

A city skyline at sunset with a blue banner overlay. The sky is a mix of orange, yellow, and blue, with clouds catching the low sun. The buildings are dark blue and black, with some lights starting to glow. The water in the foreground reflects the sky and buildings.

The future  
**needs you here**



CHARLES PANKOW  
FOUNDATION





CHALLENGING THE

# status quo



SMALL THINGS



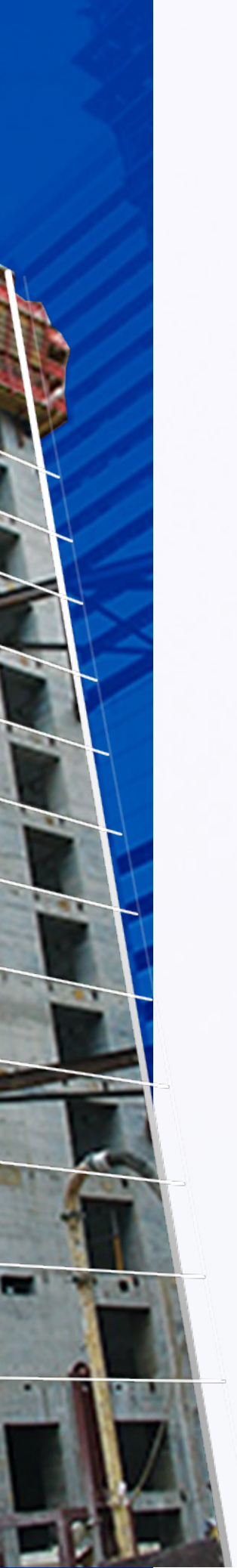






## Challenging the conventional concrete core





Nuclear  
facility  
research  
impacts



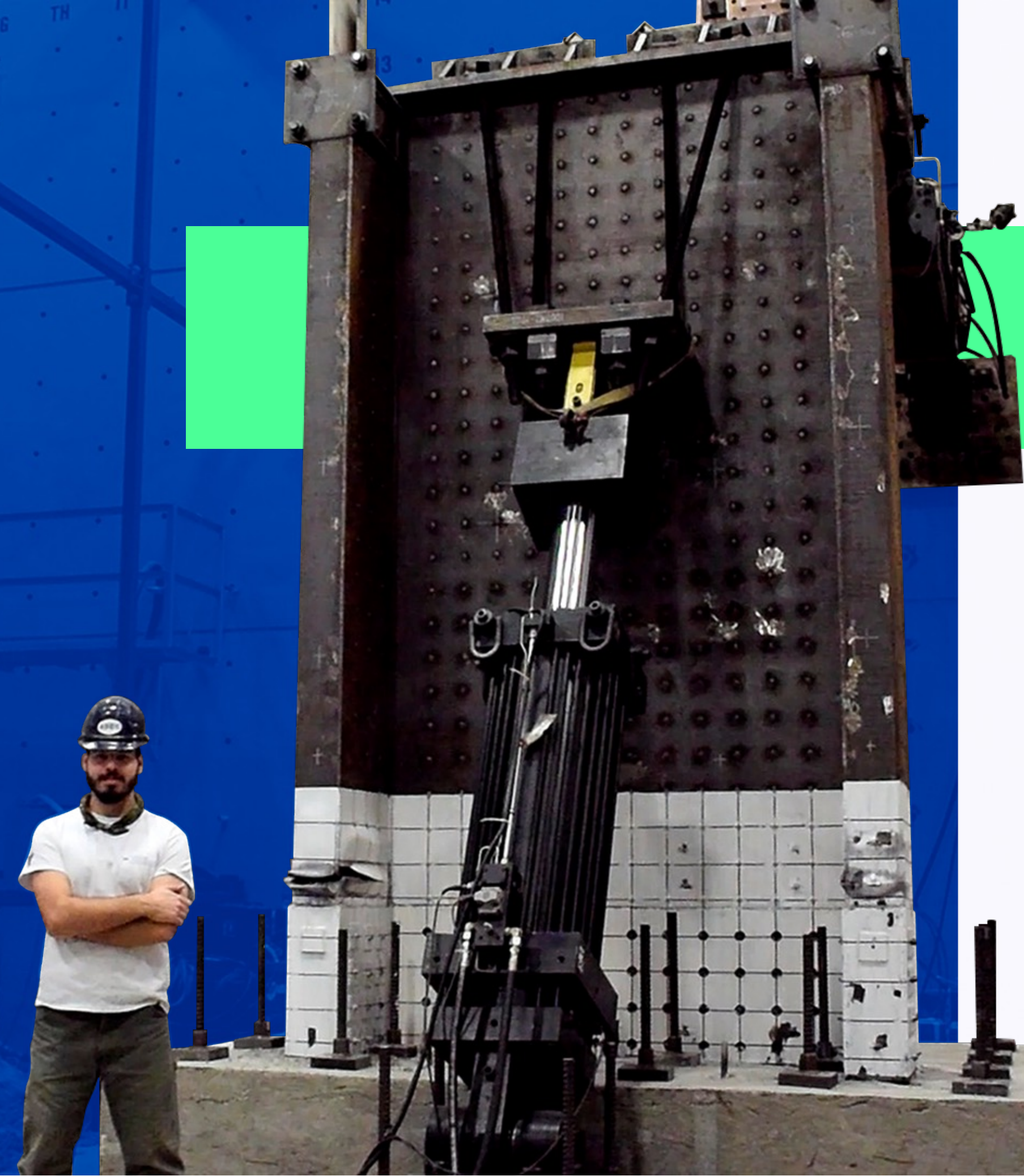
# TALL BUILDING DESIGN



TALL  
BUILDINGS

RESEARCH  
INSPIRED  
BY NUCLEAR  
BLAST WALL  
DESIGNS





**RESEARCH  
VALIDATING**

# **THE COMPOSITE CORE TECH**

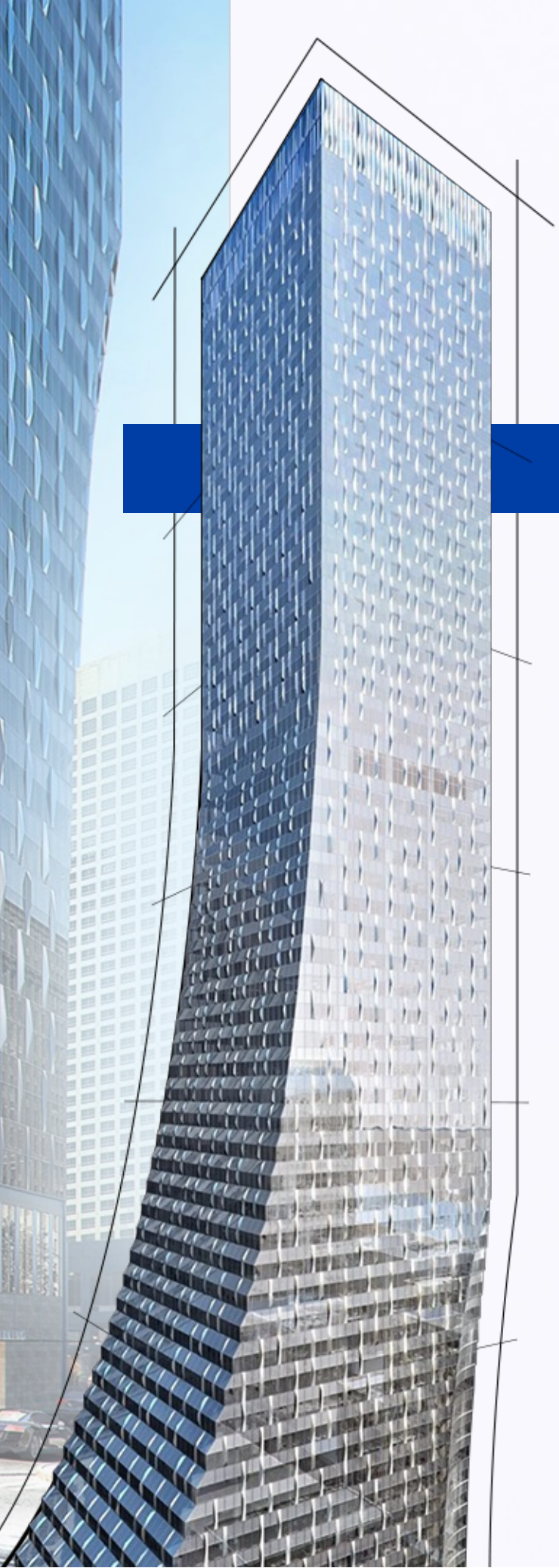




# SPEED CORE

COMPOSITE  
SYSTEM





**BUILDING  
SKYSCRAPERS  
IN RECORD TIME**  
and seeing  
connections in  
unrelated fields



# MAKE THINGS HAPPEN

IDEA



FUNDING

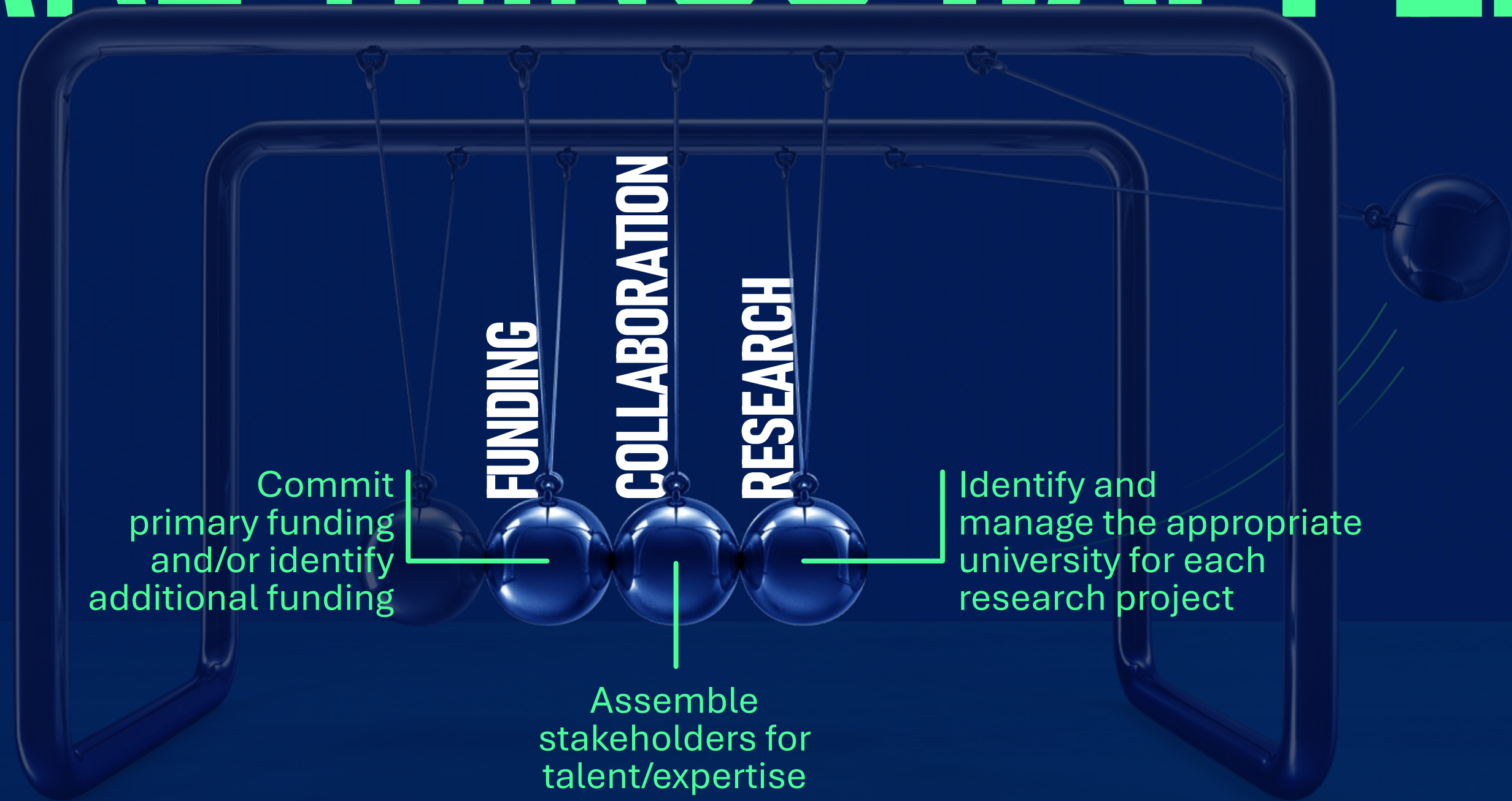
COLLABORATION

RESEARCH

CHANGE



# MAKE THINGS HAPPEN



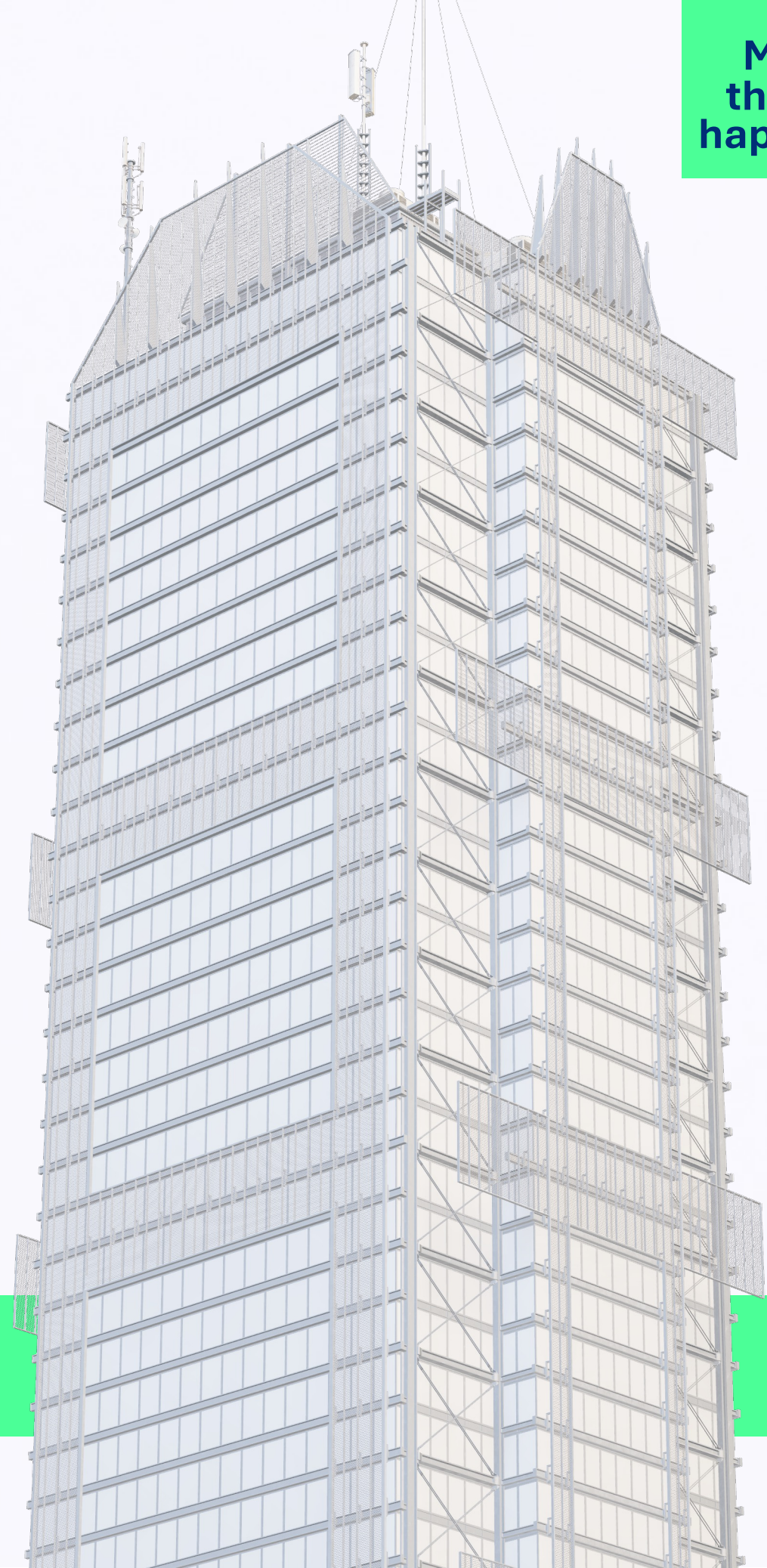
# — MAKE THINGS HAPPEN —

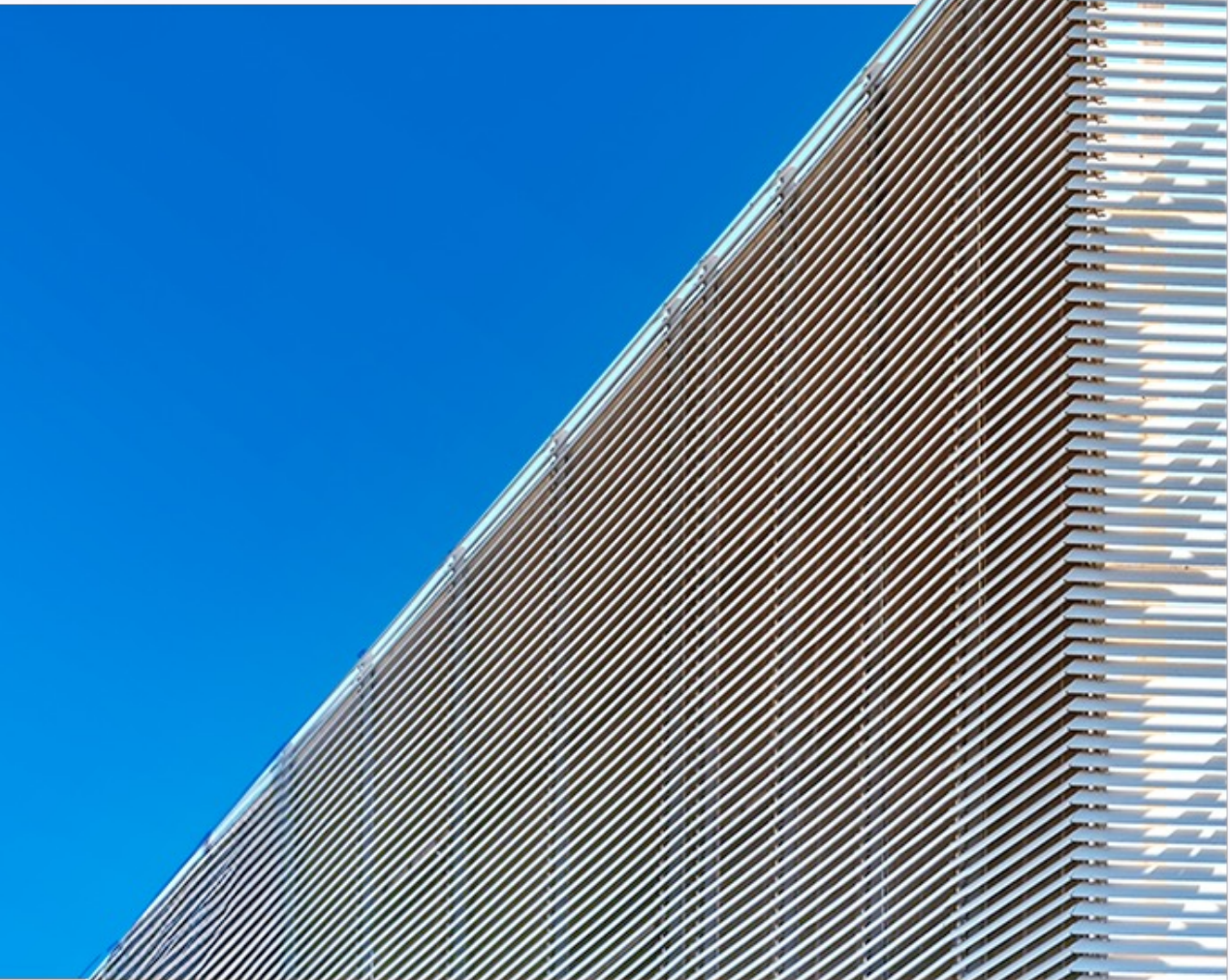


**IN THE PAST, THERE WAS**

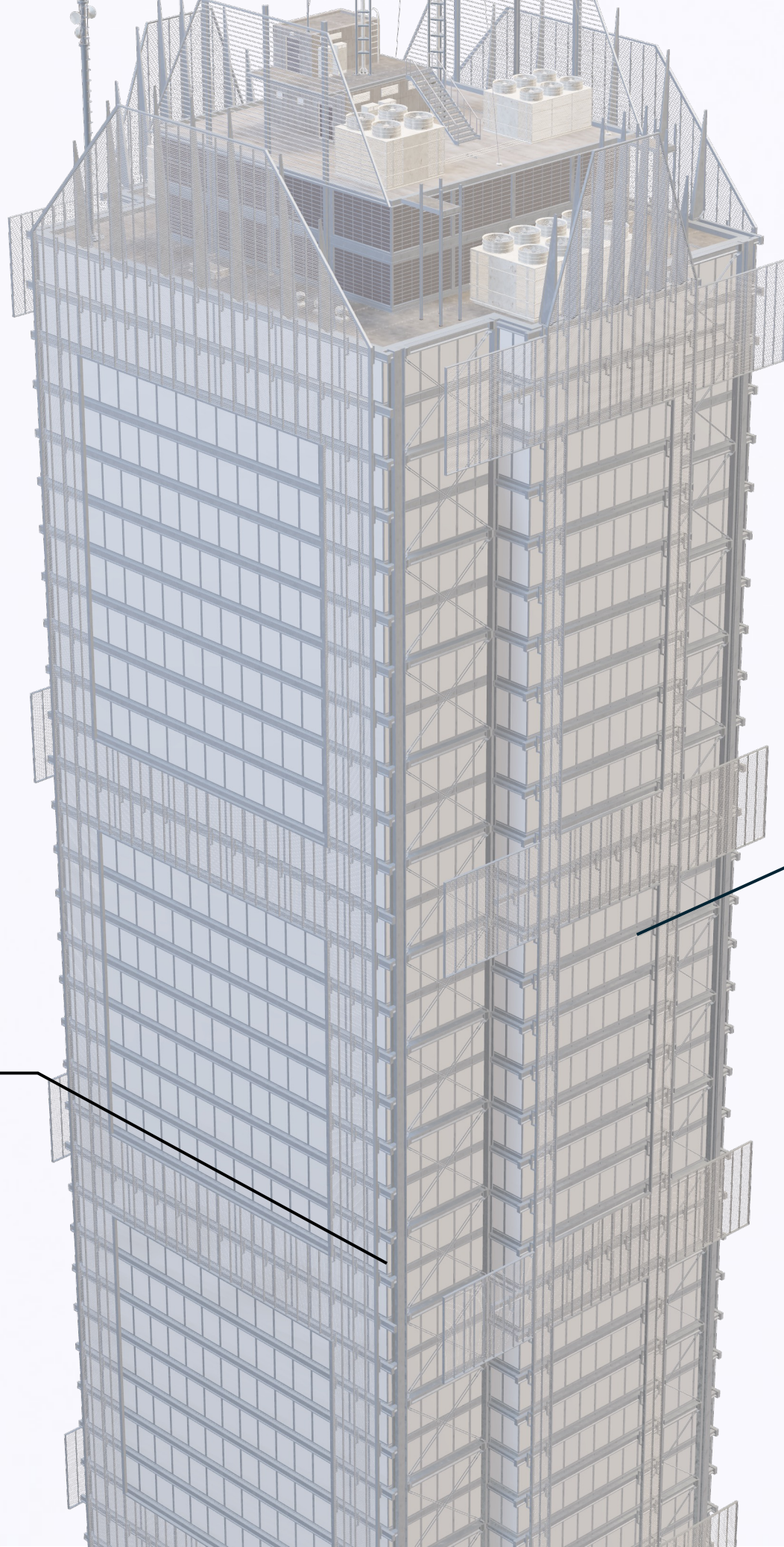
**NO INDUSTRY STANDARD TO MEASURE THE CARBON IMPACT**

**OF DESIGN DECISIONS**





**ALUMINUM**

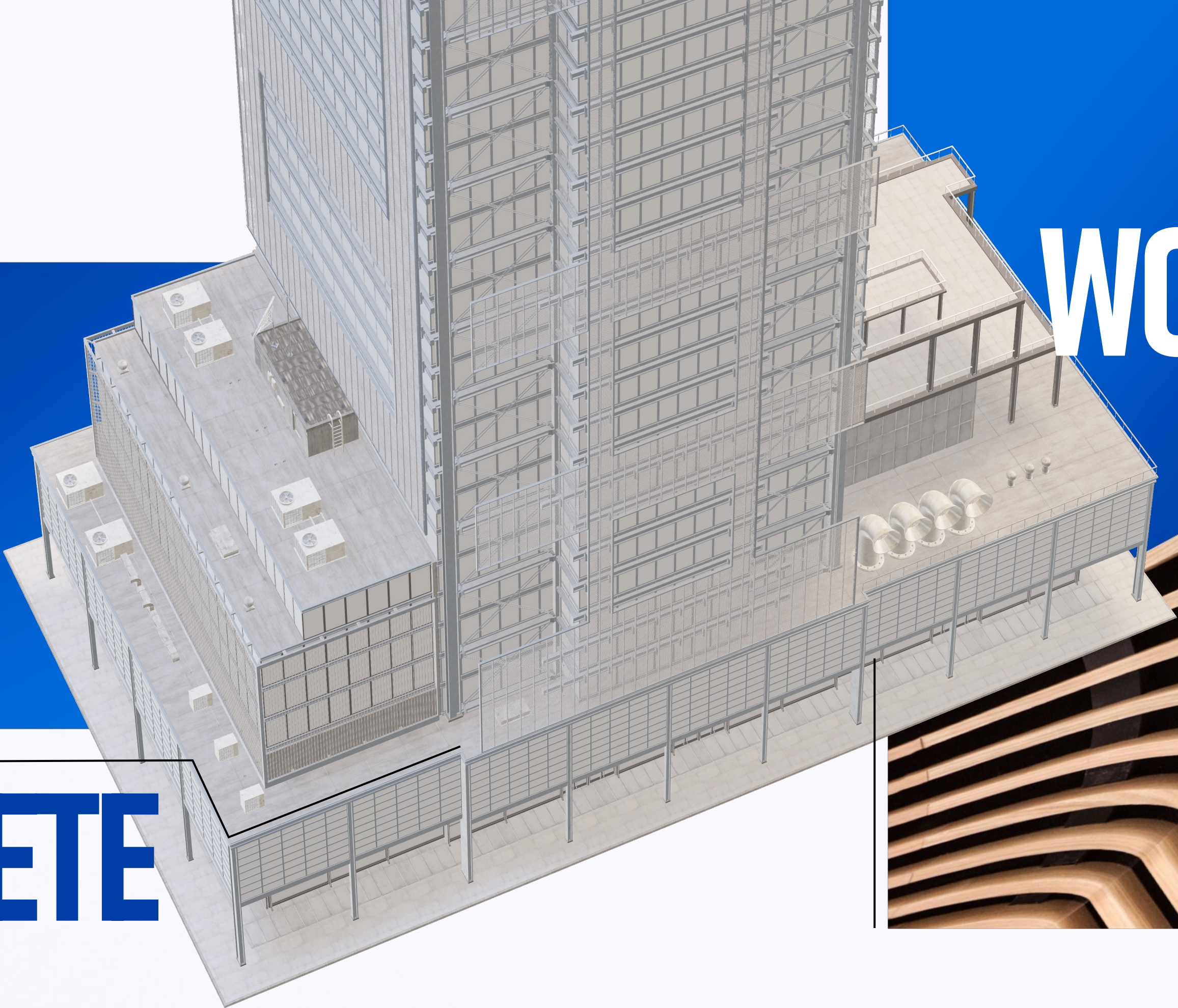


**GLASS**



Make things happen

WOOD



CONCRETE

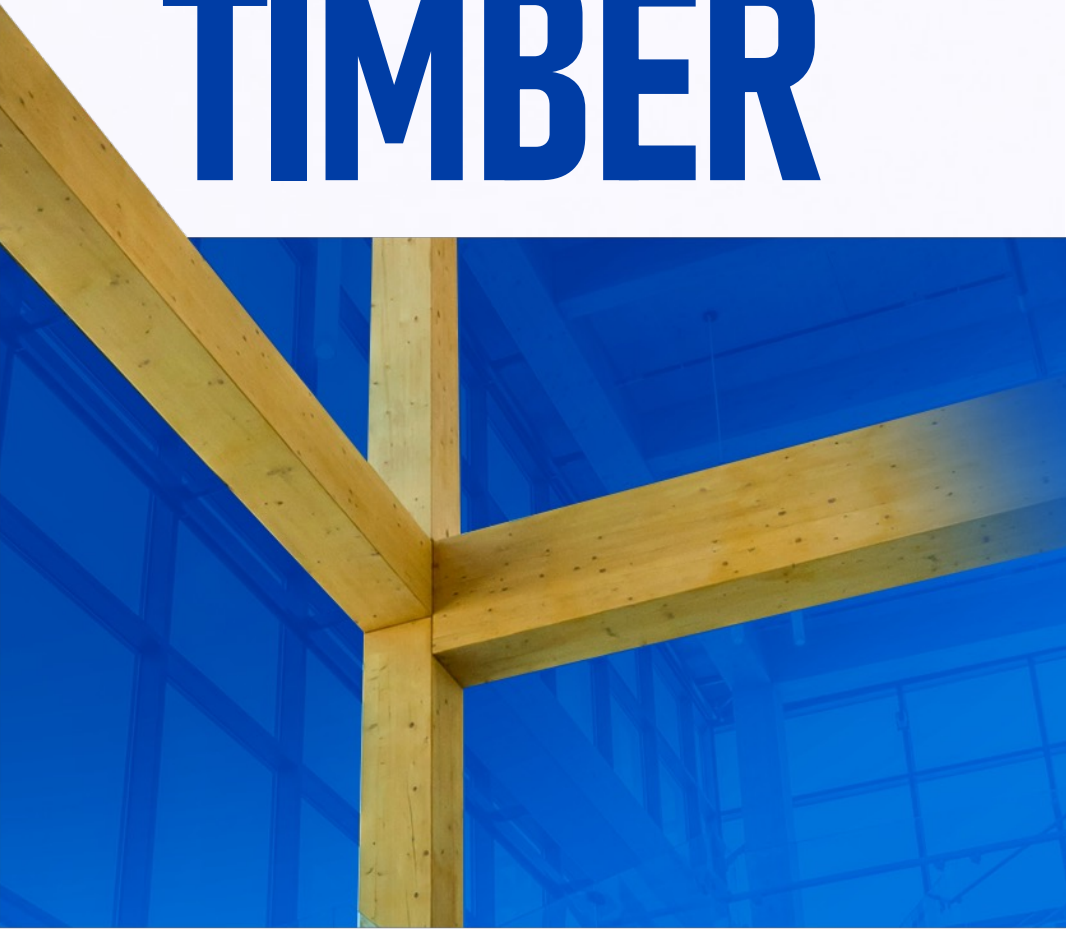






# STEEL

# HEAVY TIMBER



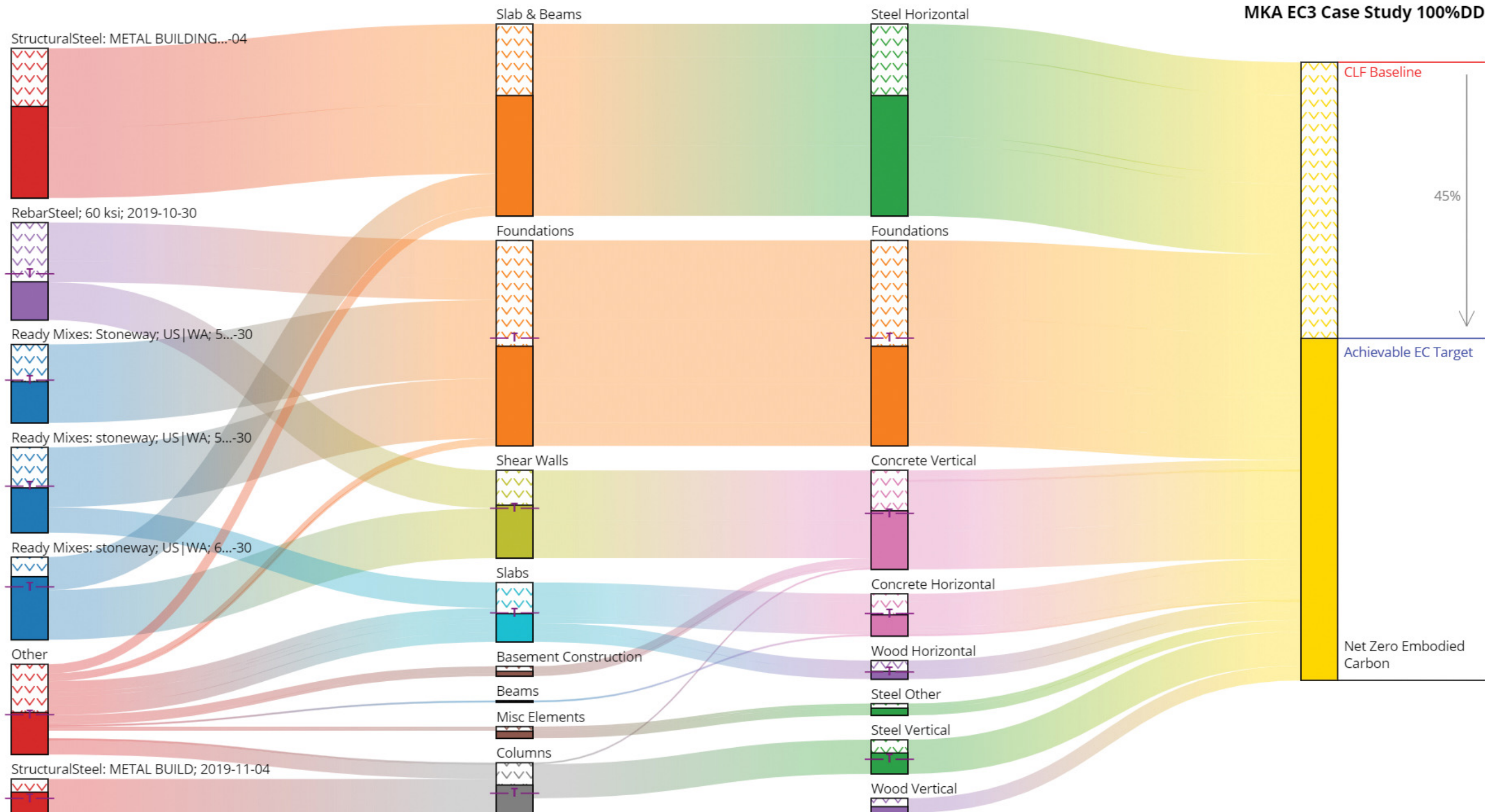
### GWP SAVINGS OPPORTUNITIES FOR MKA EC3 CASE STUDY 100%DD



Tour: [SANKEY DIAGRAM](#)



#### MKA EC3 Case Study 100%DD





**DIVERSE  
FUNDING  
COALITION**

**FOR**

**CALCULATING  
CARBON  
IMPACT (EC3)**





# CHARLES PANKOW FOUNDATION



THE ART & SCIENCE OF BUILDING



 **Energy use  
and loss**

**Water** 

**Wastewater  
treatment** 



**Construction  
waste disposal**

# **INFLUENCE INDUSTRY PRACTICES**

# — MAKE THINGS HAPPEN —



Helping ensure US building codes reflect

# CURRENT SCIENCE AND MANUFACTURING TECHNOLOGY

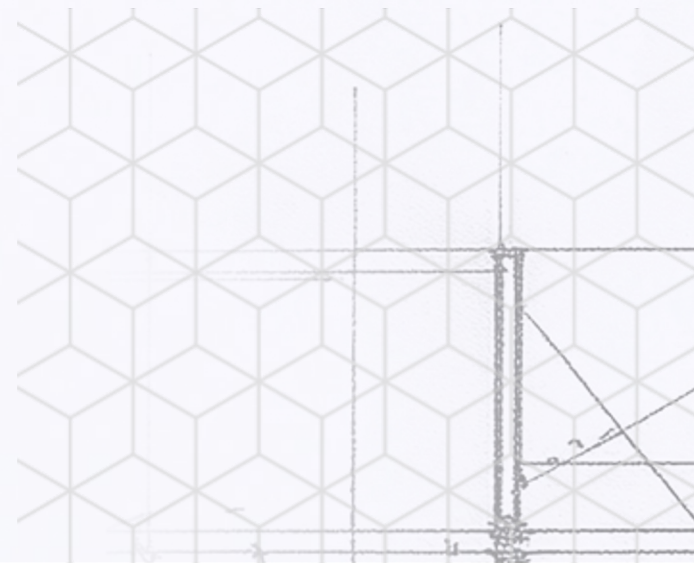
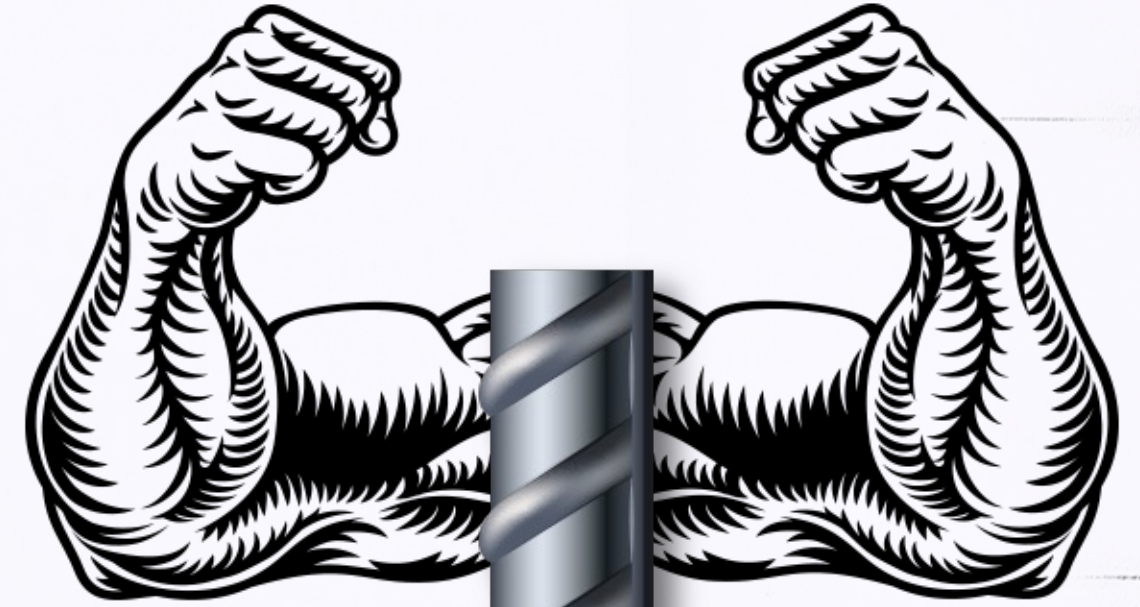
1960's

60 ksi

2020's

80 ksi

100 ksi



Make things happen

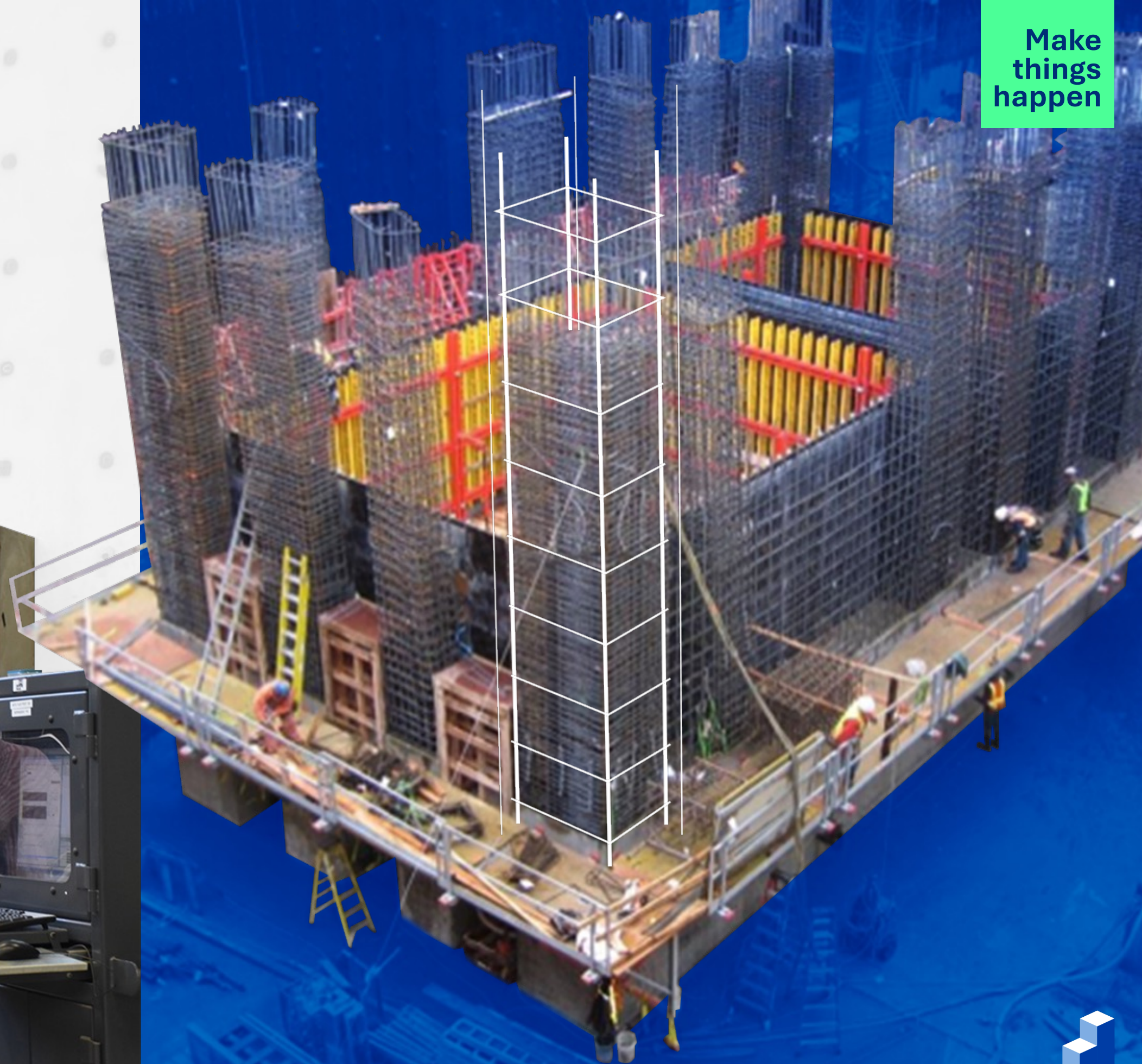
# Development and Splice Lengths for HIGH-STRENGTH REINFORCEMENT





# QUESTION OLD STANDARDS

Make  
things  
happen



# — MAKE THINGS HAPPEN —



# ADDRESSING ENERGY CONSERVATION



Empire State Building

20's



Seagram Building

50's

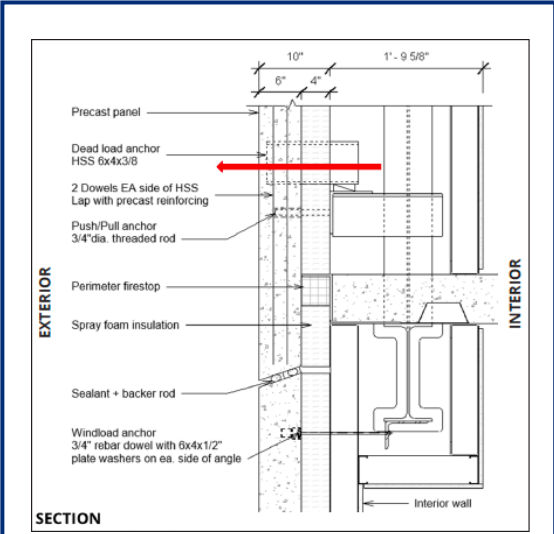


Salesforce Tower

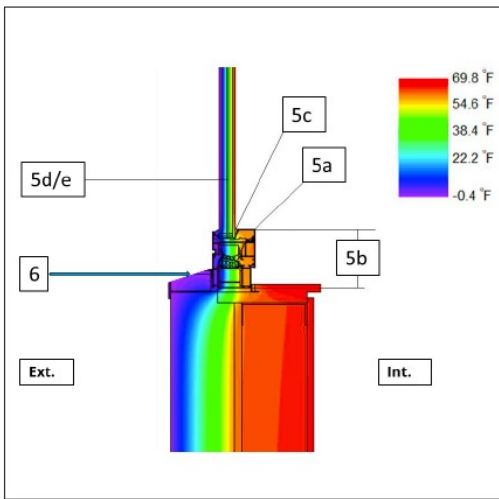
00's

Energy concern and codes

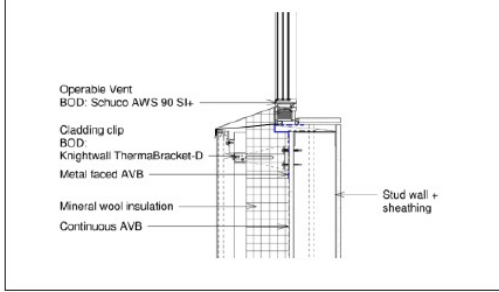




SECTION



| ID | Description                    | BOD               | Model Results                    |
|----|--------------------------------|-------------------|----------------------------------|
| 5  | Operable Vent                  | Schuco AWS 90 SI+ |                                  |
| 5a | Frame performance, Uf          |                   | U-0.14 BTU/hr-ft <sup>2</sup> -F |
| 5b | Frame Width                    |                   | 4.8 in                           |
| 5c | Glazing edge thermal bridge    |                   | ψ-0.03 BTU/hr-ft-F               |
| 5d | Glazing COG U-value            |                   | U-0.12 BTU/hr-ft <sup>2</sup> -F |
| 5e | Glazing COG SHGC               |                   | 0.40                             |
| 6  | Window-to-wall Interface (PSI) |                   | ψ-0.022 BTU/hr-ft-F              |



Partner with experts to build predictive models to ensure your designs comply with **TIGHTENING CODES**



Make  
things  
happen

EXPAND  
**DESIGN**  
FLEXIBILITY  
AND  
COMPLEXITY



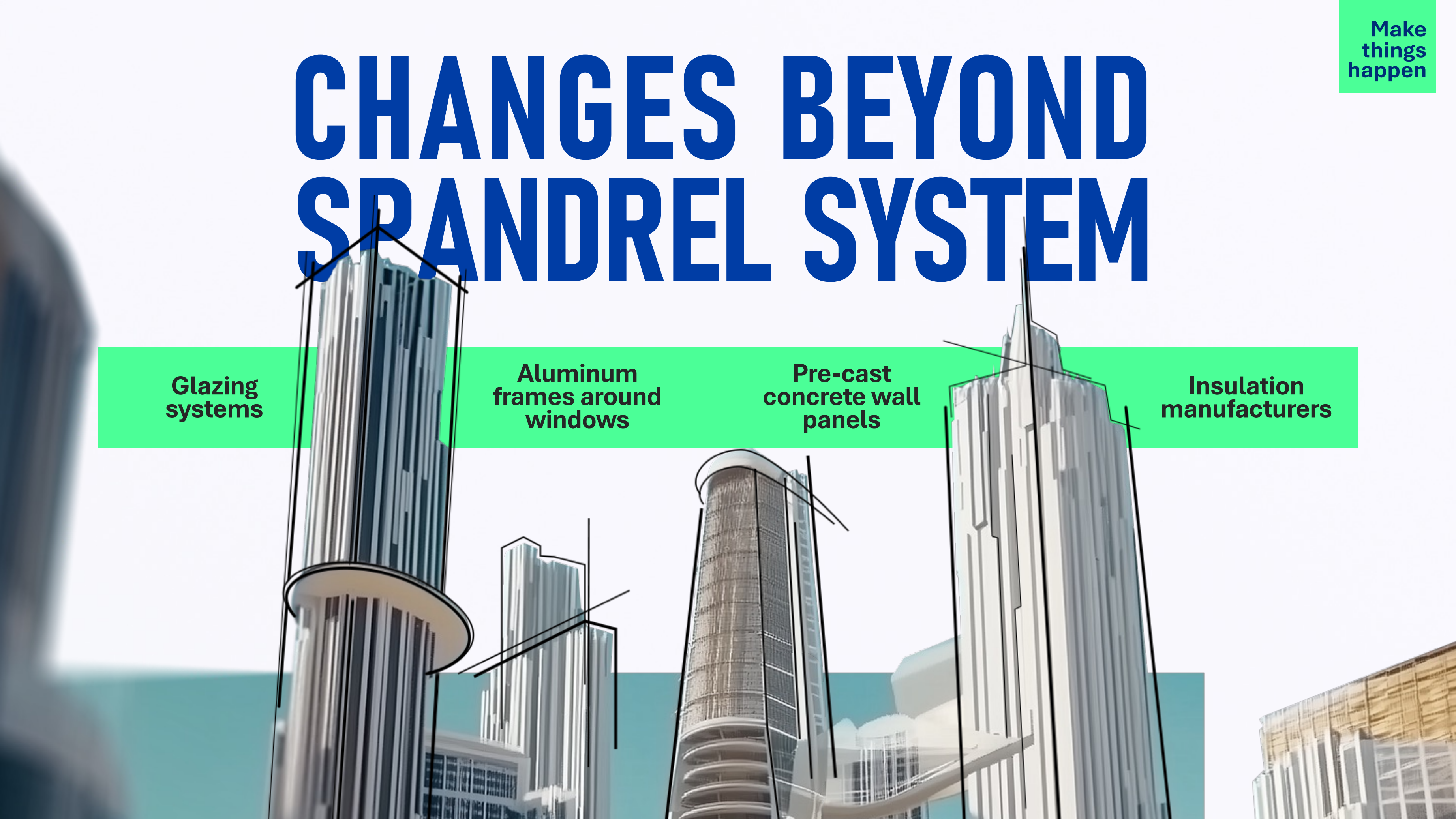
# CHANGES BEYOND SPANDREL SYSTEM

Glazing systems

Aluminum frames around windows

Pre-cast concrete wall panels

Insulation manufacturers



# MAKE THINGS HAPPEN

IDEA





# CHARLES PANKOW FOUNDATION

**Charitable  
Foundation**  
501(c)3

Non aligned  
and unbiased

Support from  
hundreds of co-  
funding partners

Independent board of  
directors with broad  
industry experience

**FUNDING**

**COLLABORATION**

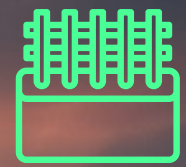
**RESEARCH**

Research  
at over 45  
universities

Research  
results are in the  
public domain



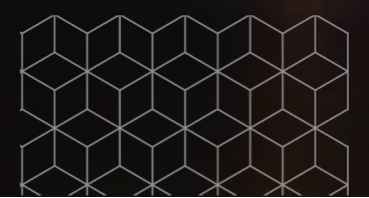




The future  
**needs you here**



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FOUNDATION



# MAKE THINGS HAPPEN

IDEA

