



We want to go forward...

but we don't want you to start with us...

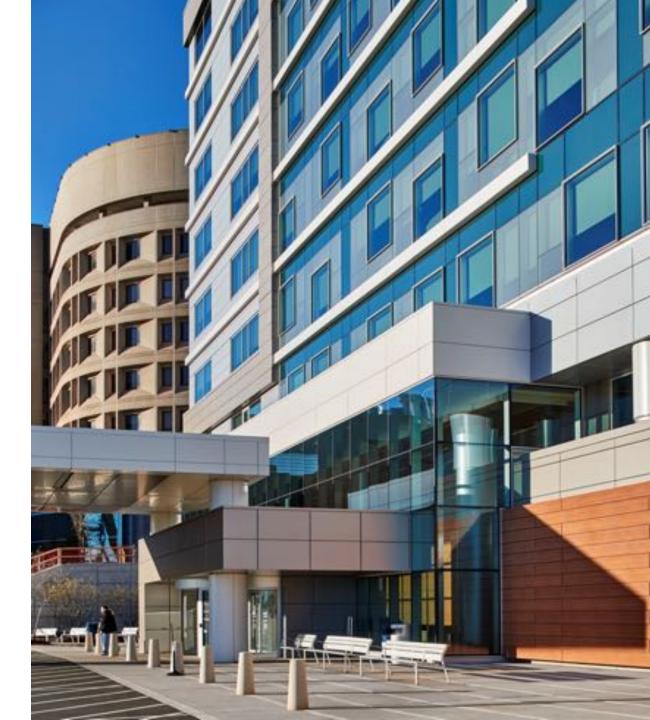
Moving the needle can depend on who is procuring the facility

Who is taking the risk?

Is there a test-bed environment?

Is there an aligned vision?

Are we accountable to outcomes?





Three Pillars of Practice

Experience

Precedence through built work

Evidence

Its been done, but did it perform

Quality of the precedence data

Empathy

Developing a contextual understanding

Doing what has been done before does not move the needle







Taking the Leap Missing Link- Contextual Testing



Design Challenge

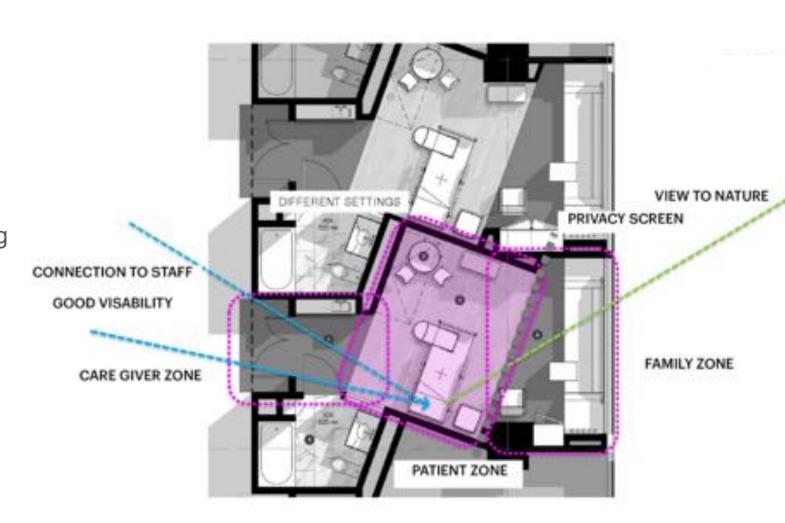
- Maternity unit
- Decrease infant & mother mortality
- Increase privacy & dignity
- Reduce waiting times
- Increase attendance
- Increase ward based aftercare





Evidence Supported Solution

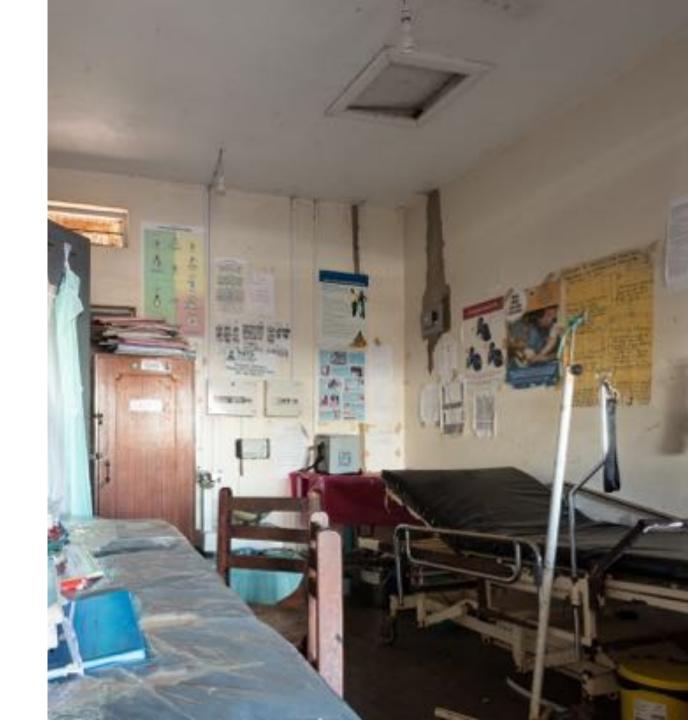
- Single Patient Room
- C. 30sqm area
- En Suite
- Space for Family Visiting/Sleeping
- Central Nurse Station
- Ventilation Sealed Building
- Daylighting daylight vs glare





Contextual Challenge: Do we have any data?

- Rural Uganda
- 1 Nurse
- Malaria & Infections Disease
- No Clean/Dirty
- Limited building materials
- Limited running water
- No hot water
- No Electricity





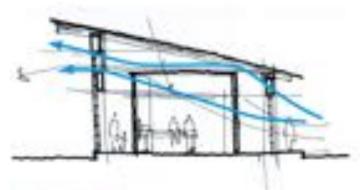
Solution / Hypothesis





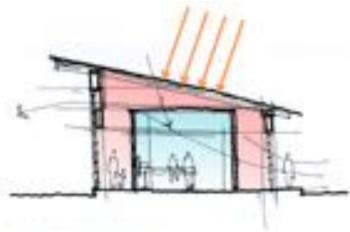


Solution / Hypothesis



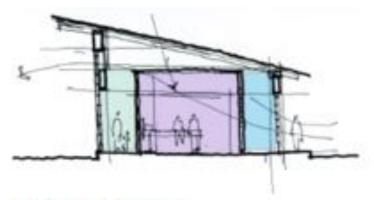
VENTILATION

THE TERACOTTS SCREENING ALLOWS & GOOD PARSAGE OF AIR THROUGH THE BUILDING, THIS CAN BE REGULATED IN THE PROTECTED SPACES



HEAT SHELLDING

HE METAL ROOF PRODUCES A THERMAL GRADIENT ACROSS TH COTION, DRAWING AIR FROM THE PROTECTED SPACES.



COMFORT & PRIVACY

PUBLIC AND STAFF CIRCULATION ARE SEPARATED, SCREENS AND CLERESTORY WINDOWS IMPROVE PRIVACY IN THE DELIVERY ROOM WHILE ALLOWING LIGHT AND VENTILATION

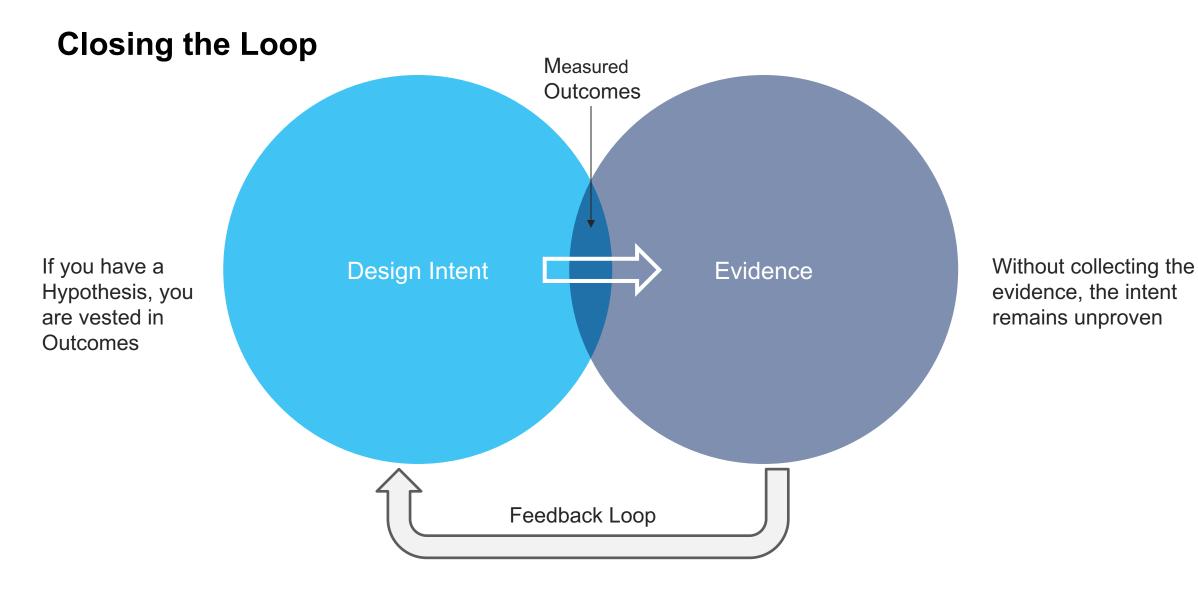


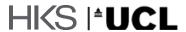
DUST

TERACOTTA SCREENS BREAK AIRBOURNE DUST TRANSMISSION















Innovate UK





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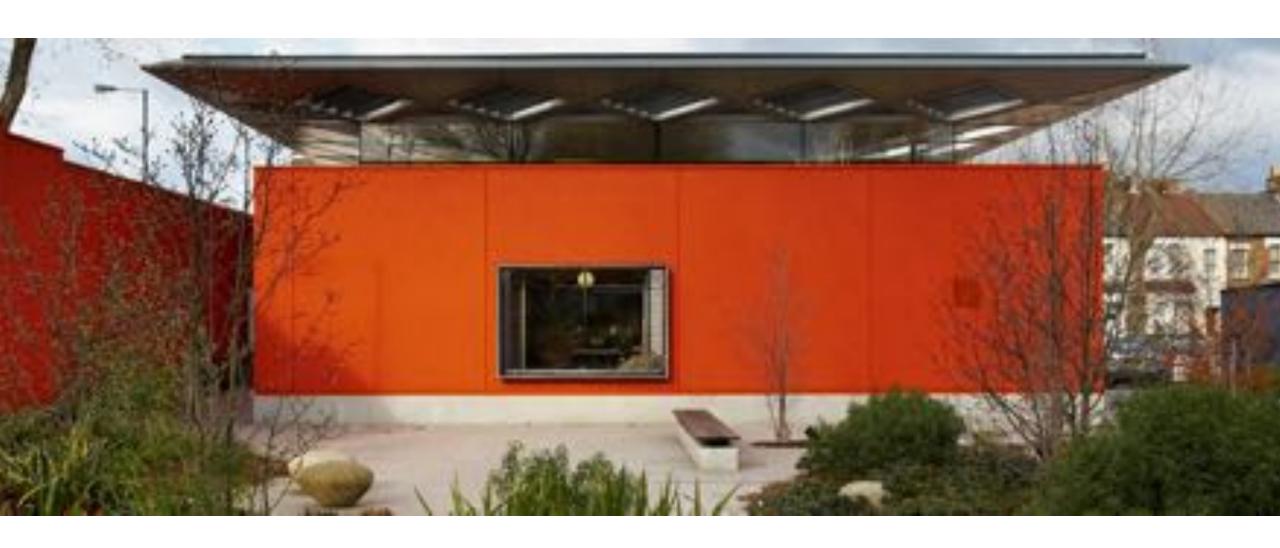












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Evidence

Evidence

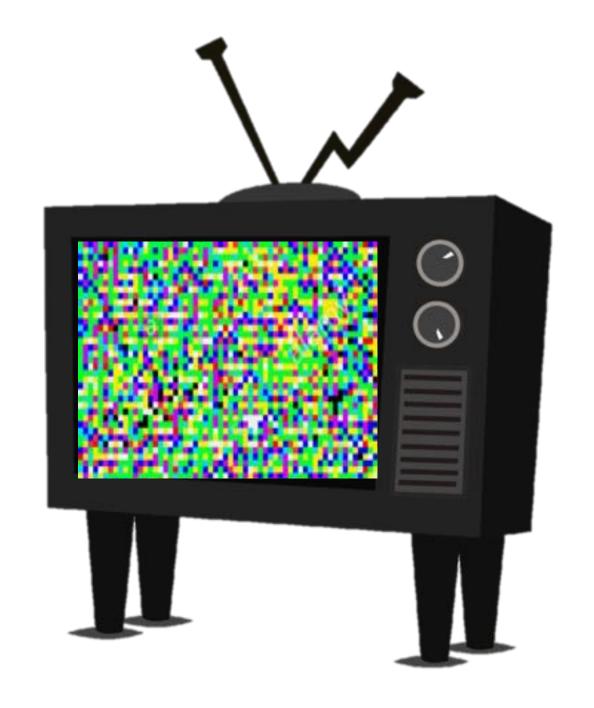
Evidence

Evidence

Evidence

Evidence



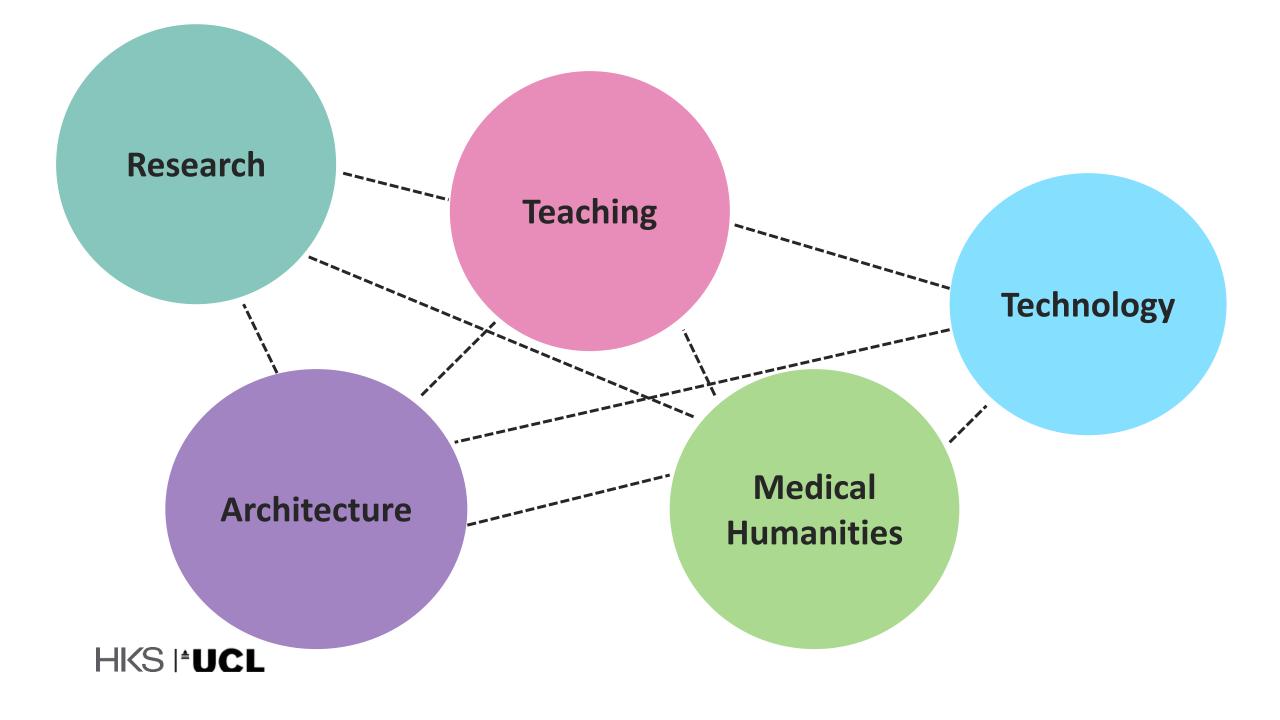






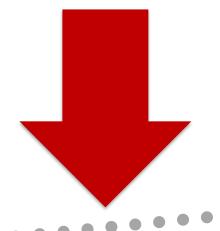
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Why. How. What. So What.





Rapidly Deployable Tools + Point of Use Resources

Academic + Industry Partnerships



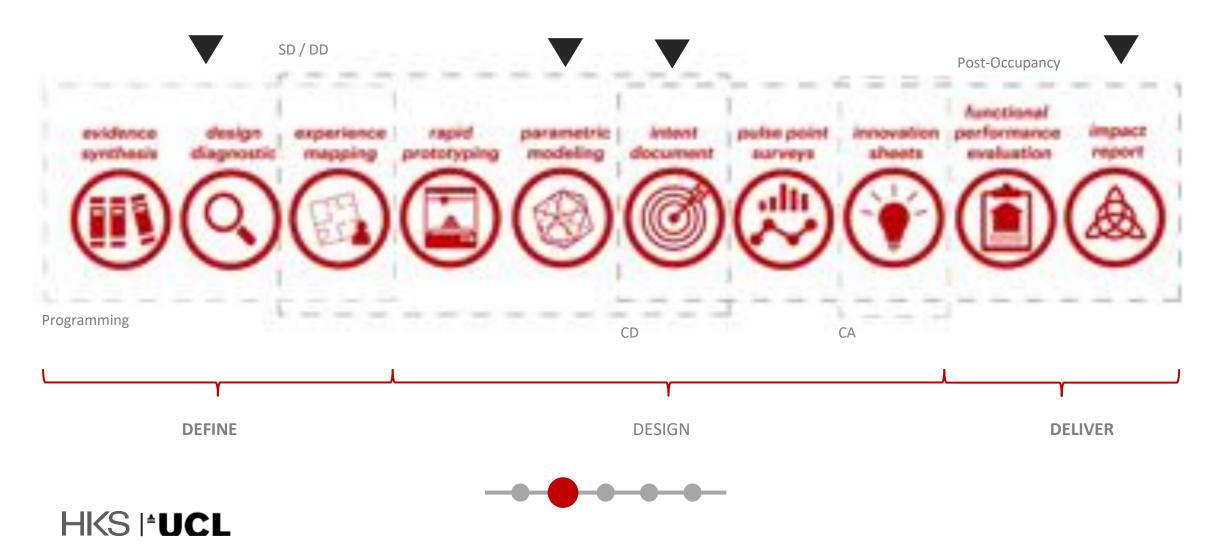
Foundational Research





Tools

10 Insight and Impact Tools



DESIGN DIAGNOSTIC

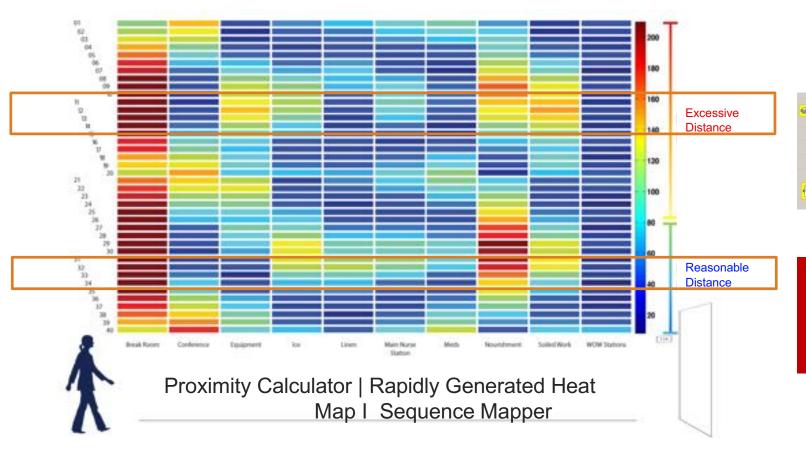
A systematic current state analysis that studies the relationship between facility design, human experience and organizational efficiency, in order to inform future state design

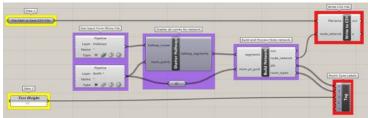
DD002: HEALTHCARE WORKPLACE A DESIGN DIAGNOSTIC OF THE SICU Creating places that enhance the human experience





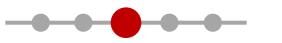
Observational + Computational. Field Research + Parametric Analysis





Data for parametric analysis comes from field research





Research

Design Integration

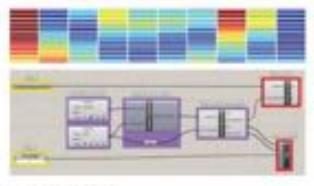
Results



Field Research + Parametric Analysis

A "Diagnostic" study using Field Research. + Parametric Analysis was conducted to understand the current state before designing the future state for people and processes in a Midwest Med-Surg unit.





Parametric Design

Info from the field research was used to develop a "sequence mapper" to simulate walking in the new unit based on observed behavior. The design team used Parametric Modeling tools for each design configuration to optimize the layout.



Walking will be reduced by half in the new design despite a larger floorplate







In addition to field research. the study also included a parametric analysis of the plane using tools developed by HKS LINE to assess proximity between key spaces (translated into a heat map).



Antivity Analysis

Space trilination

Heat May



and visibility (via isovists).

Field research findings added the human layer to space analytics regarding user. experience, work flow, space utilization and patient monitoring. The most wasteful walking was found for the smallest of tasks - getting apple sauce for med events! This made the beam redesign the meds/supplies core to





The design team also used mock-ups and EBD decision. making tools to interact with users. The design of the mockups and other tools was based on insight gleaned from on site research and spatial analysis.



3000*

200

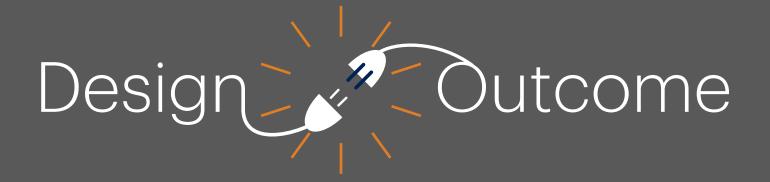
200+

100

By using research to aid design and process optimization nursewalking was reduced from: 3 miles in old facility to 1.6 miles in the new facility (simulated). Other insights on care coordination and work efficiency also informed design.



- Client paid for Field Research, systemi with KNOK process. implementation intratives
- Design teams absorbed the time for design integration.
- include nourishment. IHES combined absorbed tool disvelopment by LINE and DASHE.



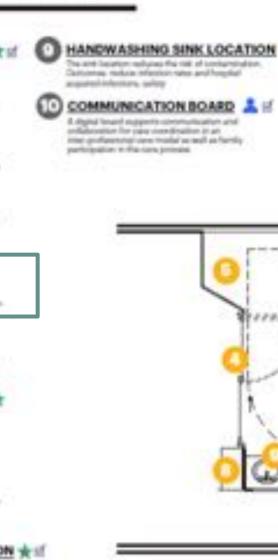
Every Design Decision is a Performance Hypothesis

D→ O: DESIGN INTENT DOCUMENT

PRIVATE PATIENT ROOM







1000000



TYPICAL PRIVATE PATIENT ROOM

To what extent were the

limitations of the

evidence considered?

Are we "engaging" or

"post-rationalizing" with

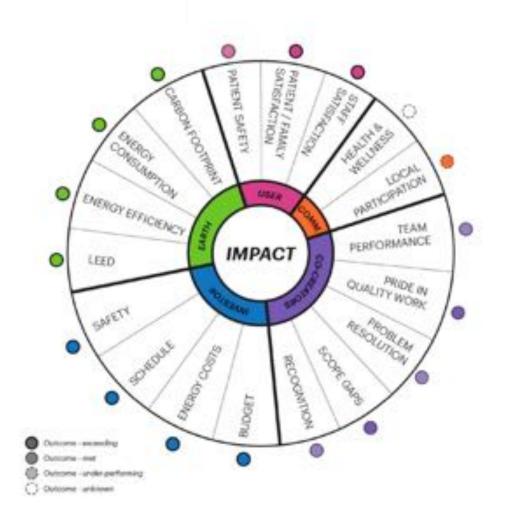
evidence







Impact Report



O 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

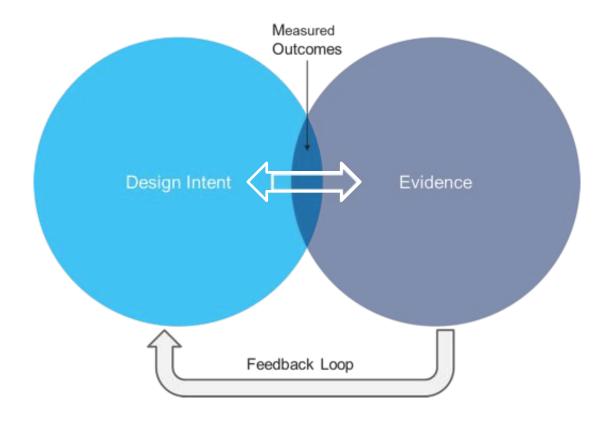
BETTER PLACES FOR PEOPLE DESIGN AWARD AIA OHIO DESIGN AWARD CHD TOUCHSTONE AWARD

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

To what extent did the building "contribute" to the overall impact.

What Happens 5 years later?





To close the feedback loop we need sustained relationships and unbiased evaluators

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Industry + Academy + Health System

Concluding and Cautionary Remarks/ Discussion

- NO successful outcome can be attributed solely to facility design
- There are ALWAYS trade-offs in design
- Context Matters. Intent Matters.
- Move from "tried and tested" to "trying and testing"
- Designers have to "engage" with evidence- not "blindly follow" or "deny" it
- Sustain academic partnerships to develop knowledge
- Always close the feedback loop





