



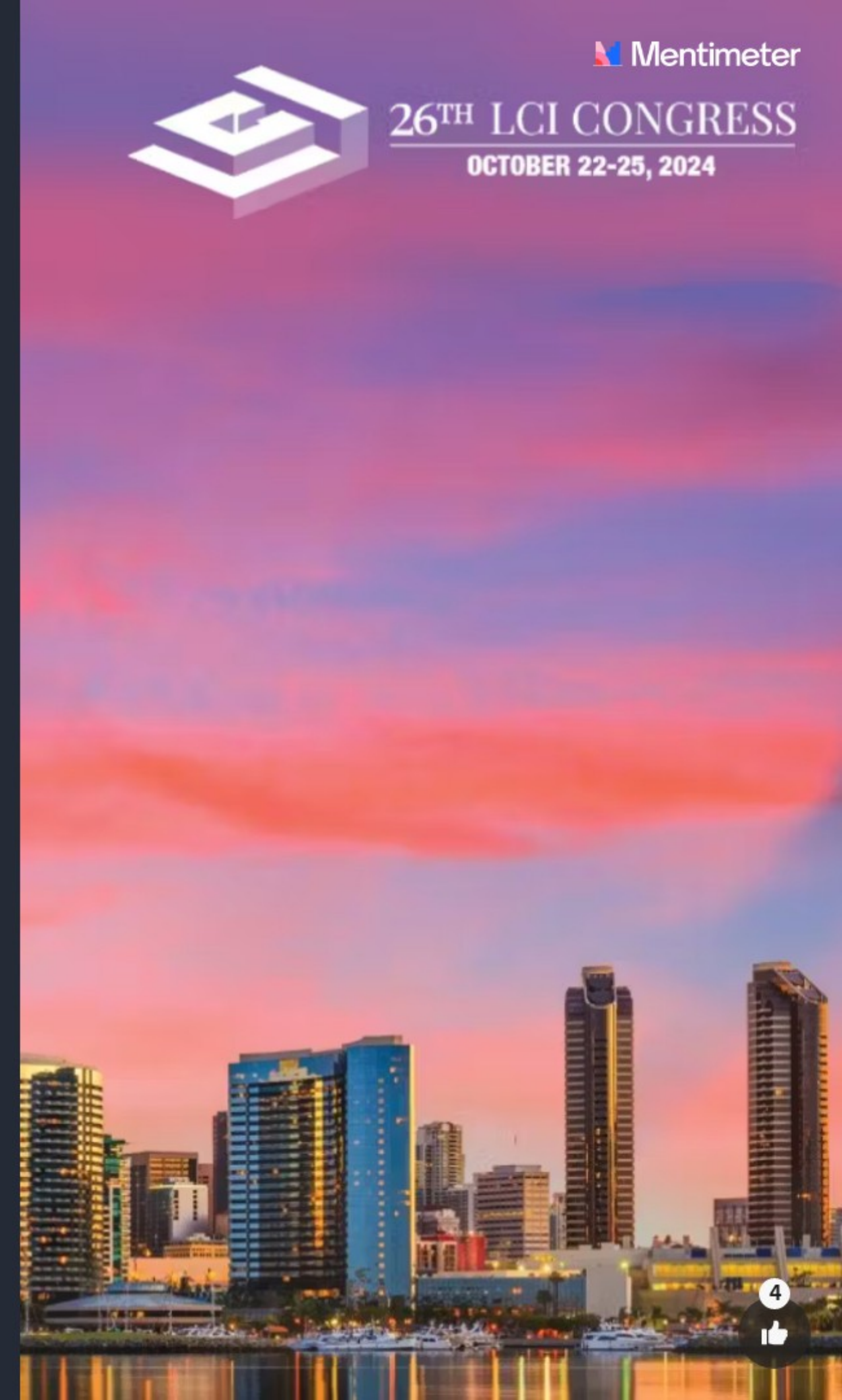
Flow State Experience:

Feel the first principles of lean
through role playing and simulations with Lego!

Amplified by music!

The Flow State Experience is
... the artistry of role playing
... the tactile joy of building with Lego
... both stress and then calm

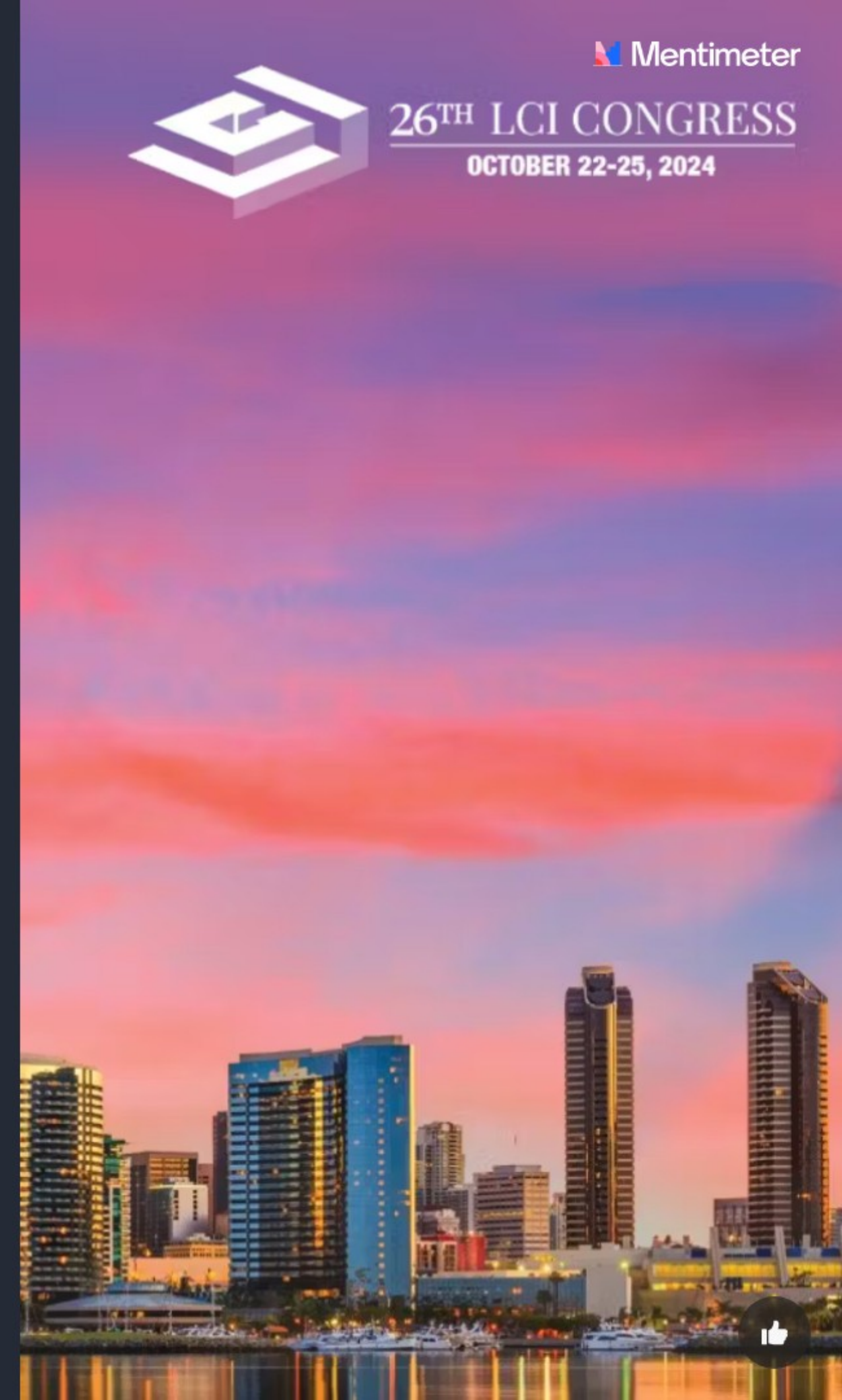
To go together through
... a shift from self-consciousness to empathy
... the feeling of group flow
... an emotional kinetic response to the question
"what do we feel about waste?"





Live Presentation Link

<https://www.mentimeter.com/app/presentation/n/alf74voeurqg929h7pcqknuwfqvhhjdjo/present>



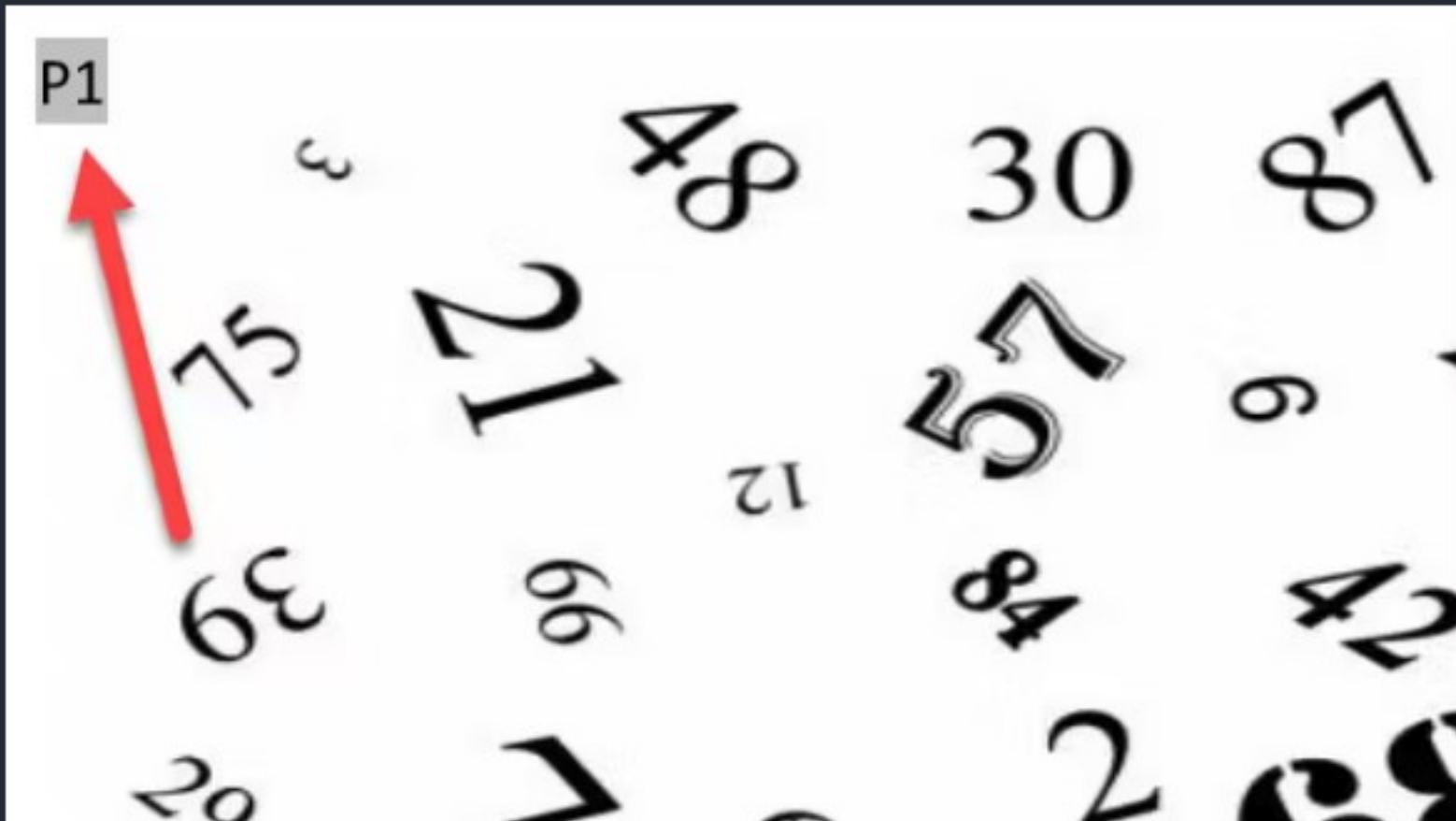
Where were you born?



Numbers: Simple Instructions

- Turn over the top page of the stack of eight pages (keep all other pages face down)
- Strike through or circle numbers one - (as high as you can)
- You have 20 seconds
- Be sure the P number in the gray box in the top left matches (P1 first, then P2 ...)

Do you have P1 in the top left corner of your paper or pdf?



21 Yes
0 No

P1



P1: What was your highest number?



P1: How does this remind you of a current work process?

Chaos

Unclear of goal

Scoping out a job

Incomplete instructions!

We are only as good as
our weakest link

Its messy

Looking for info quick but
chaos

Confusion

P1: How does this remind you of a current work process?

Confusion

Unorganized choas

Poor direction and
communication too many
inpute

Typical

Confusing

Yelling. Confusion.
Screaming

No clear direction. No
flow.

Never know where stuff is

P1: How does this remind you of a current work process?

It was chaotic

Hot mess

No context to help foster
success

Can't be accountable for
other people's actions

Frustrating

Stress and not visual

Too fast

Being unorganized makes
everything difficult

P1: How does this remind you of a current work process?

Lack of time

disorganization

Multitasking

Chaos

Unclear direction.

Trying to find the right
info in a sea of info

Cluster ...

It's a mess

P1: How does this remind you of a current work process?

Chaos

Cluster F

Limited direction

No time

Confusing

Lack of clarity.

Only as good as weakest link.

Drug down by poor performers

P1: How does this remind you of a current work process?

No organization

Chaotic, not enough time

Least amount of time to
perform a task with least
amount of instruction

Frustrated

Too much going on at
once

Incomplete

We're all doing the same
thing

Always searching
something

P1: How does this remind you of a current work process?

Rules not clear for complicated process

Disorganized activities and lack of communication.

It's a mess

Lowest brings down whole team

Slowest gives the paste

Sloppy

Hard

We're only as successful as our weakest link, and we'll be really weak with processes like this.

P1: How does this remind you of a current work process?

Yes

Lack of clarity.

Hot mess

Frustrating

Confused

Unorganized makes
things difficult

Unclear instructions

Poor direction

P1: How does this remind you of a current work process?

Less

Chaos

P2

P2: What was your highest number?



P2: What made this easier than P1? What are ways to remove waste and inventory from construction?

Same spot

Less numbers

Repetition

Less info on the page

Less clutter

Less clutter

Less clutter

Less numbers

P2: What made this easier than P1? What are ways to remove waste and inventory from construction?

Familiarity

Numbers called out

Clearer

Repetition

Less numbers.
Experience.

Less clutter

Knew the activity ahead
of time

Fewer numbers on the
page

P2: What made this easier than P1? What are ways to remove waste and inventory from construction?

Same page fewer numbers

Less numbers and having seen it before

Pattern

Less distraction

Pattern found

Less numbers

Directions were more specific

Repeated activity. Less numbers

P2: What made this easier than P1? What are ways to remove waste and inventory from construction?

Sorted

Less numbers

less numbers

Clear

Less numbers

Some numbers removed

Fewer options

Repitition

P2: What made this easier than P1? What are ways to remove waste and inventory from construction?

Cleared the noise

Less numbers and know
what to expect

Sort

Easier to see the
numbers; practice

Same pattern less
numbers

Less numbers

Less clutter

Fewer numbers

P2: What made this easier than P1? What are ways to remove waste and inventory from construction?

Slightly better prepared

Don't have to go in order

Less confusing

Repeat

It was sorted

Removing the numbers
that are not necessarily
needed

Less numbers

Repeat exercises helped

P2: What made this easier than P1? What are ways to remove waste and inventory from construction?

Less numbers

Eliminate waste

Less numbers

Less numbers, more space
between numbers, familiarity
with the process

Less numbers

Repeat

Less numbers

Expectation

P2: What made this easier than P1? What are ways to remove waste and inventory from construction?

Familiar data and instructions.

Less clutter

Less numbers

Family

P3

P3: What was your highest number?

0
1-5

1
6-10

20
11-15

12
16-20

4
21-25

20
26 or Higher



30 21 ¹² 39 ³	24 ⁶ 42	33 15	27 ⁹ 18 ⁶ 45 36
2 20 ²⁹ 47 ³⁸ 11	41 ⁵ 32 ¹⁴	23 8 26 17	44 ³⁵ 34
28 10 61 ¹ 37 ⁴⁶	31 40 22 ⁶	4 13	16 43 25 7



P4

Small Batch

Flow



P5



P5: What was your highest number?



P6

P7



P8



P8: How does standardization and flow help with missing information or disruption?

Visial

Makes it obvious

Visual

Makes it immediately
apparent

Errors are visible

Makes it apparent

Easily identified

Visual

P8: How does standardization and flow help with missing information or disruption?

Repetition

Visual

It creates flow

Knowing where to go to
find information

Reduces wasted
resources

Creates a repeatable
process

Clarity

Easily identifies it

P8: How does standardization and flow help with missing information or disruption?

When you have a flow it makes it obvious

Easily identifiable

Visual management

Fast problem solving

Power through it

Helps identify it

Helps flow remain stable

Visual

P8: How does standardization and flow help with missing information or disruption?

Clarity

Clear focus

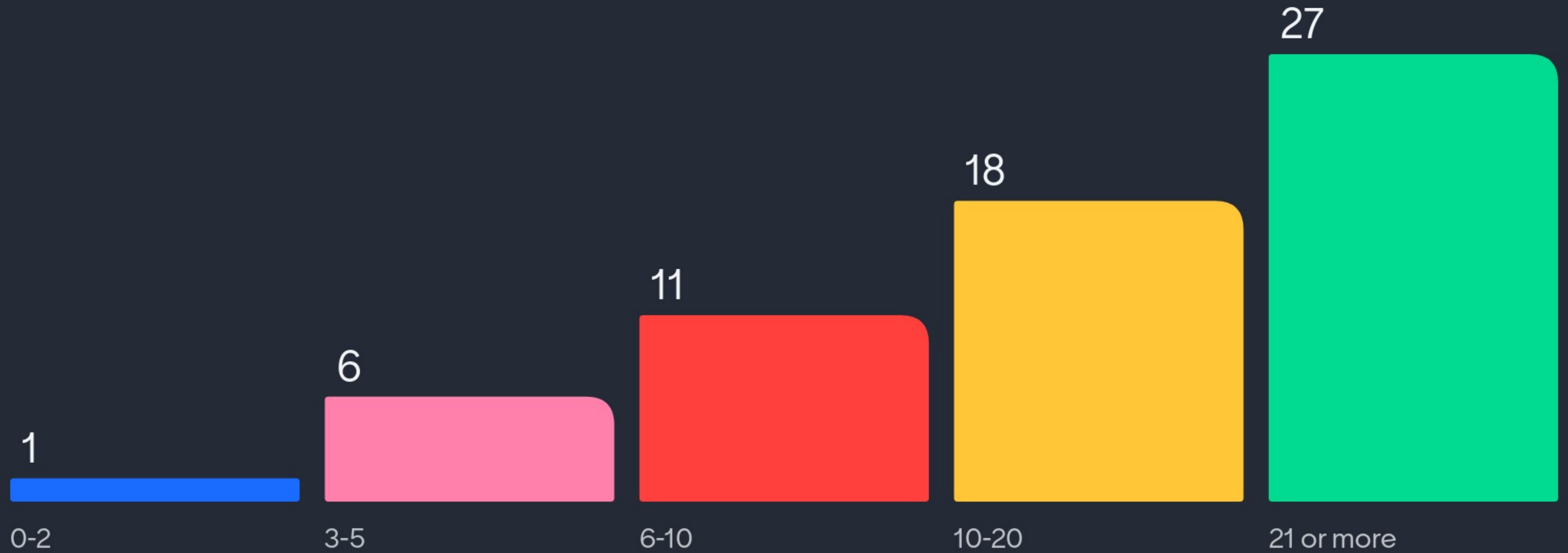
List three words that explain why you chose your picture for the introduction?

159 responses

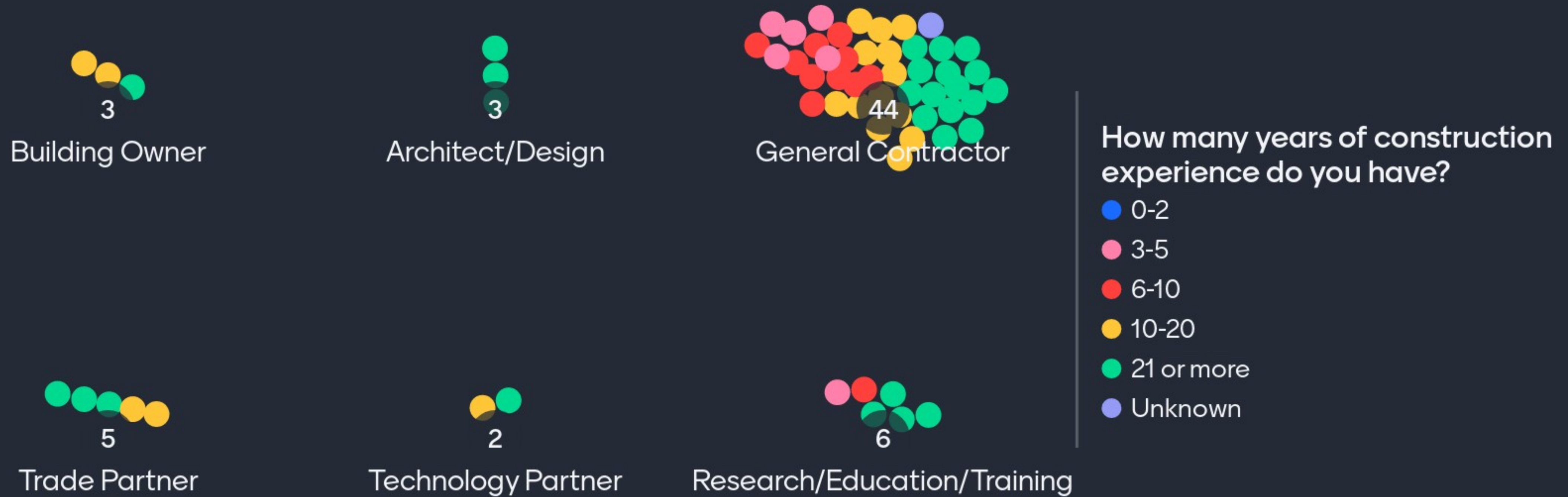




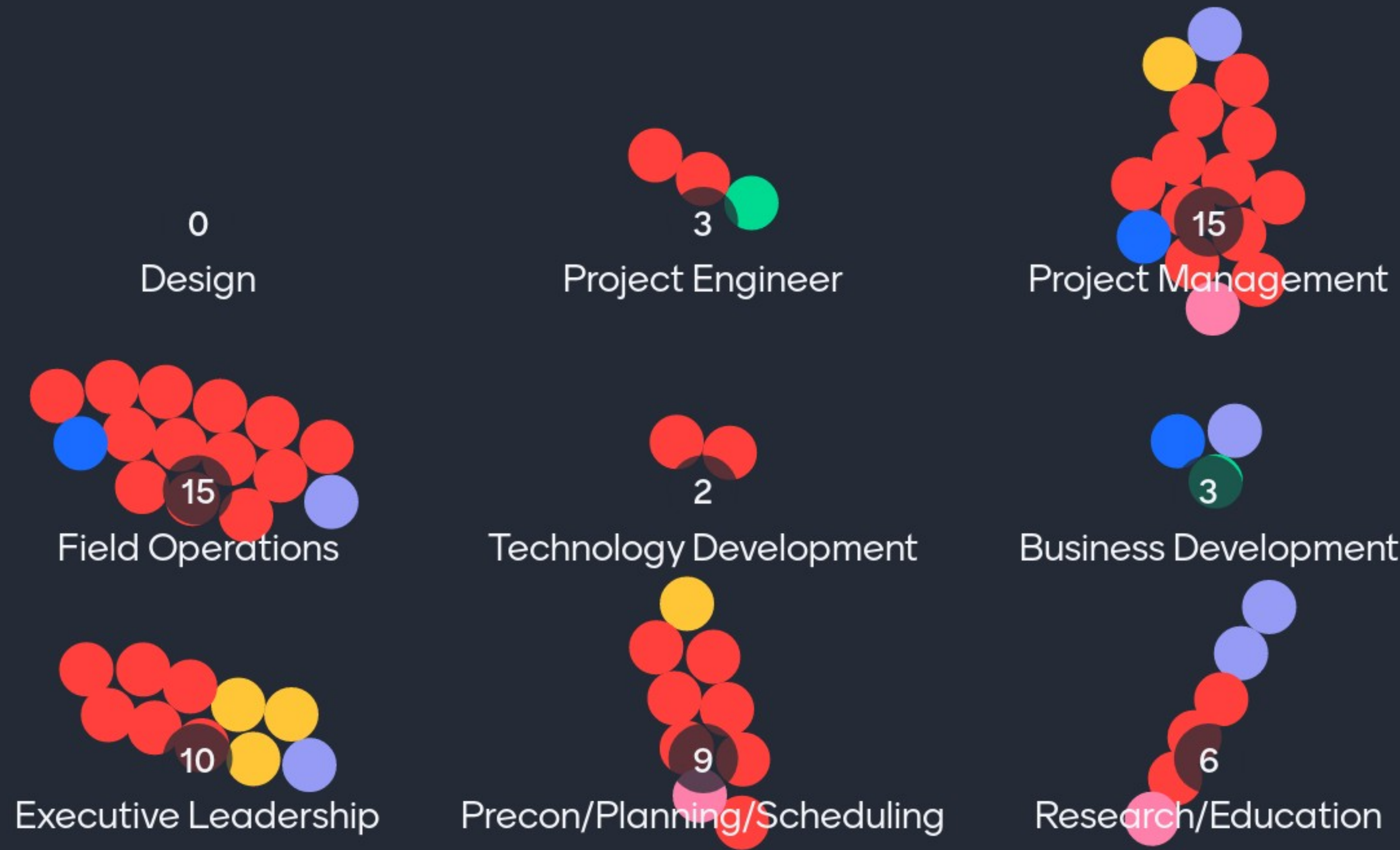
How many years of construction experience do you have?



The company I represent today:



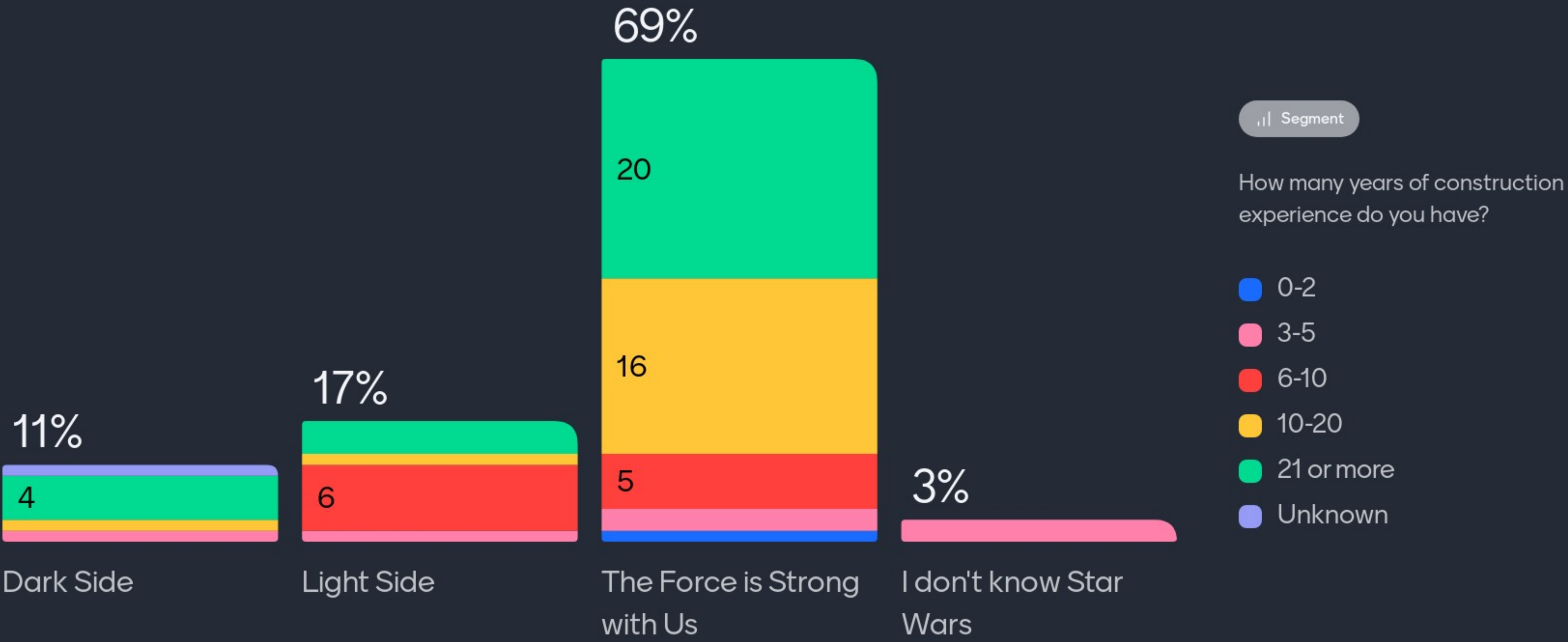
My primary role:



The company I represent today:

- Building Owner
- Architect/Design
- General Contractor
- Trade Partner
- Technology Partner
- Research/Education/Training

How do you feel about the future of construction?



Trust Matrix

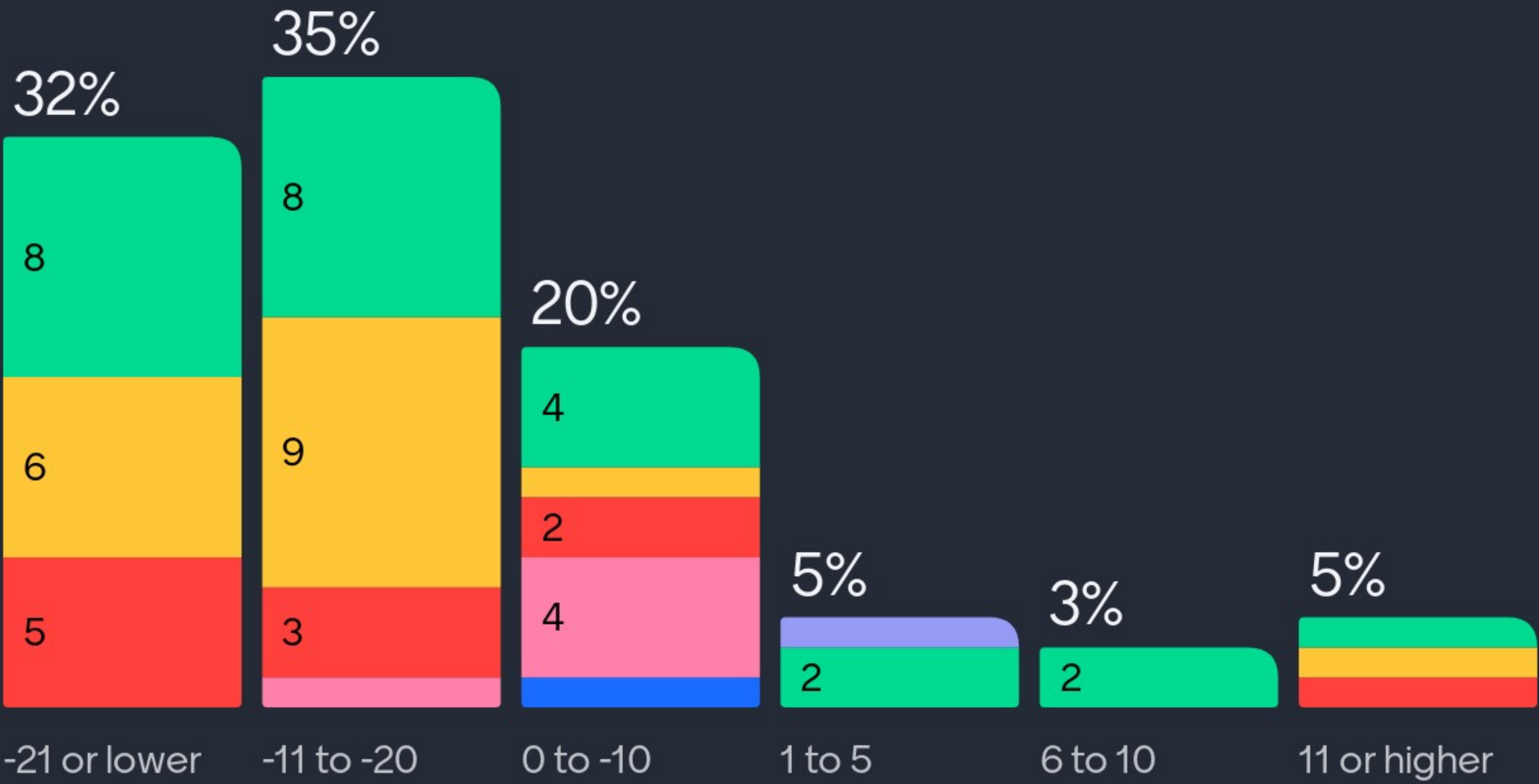
[illegible]

Pause, take a deep breath, and think of the most challenging project in your career

- Circle the word that best describes how your project felt for each row
- Put the numeric value at the top in the far right column for each row
- Total your project score

[illegible]

What was your project score?



Segment

How many years of construction experience do you have?

- 0-2
- 3-5
- 6-10
- 10-20
- 21 or more
- Unknown

What was the worst word for your project?

62 responses



What was the best word for your project?

61 responses



we give away time
time costs money
money is expensive

Time for Trouble

WIP



Value Stream Mapping

Building Simulation Large Batch

- Choose your role playing sheet
- Split the legos by color as noted on the trade sheets
- Build with the included design
- Owner expects substantial completion in 3 minutes



What is your current quantity progress (based on stud count, do not include baseplate)?



What is your current scope progress (based on piece count)?



Darth Vader, when will you finish?

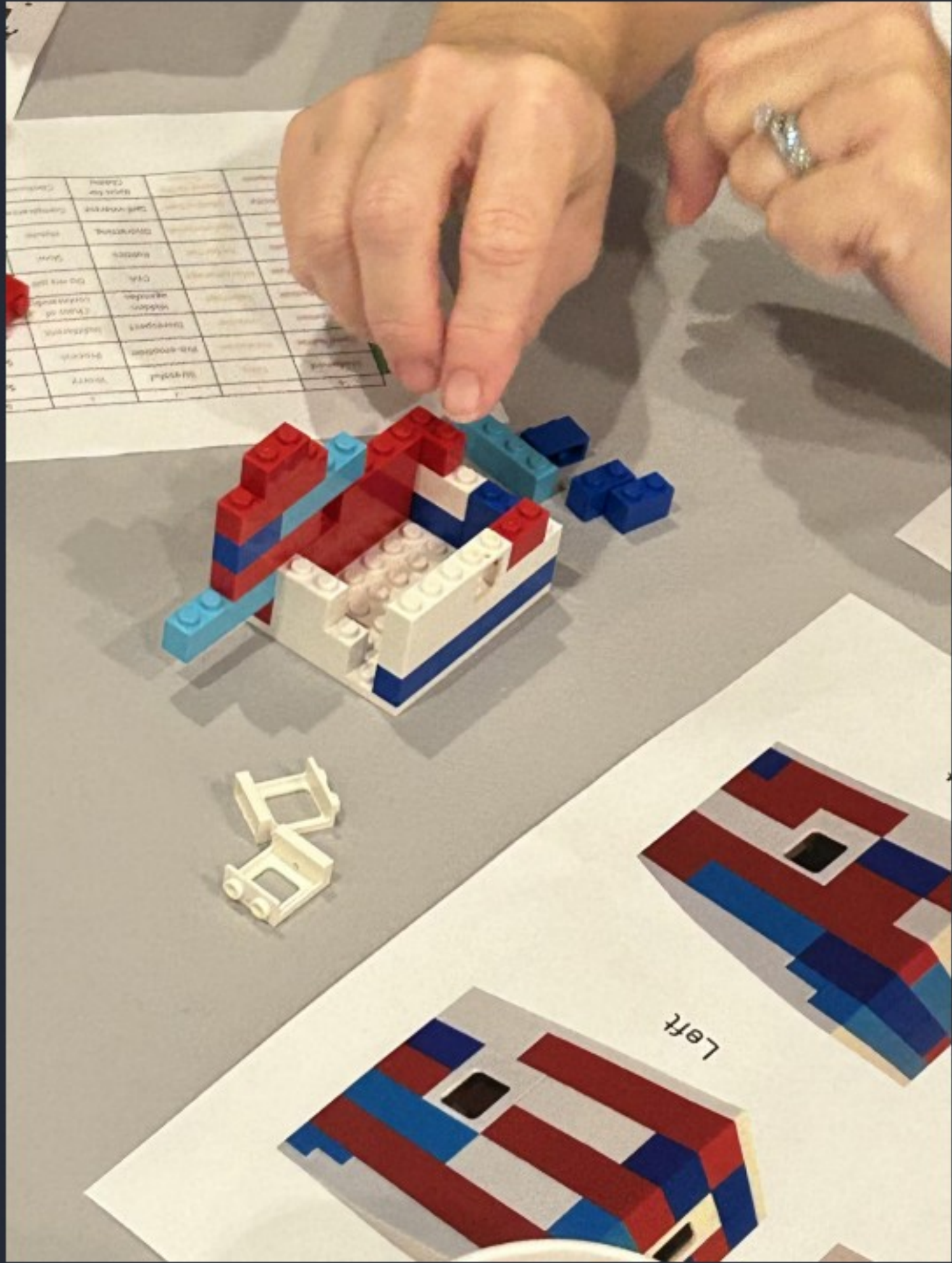
1
6 minutes

2
7 minutes

0
8 minutes

3
9 minutes

8
Never













What made this building difficult to finish? What would make your role easier? Any comments on a team member?

Crap trades

Communication

Dollar waiting on a dime

Architect sucks

More time

No shop drawings

Superintendent got in the way

Communication

What made this building difficult to finish? What would make your role easier? Any comments on a team member?

Different priorities

One set of drawings for everyone.

I hate yoda

Directions unclear

It was a competitive environment.

Drawings lacked sufficient detail

Wasn't set up to be collaborative

If I (Vader) hadn't been second guessing them and making them slow down.

What made this building difficult to finish? What would make your role easier? Any comments on a team member?

Everyone had competing interests

Lack of coordination.
Room to breathe. We rocked!

Unclear direction

Everyone had there own agenda

Do not like this design!!

Difficult to ge bearings
with so many colors

Project controls needed
to tell loyder

Poor designs

What made this building difficult to finish? What would make your role easier? Any comments on a team member?

Poor direction

Started in work sequence

Project controls too nosy

Trades did not
understand the design.

Project Management
was dumb

Yelling

Not really understanding
of roles

Wookie was always
behind

What made this building difficult to finish? What would make your role easier? Any comments on a team member?

Need a better design...

Perfect just perfect

Hard because I can't use words. Need more communication

Leadership was awful! If everyone left me alone The Wookiee is dumb and controlling

Rubbish darth

Poor quality control. No coordination. Controls made us restart.

trades jumping ahead

Material shortages

What made this building difficult to finish? What would make your role easier? Any comments on a team member?

Everybody jelling

There was no schedule

BIM please

Everyone talking

Yoda sucks

Have instructions

Bad drawings. Bad
communication.

Aggressive schedule

What made this building difficult to finish? What would make your role easier? Any comments on a team member?

TERRIBLE PLANS

Pew pew

Deatiled drawing, team building

I don't have time for building buildings I'm busy hating

Drawings hard to read

Poor design

The storm trooper builds no better than he shoots

Better drawings

What made this building difficult to finish? What would make your role easier? Any comments on a team member?

Team workTrust

I was not a good earth
vader

F-ing Wookiee in the
ways

Poop planning

The GC

Drawings suck

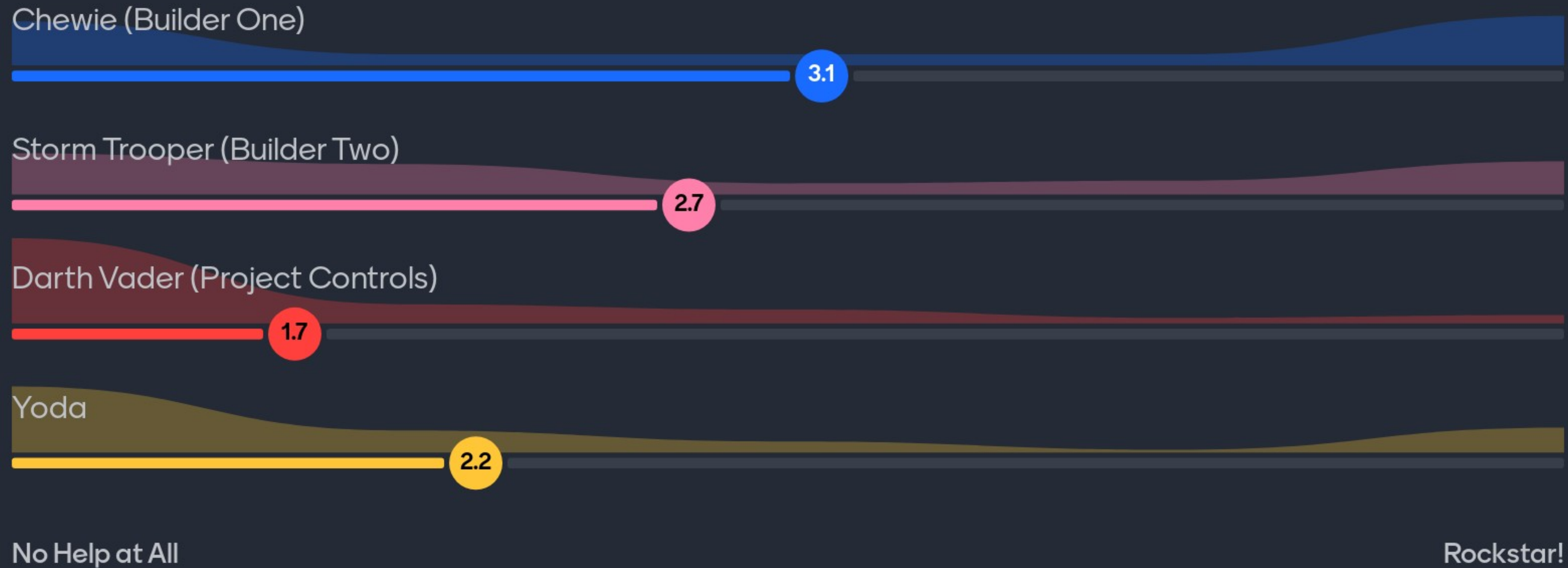
I

I have 30 years experience
and our super has 10 so I don't
listen to her

What made this building difficult to finish? What would make your role easier? Any comments on a team member?

Team not gelling

How valuable was each role?



Quality at the Source



Take apart your pieces
but keep the roof pieces
together



Building simulation with Takt

- Job 1: Build Trust!! Work together as friends
- Darth Vader will focus on quality
- All Roles help prestage the legos for each level on the new design sheets
- Owner expects substantial completion in 1 minute

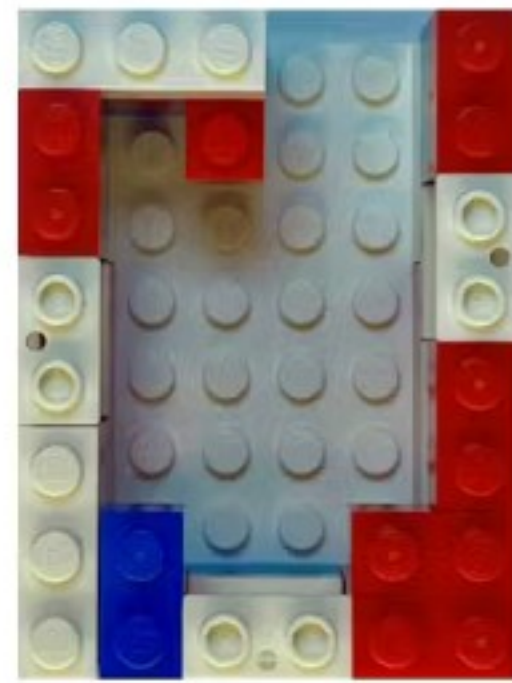




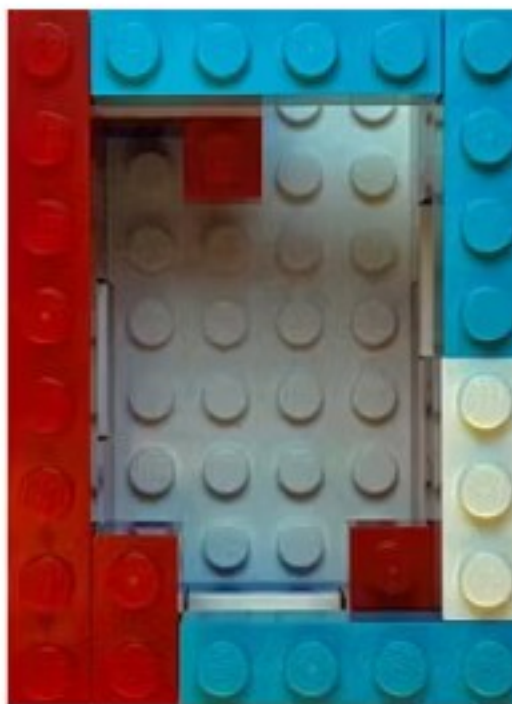
Layer 1



Layer 2



Layer 3



Layer 4



Layer 5

Prefab Roof

Layer 6



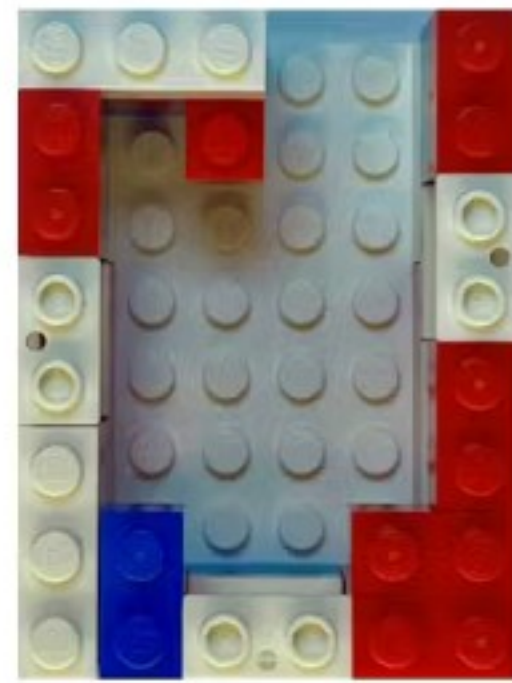
Takt	1	2	3	4	5	6		Total
Pieces	8	11	8	6	8	6		47
Chewie	5	7	3	1	5	3		
Storm Trooper	3	4	5	5	3	3		
Takt %	17	23	17	13	17	13		100
Total %	17	40	57	70	87	100		
		*				*		



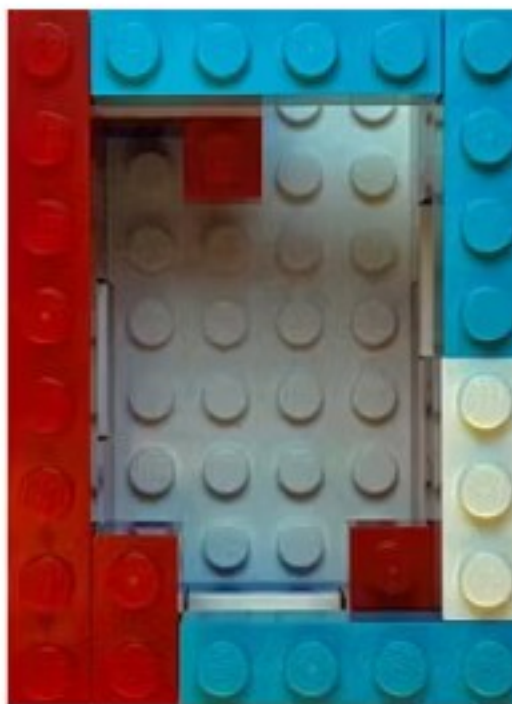
Layer 1



Layer 2



Layer 3



Layer 4





Layer 5

Prefab Roof

Layer 6



	IWP	1	2	3	4	5	6		 Total
	Studs	22	23	18	25	24	24		136
	Pieces	8	11	8	6	8	6		47
Trade	Chewie	5	7	3	1	5	3		
	Storm Trooper	3	4	5	5	3	3		
IWP	Quantity %	16	17	13	18	18	18		
	Scope %	17	23	17	13	17	13		
Total	Total Quantity %	16	33	46	65	82	100		
	Total Scope %	17	40	57	70	87	100		

Production Math



Play?

Pause and Reflect



What do you feel
about waste?



Peter Court



WHY DfMA?

- To satisfy customers needs and requirements
- To look after our people, as everybody has a right to go home safely after a productive days work
- To challenge and change the poor image of construction
- Because of increasing time, cost and resource constraints
- To bring a high degree of certainty to what we do
[Safety, quality, cost, time]
- To protect valuable commissioning periods



It's all about People.

- Musculoskeletal disorders (MSDs) are a significant concern in the construction industry, with higher prevalence rates compared to other sectors. According to data from the U.S. Bureau of Labor Statistics (BLS) and OSHA:
- In 2022, over 20% of nonfatal injuries in the construction industry were due to MSDs, which include injuries such as sprains, strains, and tears, often resulting from overexertion and repetitive motions ([CPWR](#)) ([CPWR](#)).
- Specifically, about 65% of work-related MSDs (WMSDs) in construction are related to sprains, strains, and tears ([CPWR](#)).
- Compared to other industries, the construction sector has a notably higher rate of MSDs, primarily due to the physically demanding nature of the work. For example, in 2021, construction workers experienced an MSD incidence rate of 27.2 per 10,000 full-time workers, significantly higher than the overall private industry rate of 16.7 per 10,000 full-time workers ([Occupational Health & Safety](#)) ([CPWR](#)).
- These statistics highlight the need for ergonomic interventions and safety measures to mitigate the risks associated with MSDs in the construction industry. For more detailed data, you can refer to the CPWR and OSHA reports on their respective websites ([CPWR](#)) ([DOL](#)).



“Modular assembly using mechanical lifting aids will significantly reduce the risk of manual handling injury to workers in the construction industry”

Room in Takt



↓ INVENTORY
WASTE

↓ Inventory
Waste PHYSICAL
&
PROCESS

How might apply
Sign we're not doing this.

① HOW

② SIGN

A small white thumbs up icon on a dark circular background, located in the bottom right corner of the slide.

- ① How might we apply this?
- ② What is a sign we are not using this principle?

#1 How might we optimize?

CO-locate
TEAM

Leadership
Supports the
workers

Best of Those

Putt Plan

Right People
Left Account

Respect
for people

DALE
HUDSON

100% FINISH
GOALS

Team mindset

CO-ELEVATE

COLLABORATIVE
TEAM

Agree on
Cos

Team planning Meetings

2) WHAT IS A SIGN WE ARE IN NEUTRALITY THIS ORIGINATE?

Schneitend

CRITICISM

opportunities to maximize value for customer as needed

Stahl

st
Trade

22 Jan

Everyone is
of the same

sol
= 1/2

FT/

Critical
Date

sticking

WASA
Lund

John
Mettus

Knowledge
of
Project

Wasted
Mar pen

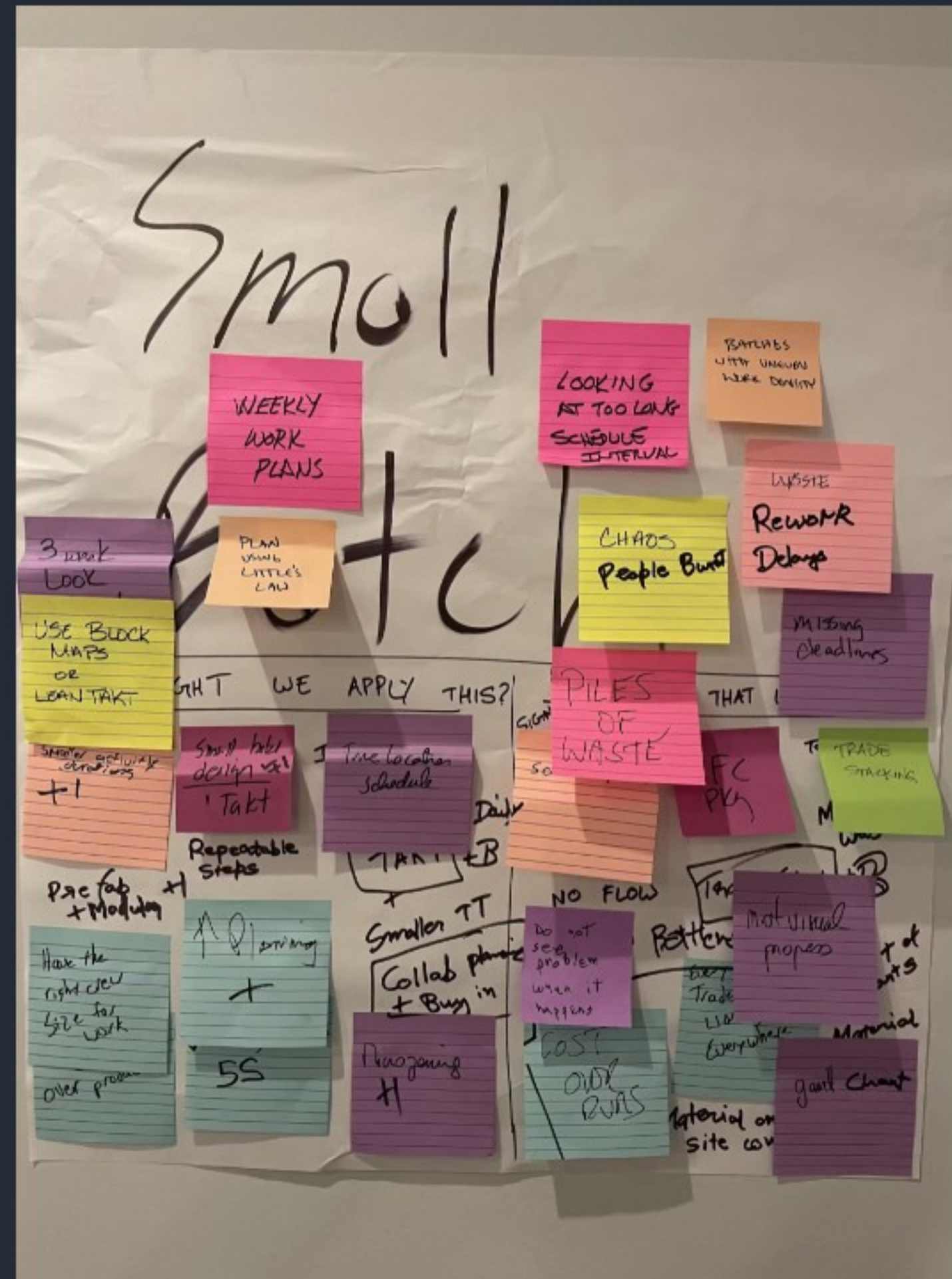
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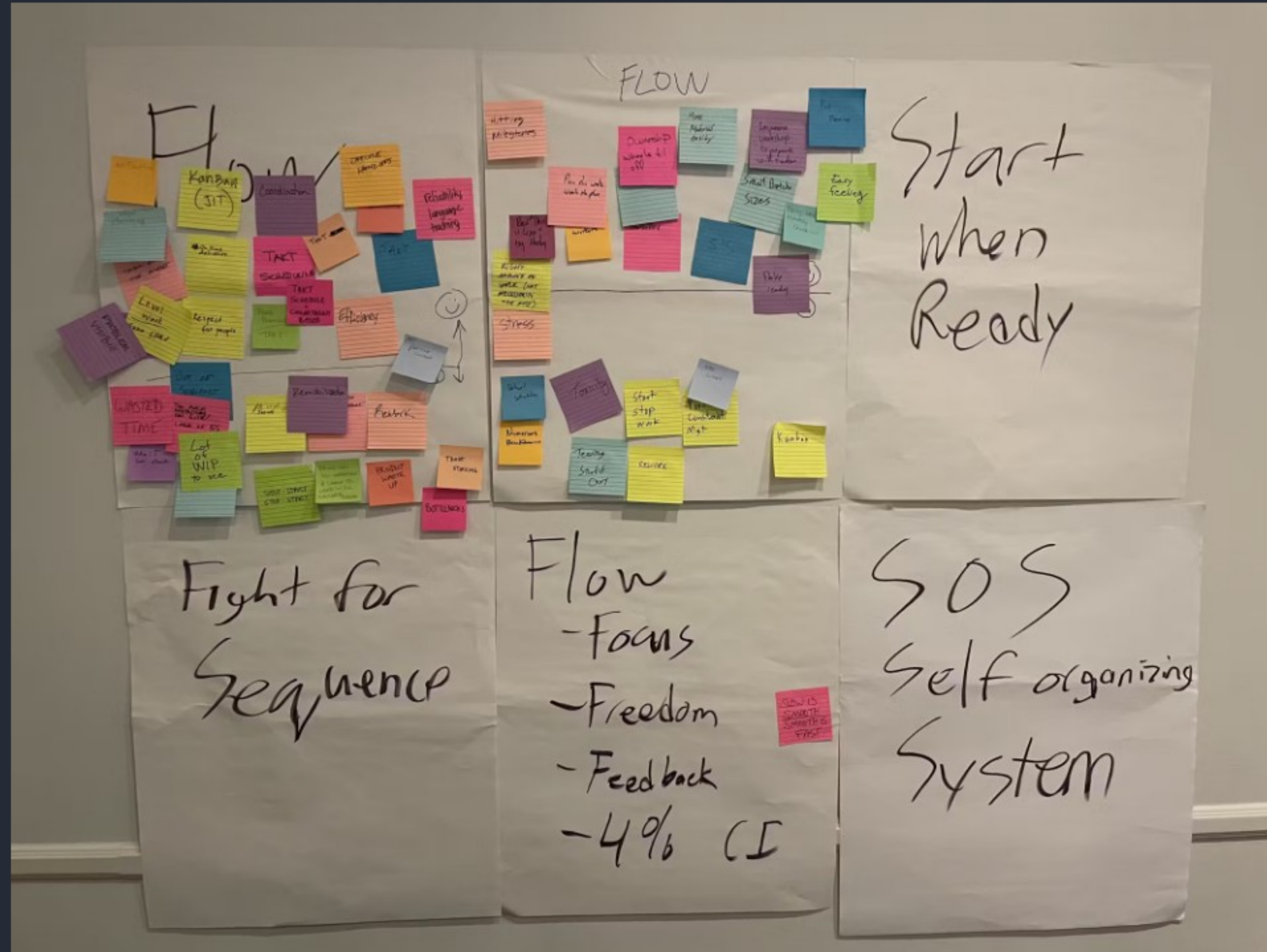
Lack of

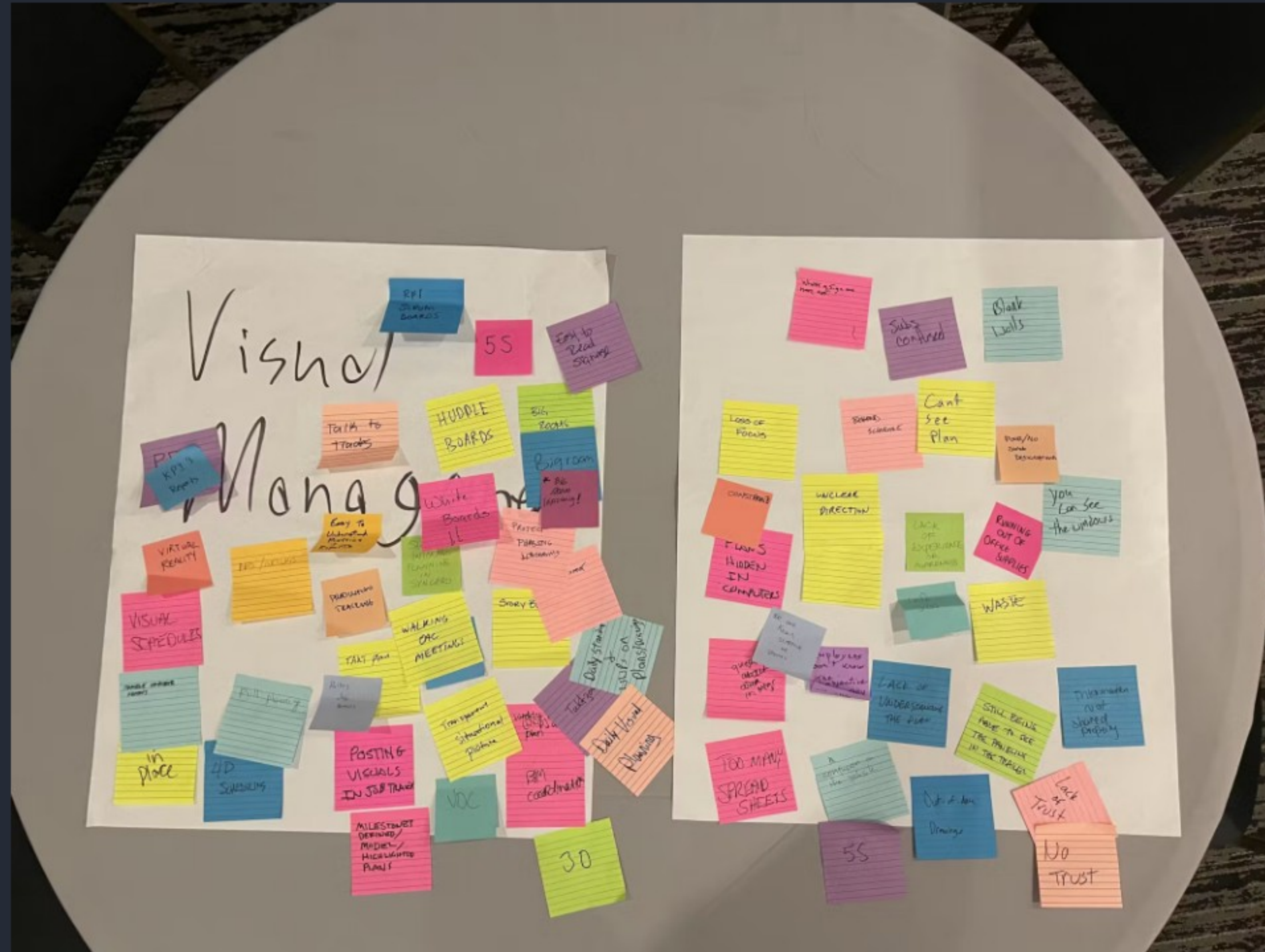
10

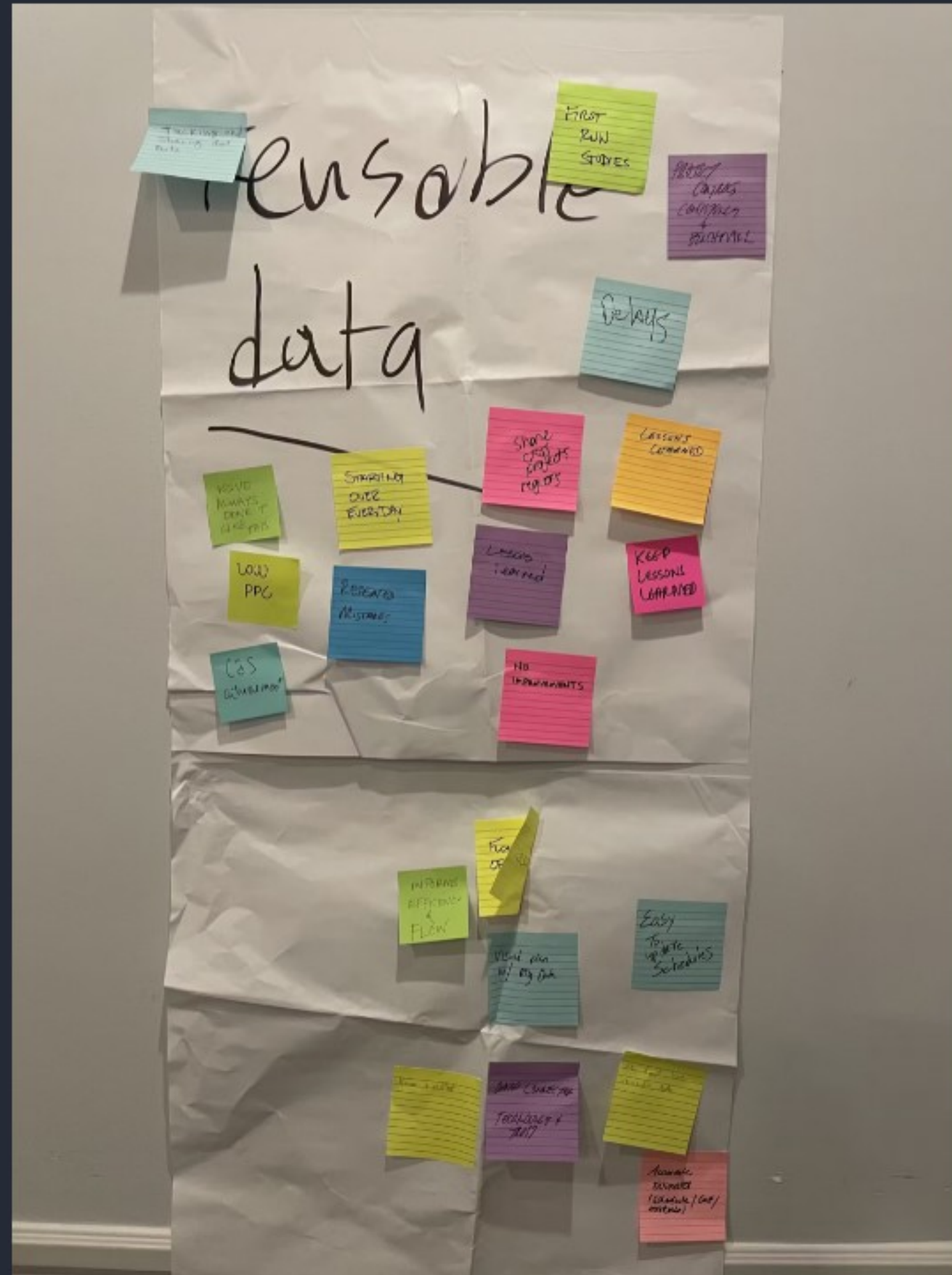
Separated
black space

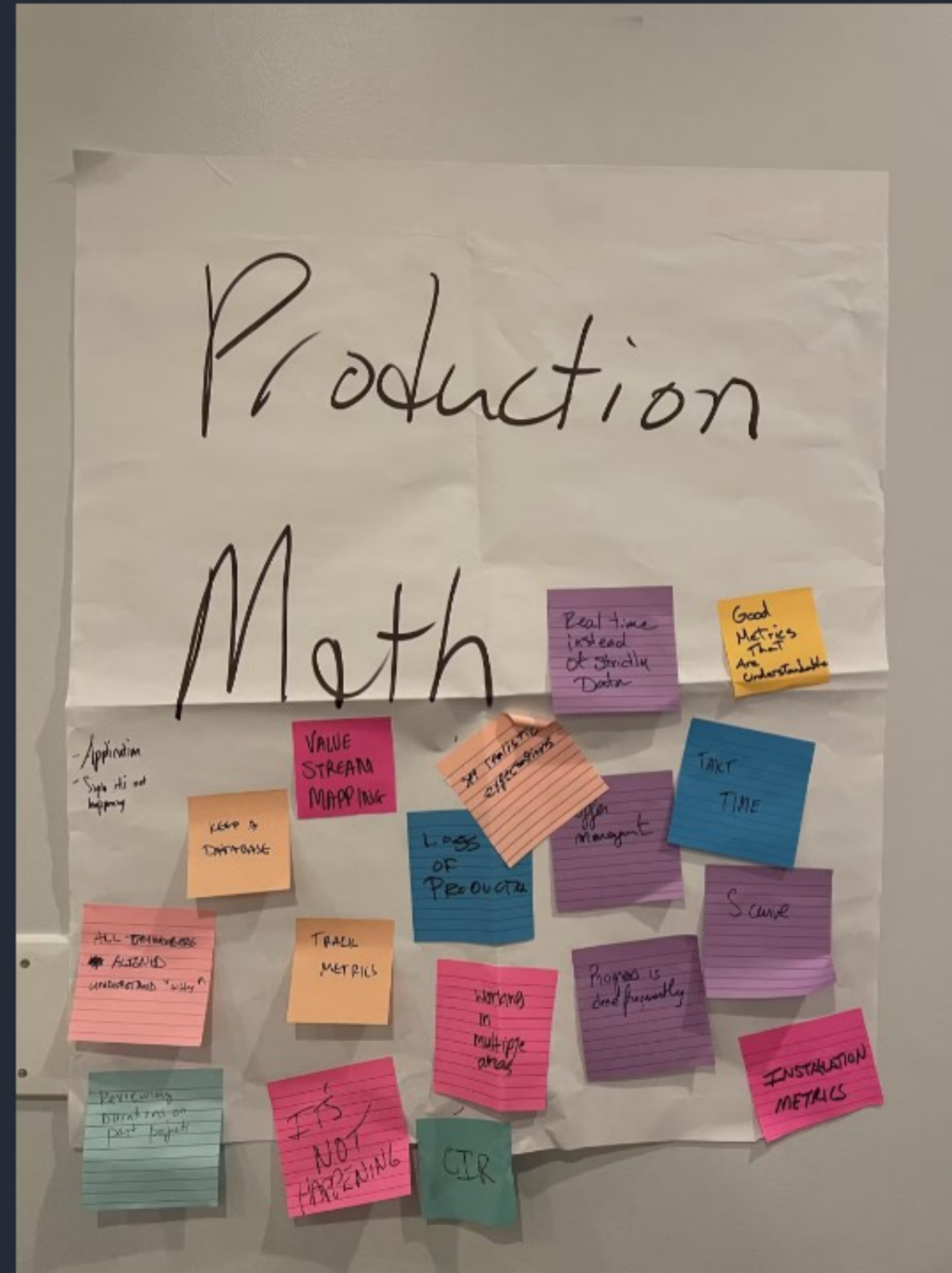
- distinction communication
- looking

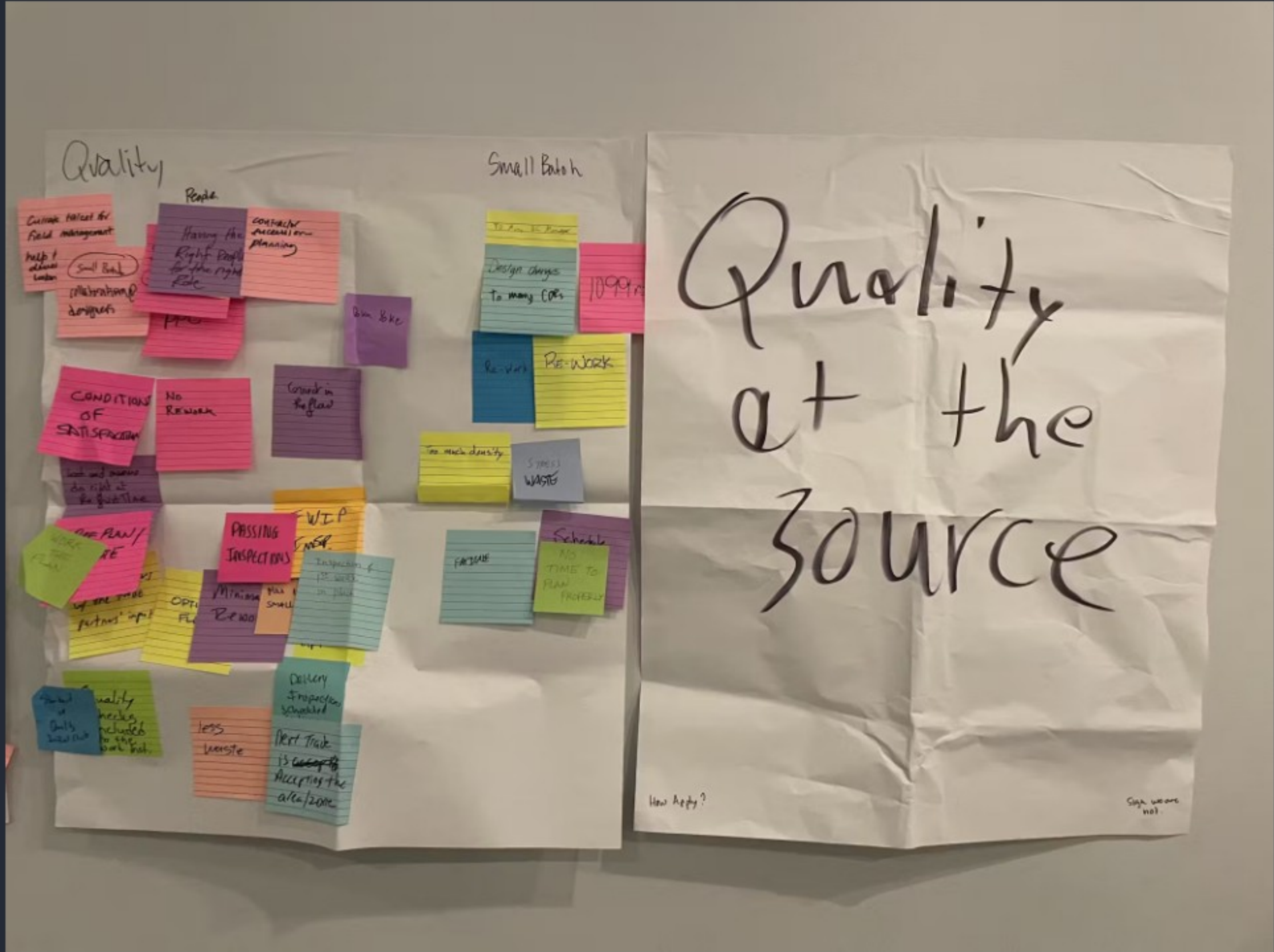














90%

Opportunity

My favorite takeaway from the Flow State Experience (in one word)

121 responses



Please List any plus/delta (+, -) for this experience ...

Room to small

- Lighting

+ games

-room size

+creative play

+ interactive

+ energy

-lighting

Please List any plus/delta (+, -) for this experience ...

+ interactive - chaotic

Delta: I have no notes from this session and fear I'll forget everything we just covered

+ Games supported big ideas

+interactive activities

A little chaotic in places.

+ great engaging presentation

+activities

+ activities

Please List any plus/delta (+, -) for this experience ...

-small space

+ games that are relevant
to real life

-lighting

-room

- More space

Delta - sometimes the
directions were confusing

+ presentation style

Room too small

Please List any plus/delta (+, -) for this experience ...

Plus was the amount of
information shared
No
delta

+ very fun and
interactive+ great
content -room too small

Great energy and fun,
creates a spark

+ helpers

- More time between
exercises for sharing

-Lighting-Room size

+ learned the different
ways we can improve
flow

+ let us fail on our own

Please List any plus/delta (+, -) for this experience ...

- too small room+ flow of the class

Delta: post it note exercise needs some fine tuning.+excellent session

+ real-world examples

- lighting

+ great explanation of how the flow works- board explanation was confusing

Better up front explanation of rules on Lego and Trouble game. It was unclear what was allowed and what wasn't.

+ interaction+ presenter

+ Interacting games

Please List any plus/delta (+, -) for this experience ...

+ energy and passion-
dark lights, room too
small

- not sure the final take away
of how to get into/develop the
flow state.... Nor how to help
the team see it and need it

+ very behavioral focused
and enough technical details
as well - weird volume setting
here

- room small+ amazing
facilitation+ personal
stories

+ great engagement - bigger
room/ better organization +
great knowledge base from
presenters- clearer
instructions for "games"

- need bigger space for
activities + activities + eyes
opened to small batch

- make sure rules for lego
house assembly is clear
before starting the second
simulation

Having a facilitator for
every table

Please List any plus/delta (+, -) for this experience ...

-Room too small - would have liked more time +No talking heads+passion

-no initial objective or course outline, thus felt disjointed at times.

Imagine that *which* is not, and take
others there with you

– *Charlie Dunn*



Keep the twinkle in her eye
[https://youtu.be/W8Jg8BG8szc?
si=9APrfdq1FvwcWJD4](https://youtu.be/W8Jg8BG8szc?si=9APrfdq1FvwcWJD4)

– Charlie Dunn



Connect to 2024 Facilitators:

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- Denise Devine, Continuum AG, <https://www.linkedin.com/in/denise-devine/>
- Peter Court, Tecoustics, <https://www.linkedin.com/in/peter-court-716469/>

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- Adam Hoots, IPI, <https://www.linkedin.com/in/adamhoots/>
- Adam Frandson, DPR, <https://www.linkedin.com/in/adamfrandson/>
- Craig Davis, DPR, <https://www.linkedin.com/in/craig-davis-85853a10/>
- Jonathan Ruggeberg, DPR, <https://www.linkedin.com/in/jonathan-ruggeberg-33269a4b/>
- Preston Williams, DPR, <https://www.linkedin.com/in/preston-williams-12a80a100/>
- Yash Lalwani, DPR, <https://www.linkedin.com/in/yashl/>
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Thank you to 2023 Detroit Facilitators:

- Charlie Dunn, DPR, <https://www.linkedin.com/in/projectstory/>
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- Al Schwarzkopf, Wood, <https://www.linkedin.com/in/schwarzkopf-albert-03b7415/>
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- Yash Lalwani, DPR, <https://www.linkedin.com/in/yashl/>