earth &
environments



organizations
& economies

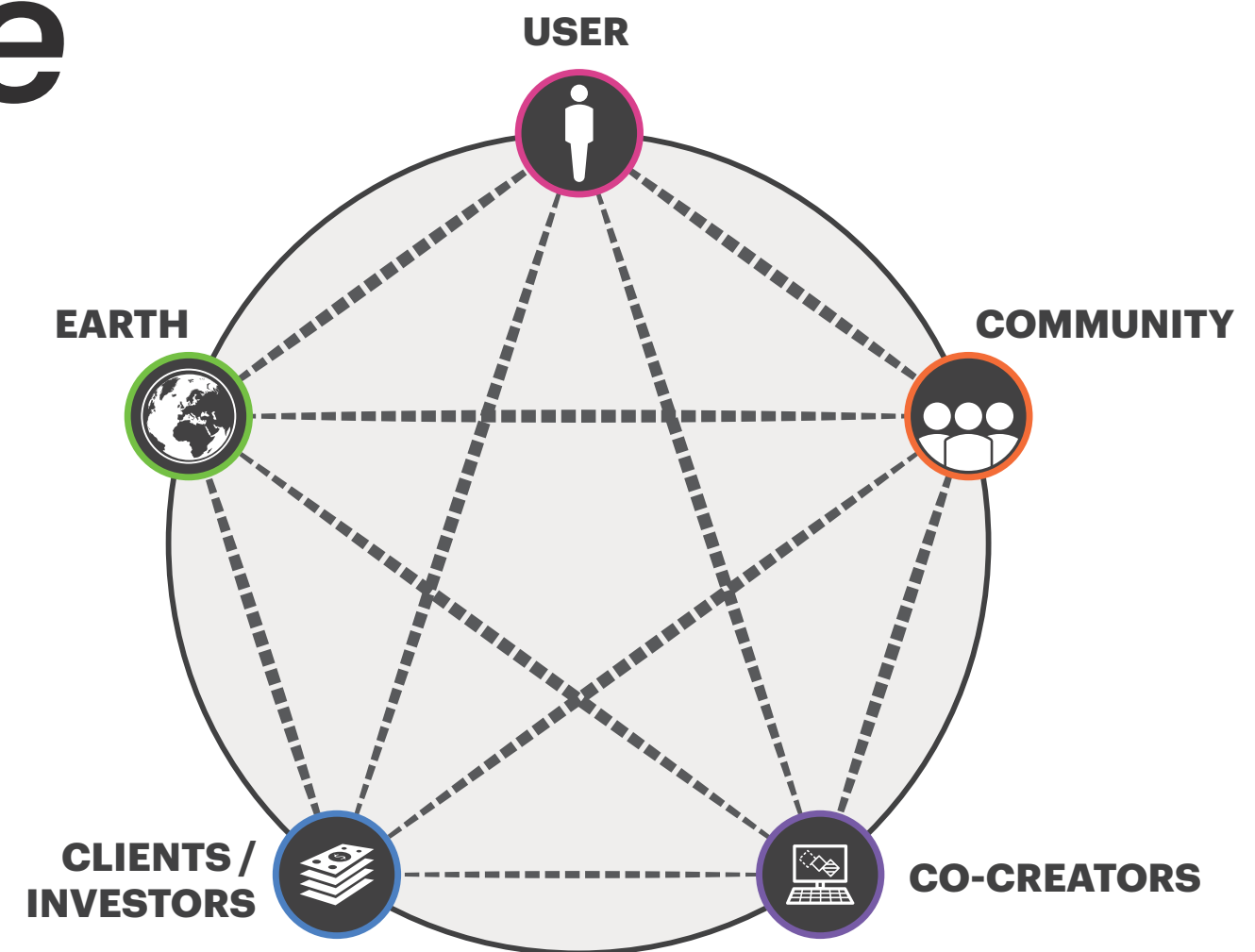
*integrate beauty & performance for
systemic wellbeing*

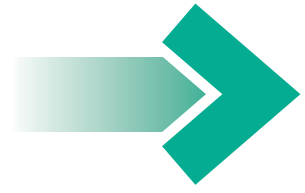


KEY STAKEHOLDERS

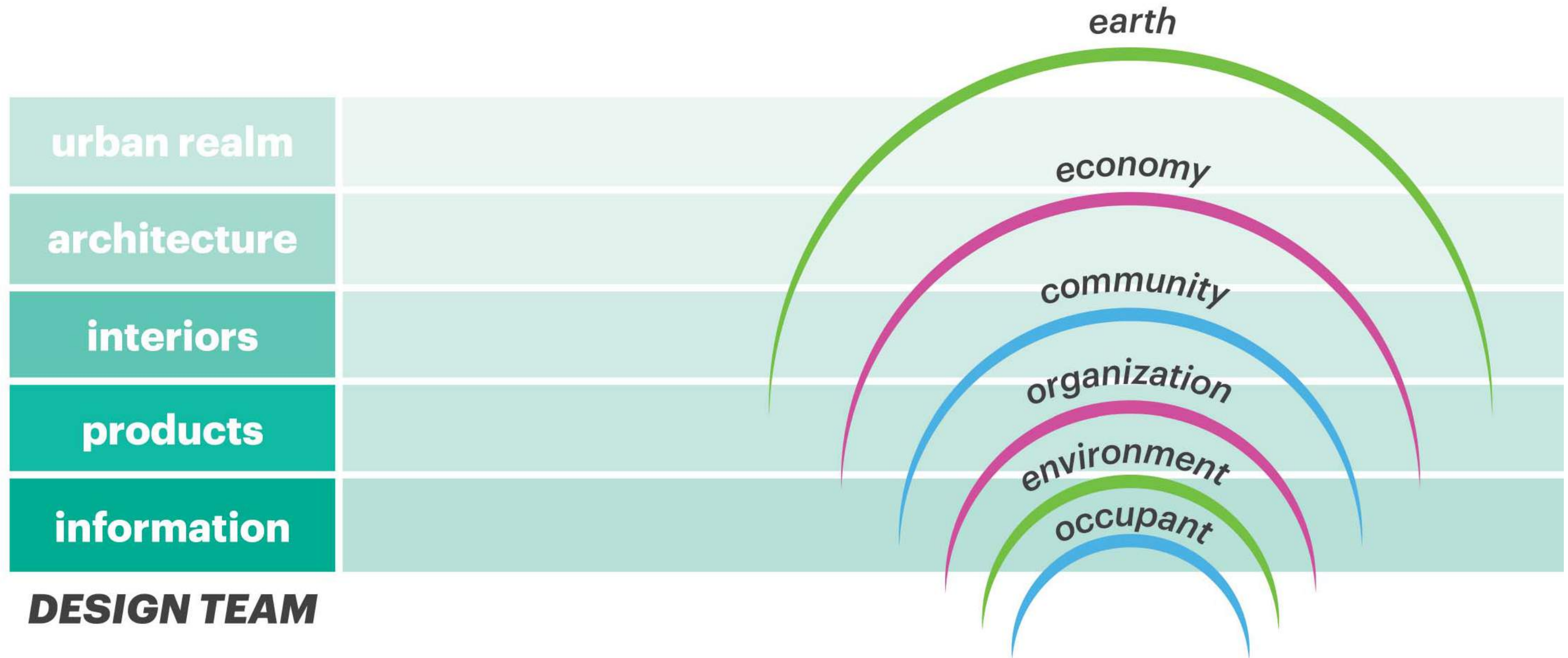
*responsible
& holistic*

RESPONSIBLE DESIGN
ECOSYSTEM ➔





SCALAR ECOSYSTEMS



UNOBTRUSIVE DATA + OTHER DATA SOURCES

data that is already being collected by designers, clients, the industry...

examples of **COMMON METRICS**



DESIGN TEAM

BIM / Revit Data
Construction Data
Energy Model Data
Parametric Analysis
Project Management Data

CLIENTS

HR Data
Insurance Data
Public Health Data
Performance Dashboards
Market Analysis



IMPACT

*where meaning &
measures overlap*



.....
just because it is
measurable does not
make it meaningful.

.....
just because it is **NOT**
measurable does not
take away the meaning.

.....
IMPACT is where
meaning and measure
overlap.

HOW DO WE TIE DESIGN STRATEGIES TO ANTICIPATED OUTCOMES?



INTENT



***articulate design purpose and impact potential** by identifying areas of the project to **prioritize** based on rationales such as return on investment, evidence-based research, user feedback, precedents or best practices, and code or certification requirements; consider all stakeholders and systemic wellbeing / responsible design*

***constantly record intent** and why design decisions were made throughout and reference that documentation*



DEFINE

PRE-DESIGN



DESIGN

CONCEPT

SCHEMATIC
DESIGN

DESIGN
DEVELOP.



DELIVER

CONSTRUC.
DOCUM.






CONSTRUC.
ADMIN.

OCCUPANCY

// EXAMPLE



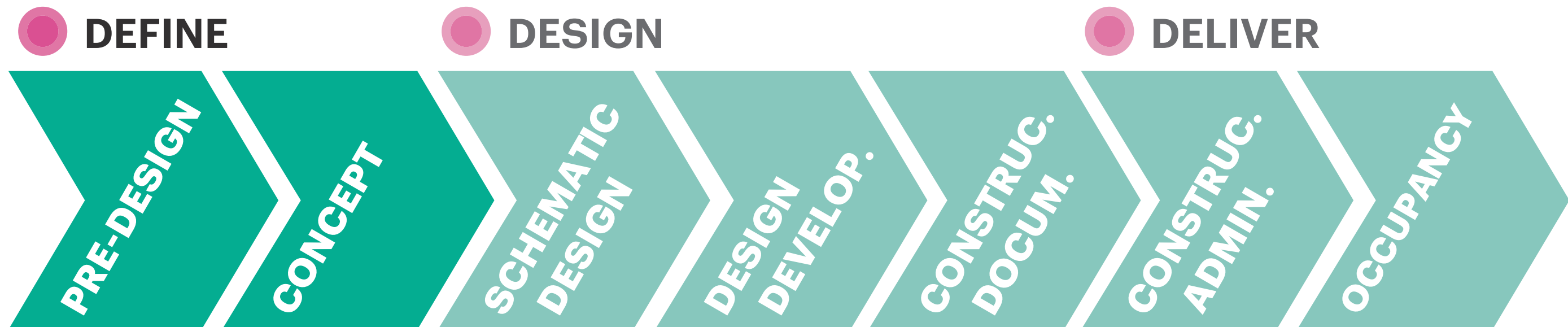
GOAL SETTING

	GOAL	METRIC	OUTCOME
 USER	Improve comfort in family waiting areas	HCAHPS	Family Satisfaction
 CLIENT / INVESTOR	Owner move-in / substantial completion ahead of schedule	Calendar Days + Revenue	Cost Savings + Profit
 COMMUNITY	Provide public green space with walking pathways	Obesity Rates	Public Health
 EARTH	energy usage XX% below the national average	EUI	Reduce Energy / Fuel Consumption
 CO-CREATORS	Highly effective and collaborative team	Pulse Point Check Surveys	Project Team Satisfaction

DEFINE



collect existing / current organizational, systemic, and site data or other **baseline information** to help establish goals, targets, and baselines to achieve (and later compare with) post-occupancy results



// EXAMPLE INTENT DOCUMENT



SPLIT FLOW

- Vertical patients (healthier) separated from Horizontal patients (sicker) for quick turnover
- Flexible examination spaces

BEDSIDE DISCHARGE

- Patient to receive medication, consultation, education, scheduling of follow-up appointments and arrangement of any valet services before leaving the patient room.
- Mobile pay or Auto-draft payment setup for services
- PRO - Specialized attention in the comfort of patient room
- CON - Increased Length of Stay

ADVANCED / VIRTUAL CHECK-IN

- Pre-registration online or by phone; registration wristband, parking map, etc. mailed or patient or sent by email. Wristband / barcode scanned upon entry notifying hospital that patient has arrived and how to be greeted / directed
- PRO - Customer friendly atmosphere
- CON - Reprinting of information for patients that don't bring / can't access registration materials

SELF CHECK-IN KIOSK

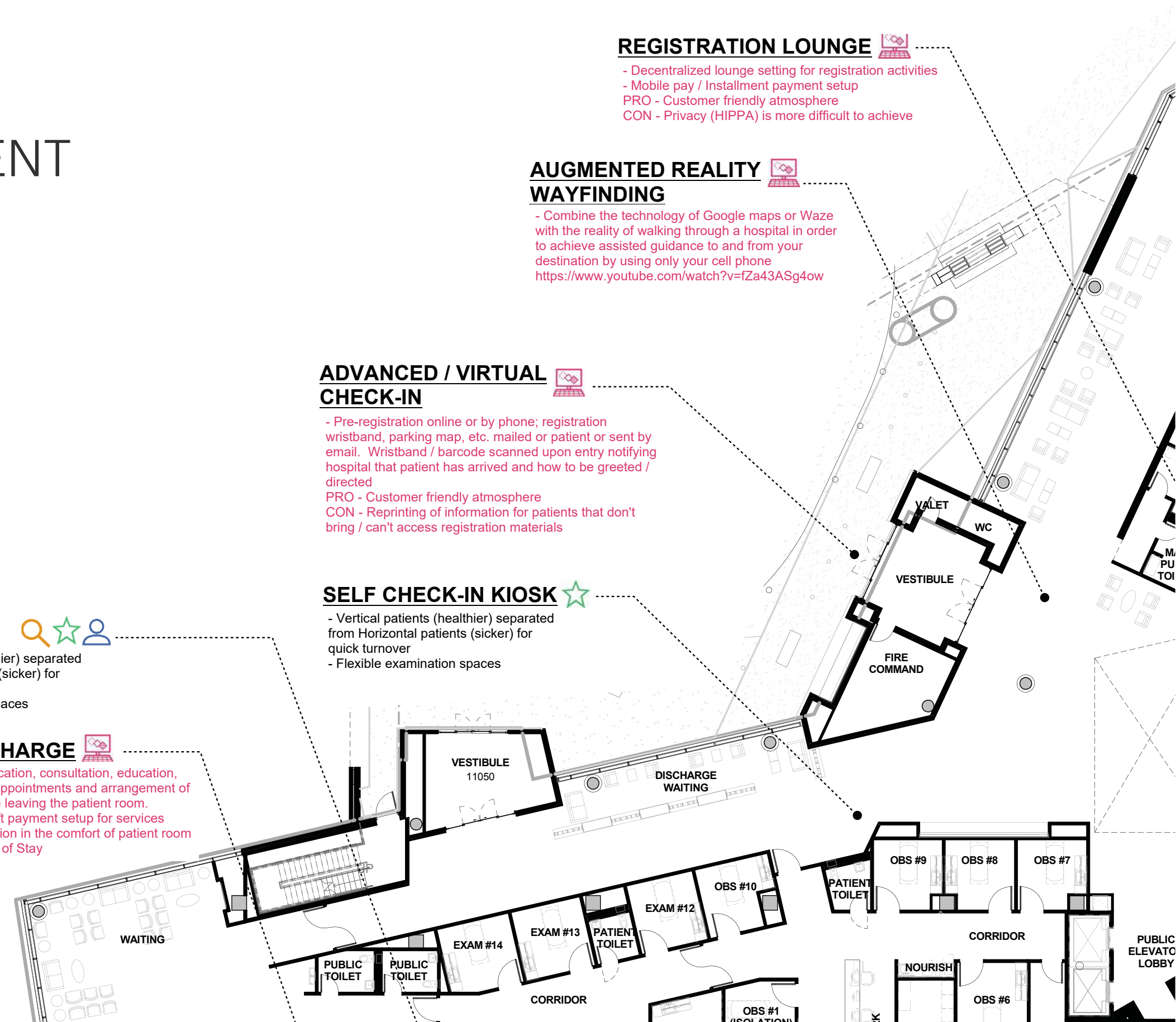
- Vertical patients (healthier) separated from Horizontal patients (sicker) for quick turnover
- Flexible examination spaces

REGISTRATION LOUNGE

- Decentralized lounge setting for registration activities
- Mobile pay / Installment payment setup
- PRO - Customer friendly atmosphere
- CON - Privacy (HIPPA) is more difficult to achieve

AUGMENTED REALITY WAYFINDING

- Combine the technology of Google maps or Waze with the reality of walking through a hospital in order to achieve assisted guidance to and from your destination by using only your cell phone
- <https://www.youtube.com/watch?v=fZa43ASg4ow>



DESIGN

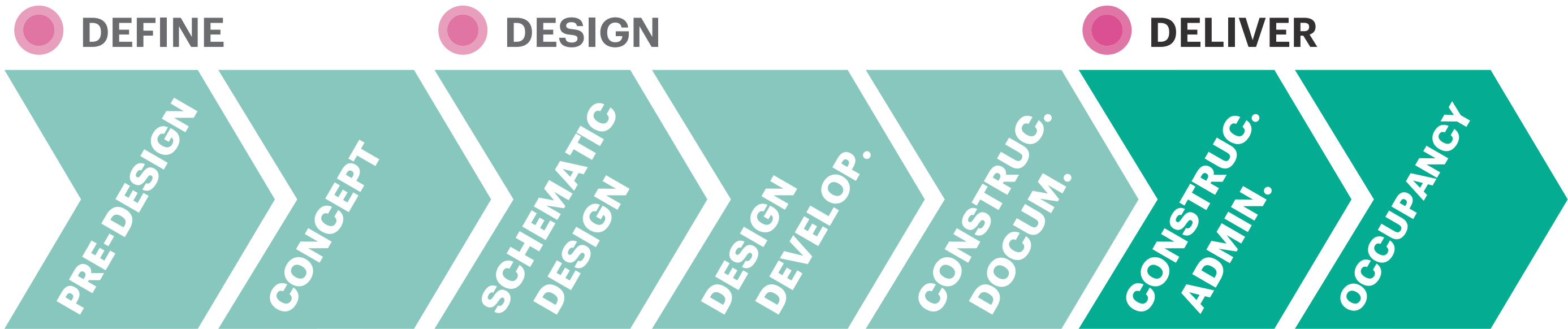


through research and studies, **discover strategies linked to certain outcomes and protect the design intent** by using supporting evidence and tracking / testing certain metrics with various tools and integrative or collaborative efforts as the design develops



DELIVER

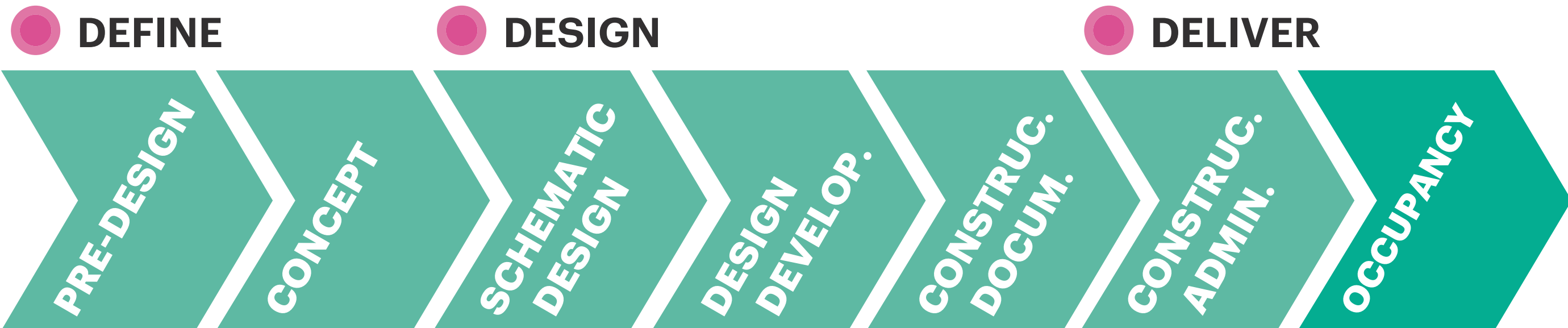
supervise and monitor the construction delivery of the project to ensure that design strategies or policies are built and executed in accordance with original design intents and specifications



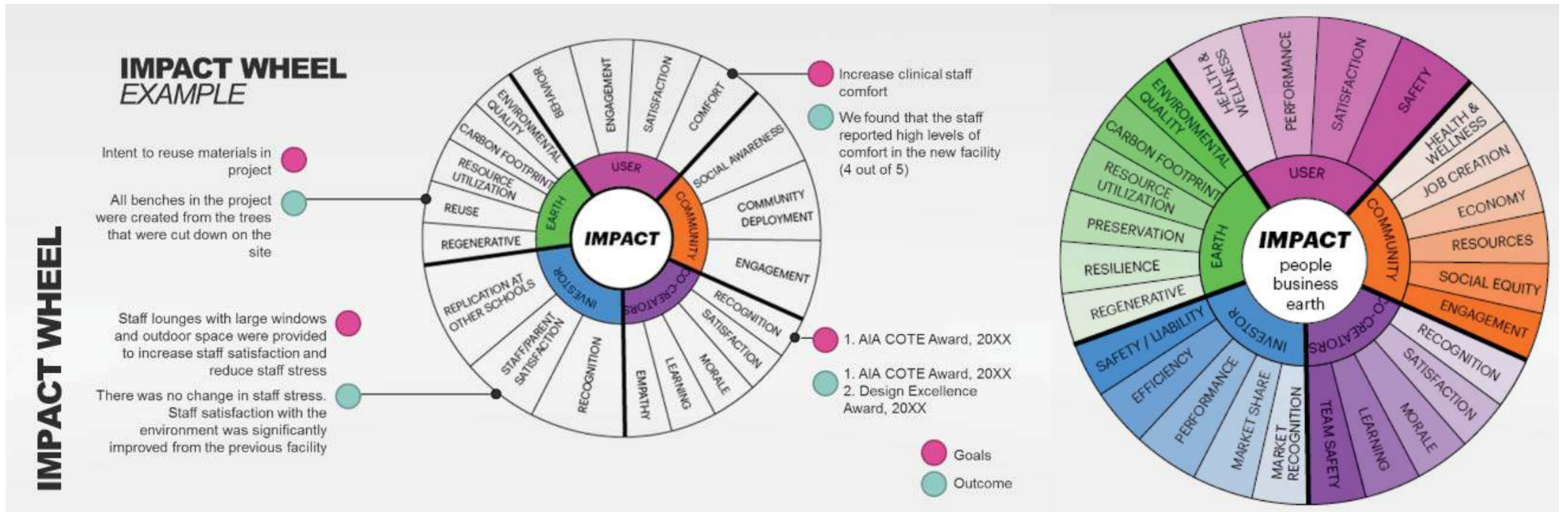
IMPACT



routinely collect data and conduct performance evaluations post-occupancy to continue recording meaningful metrics that measure how well the project meets anticipated outcomes; if the project is under-performing, or as technologies, care models, or trends evolve, devise and implement strategies for **continuous improvement**



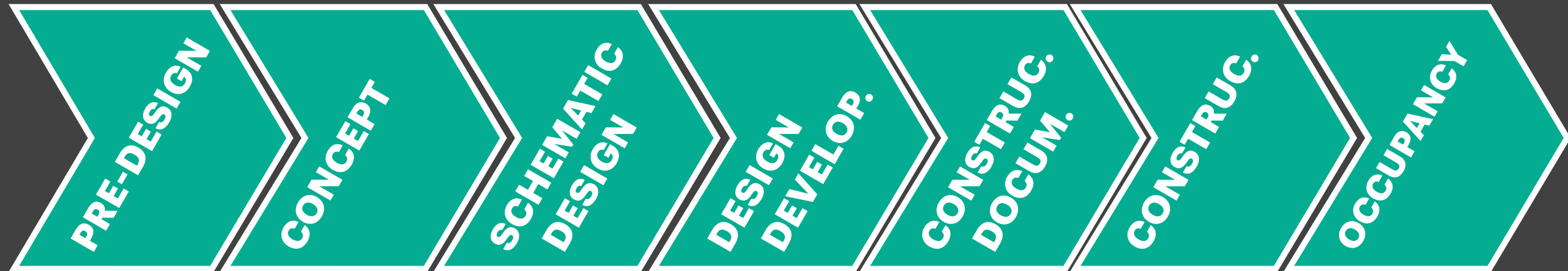
// EXAMPLE IMPACT REPORT



● DEFINE

● DESIGN

● DELIVER



.....
every project has GOALS
metrics exist for EVERY goal

*establishing and recording
baselines, targets, and
intent* begins on... **DAY 0.**

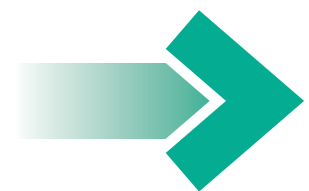


We can have no
meaningful impact
without clearly articulated
and ***informed intent.***



// CASE STUDY

AKRON CHILDREN'S HOSPITAL KAY JEWELERS PAVILION



MISSION

“BUILDING ON THE PROMISE”

AKRON CHILDREN’S FOUNDING PROMISES:

To treat others as we would like to be treated.







To care for every child as we would our own.

To turn no child away for any reason.

VISION & GUIDING PRINCIPLES

key guiding principles:

We intend to create a place that...

-  is **distinctive** and serves as a beacon to the **community**.
-  is **safe** and **comforting** in the eyes of a **child, parent,** and **staff member**.
-  has a respectful connection to the **natural environment**.
-  is playful and engages the **imagination**.
-  inspires **confidence** and **hope**.
-  **builds on the promise** to serve the needs of the community and never turn a child or family away.

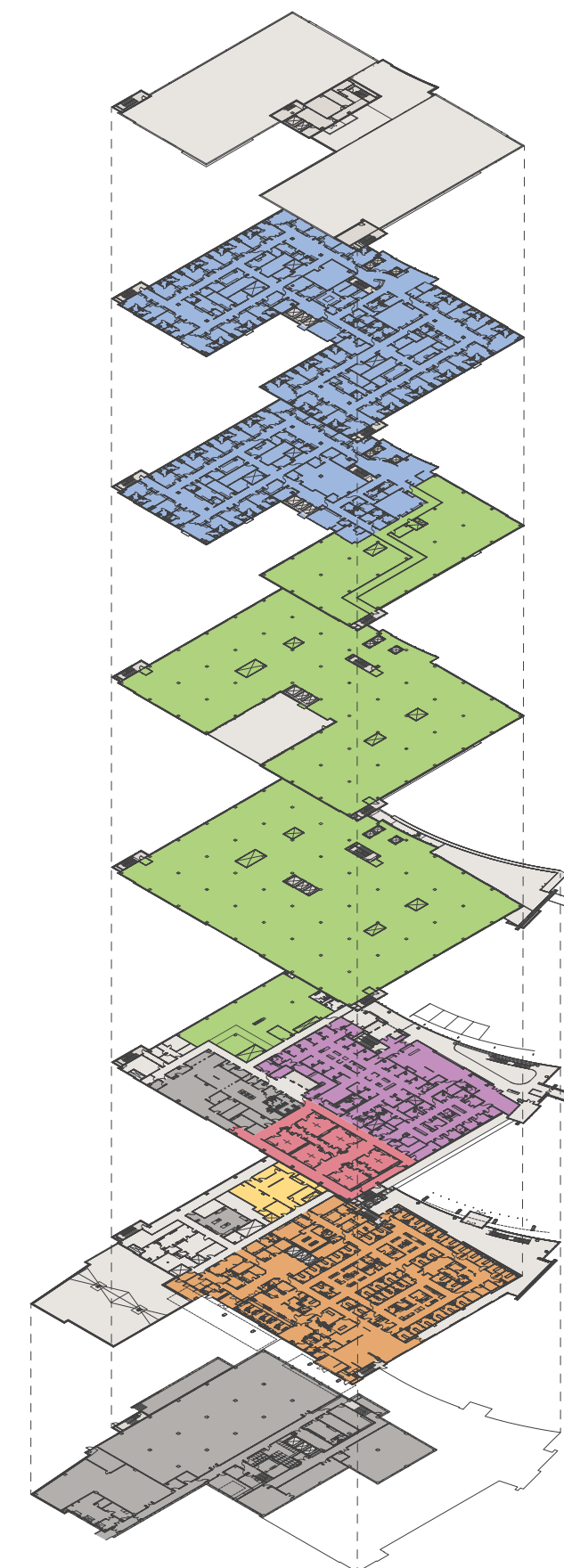


PROJECT BACKGROUND

Location	AKRON, OHIO
Type	CRITICAL CARE TOWER
Scope	368,000 SF 75-bed NICU, 39-bay Emergency Department, Special Delivery Unit, Outpatient Surgery Center with 6 Operating Rooms, & Support Services
Opened	MAY 2015
LEED	LEED GOLD CERTIFICATION under Healthcare v2009
Project Delivery	INTEGRATED LEAN PROJECT DELIVERY & LEAN SIX-SIGMA

Level 08
Mechanical Penthouse
Level 07
Neonatal Intensive Care Unit (NICU)
Level 06
Neonatal Intensive Care Unit (NICU) swing space for high census and acute care (PEDS)
Level 05
Shell Space (for specialty clinics)
Level 04
Special Delivery Unit (HROB)
Level 03
Outpatient Surgery Center (OSC) Sterile Processing Department (SPD) Shell Space (potentially Pharmacy)
<i>*no Level 02</i>
Level 01
Emergency Department (ED) Food Services
Level 00
Support Services

NICU	Prep / Recovery / PACU
Shell Space	Surgery
Support Services	Emergency Dept.
Mech. Penthouse & Vertical Circulation	Food Services

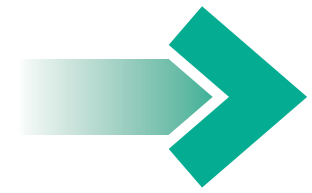


// DEFINE

excited
finish end
proud peace frustrated
it's almost done
anxious

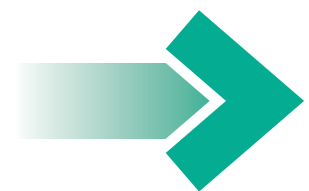
ARTICULATING INTENT





SUCCESS METRICS

- | | | | |
|---|----------------------------|----|--|
| 1 | SAFETY | 7 | QUALITY PROBLEM RESOLUTION |
| 2 | LOCAL PARTICIPATION | 8 | QUALITY PRIDE IN QUALITY WORK |
| 3 | ENERGY EFFICIENCY | 9 | QUALITY SCOPE GAPS |
| 4 | TEAM PERFORMANCE | 10 | STAFF & FAMILY SATISFACTION WORKSHOP |
| 5 | SCHEDULE | 11 | STAFF & FAMILY SATISFACTION CONSTRUCTION |
| 6 | LEED | 12 | STAFF & FAMILY SATISFACTION POST-CONSTRUCTION |



WHY **INTEGRATED LEAN PROJECT DELIVERY** (ILPD)?



optimize project
results



increase **value** to
the owner / client



reduce / eliminate
waste



maximize
efficiency during
all project phases



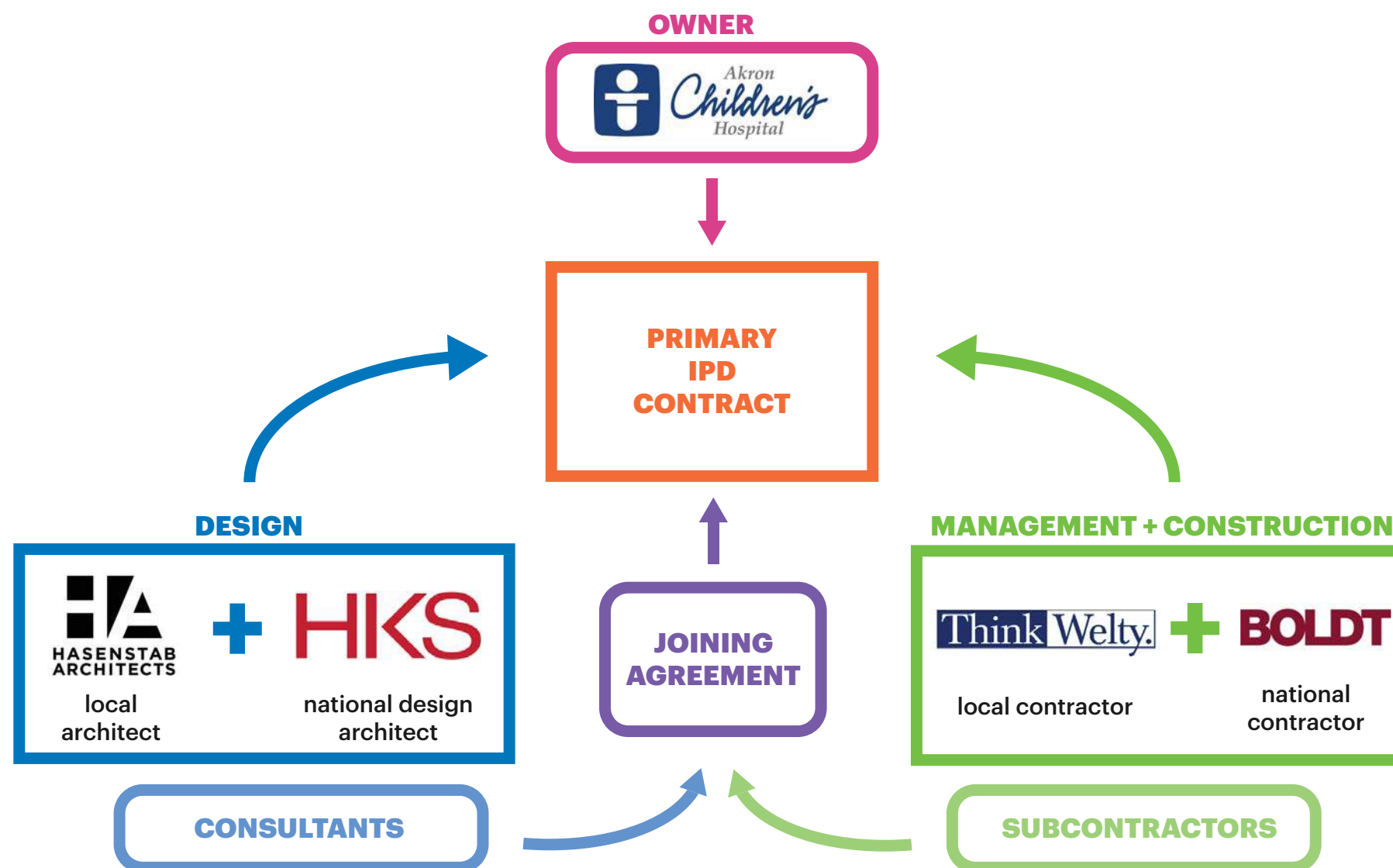
amplify the
voice of patients,
families, and staff



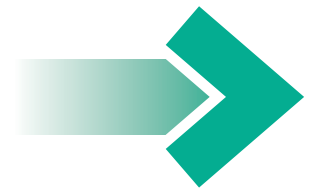
enhance **quality**
of care



ILPD CONTRACT



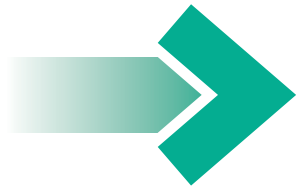
in addition to the key players, the team included other trade partners to perform aspects of construction, as well as hospital executives, physicians, nurses, clinical staff, and patient families



ILPD: **CO-LOCATION**



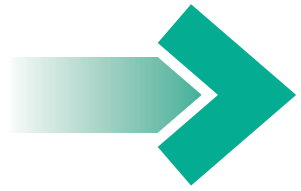
BIG ROOM COLLABORATION



LEAN SIX-SIGMA: **LEAN BOOT CAMP**

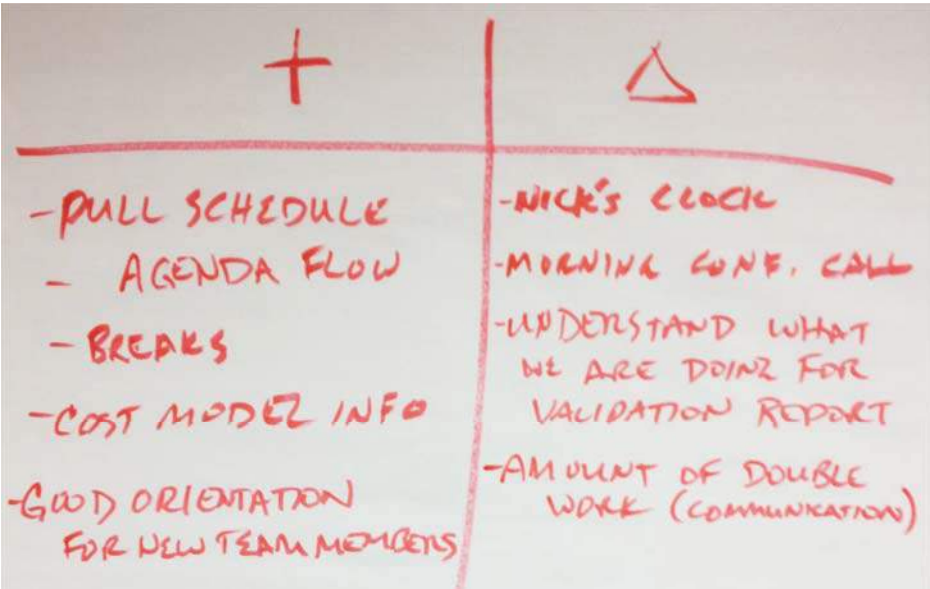


ALL team members were educated and trained in Lean Six-Sigma principles and implementation.

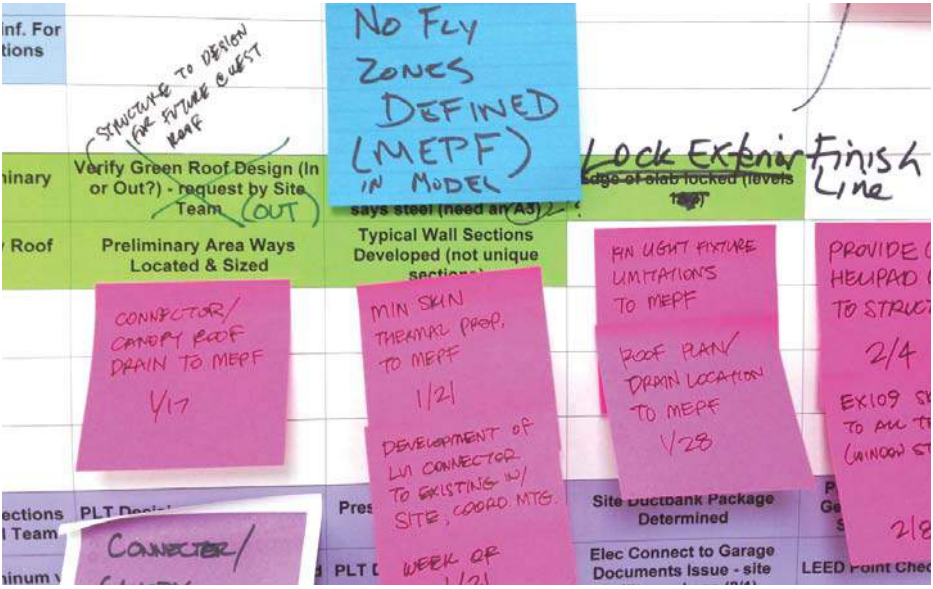


LEAN SIX-SIGMA: **METHODOLOGIES**

Continuous Improvement

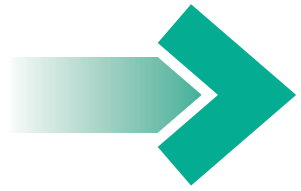


Collaboration



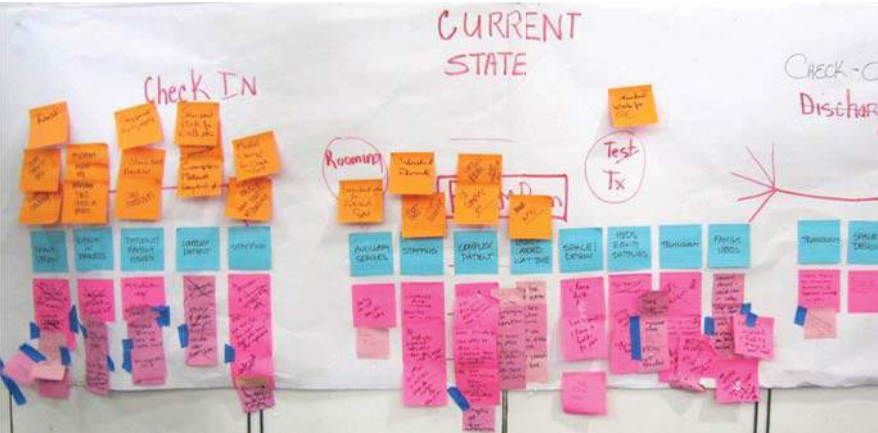
Pull Planning



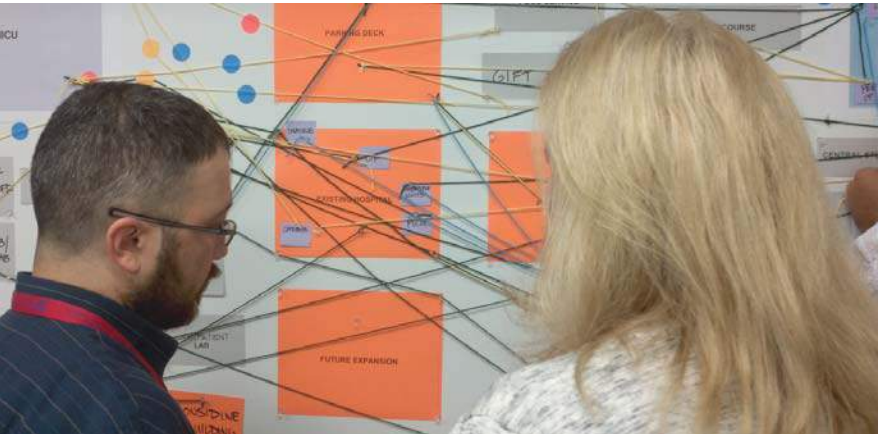


EARLY DESIGN PROCESS **ENGAGEMENT**

*Current / Future State
Process Mapping*



Critical Adjacencies Study



First Impressions



Improvements



Healing Environment



*Programming and Layout
Iterations*



Critical Review





ILPD: **MOCK-UPS & SCENARIO TESTING**



***FULL-SCALE** CARDBOARD MOCK-UPS*

***RAPID 3D PROTOTYPING** / SPACE PLANNING*

***SIMULATION** & ITERATION*

***REAL TIME** DESIGN VALIDATION*



TESTING WHAT?

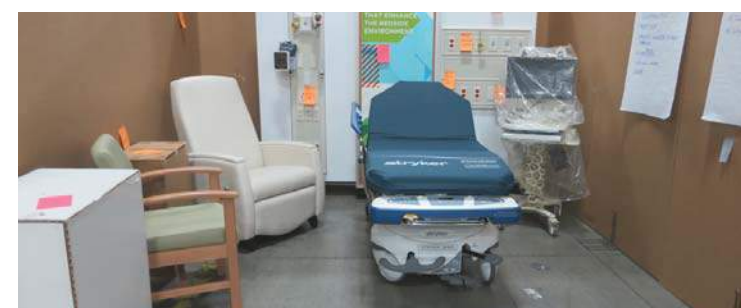
KEY ROOMS

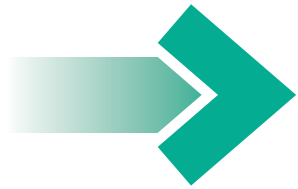
ADJACENCIES

OCCUPATION & SPACE UTILIZATION

WORK FLOWS

VISIBILITY






LEAN SIX-SIGMA: **A3s**

A3 #	Title	Date Opened	Date to be Closed (LRM)	Status
V102	Design Visioning 03			<input type="checkbox"/> In-Progress <input type="checkbox"/> Closed / Approved
	Discipline	Champion	Decision Maker	Author
	Architecture, Interior Design, Landscape			
Participants: [REDACTED]				

DEFINE (Purpose/Background/Problem/Goal):
Goals for Visioning 02 Session:

- Recap of What We Learned in Visioning 02
- Share the updated Project's Guiding Principles
- Review Landscape and Site Development
- Review Development of Exterior
- Review Development of Interior Concept


MEASURE (Current State / Performance Gap):



ANALYSIS (Root Cause Analysis):

- Landscape/Site
 - Confirm number of parking spots at ED
 - Employee Parking is lower grade than ED Parking, but may have covered shelters along accessible walkway (shelters priced as an alternate)
 - The question was asked if the project could take Buchtel Ave and expand parking?
 - It was stated that Buchtel is being vacated, but would still act as vehicular path as it does today.
 - The landscape/site design will create a sense of arrival at the main entry, introducing artwork and landscape along the street.
 - The softness of the meandering path was preferred, but without the large earth mounds
 - Artwork that would provide color through all seasons and engage the children was also preferred
- Exterior
 - It was stated that there is no feeling of synergy between the green panels, glass, brick and canopy.
 - There is no softness on the exterior, it feels very boxy with sharp angles – would like to see more curves
 - A window wall is a similar feature to all buildings on campus – it identifies the building as a Children's building
 - Would like to see additional options for the drop off area at the Main Entrance
- Interiors
 - The concepts "Uniquely Akron" and "Things Familiar" were presented, with "Things Familiar" (sandbox, garden, tree house, puddles, etc...) being the preferred concept.
 - The group cautioned against using materials and colors that were too trendy and would make the building appear outdated as soon as it opened.
 - Alternatives to interactive walls should also be explored.

IMPROVE (Countermeasures):



Guiding Principles:

We intend to create a place that:

- is distinctive and serves as a beacon to the community
- is safe and comforting in the eyes of a child, parent and staff
- has a respectful connection to the natural environment
- is playful and engages the imagination
- inspires confidence and hope
- builds on the promise

CONTROL (Plan and Follow-Up):		
What?	Who?	When?
Design Visioning 04 for Exterior and Landscape/Site	Meeting Attendees	November 5th
Design Visioning 04 for Interiors	Meeting Attendees	November 14th

PROJECT WIDE FACTORS

Seven Flows of Healthcare

- Patient Flow
- Family Flow
- Staff Flow
- Medications Flow
- Supplies Flow
- Equipment Flow
- Information Flow

Safety

- Patient Safety
- Staff Safety
- Construction Safety

Cost

- First Cost
- Life Cycle Cost

Schedule

- Design
- Procurement
- Fabrication
- Installation

Impacts on Occupants

- Patient Impact
- Family Impact
- Staff Impact

Future

- Flexibility (surge)
- Expendability (grow)
- Adaptability (change)

Community Impact

- Traffic
- Aesthetics

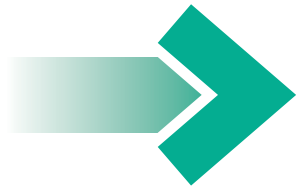
Evidence-base Healing Environment

- Natural Light
- Landscape Integration
- Horticulture
- Acoustics
- Infection Control

Sustainability

Quality

RECORDING KEY **DECISIONS**



PULSE REPORTS

method chosen by the Project Leadership Team (PLT) to evaluate the **overall performance of the Project Team**

MONTHLY SURVEY analyzed and documented by 3rd party



PURPOSE:



detect **potential issues** within the team



monitor progress on key metrics



assess the **working climate** on the project

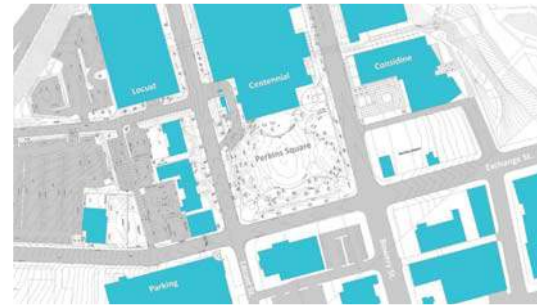
// DESIGN

DISCOVERING STRATEGIES



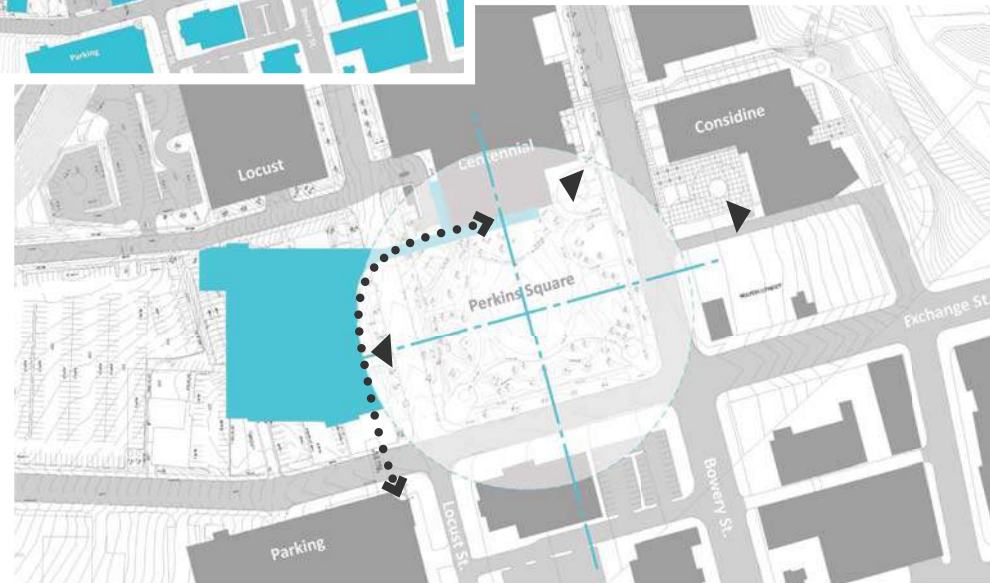
// OVERALL FACILITY EXTERIOR + SITE

Before Kay Jewelers Pavilion

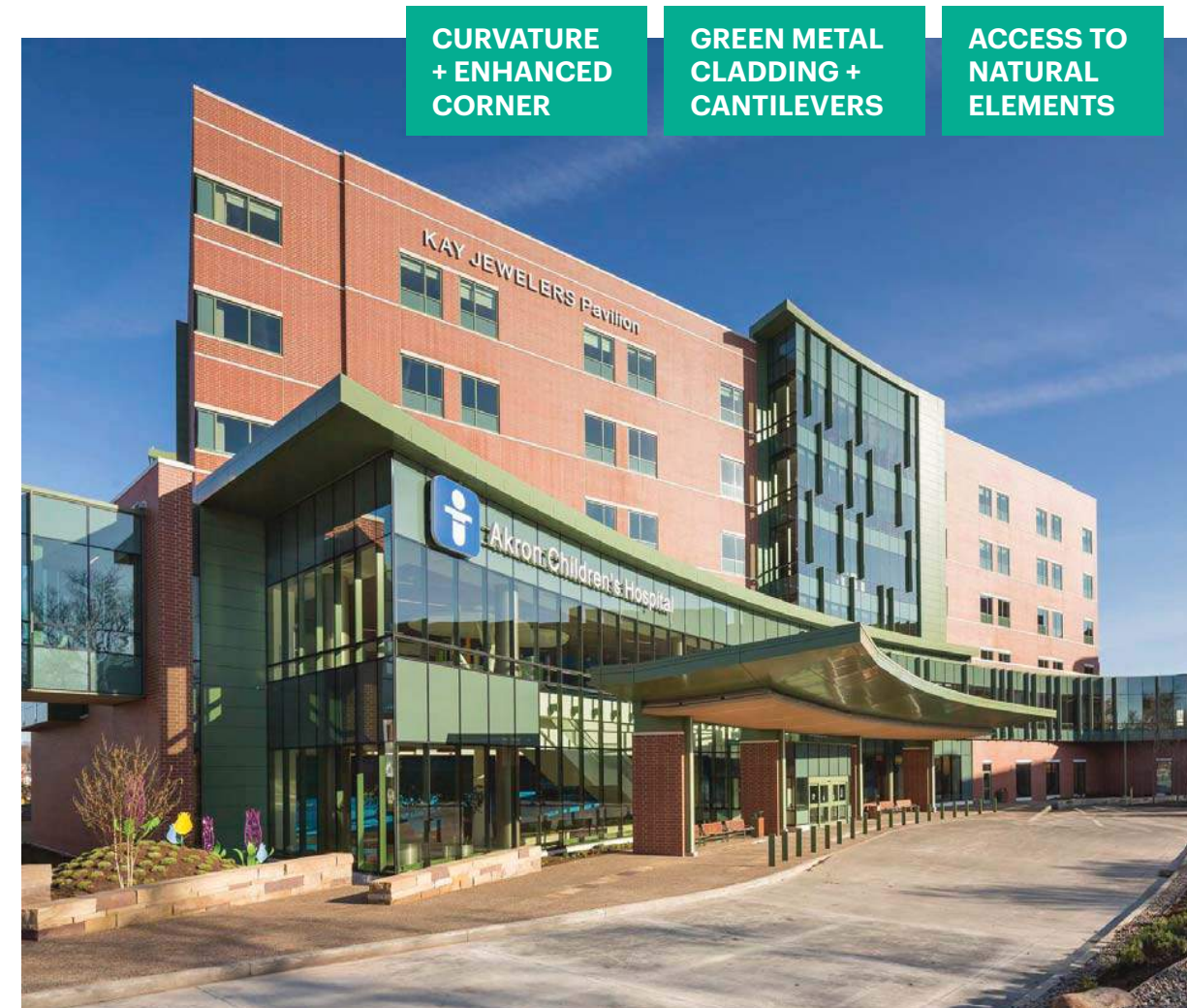


**ORIENTATION,
CONNECTIONS,
& CLARITY**

Site Strategy



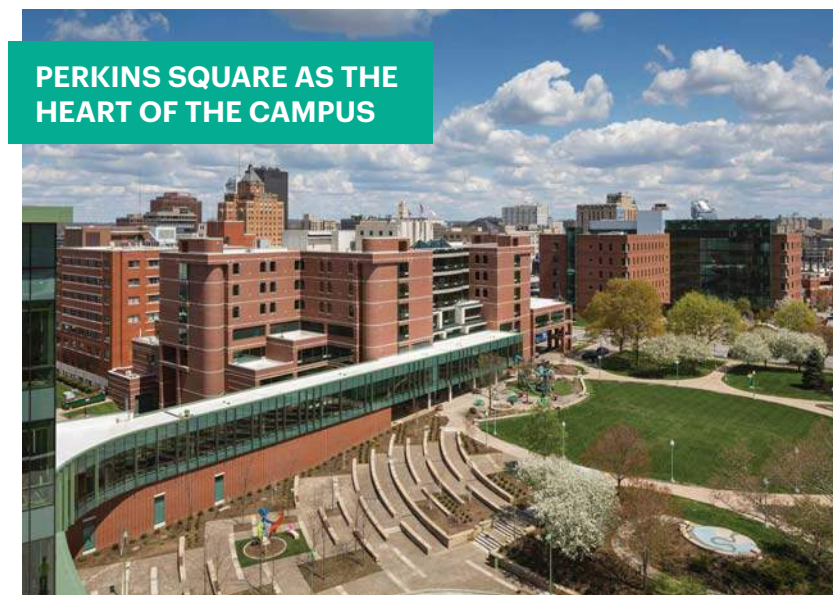
**PROMINENCE
AT THE POINT OF
ARRIVAL**



**CURVATURE
+ ENHANCED
CORNER**

**GREEN METAL
CLADDING +
CANTILEVERS**

**ACCESS TO
NATURAL
ELEMENTS**




























**PERKINS SQUARE AS THE
HEART OF THE CAMPUS**



**CAMPUS
COHESION**

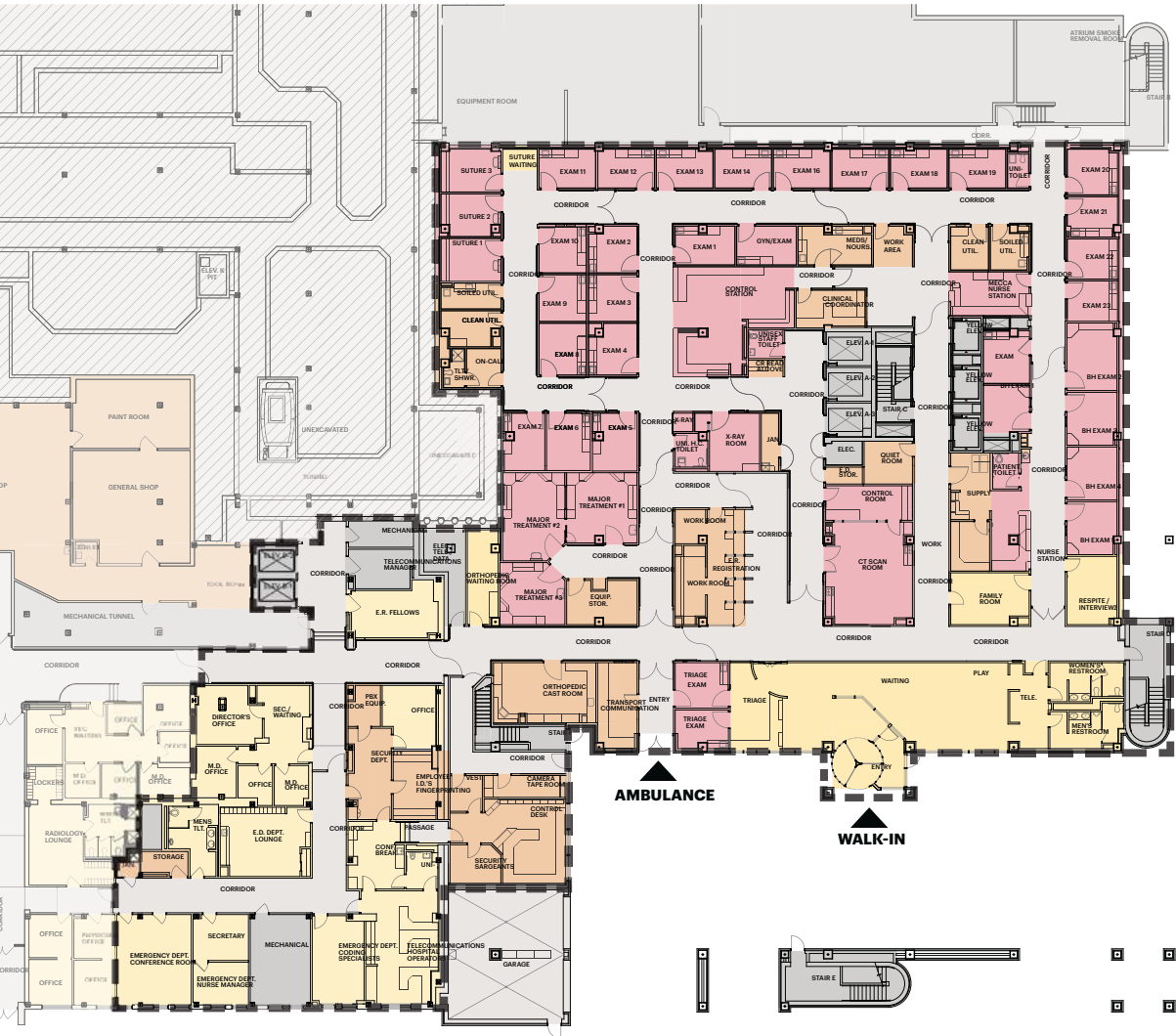
// OVERALL FACILITY INTERIOR DESIGN

INTERIOR DESIGN CONCEPT: “*THINGS FAMILIAR*”

 PLAYFUL + RELATABLE = CHILD-FRIENDLY	BIOPHILIA	POSITIVE DISTRACTIONS	WAYFINDING STRATEGY	SAFE, DURABLE, FUNCTIONAL, LOW-MAINTENANCE MATERIALS	ARTWORK THROUGHOUT	GEOMETRIC PATTERNS, + TEXTURES
L1 L3 PUBLIC 'backyard'    	L1 ED 'puddle'    	L3 OSC 'sandbox'    	L4 L5 CLINICS 'garden'    	L6 NICU 'tree house'    	L7 NICU 'tree house'    	

EMERGENCY DEPARTMENT

MAIN HOSPITAL - LEVEL 01



KAY JEWELERS PAVILION - LEVEL 01



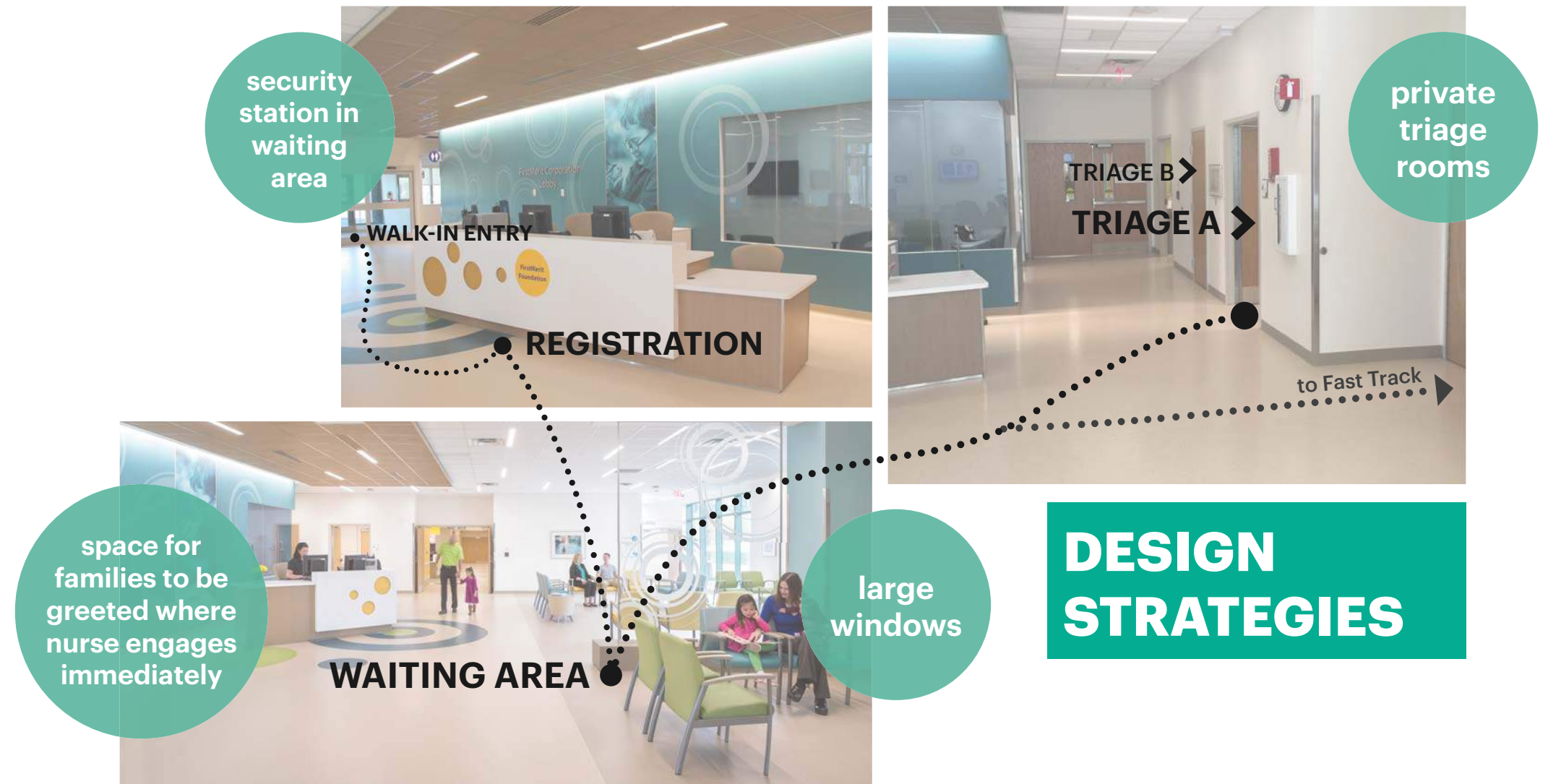
- Inpatient
- Clinical Support/ Treatment & Diagnostic Space
- Staff Support
- Public Space
- Administrative / Lounge / Lockers
- Outpatient
- Shell Space
- Vertical Circulation & Mechanical
- Circulation

floor plans are NOT to scale

// EMERGENCY DEPARTMENT WAITING + TRIAGE

PRE-CONDITION

- Crowded
- minimal natural light
- limited security presence
- **Open Triage** visible from the waiting room

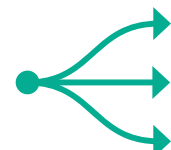


DESIGN STRATEGIES

LINKED OUTCOMES



FAMILY SATISFACTION



ENGAGEMENT
PRIVACY
COMFORT



ACCESS TO
NATURAL LIGHT



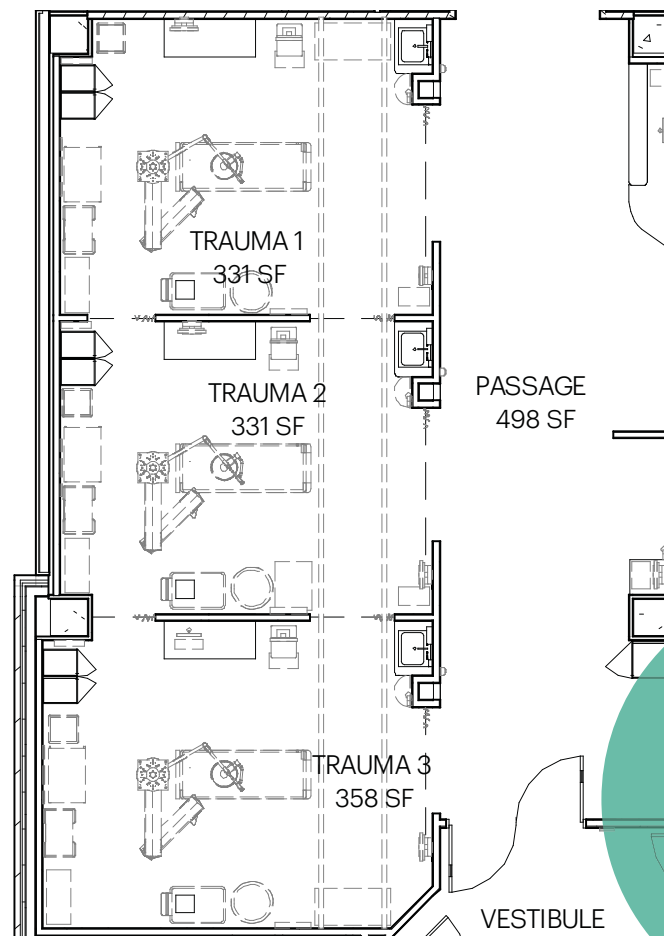
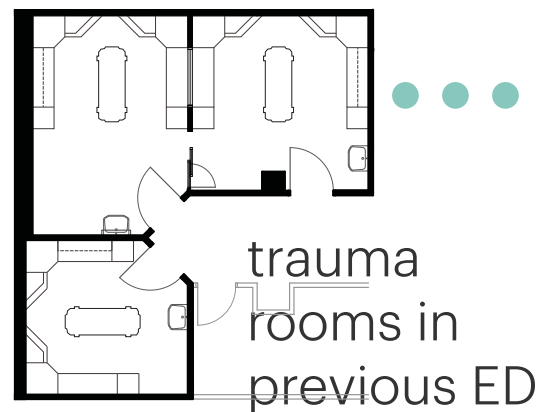
SAFETY +
SECURITY

// EMERGENCY DEPARTMENT

TRAUMA SUITE

PRE-CONDITION

- 3 small trauma rooms (one considered unusable)
- Hallway between rooms narrow and difficult to move patients through



transport from ambulance entrance to trauma includes one turn with wider hallways and slider doors

one room with 3 generously-sized trauma bays

DESIGN STRATEGIES



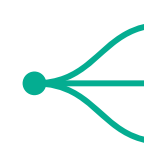
LINKED OUTCOMES



STAFF INJURIES



STAFF SATISFACTION



SUPPLY ACCESS
WORKSPACE FLEXIBILITY
TEAMWORK



PATIENT PRIVACY

// EMERGENCY DEPARTMENT

RADIOLOGY + IMAGING

DESIGN STRATEGIES

PRE-CONDITION

- all radiology / imaging with portable equipment or child taken to radiology / imaging on the same floor, but opposite side of the hospital

X-RAY



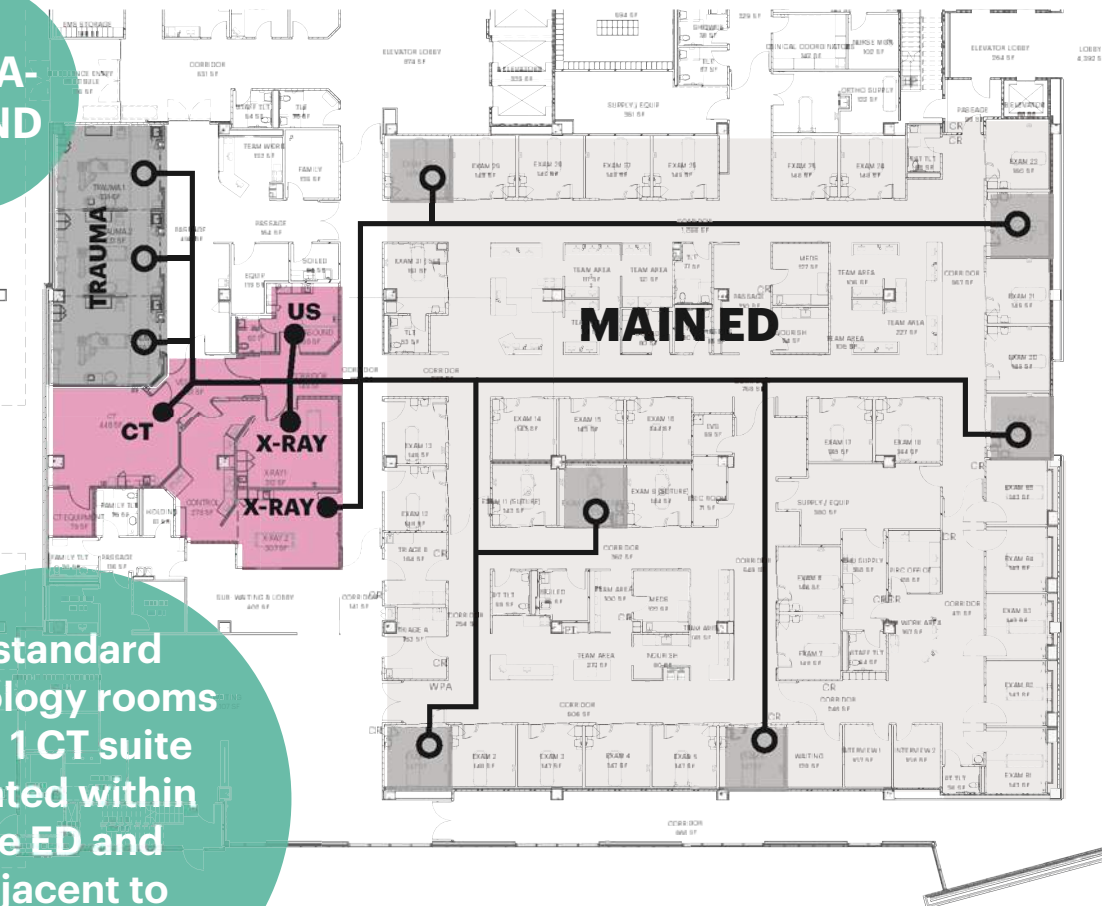
ULTRA-SOUND



CT SCAN



2 standard radiology rooms and 1 CT suite located within the ED and adjacent to trauma suite



LINKED OUTCOMES



STAFF INJURIES



STAFF SATISFACTION



EXTUBATIONS IN TRANSIT



REPEAT FILMS

// EMERGENCY DEPARTMENT

EXAM ROOMS

PRE-CONDITION

- small exam rooms with minimal family space
- challenging to get bed into room due to room configuration
- standard doors with small windows
- limited amount of staff equipment at bedside

DESIGN STRATEGIES



wall-mounted monitor and diagnostics; supplies in mobile carts



"straigh-in" allowance and 4/2 breakaway glass doors

larger exam rooms with family zone

LINKED OUTCOMES



STAFF INJURIES



VISIBILITY



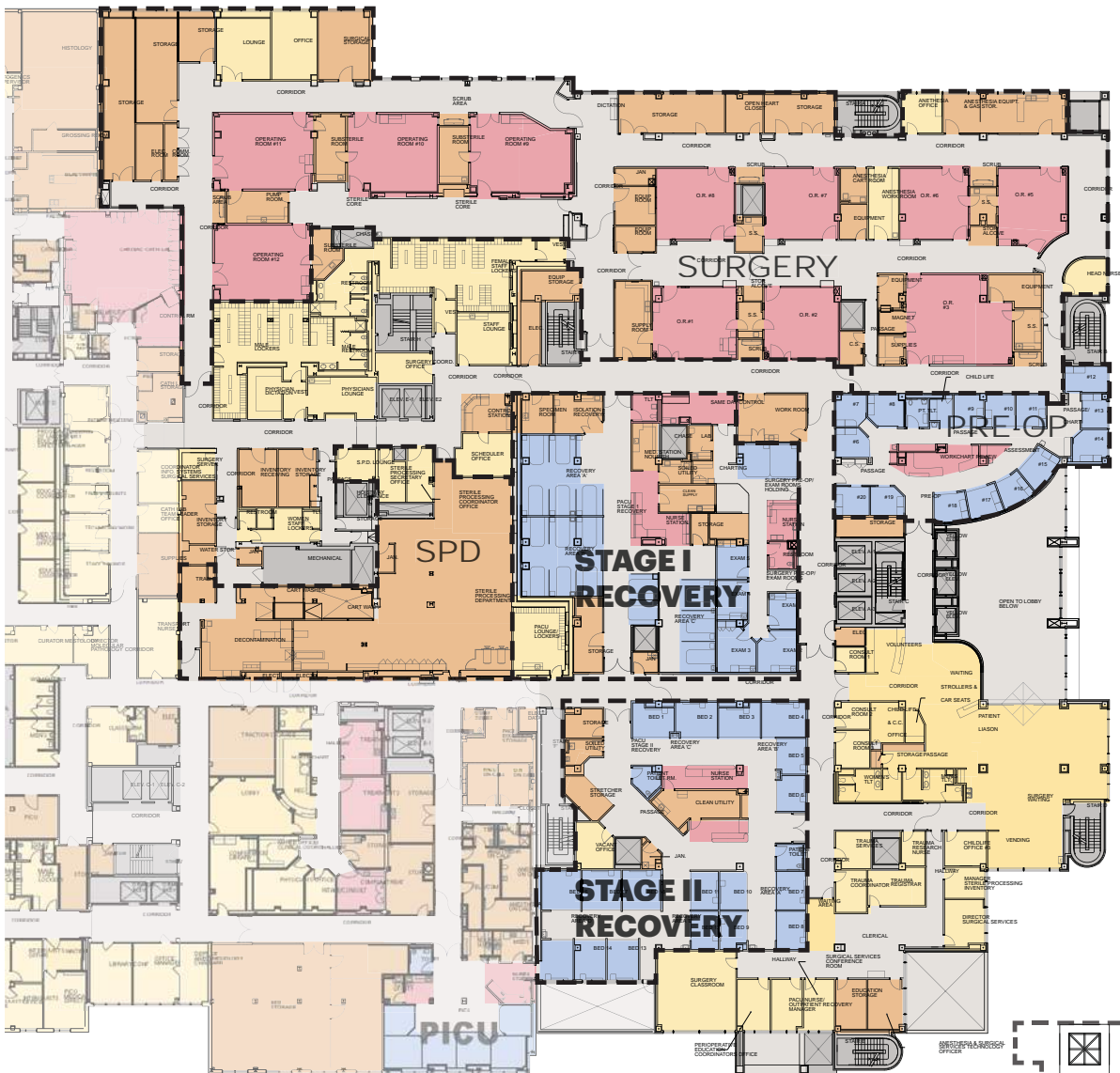
PATIENT / FAMILY SATISFACTION



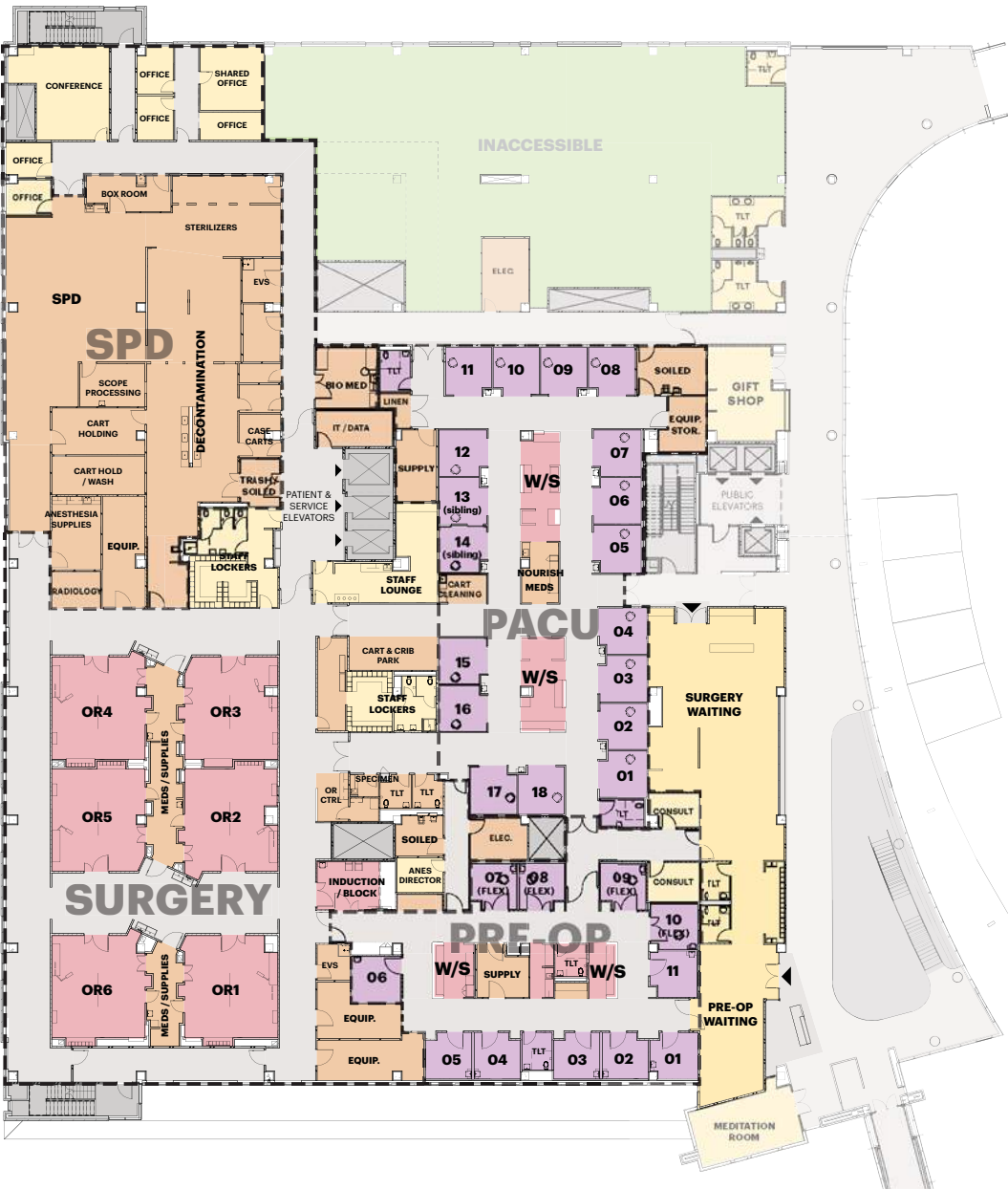
SUPPLY ACCESS + WORK SURFACE FLEXIBILITY

OUTPATIENT SURGERY CENTER (OSC)

MAIN HOSPITAL - LEVEL 04



KAY JEWELERS PAVILION - LEVEL 03



- Inpatient
- Clinical Support/ Treatment & Diagnostic Space
- Staff Support
- Public Space
- Administrative / Lounge / Lockers
- Outpatient
- Shell Space
- Vertical Circulation & Mechanical
- Circulation

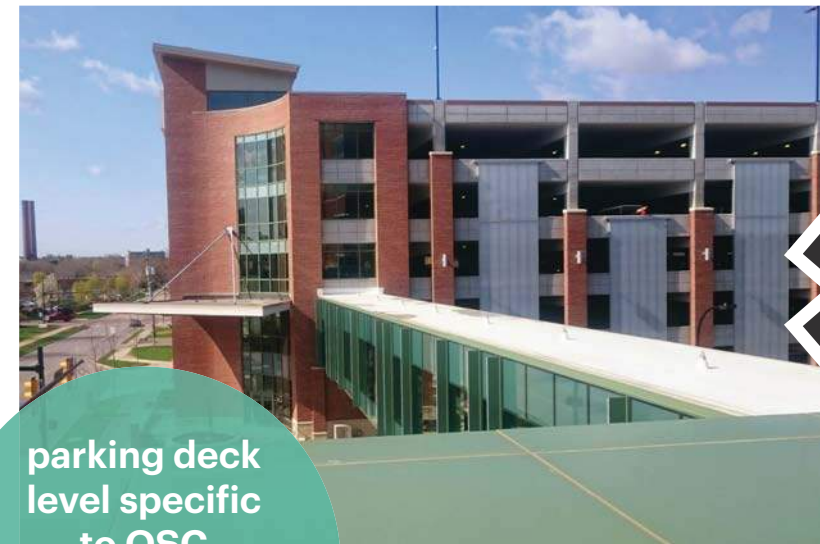
floor plans are NOT to scale

// OUTPATIENT SURGERY CENTER

PARKING + WAYFINDING

PRE-CONDITION

- all parking is remote to OR area leading to confusion with parking deck and finding pre-op



parking deck level specific to OSC parking - on the same floor as the OSC

bridge access



DESIGN STRATEGIES



high visibility of reception desk

LINKED OUTCOMES



ANXIETY



PATIENT / FAMILY SATISFACTION



ON-TIME PROCEDURES

// OUTPATIENT SURGERY CENTER

FAMILY SPACES

PRE-CONDITION

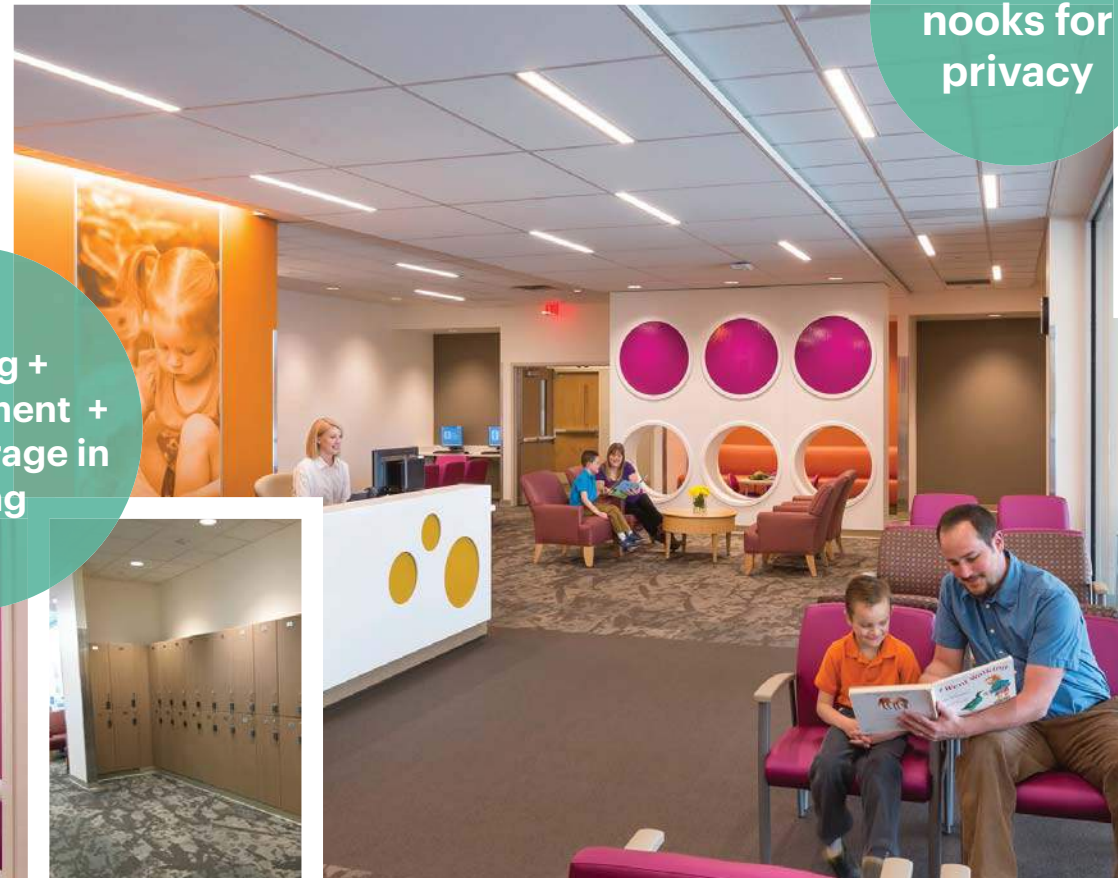
- no space for privacy or family storage
- outpatient and acute surgery cases mixed together

DESIGN STRATEGIES

family zones in private patient rooms so family can stay with child



vending + entertainment + family storage in waiting



areas and nooks for privacy



connected waiting rooms for pre-op and post-op for flexibility of volumes



LINKED OUTCOMES



ANXIETY



PATIENT / FAMILY SATISFACTION



PRIVACY

// OUTPATIENT SURGERY CENTER

STAFF CORE

PRE-CONDITION

- limited visibility for staff to monitor patients from the central workspace

DESIGN STRATEGIES

transparent materials



private patient rooms with curtains



half-height partitions

LINKED OUTCOMES



PATIENT / FAMILY
SATISFACTION



VISIBILITY



STAFF
SATISFACTION



COLLABORATION

// OUTPATIENT SURGERY CENTER

STERILE PROCESSING DEPARTMENT

PRE-CONDITION

- Sterile Processing Department on same level, but not adjacent to ORs

DESIGN STRATEGIES



departmental adjacency of SPD and ORs



smaller clean core

separate doors to access carts with supplies from clean core



LINKED OUTCOMES



EFFICIENCIES (JUST IN TIME DELIVERY)



STORAGE SPACE



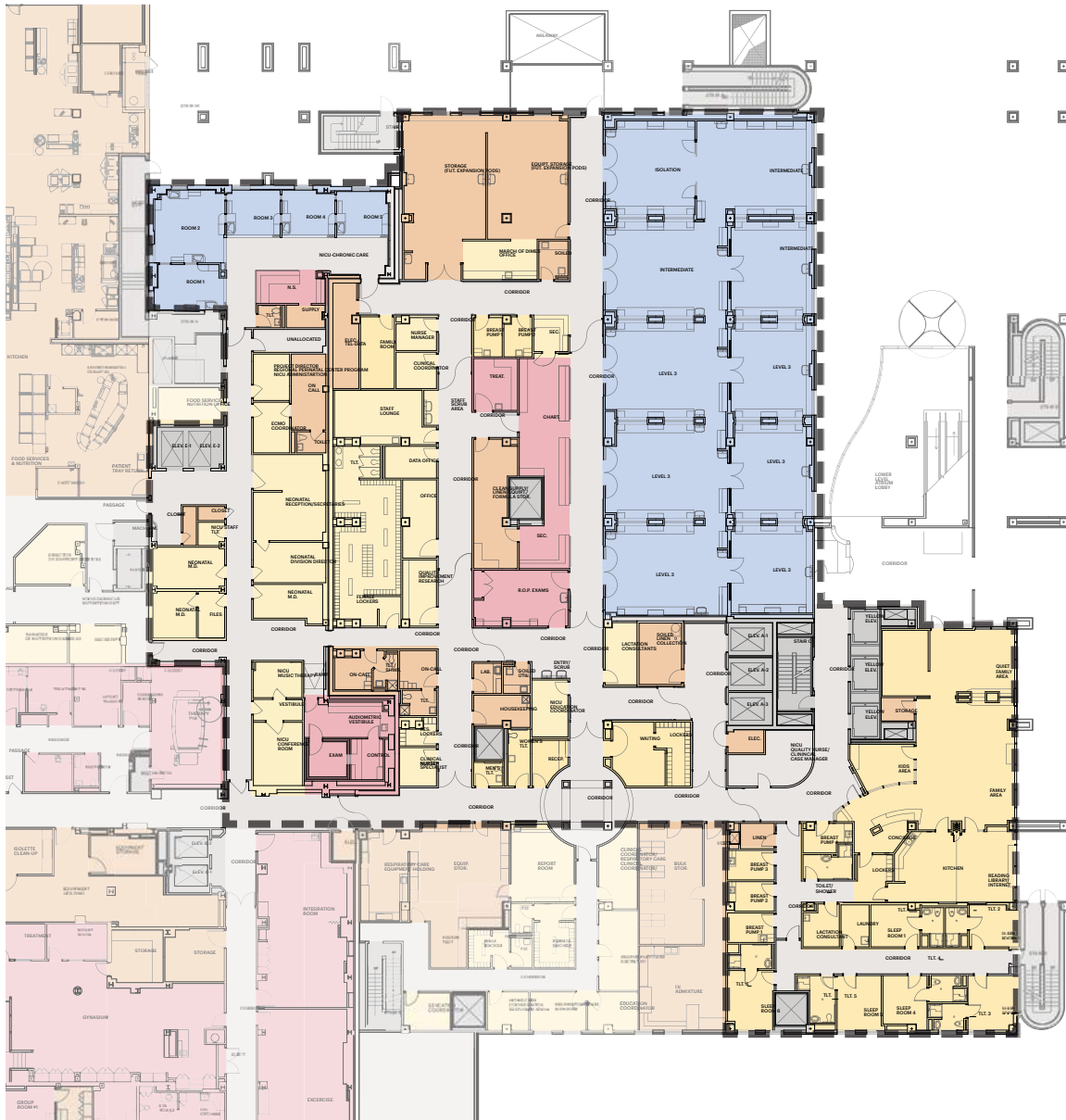
STAFF SATISFACTION



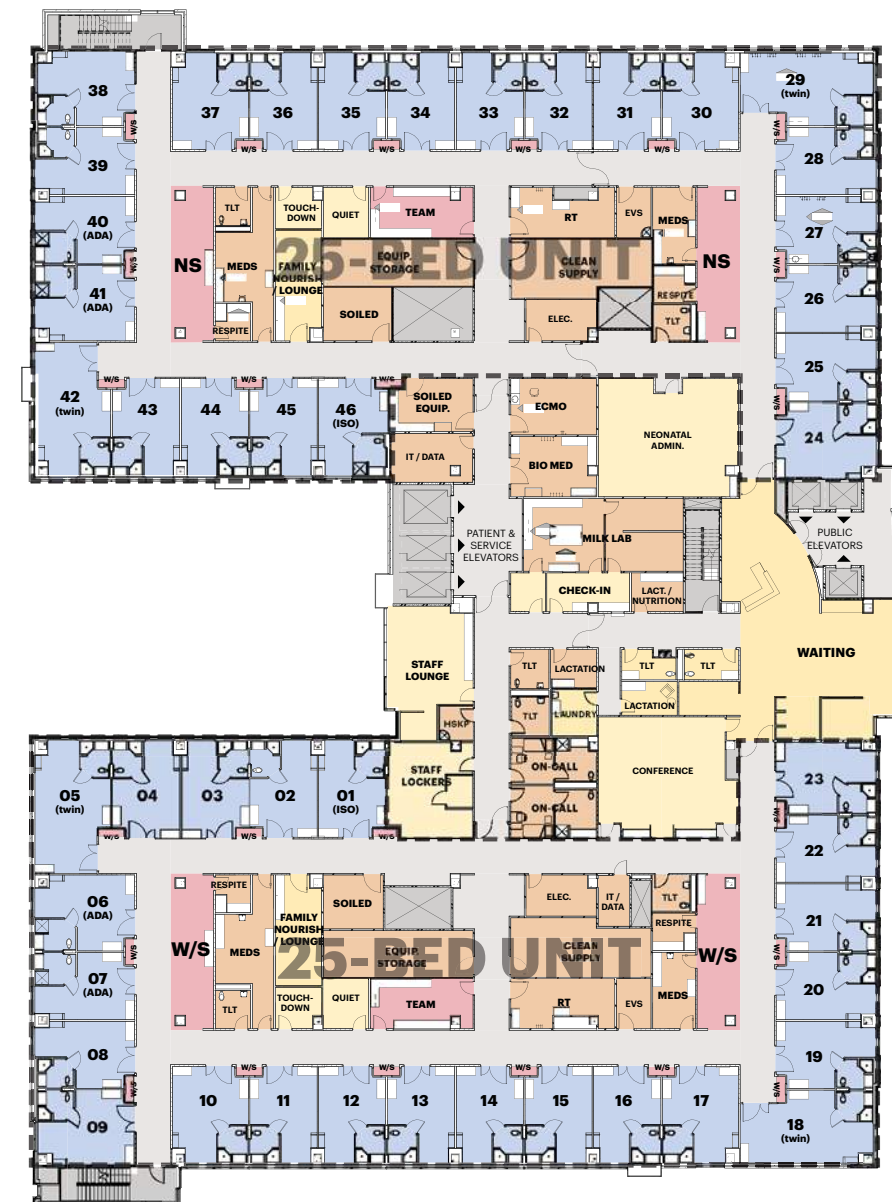
TRAVEL DISTANCES

NEONATAL INTENSIVE CARE UNIT (NICU)

ORIGINAL NICU - LEVEL 02



KAY JEWELERS PAVILION - LEVEL 07



- Inpatient
- Clinical Support/ Treatment & Diagnostic Space
- Staff Support
- Public Space
- Administrative / Lounge / Lockers
- Outpatient
- Shell Space
- Vertical Circulation & Mechanical
- Circulation

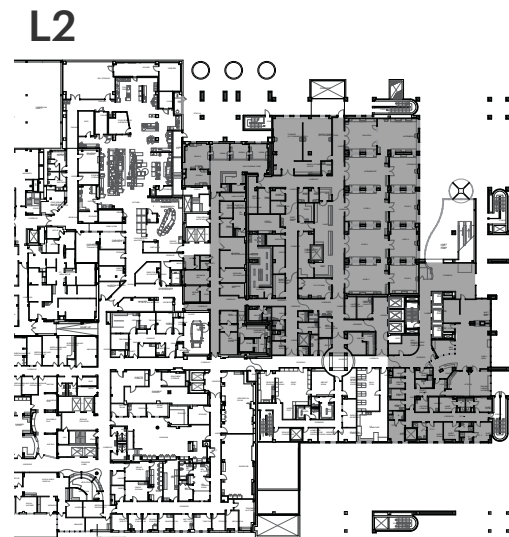
floor plans are NOT to scale

// NEONATAL INTENSIVE CARE UNIT

FLEXIBILITY

PRE-CONDITION

- very small, crowded unit



28,000 SF
PREVIOUS

L6



70,292 SF
KAY JEWELERS PAVILION

L7



DESIGN STRATEGIES

standardized patient rooms for NICU or PEDS

75 rooms divided into 3 neighborhoods

strategic shell space

LINKED OUTCOMES



FLEXIBILITY FOR PEDS



STAFF SATISFACTION



STAFF TURNOVER



COLLABORATION + TEAMWORK

// NEONATAL INTENSIVE CARE UNIT

MEDICATION ROOMS

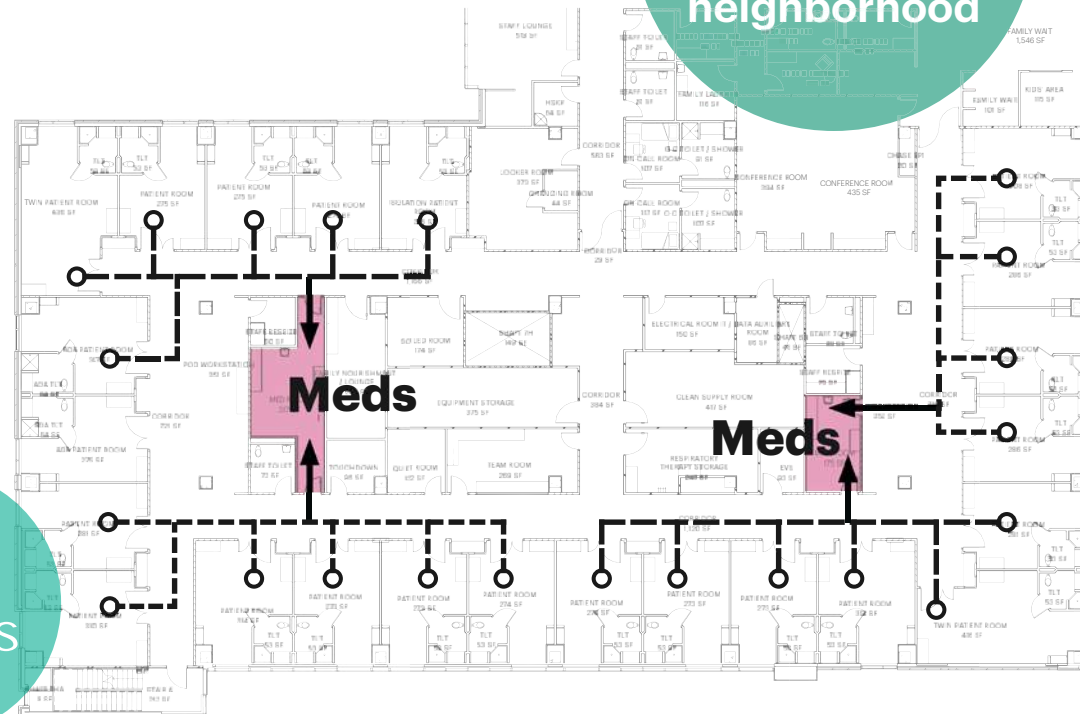
PRE-CONDITION

- common medication storage and prep area shared among 4 pods
- open medication room; crowded and cluttered area of high activity
- medications and breast milk prepped on same counter

DESIGN STRATEGIES

2 medication rooms per 25-bed neighborhood

dual-access



supply storage above and below

separate medication and breast milk prep counters



LINKED OUTCOMES



MEDICATION
ERROR RATES



STAFF
SATISFACTION



TRAVEL
DISTANCES



SUPPLY ACCESS
+ STORAGE

// NEONATAL INTENSIVE CARE UNIT

STORAGE

PRE-CONDITION

- single storage room for ALL supplies

DESIGN STRATEGIES

MOST NEEDED

storage hierarchy

PATIENT ROOM

CABINETS & CARTS

CORRIDORS

PPE CABINETS

ALCOVES

MOBILE CARTS

STORAGE ROOMS

CLEAN SUPPLY

kanban supply system

LEAST NEEDED

LINKED OUTCOMES



OUTDATED SUPPLIES



STAFF SATISFACTION



TRAVEL DISTANCES



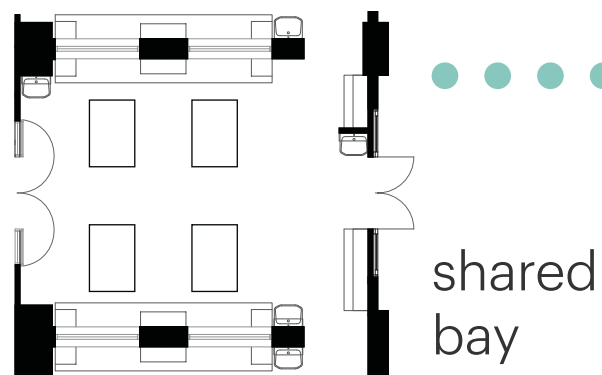
INFECTION CONTROL

// NEONATAL INTENSIVE CARE UNIT

PATIENT ROOMS

PRE-CONDITION

- shared bays (4 families to a room)
- no family privacy for bonding and no personal storage
- no natural light



large windows

full bath

family zone + overnight amenities

DESIGN STRATEGIES



LINKED OUTCOMES



LENGTH
OF STAY



INFECTION
RATES



FAMILY
SATISFACTION



PRIVACY +
ENGAGEMENT

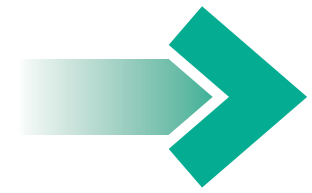


STRESS

// DELIVER

**WHAT WAS THE
IMPACT?**



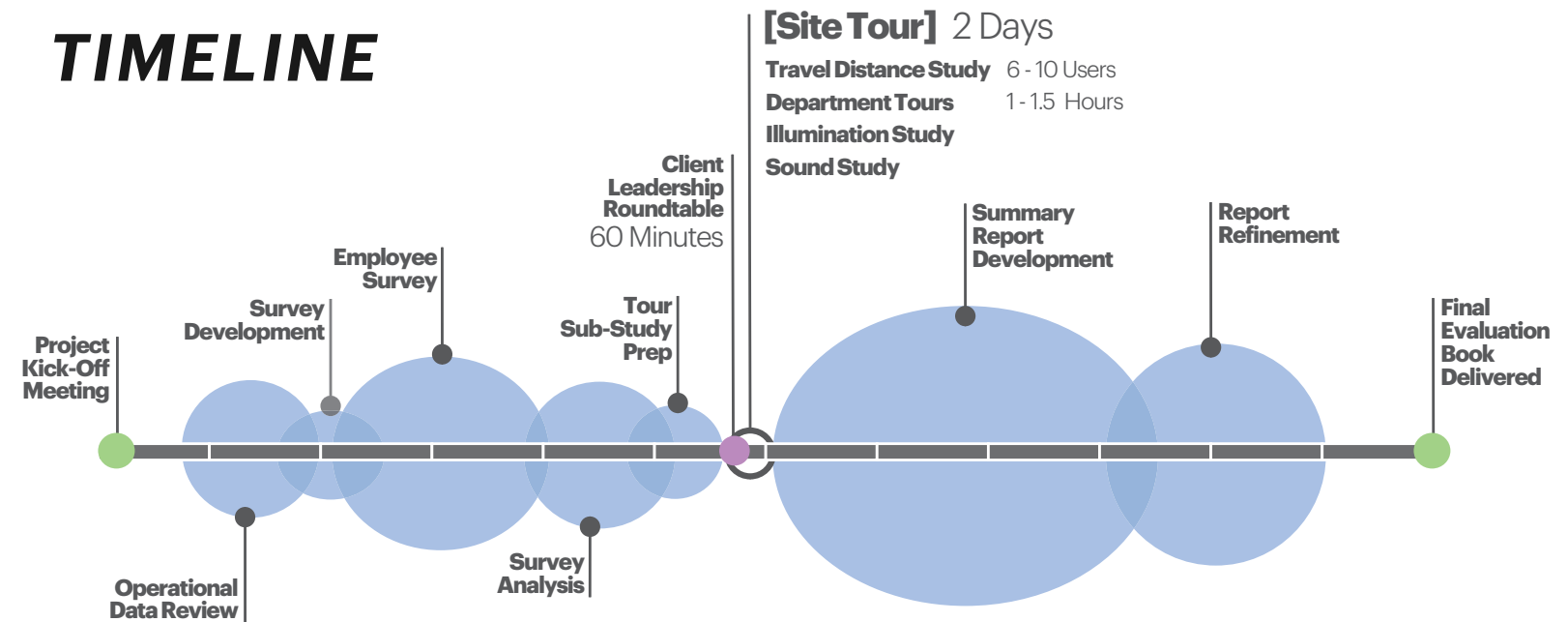


FUNCTIONAL PERFORMANCE **EVALUATIONS**

PROCESS

The FPE process extensively reviews a healthcare facility through *quantitative* and *qualitative* studies to gather and analyze *subjective* and *objective* data.

TIMELINE



1

**collect current
operating data**

2

**distribute
surveys**

3

**round table
interview**

4

**facility
tour**

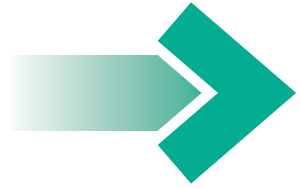
5

**analyze
findings**

6

**final report
and results**

**INTERNAL
DATABASE**



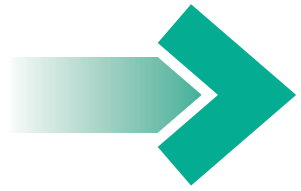
KEY FINDINGS

// BEST PRACTICES

- 1 flexibility** embedded in the design for the future
- 2 growth** strategy
- 3 clear and distinct separation of flows**
- 4 simplified and clean wayfinding** routes
- 5 high quality and durable materials**
- 6 facility image**

// LESSONS LEARNED

- 1 future state assumptions** do not always become present state operations when a facility opens
- 2 value-engineered based decisions,** have contributed to operational, maintenance, and building service related challenges
- 3 lack of engagement** of building support services staff during the design process



FPE SURVEY **RESPONSES**

OVERALL FACILITY



3.71 OF 5

SCORE ACCORDING TO
119 STAFF ASSESSMENT
RESPONSES

BY DEPARTMENT

ED



OSC



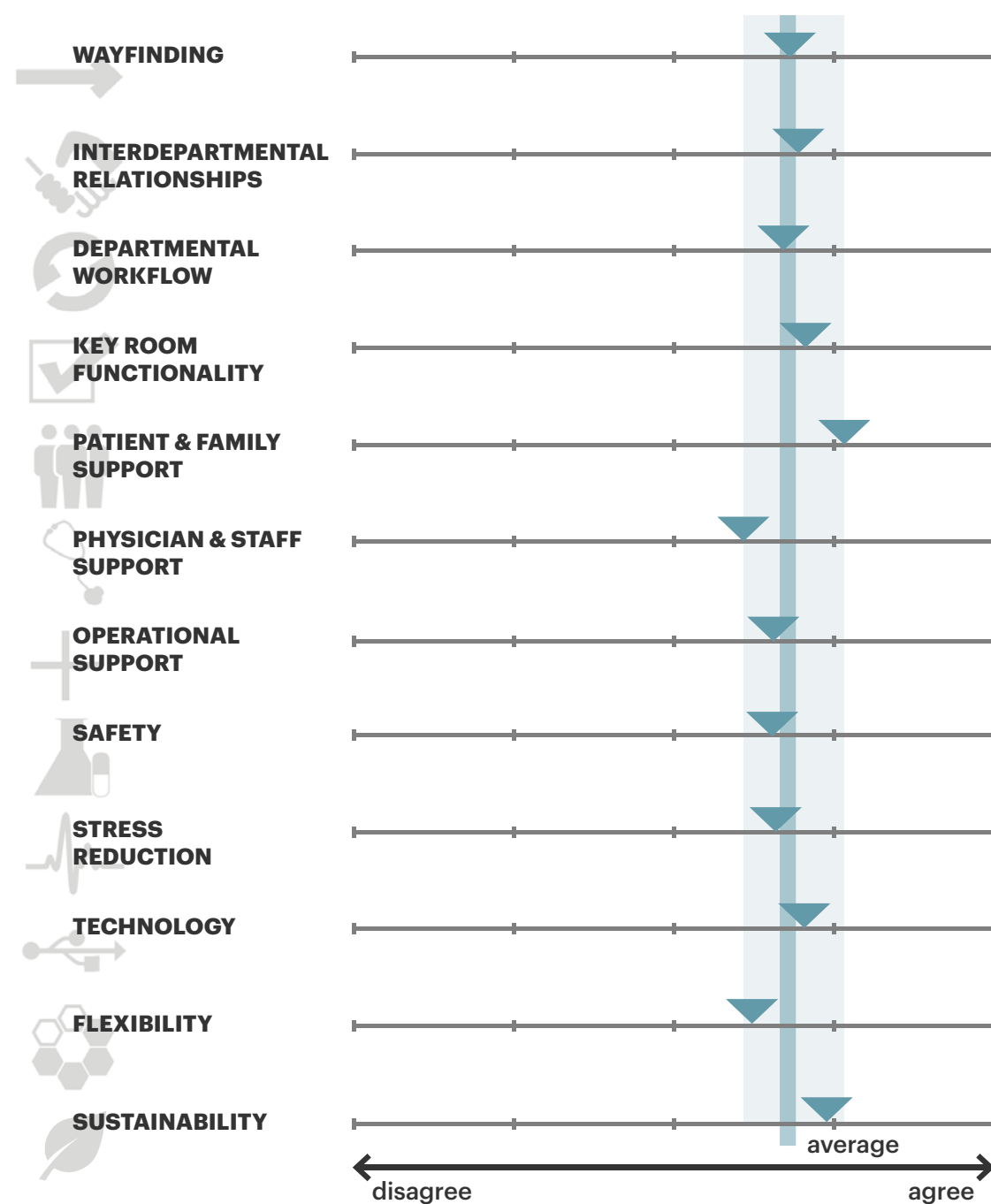
NICU



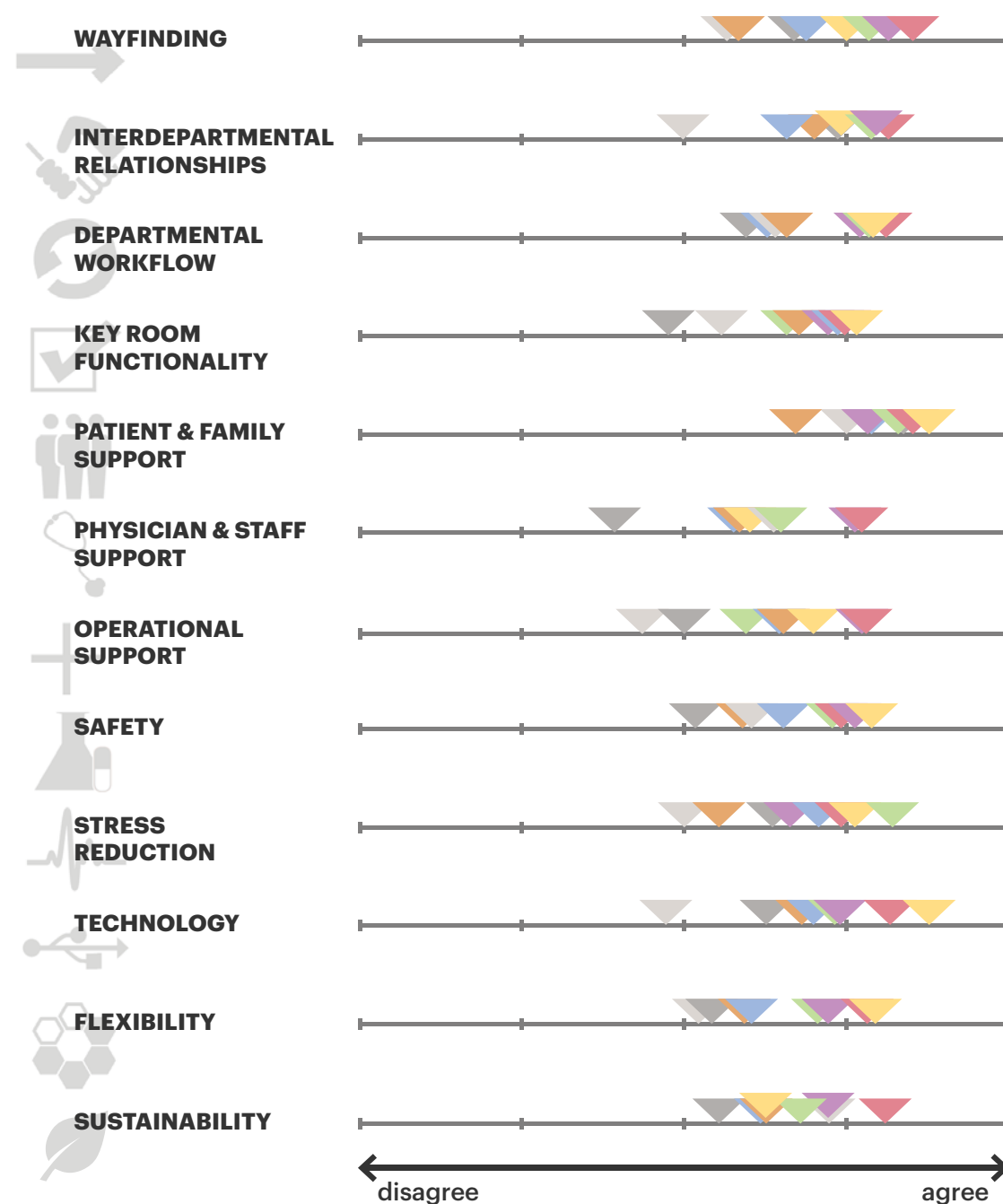


FPE SURVEY RESPONSES

COMBINED AVERAGES



BY DEPARTMENT



- Bio Engineering
- Building Facility
- (Pediatric) Emergency Dept.
- EVS
- NICU
- Nutrition
- Prep / Recovery / PACU
- Surgery

SUCCESS METRIC **OUTCOMES**

SAFETY



LOCAL PARTICIPATION



ENERGY EFFICIENCY



TEAM PERFORMANCE



SCHEDULE



LEED



QUALITY *PROBLEM RESOLUTION*



QUALITY *PRIDE IN QUALITY WORK*



QUALITY *SCOPE GAPS*



STAFF & FAMILY SATISFACTION *WORKSHOP*



STAFF & FAMILY SATISFACTION *CONSTRUCTION*



STAFF & FAMILY SATISFACTION *POST-CONSTRUCTION*



While the highest number of possible points varied, the project **Health Facility** achieved **the greatest points possible in 9 of the 12 success metrics (75%)** and even exceeded expectations for certain goals.



SIGNIFICANT **COST SAVINGS**

Budget

\$44 million
UNDER
BUDGET OF \$211 MILLION

Schedule

CONSTRUCTION
COMPLETED
54 days
BEFORE
24 MONTH SCHEDULE

Construction

0 change orders

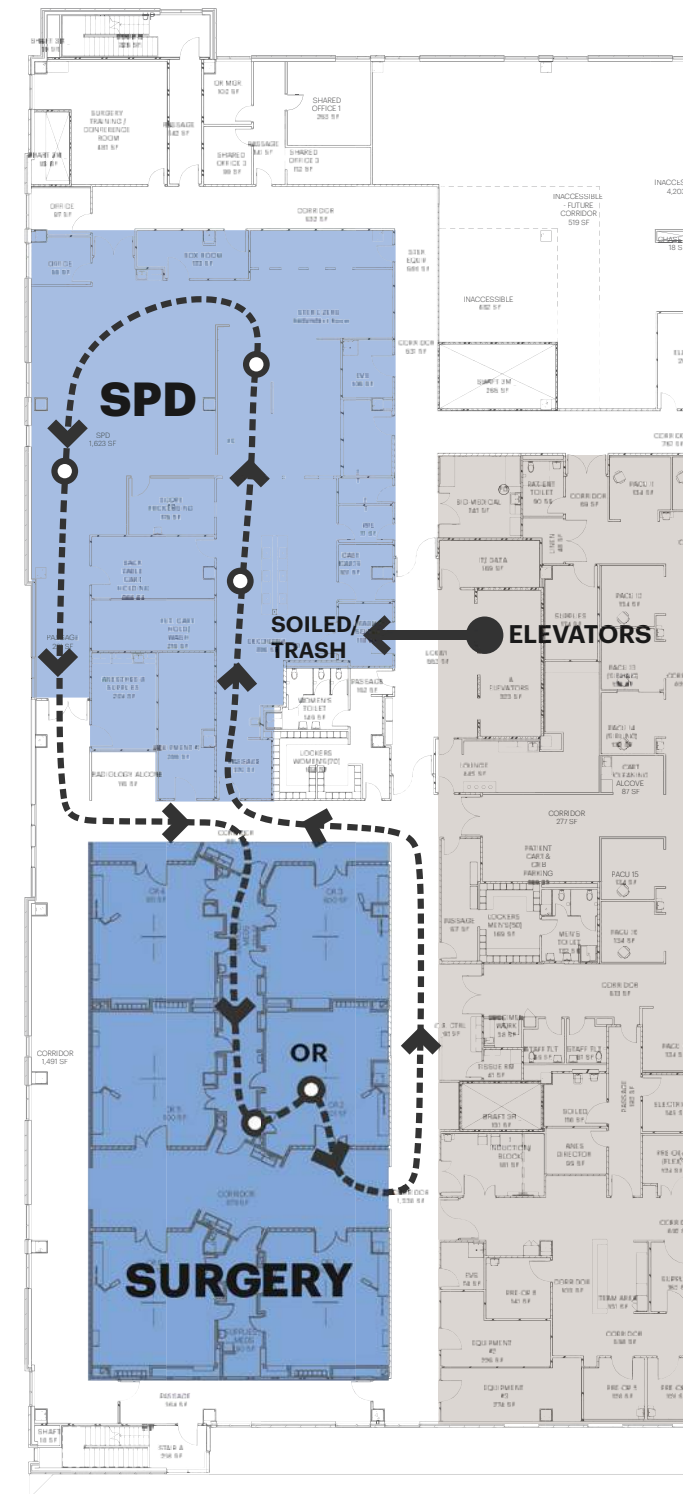
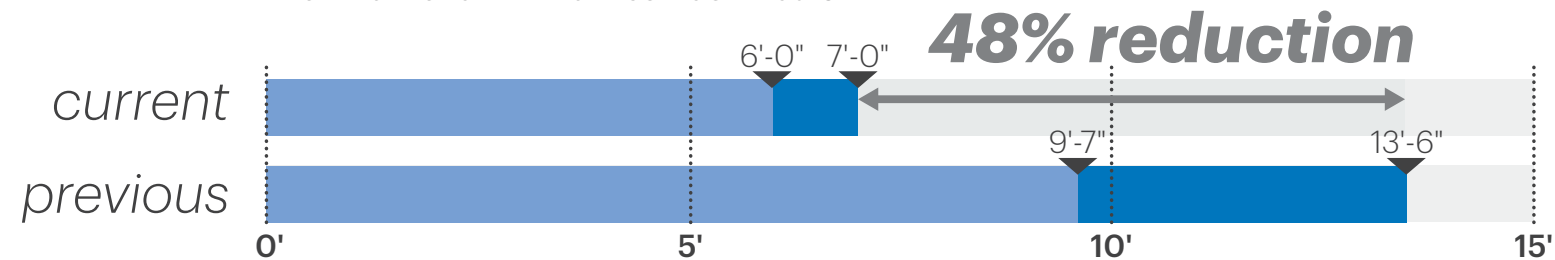


OPERATIONAL ADJACENCIES

STERILE PROCESSING DEPARTMENT **ADJACENT** to CLEAN CORE

CLEAN CORE WIDTH

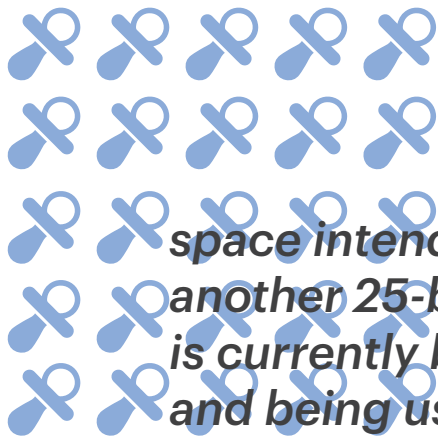
maximum and minimum corridor widths



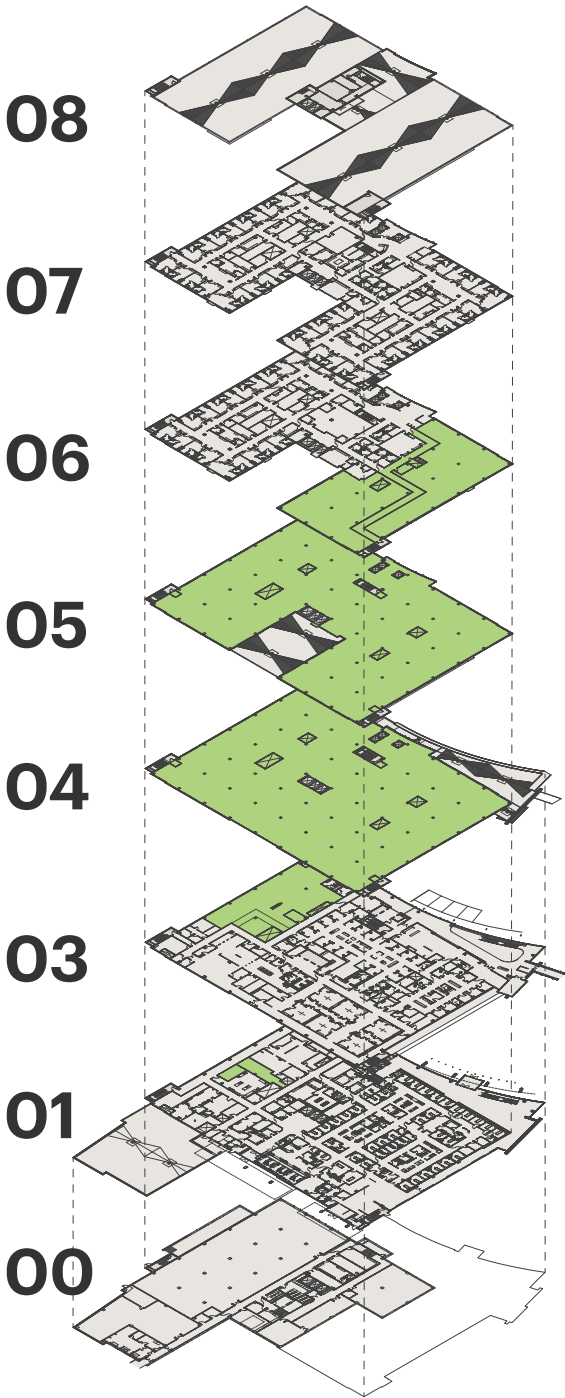


STRATEGIC SHELL SPACE
FLEXIBILITY

+25 100 total
NICU / PEDS **beds**



space intended for
another 25-bed NICU
is currently built out
and being used for
Pediatrics while the
main hospital is being
renovated





PROJECT DELIVERY **SATISFACTION**

PROJECT TEAM SATISFACTION

IPD FEEDBACK SURVEY

ADVANTAGES

ENGAGEMENT (team, buy-in, local participation, community)

COLLABORATION

*RELATIONSHIP BUILDING / TRUST /
TRANSPARENCY*

*LEARNING (continuous improvement,
understanding)*

SCHEDULE

BUDGET

COMMON GOAL & CLEAR MISSION



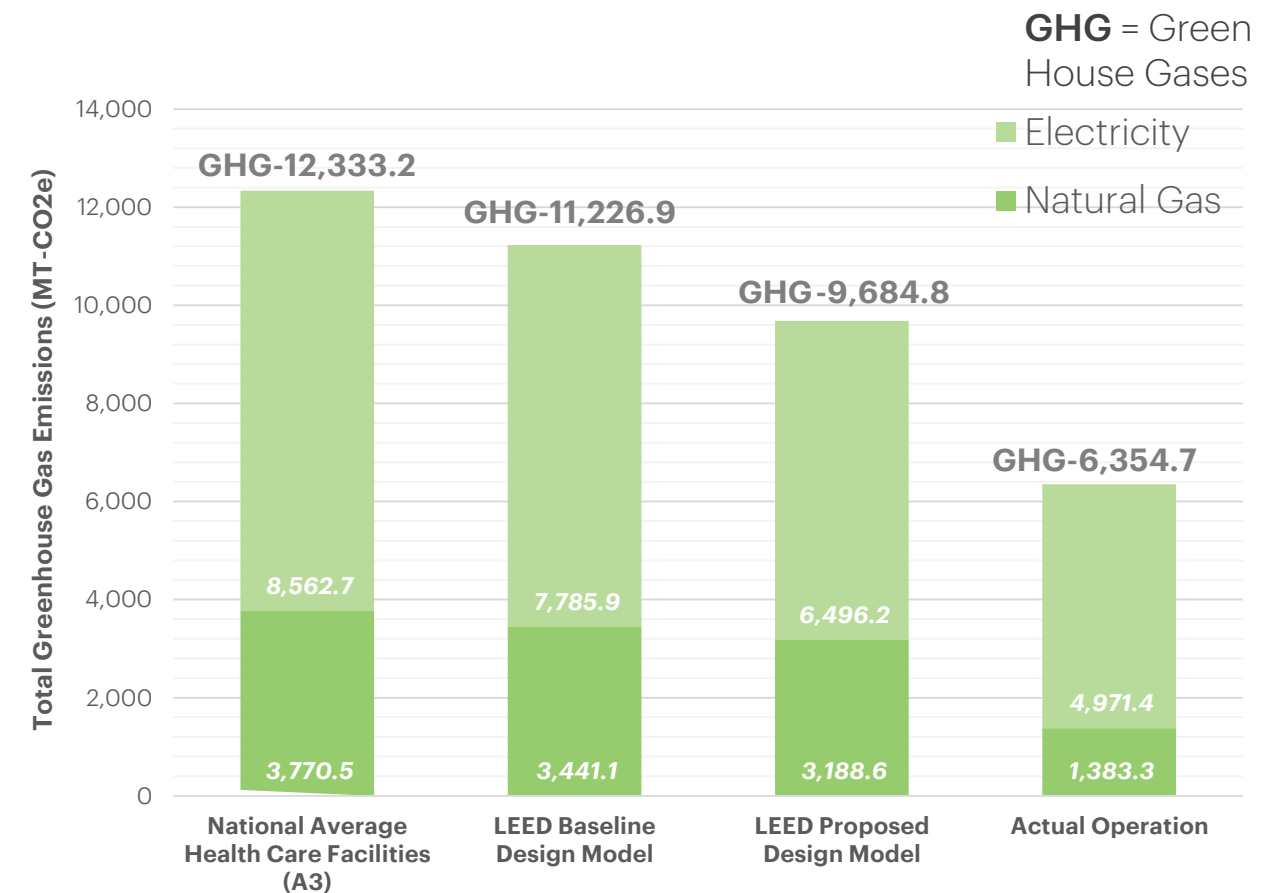
100%

**OF PROJECT TEAM
MEMBERS**

agreed or strongly agreed that **Lean-IPD is better than non-Lean-IPD** in terms of scheduling, cost, quality, safety, morale, and learning



REDUCED CARBON FOOTPRINT



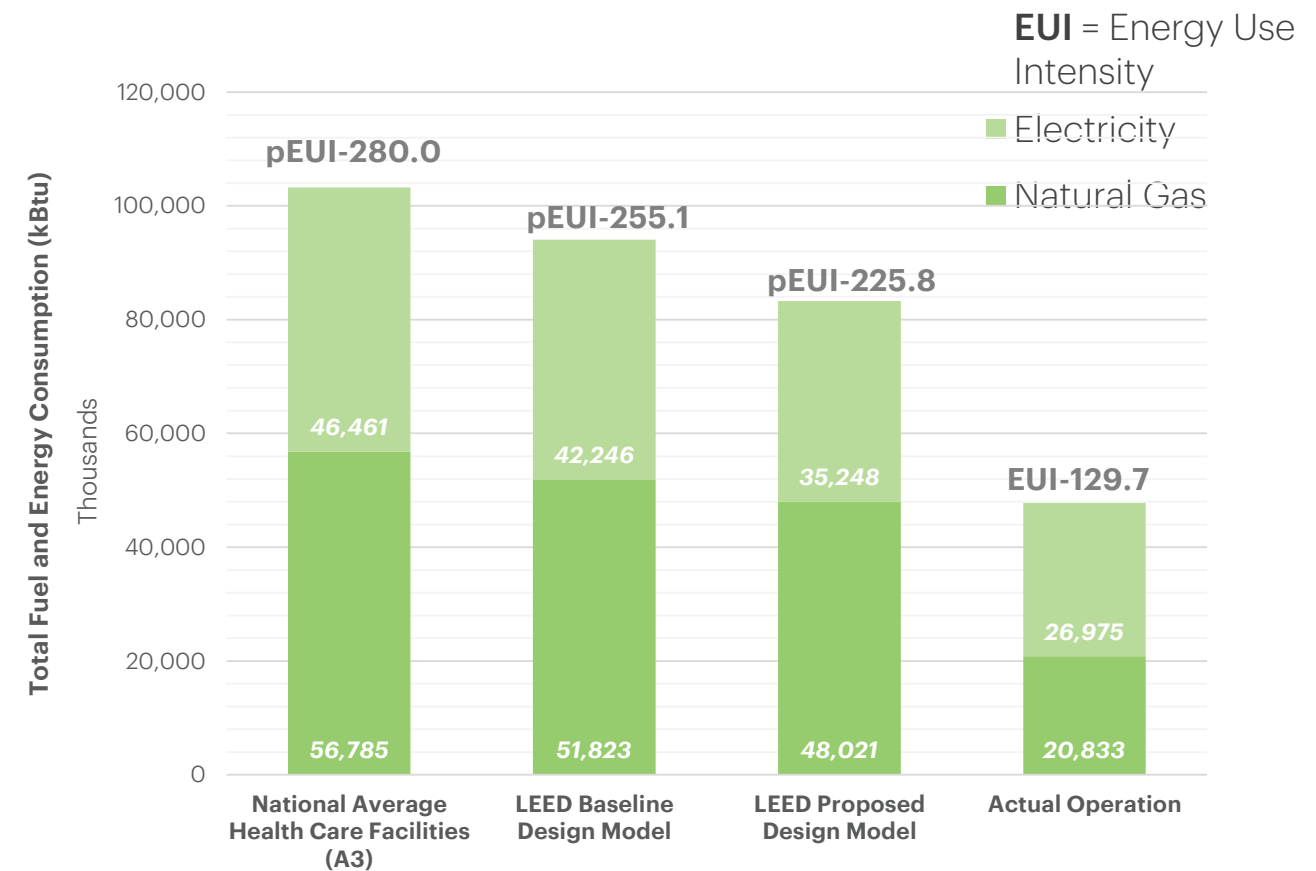
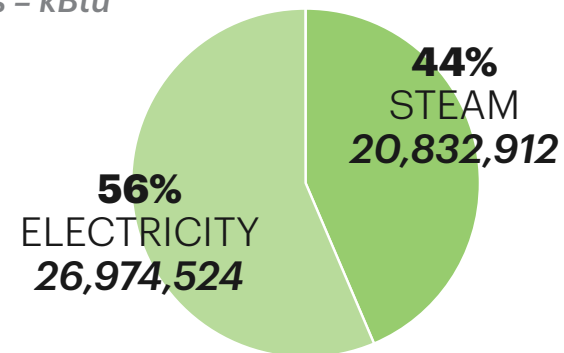
*savings percentages represent the comparisons of Akron Children's Hospital's actual operations to the National Averages for Health Care Facilities based on steam and electricity data to calculate EUI, GHG emissions, and ECI



REDUCED ENERGY CONSUMPTION



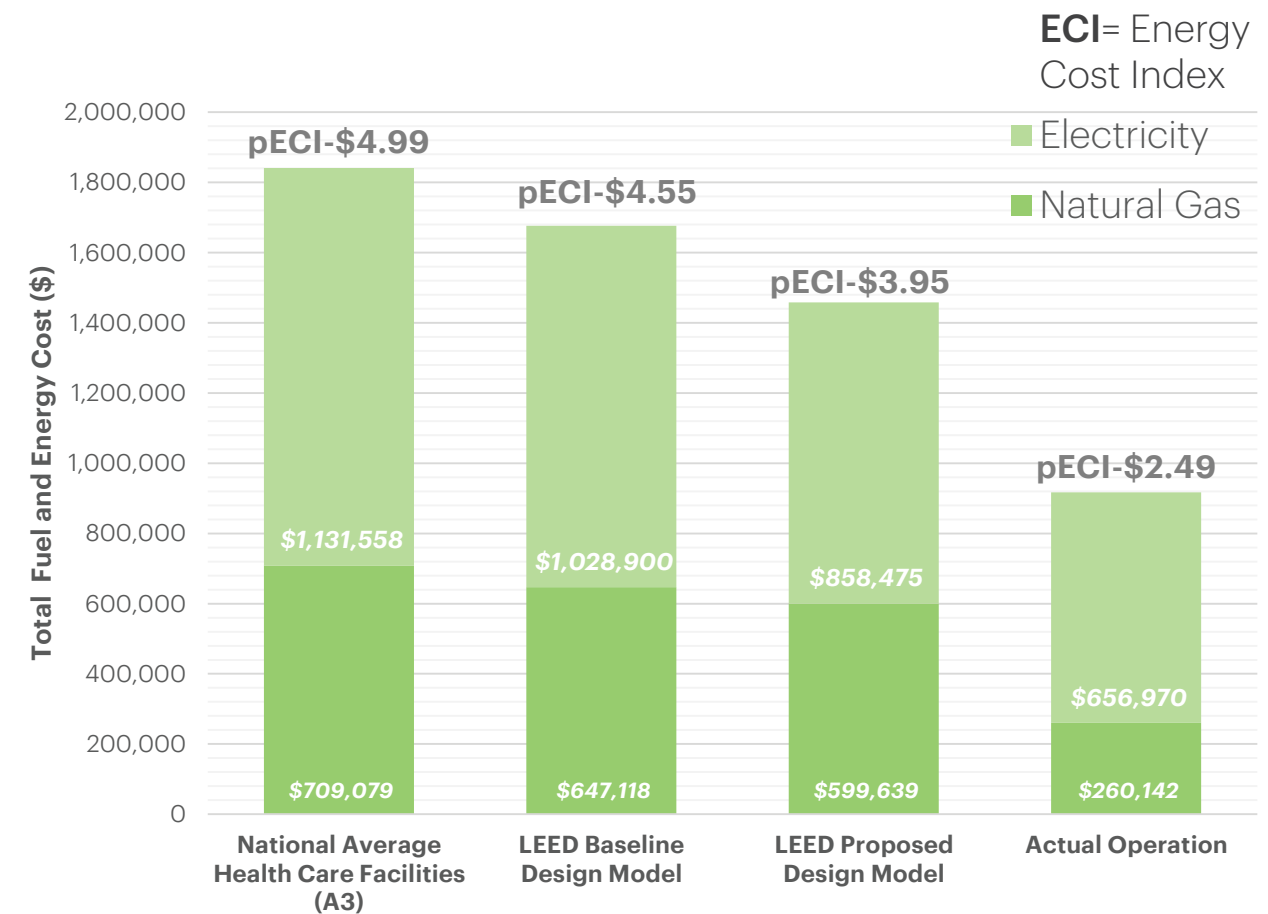
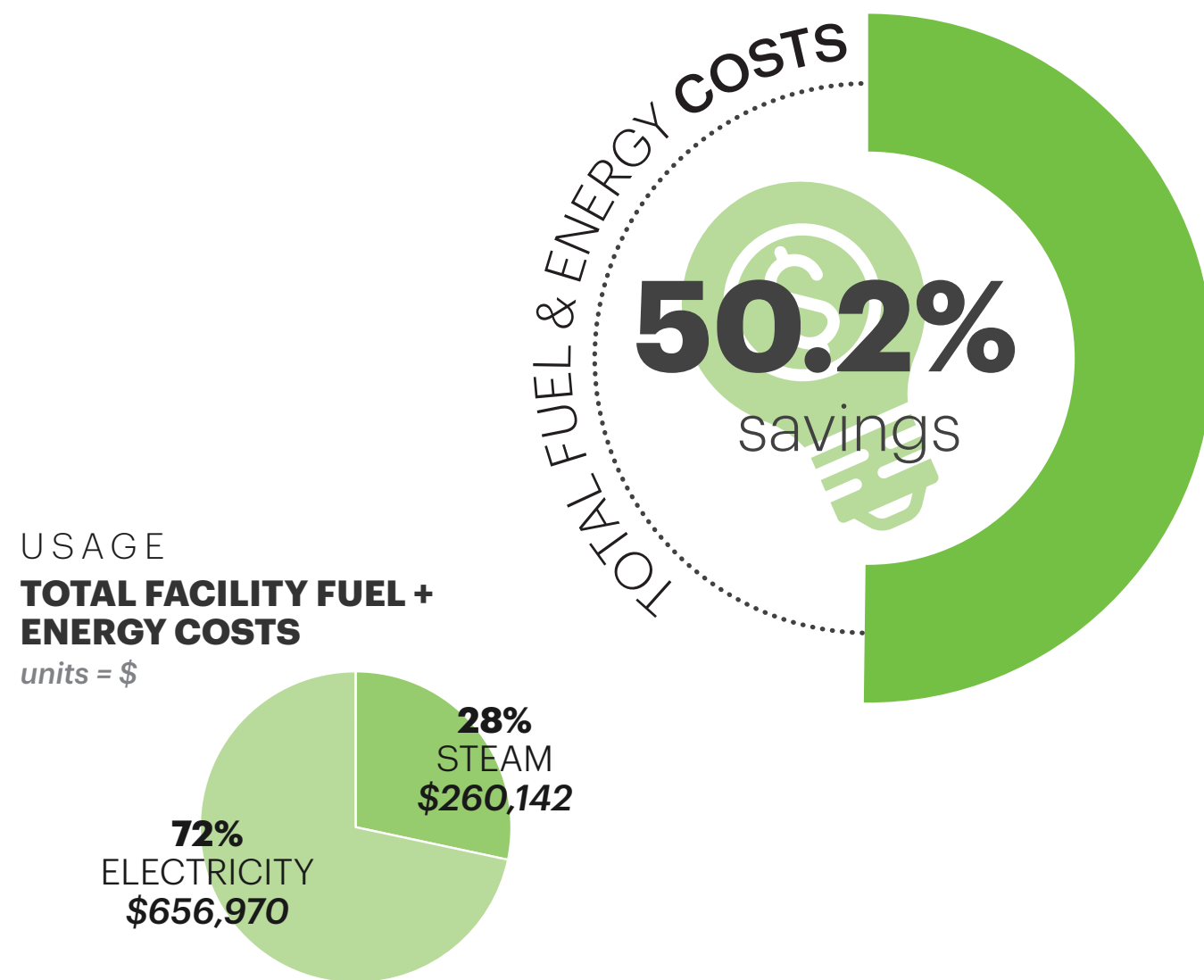
USAGE
**TOTAL FACILITY FUEL +
ENERGY CONSUMPTION**
units = kBtu



*savings percentages represent the comparisons of Akron Children's Hospital's actual operations to the National Averages for Health Care Facilities based on steam and electricity data to calculate EUI, GHG emissions, and ECI



REDUCED ENERGY COSTS



*savings percentages represent the comparisons of Akron Children's Hospital's actual operations to the National Averages for Health Care Facilities based on steam and electricity data to calculate EUI, GHG emissions, and ECI



INCREASED
SATISFACTION

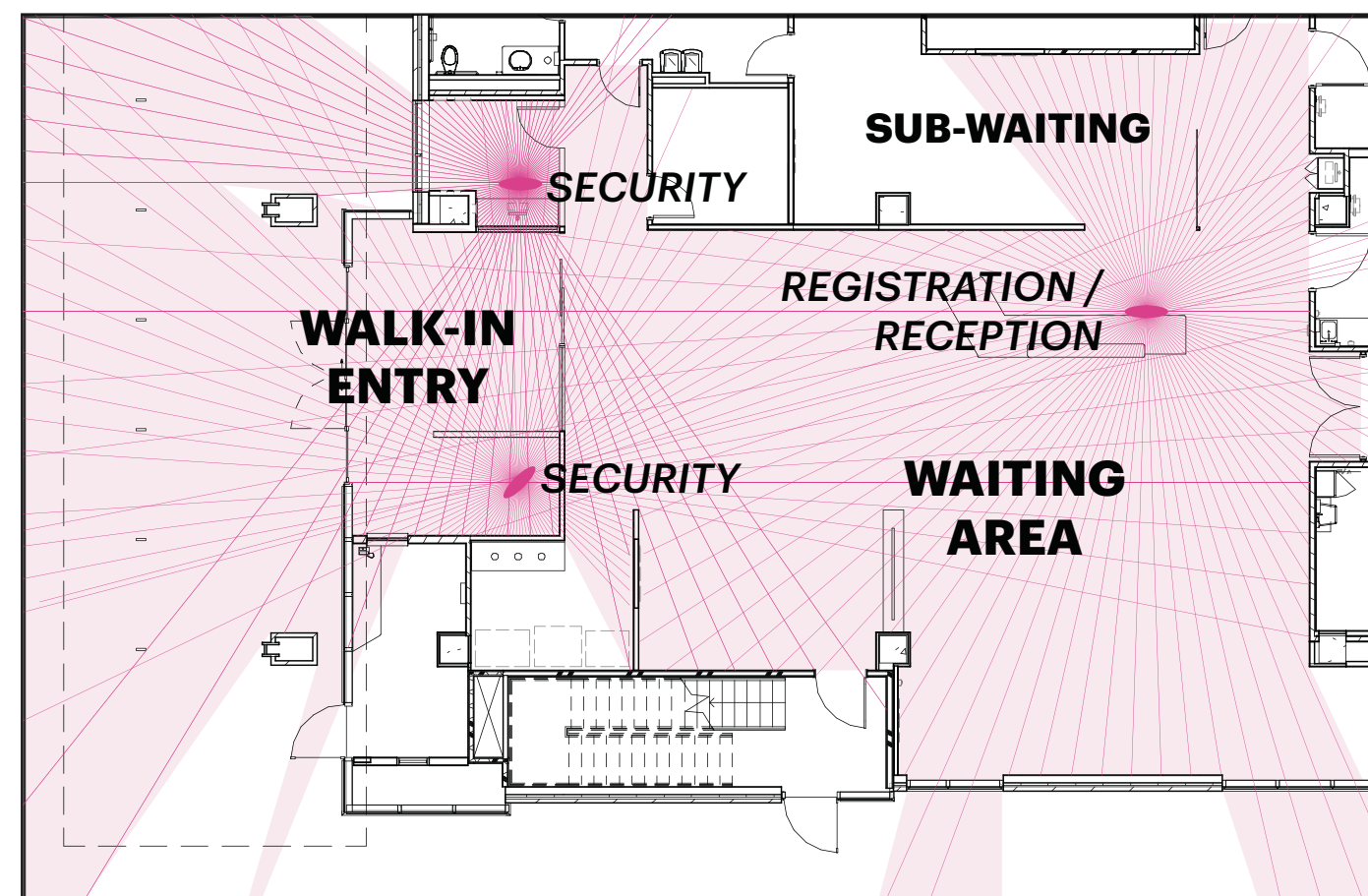
STAFF SATISFACTION
POST-MOVE STAFF SURVEY





IMPROVED **SECURITY**

95% VISIBILITY
OF ED WAITING &
WALK-IN ENTRY



**ED WAITING ROOM AND WALK-IN ENTRY VISIBLE FROM
REGISTRATION / RECEPTION AND SECURITY DESK**



ENHANCED
SAFETY & COMMUNICATION

13
18

**PACU PATIENT
HEADS / MONITORS**
VISIBLE FROM THE SUPPORT CORE

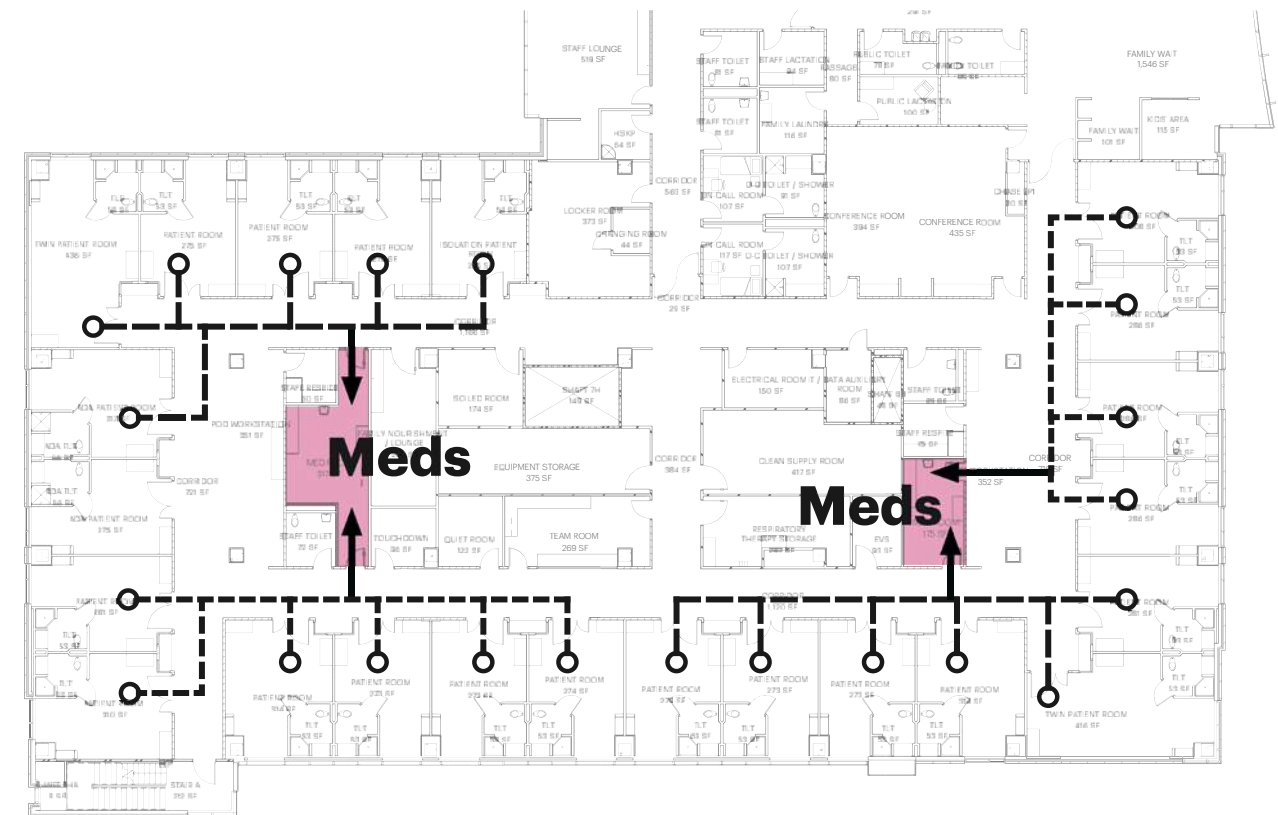




REDUCED TRAVEL DISTANCES



on average
MEDICATION ROOM
36 ft
FROM PATIENT ROOM

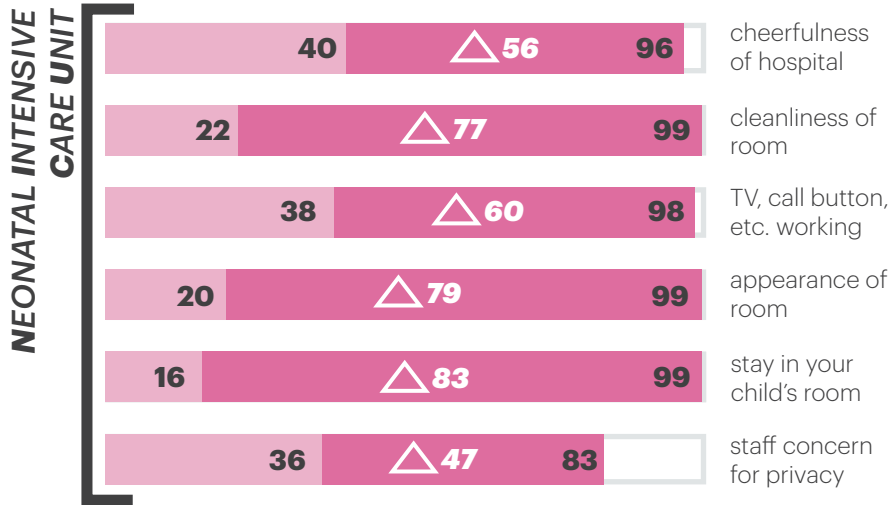
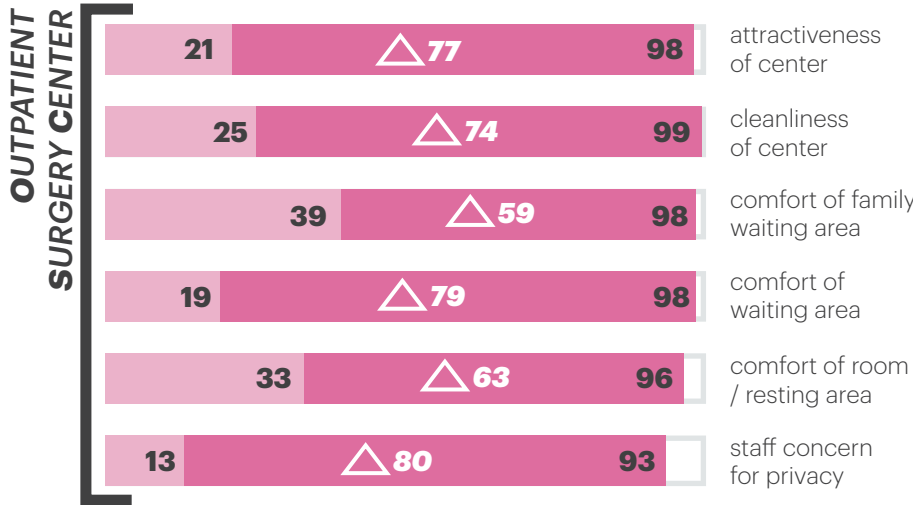
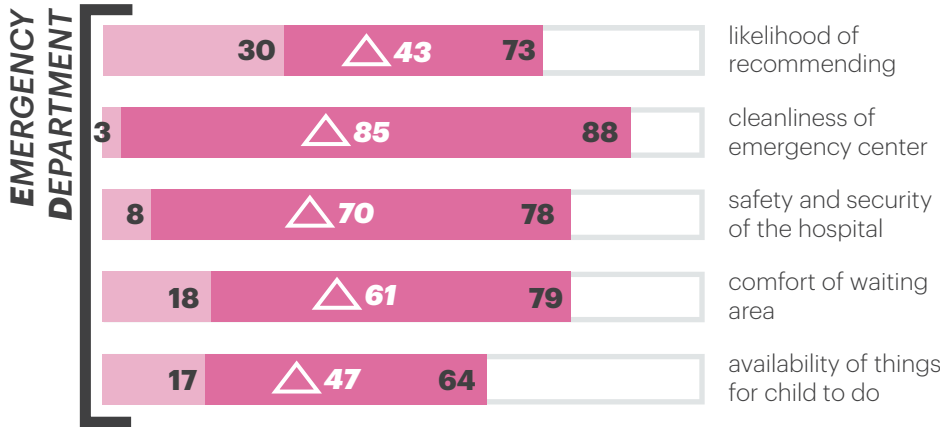


2 Medication Rooms per 25-bed neighborhood with **dual access**

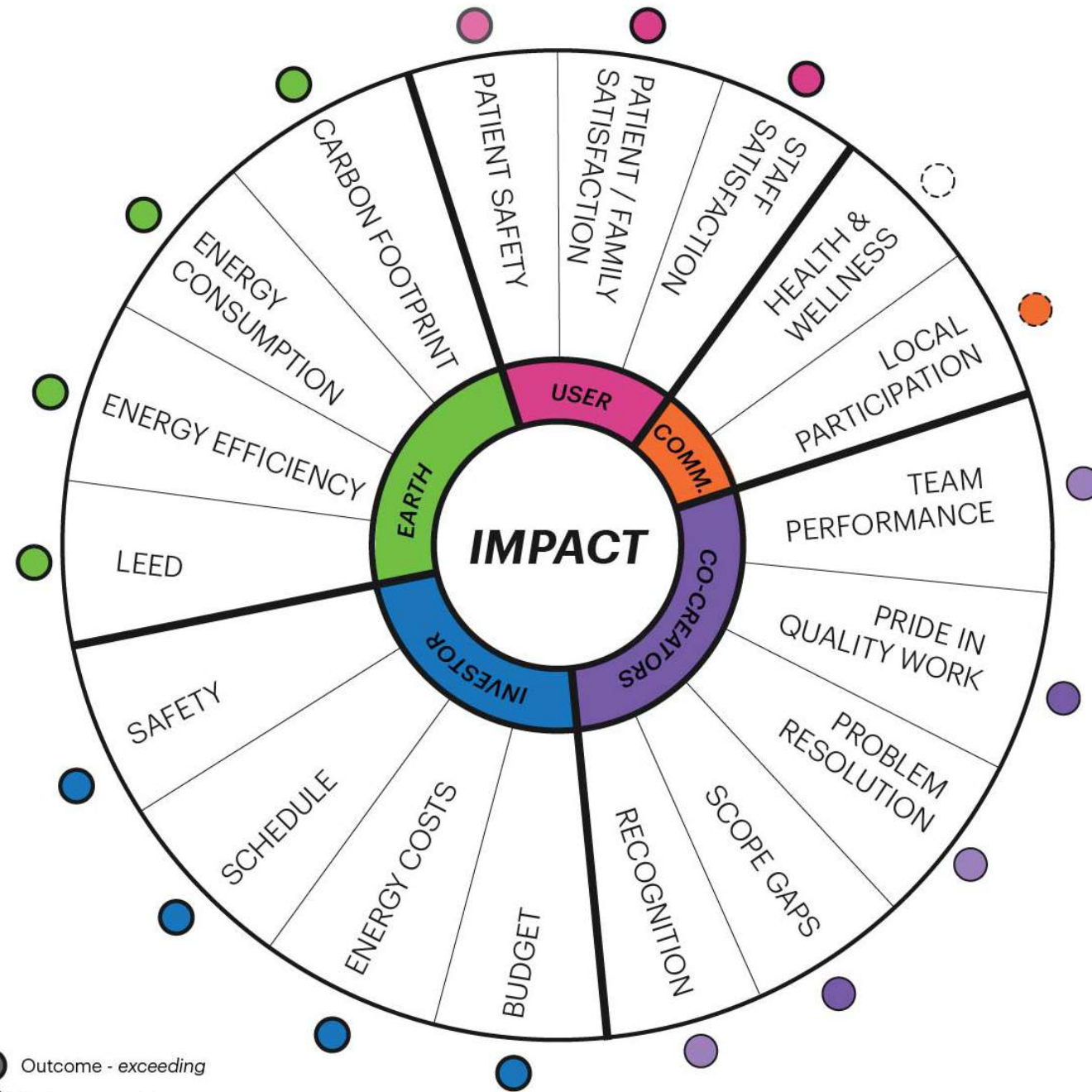


INCREASED SATISFACTION

PATIENT / FAMILY SATISFACTION PRESS GANEY SCORES



IMPACT



- Outcome - exceeding
- Outcome - met
- Outcome - under-performing
- Outcome - unknown



.....
0 CHANGE ORDERS
54 DAYS BEFORE SCHEDULE
\$44 MILLION UNDER BUDGET
50.2% ENERGY COST SAVINGS



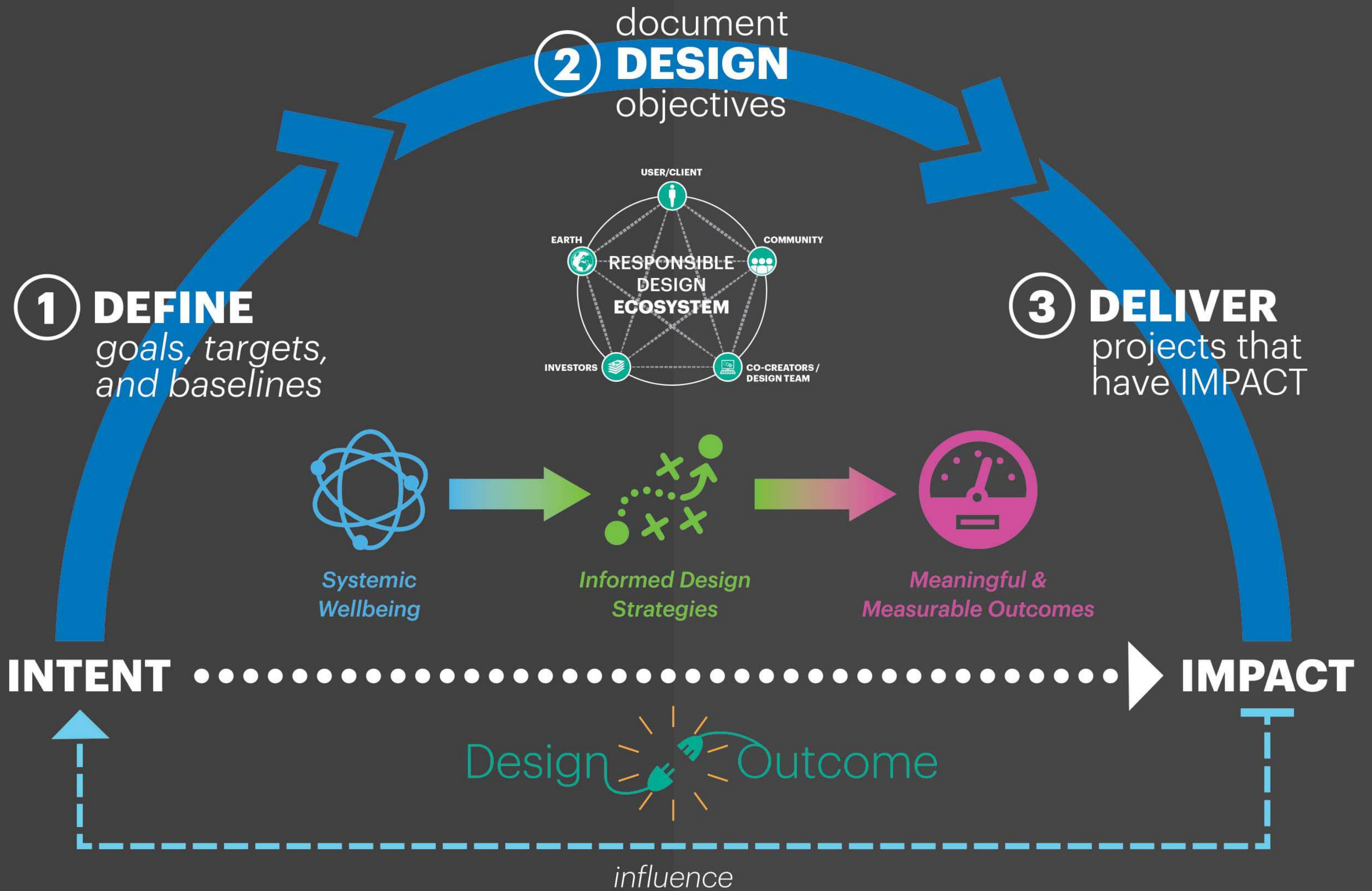
.....
67 POINT INCREASE IN PATIENT SATISFACTION
70% INCREASE IN STAFF SATISFACTION

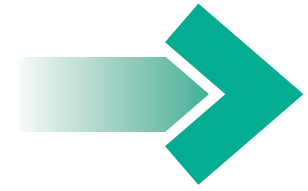


.....
BETTER PLACES FOR PEOPLE DESIGN AWARD
AIA OHIO DESIGN AWARD
CHD TOUCHSTONE AWARD (PENDING)



.....
LEED GOLD
48.5% TOTAL GREENHOUSE GAS EMISSIONS SAVINGS
53.7% REDUCTION IN FUEL AND ENERGY CONSUMPTION





3 BIG IDEAS

1

We can have no **meaningful impact** without **clearly articulated and informed intent**.

2

ILPD requires education of and active participation from all key **stakeholders** throughout the **entire design process** to achieve the greatest value.

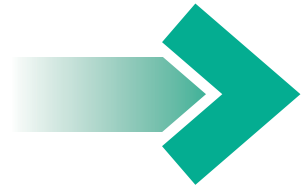
3

Routinely **tracking and documentation** of intent and subsequent impacts informs design strategies for **continuous learning and improvement**.

// INTENT TO IMPACT

QUESTIONS?





WANT TO LEARN MORE?



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