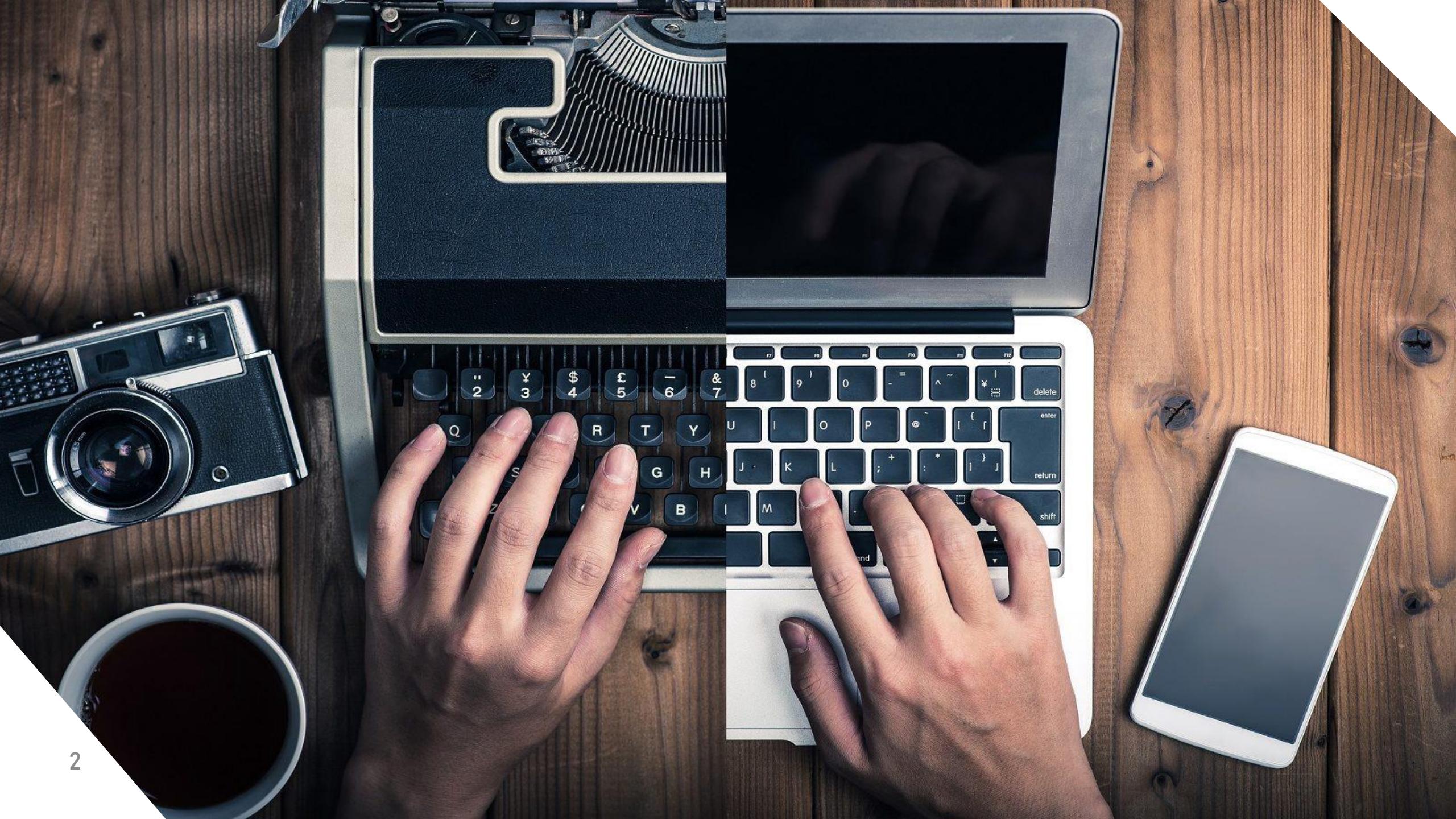
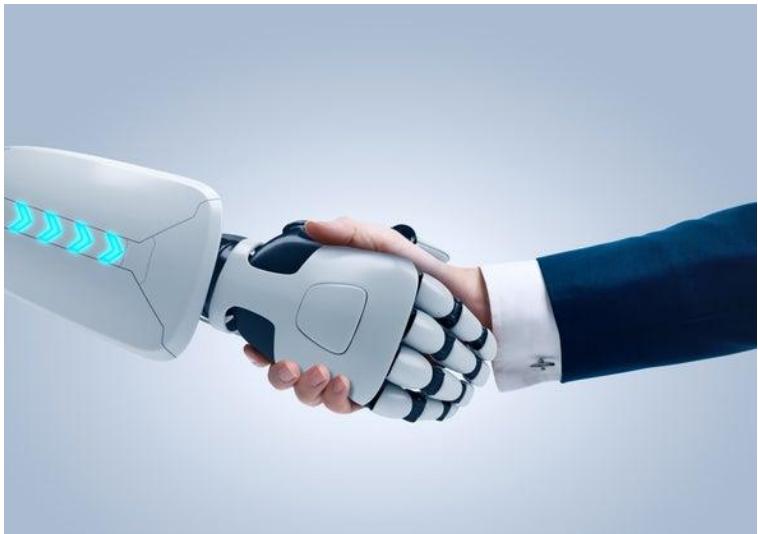


# Trusting Automation: Core Wall Optimisation

Michael Rizoski



# Project aims



Trust as a Barrier to Automation



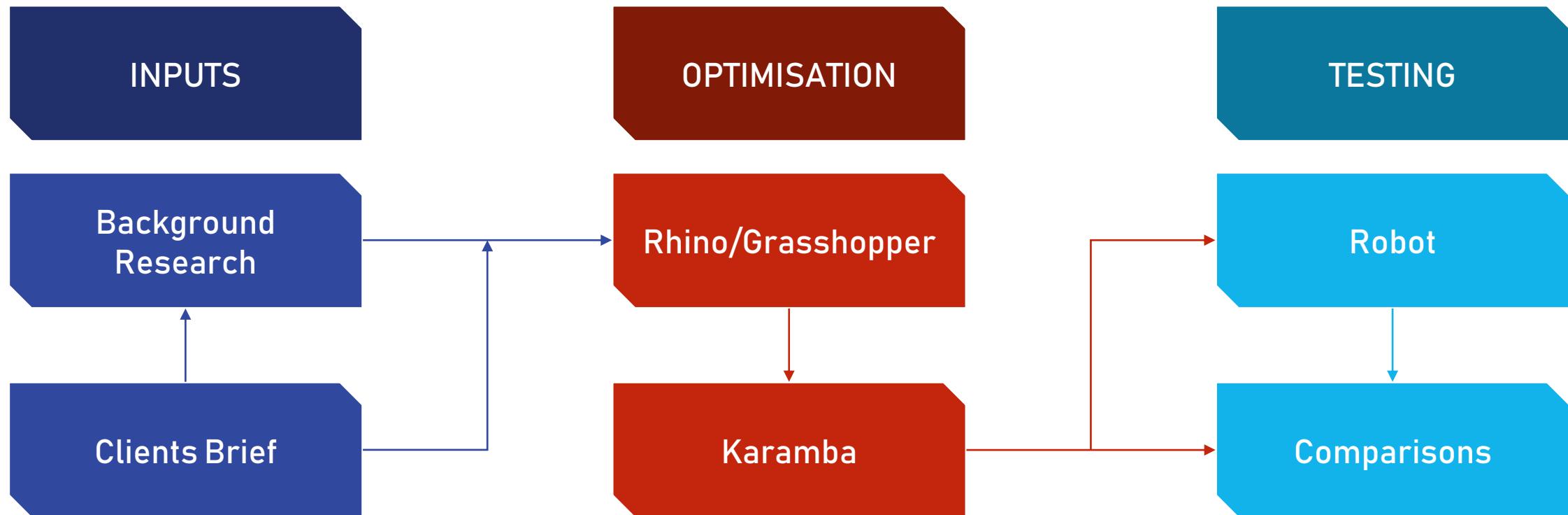
Produce an Automation Tool

# Research questions

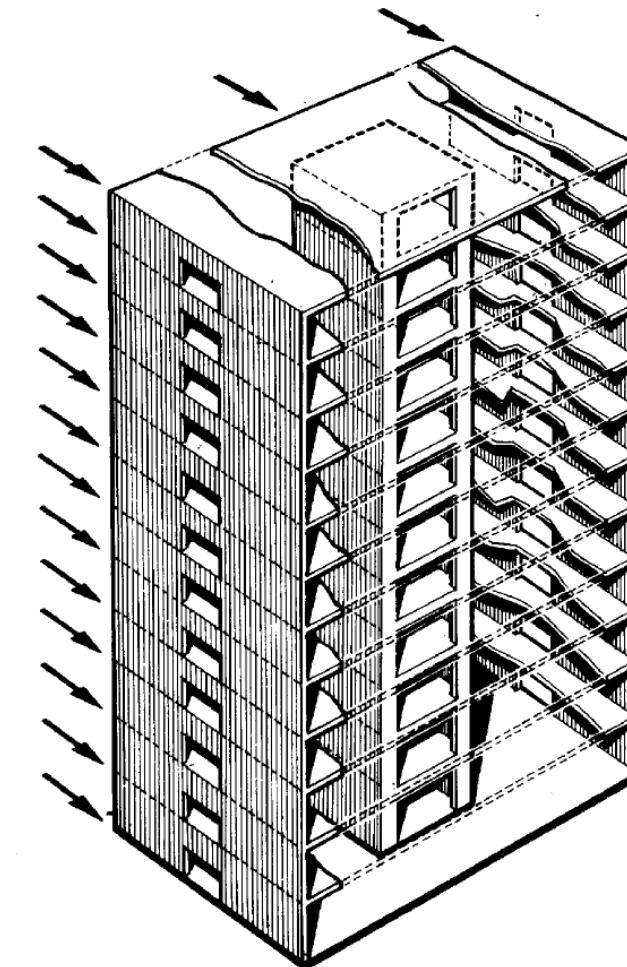
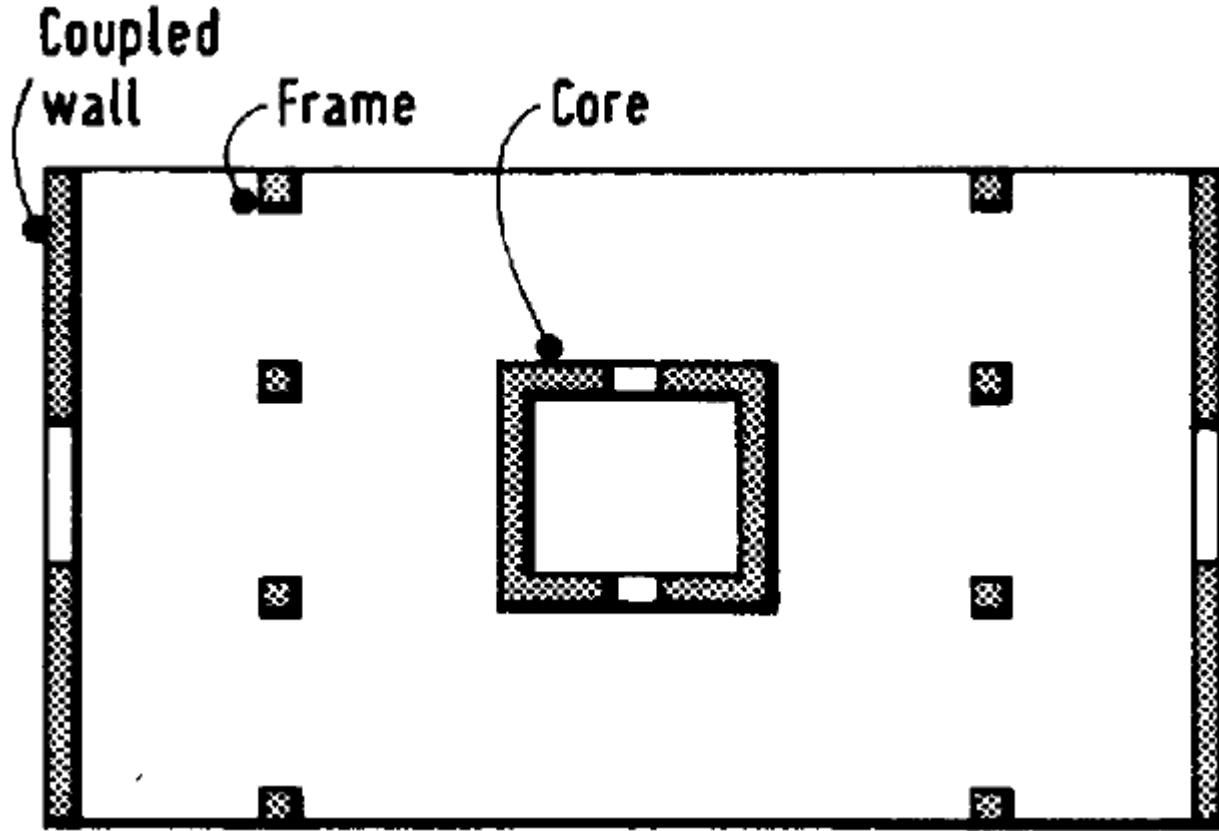
*In what ways can automation be implemented in architecture and engineering design workflows for core wall optimisation in multi-storey buildings?*

*How can verification or trust be built into an automated workflow for core wall optimisation in multi-storey buildings?*

# Project overview



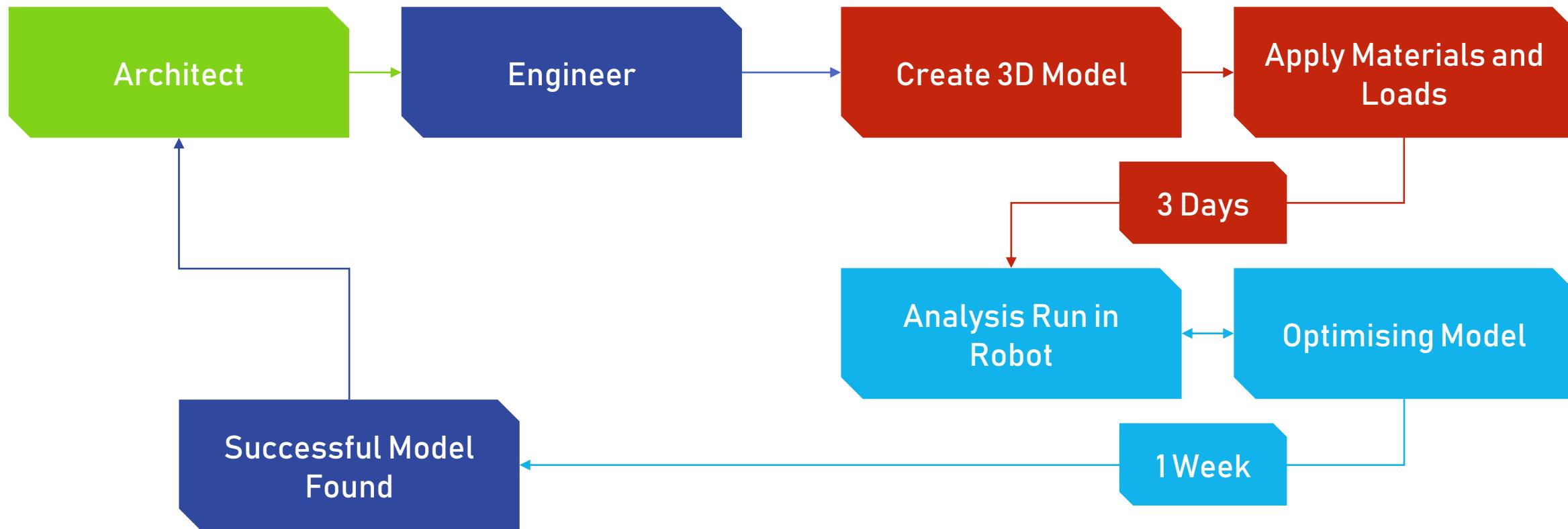
# What is core wall optimisation?



# What is core wall optimisation?



# What is the traditional method?



# What inputs do we have?

Placement of  
the core wall

Height of the  
building

Levels

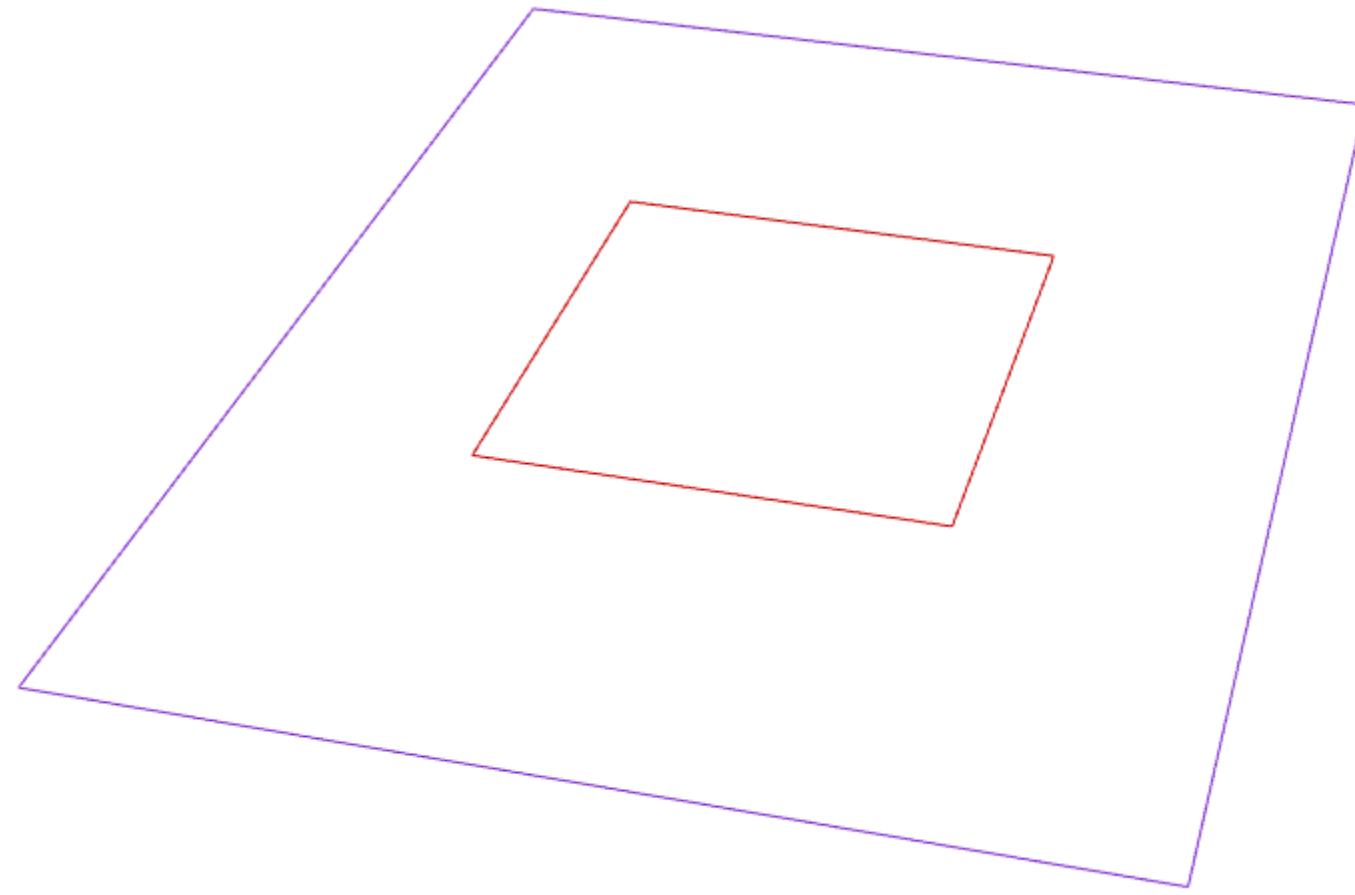
Floor  
heights

Core wall  
Thickness

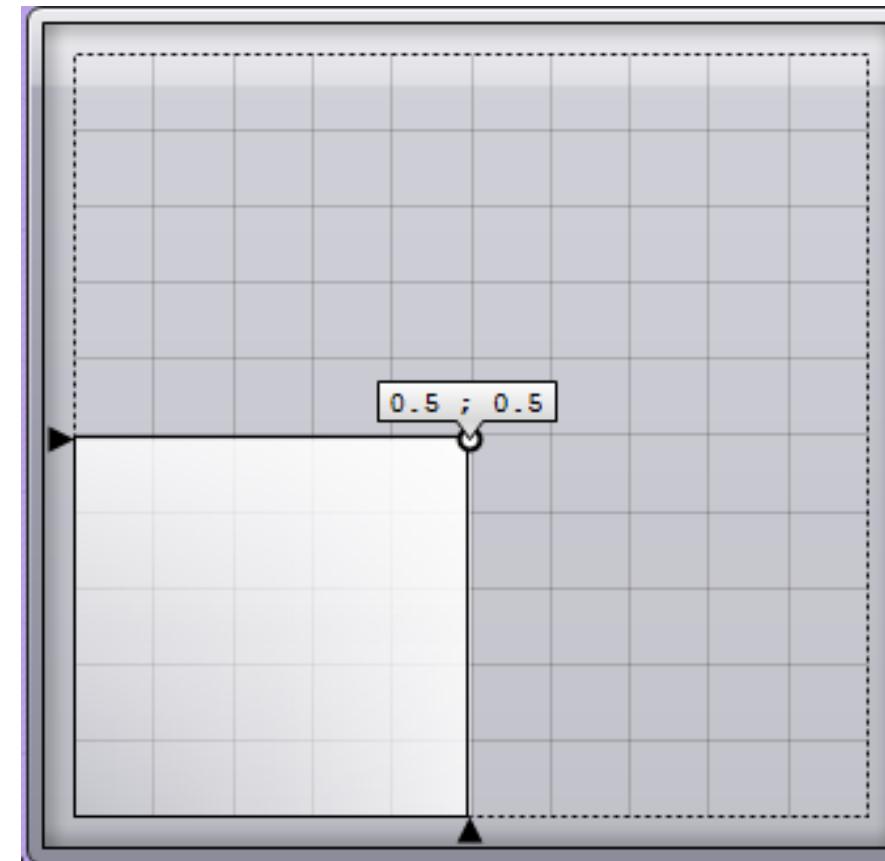
Floor  
groupings

Layout of the  
building

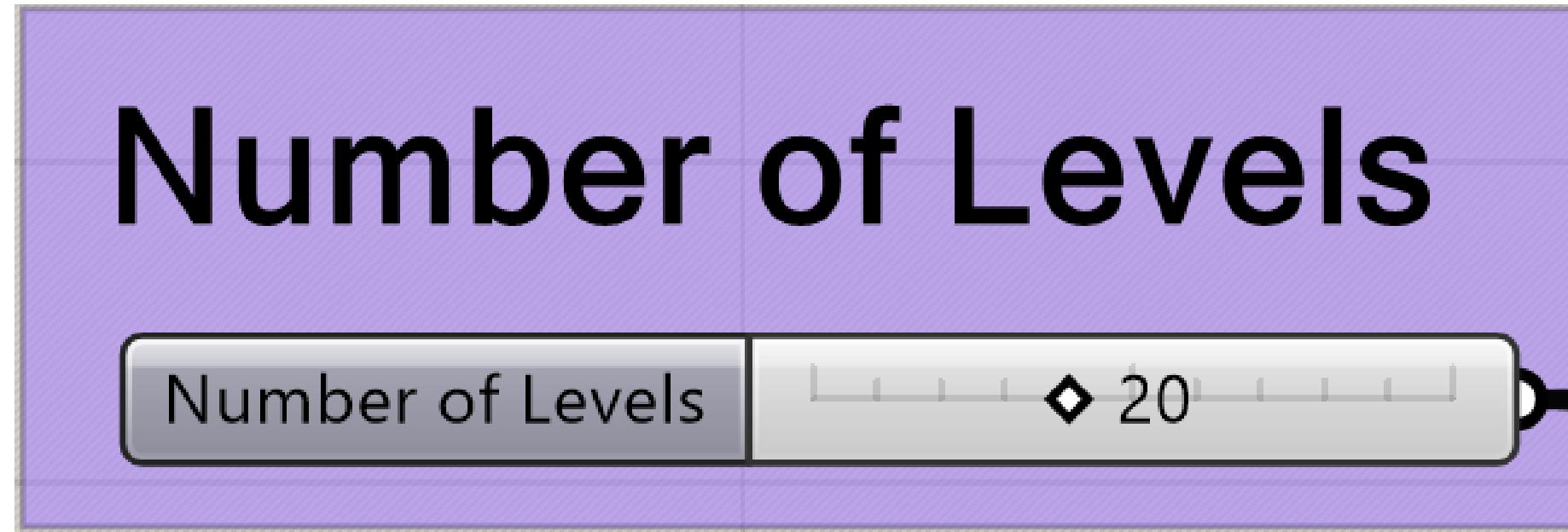
# Inputs – walls



# Inputs – MD slider



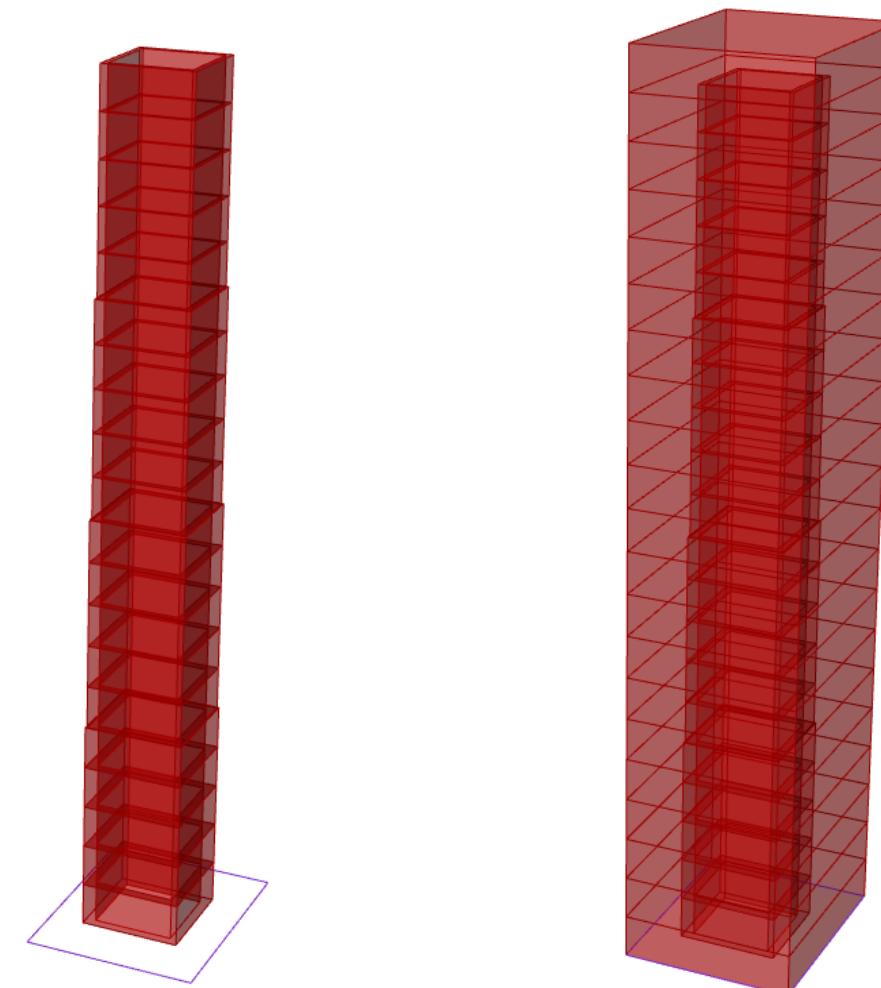
# Inputs - sliders



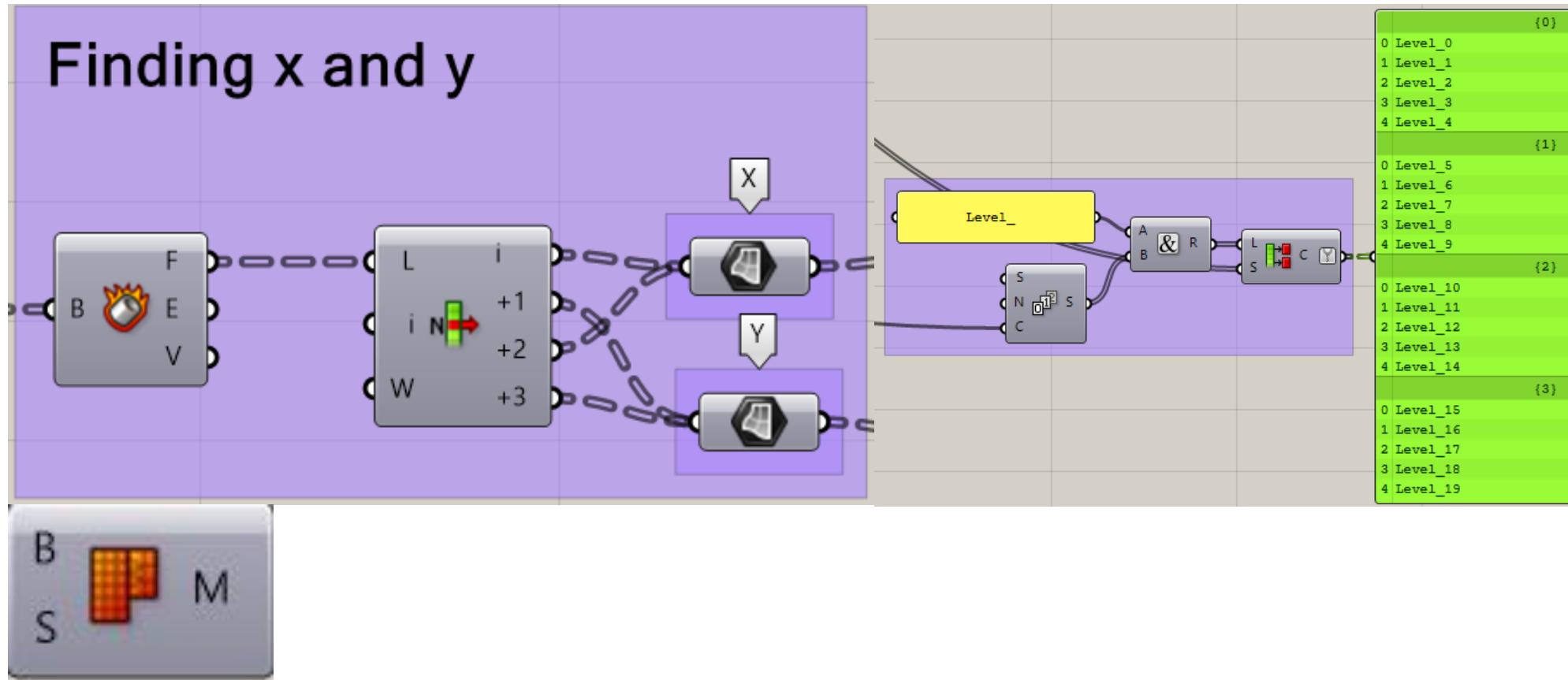
# Inputs - gene pool



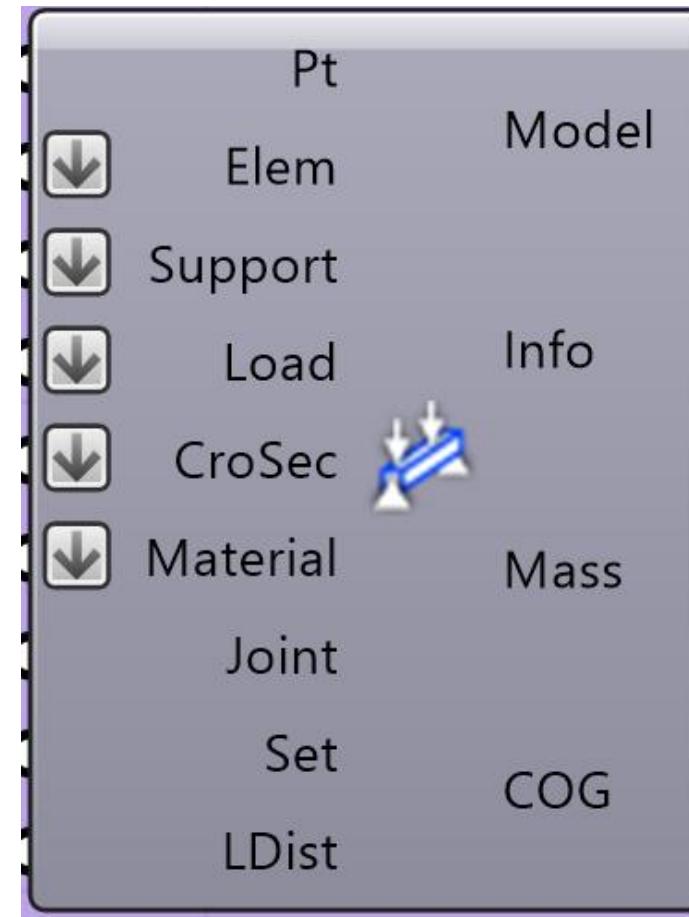
# Automation - visualisation



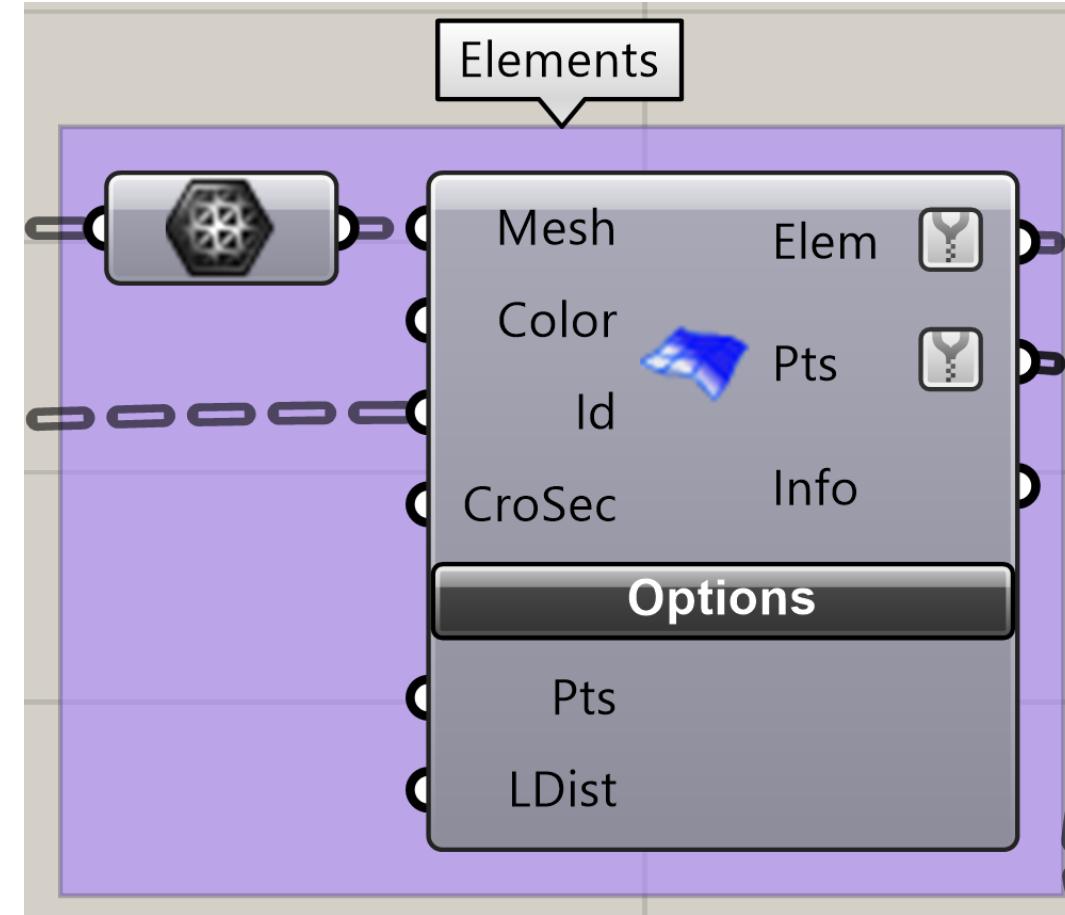
# Automation – preparing for Karamba



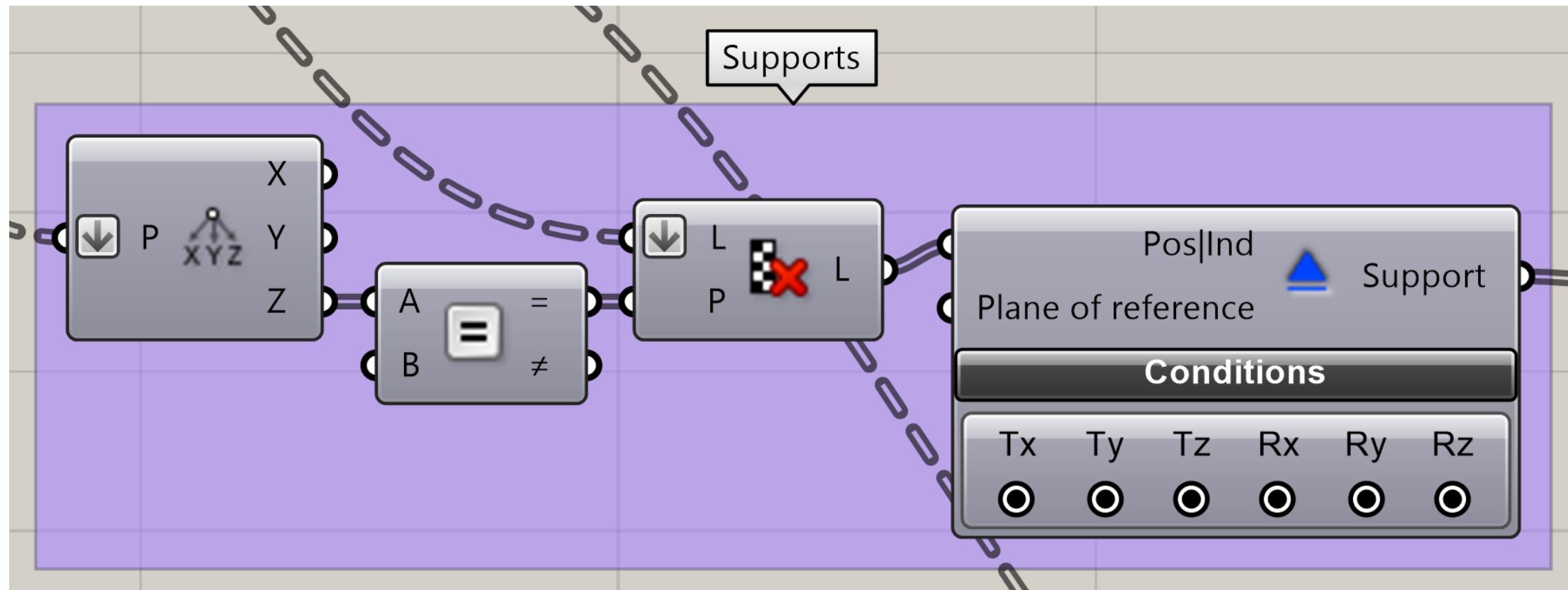
# Karamba - inputs



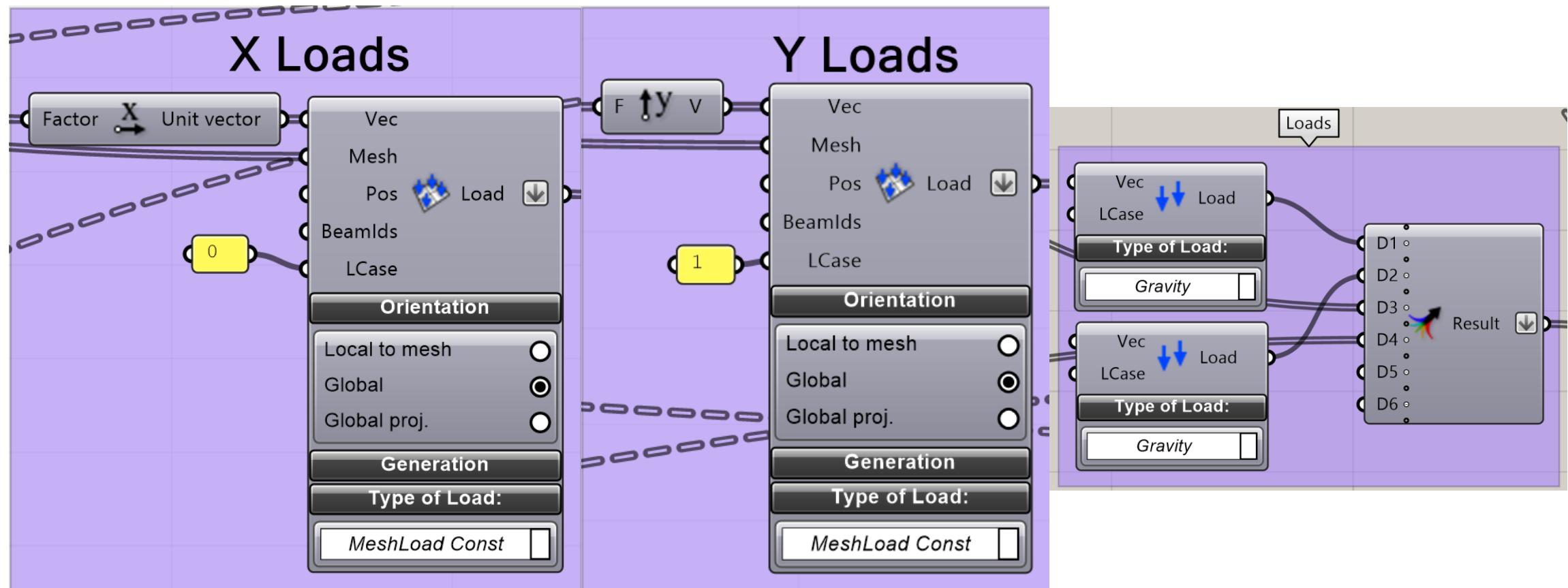
# Karamba - elements



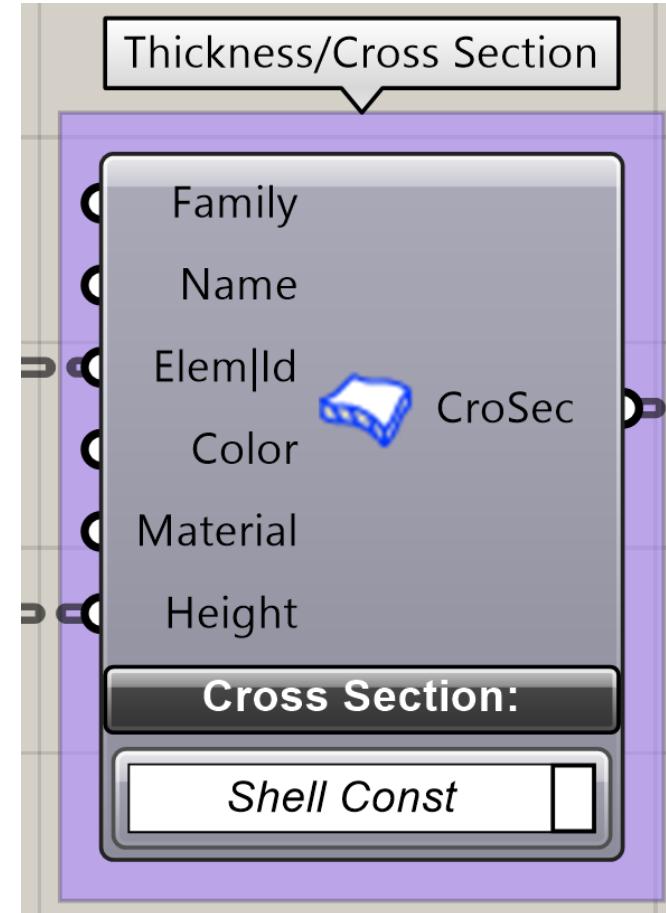
# Karamba - supports



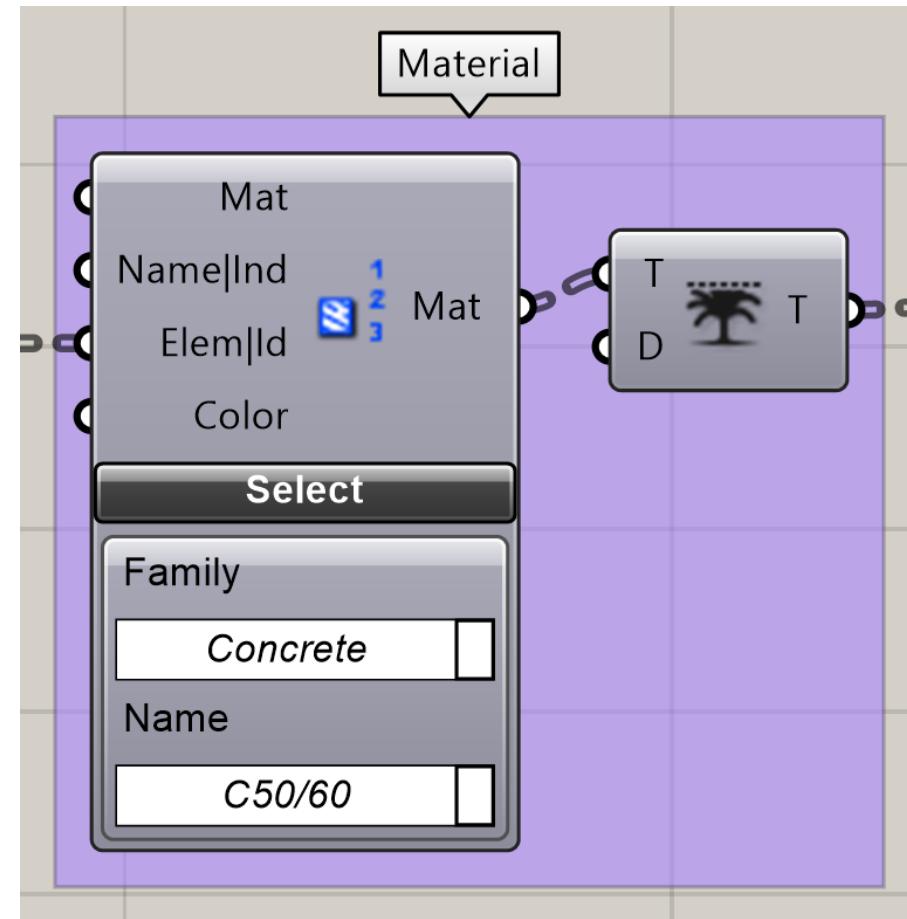
# Karamba - loads



# Karamba - cross section

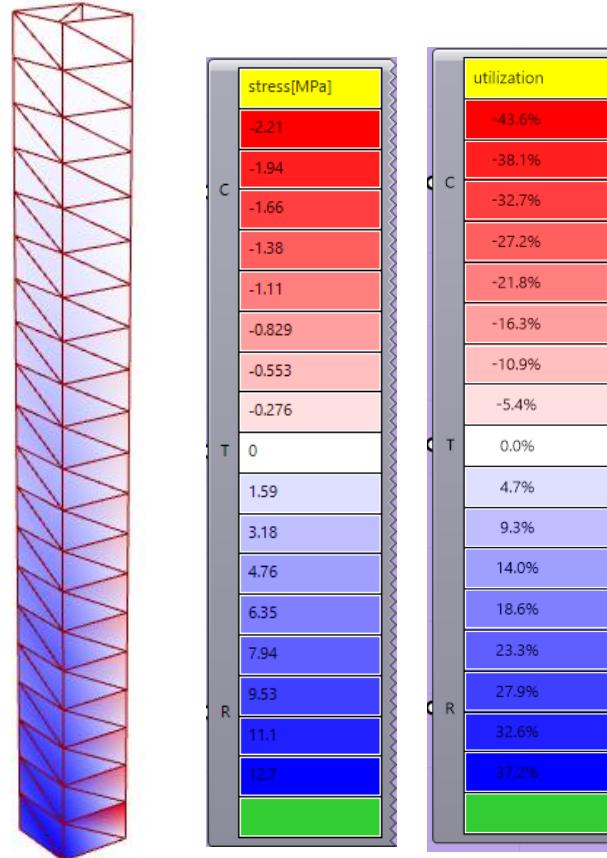


# Karamba - material

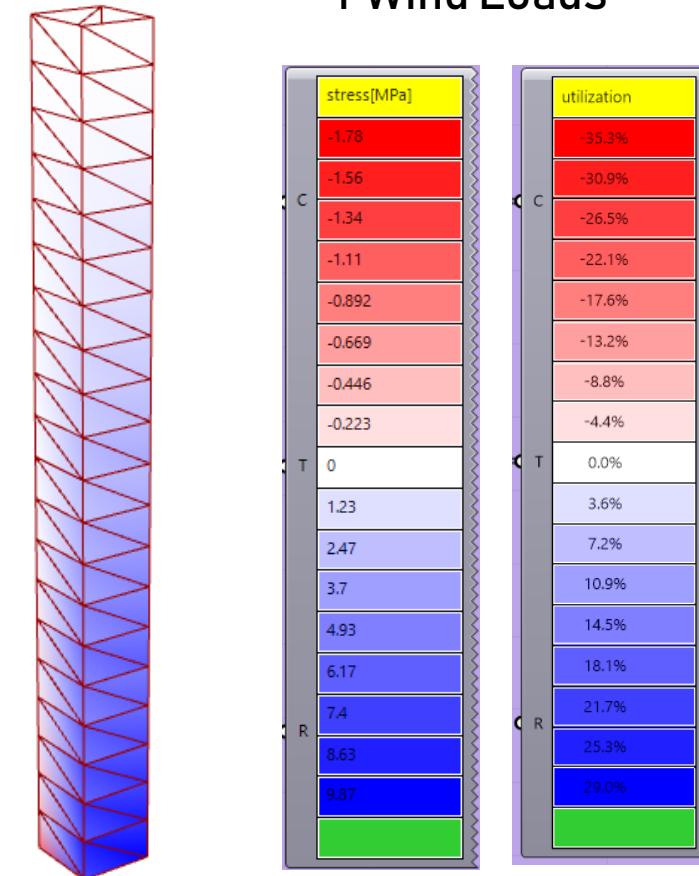


# Karamba – visualisation and results

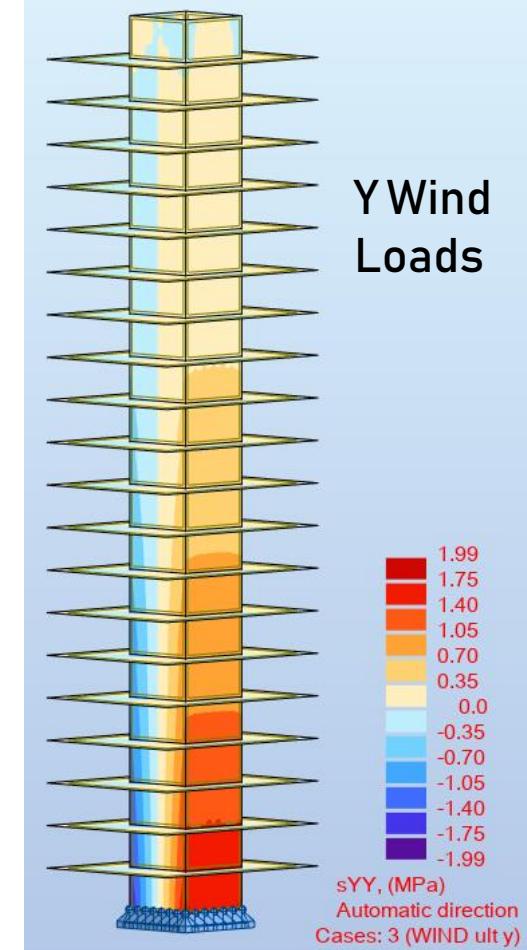
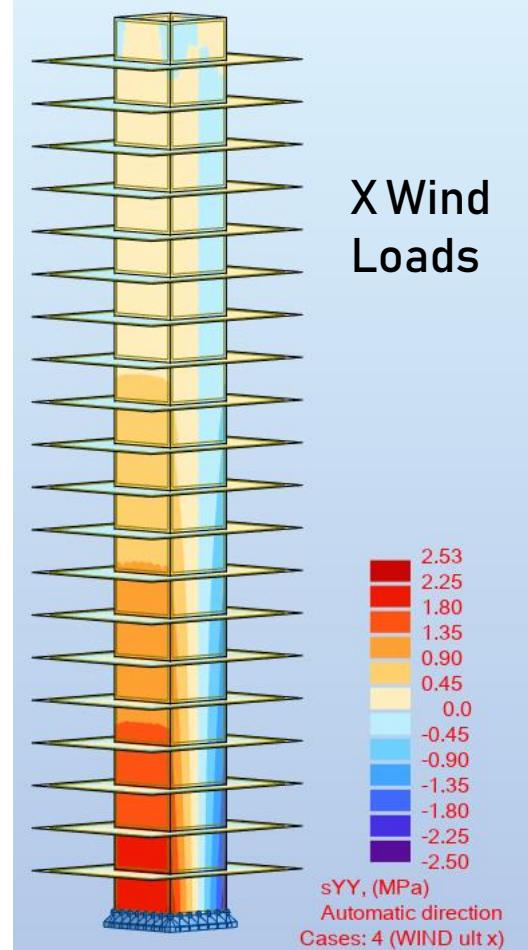
X Wind Loads



Y Wind Loads

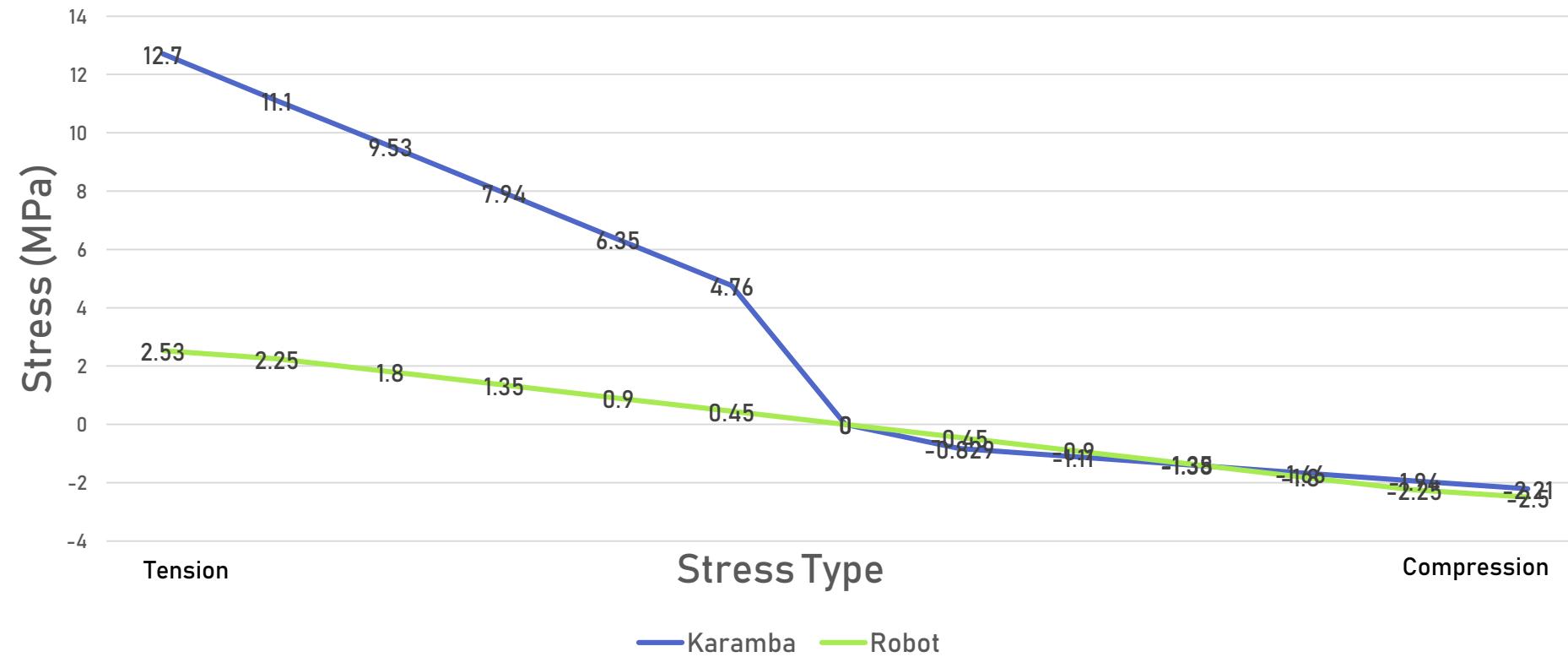


# Robot - results



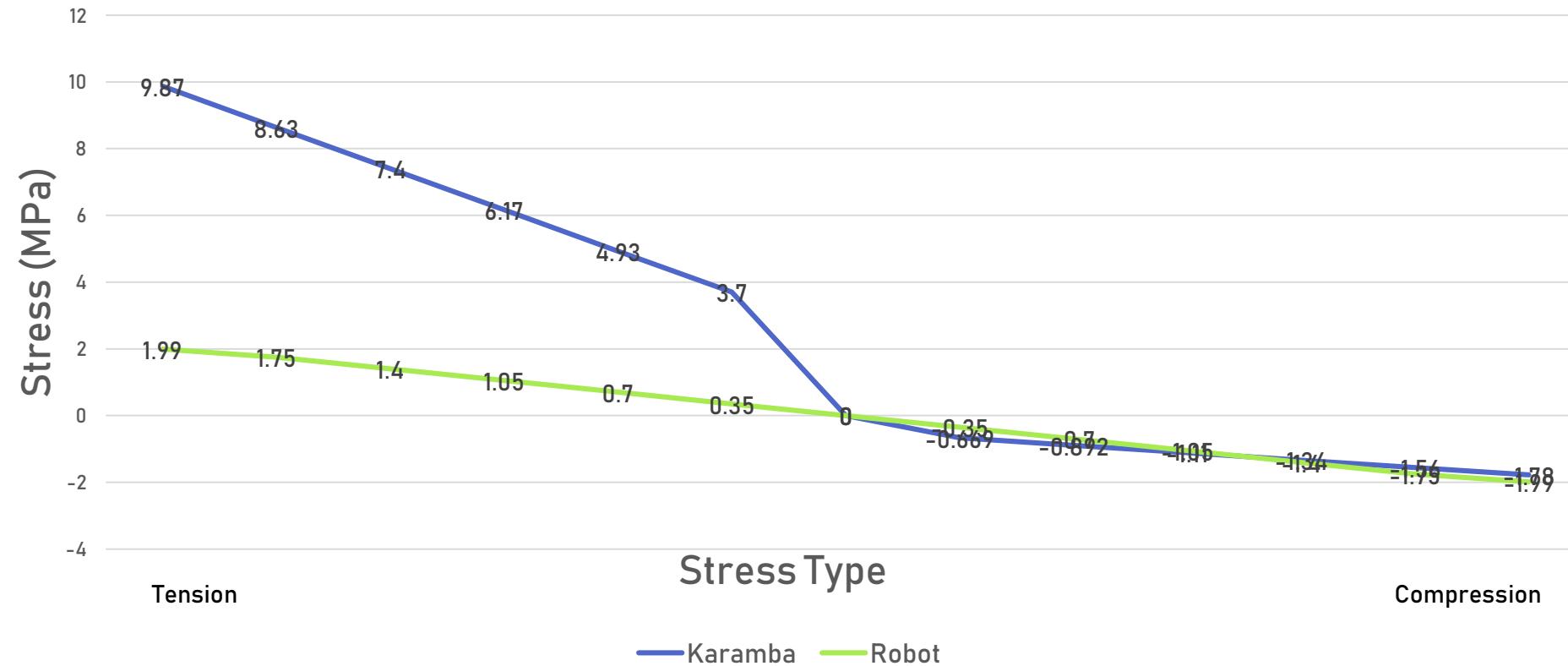
# Comparisons

## Comparing for X

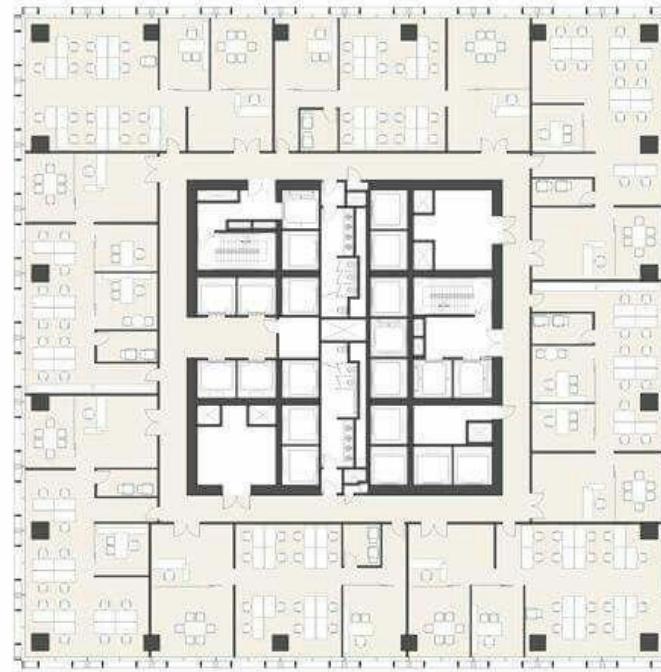
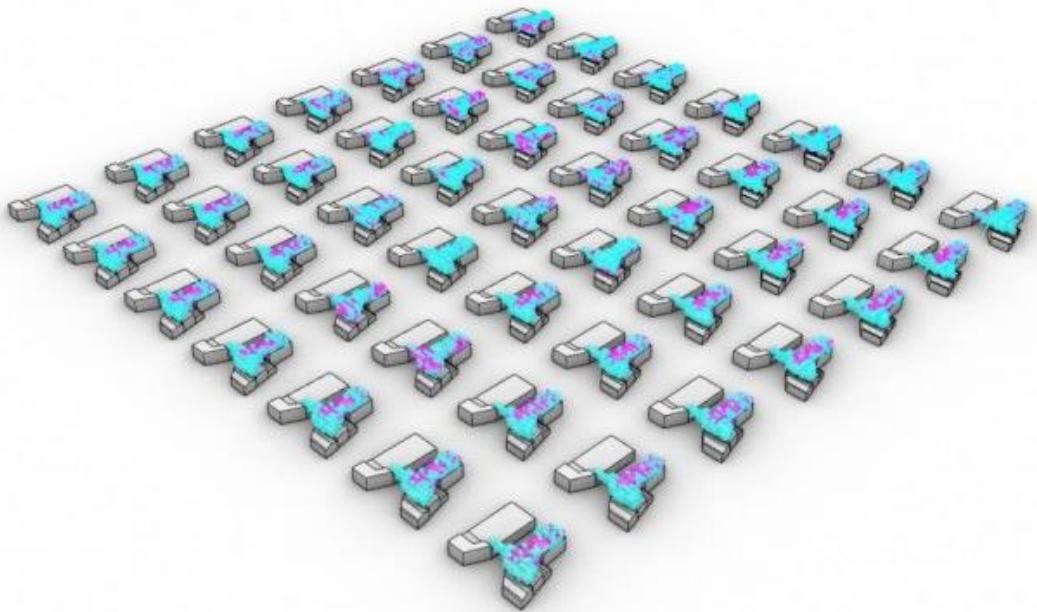


# Comparisons

Comparing for Y



# Areas started



# Areas of further research

Interoperability

Engineering  
Knowledge

Computational  
Design Tools

User Testing

# Thank you



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