



12 Brain Rules

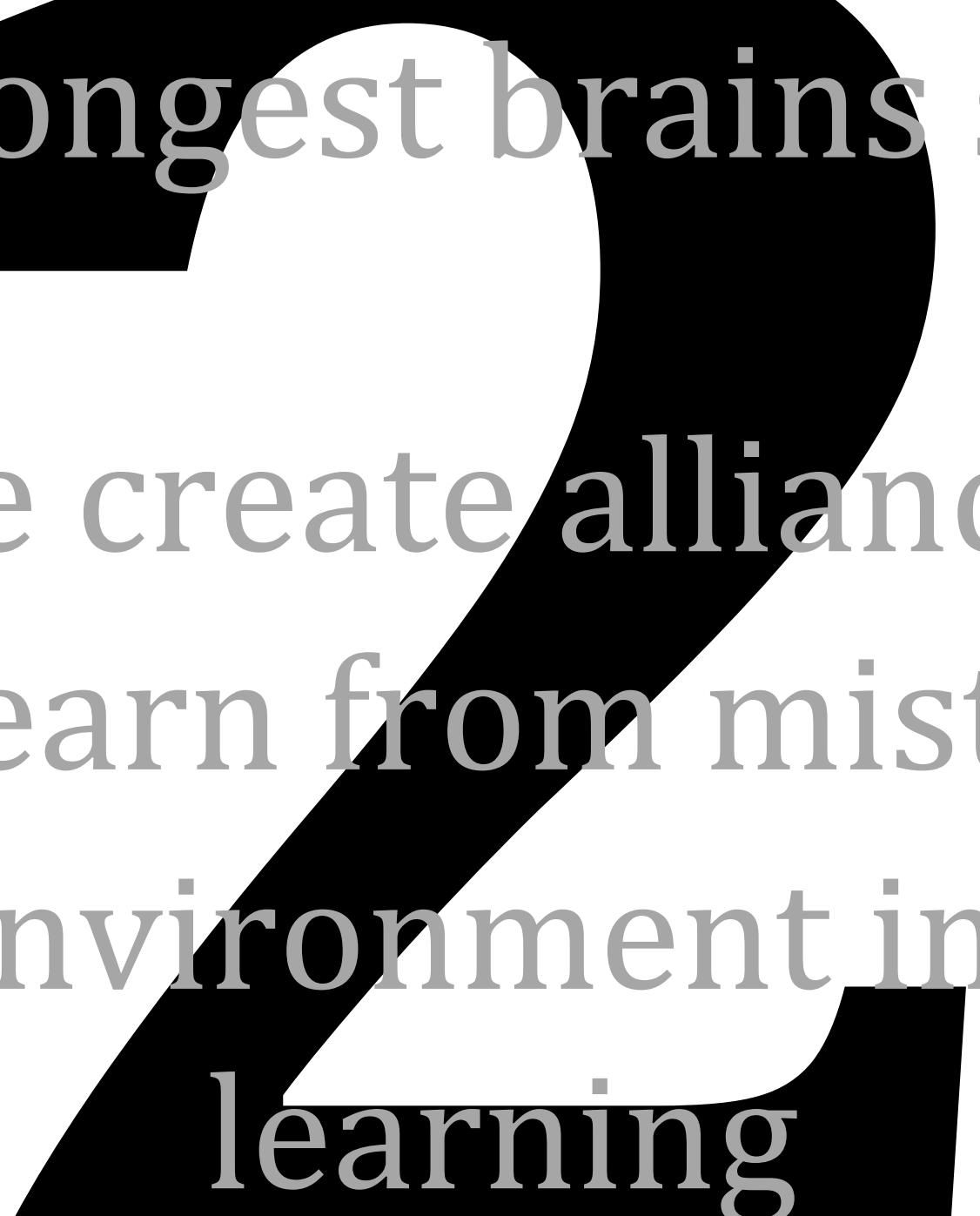
by John Medina

exercise boost brainpower

we used to walk 12 miles a day

exercise improves executive
functions

increase of oxygen = mental
sharpness



the strongest brains survive

we create alliances

we learn from mistakes

a safe environment improves
learning



wiring

everybody has a different brain
learning changes the brain
customization = ☺

attention

no attention to boring things

the brain can not multitask

error rates go up by 50%

our classrooms are multitask-

environments = ☹

short time memory

a 7 digit number disappears in
our memory after 30"
repeating within 30" helps you
remembering it for hours



long time memory

remember to repeat 90 to 120'
after initial learning

it takes 10,000 repetitions to
transform memory into habit

sleep well

7

the brain does not sleep

a 26' nap at 3 p.m.

= 34% improvement



avoid stress

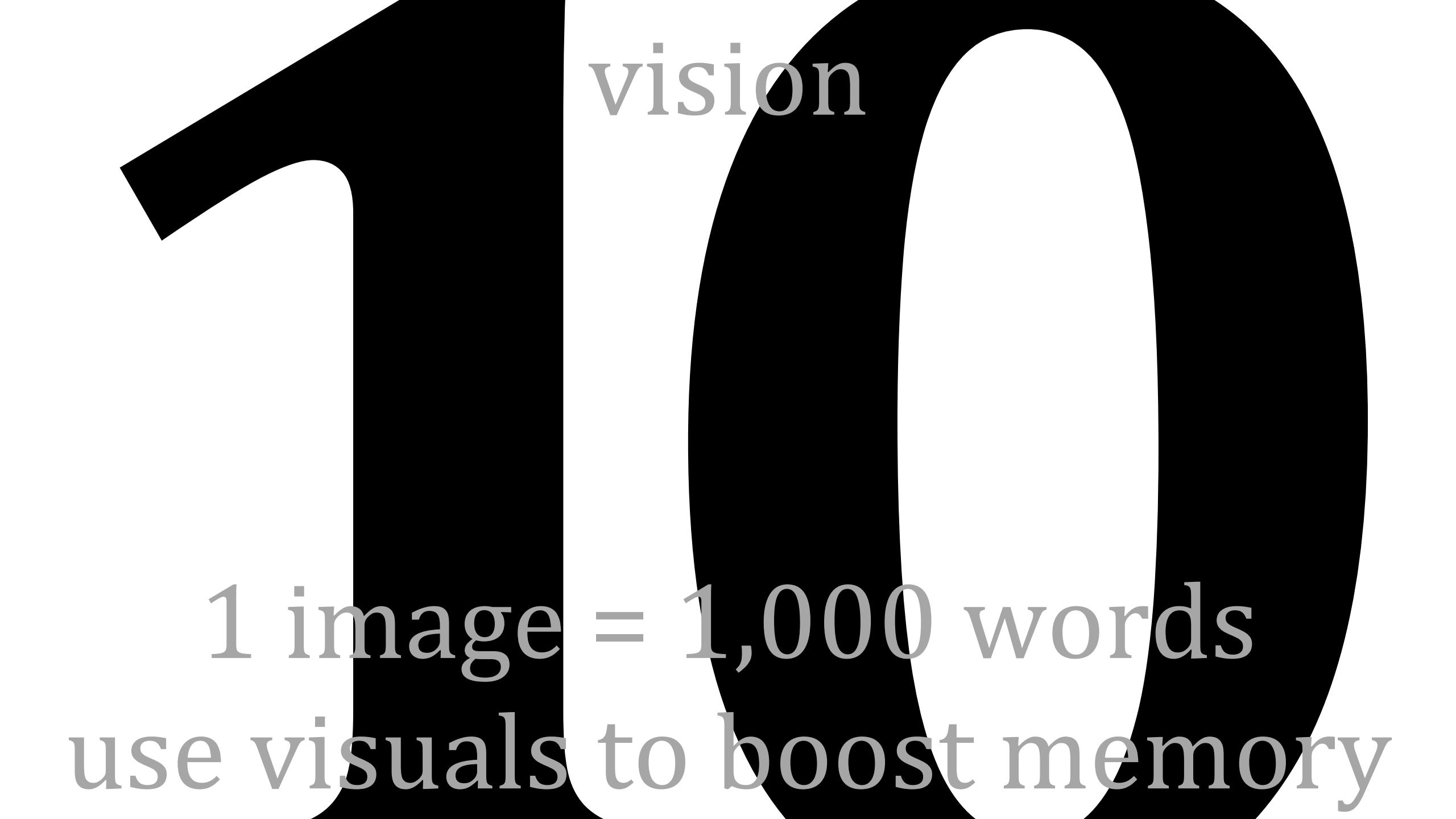
30' stress = natural

long periods of stress =
cognition damage



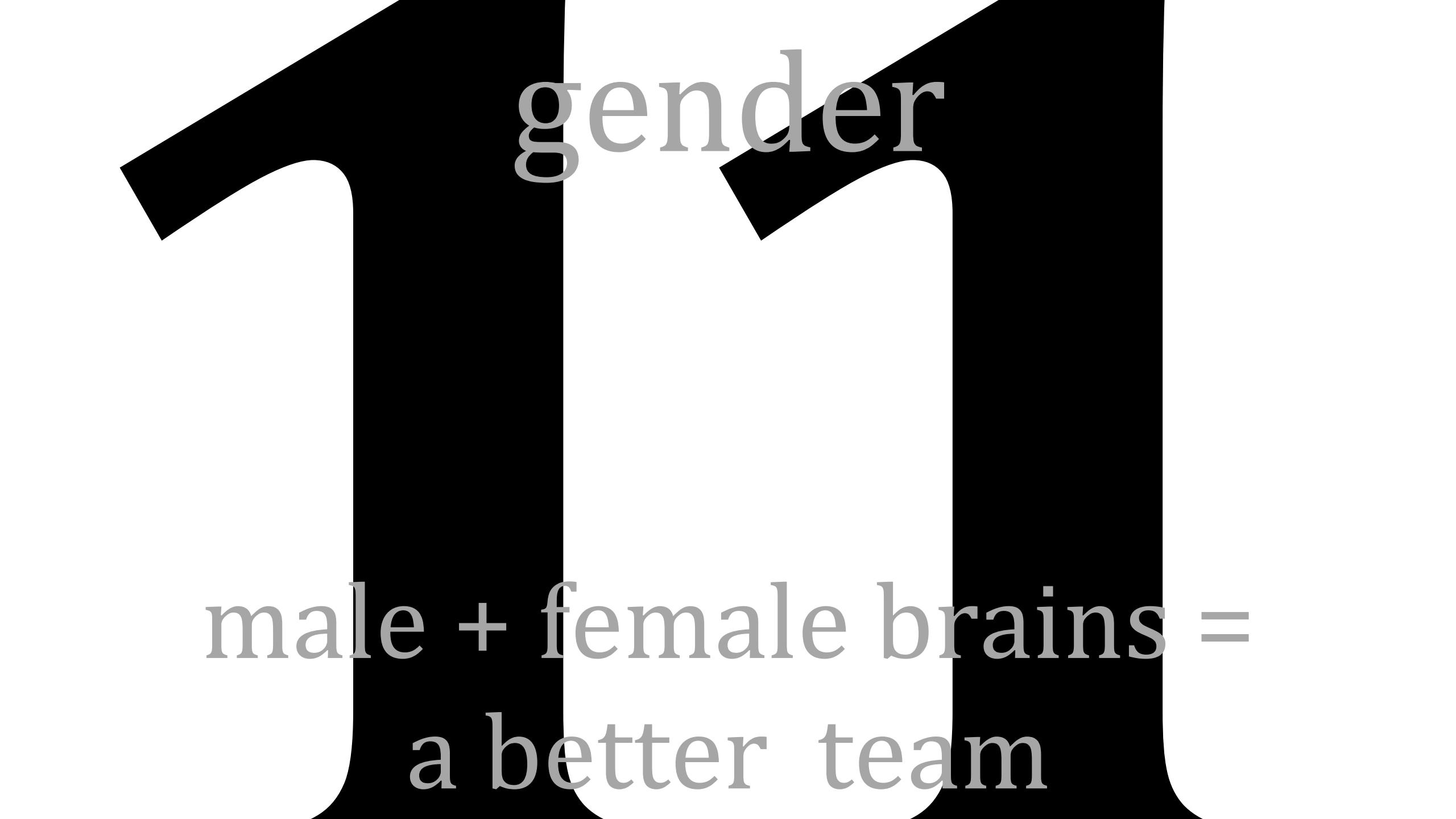
sensory integration

our senses work together
stimulate all of them



vision

1 image = 1,000 words
use visuals to boost memory



gender

male + female brains =
a better team



stay curious

explore your world

20% time off to play pays off

Avans University of Applied Sciences

Academy of Building and Infrastructures (AB&I)

Department of Architecture

Tilburg, the Netherlands

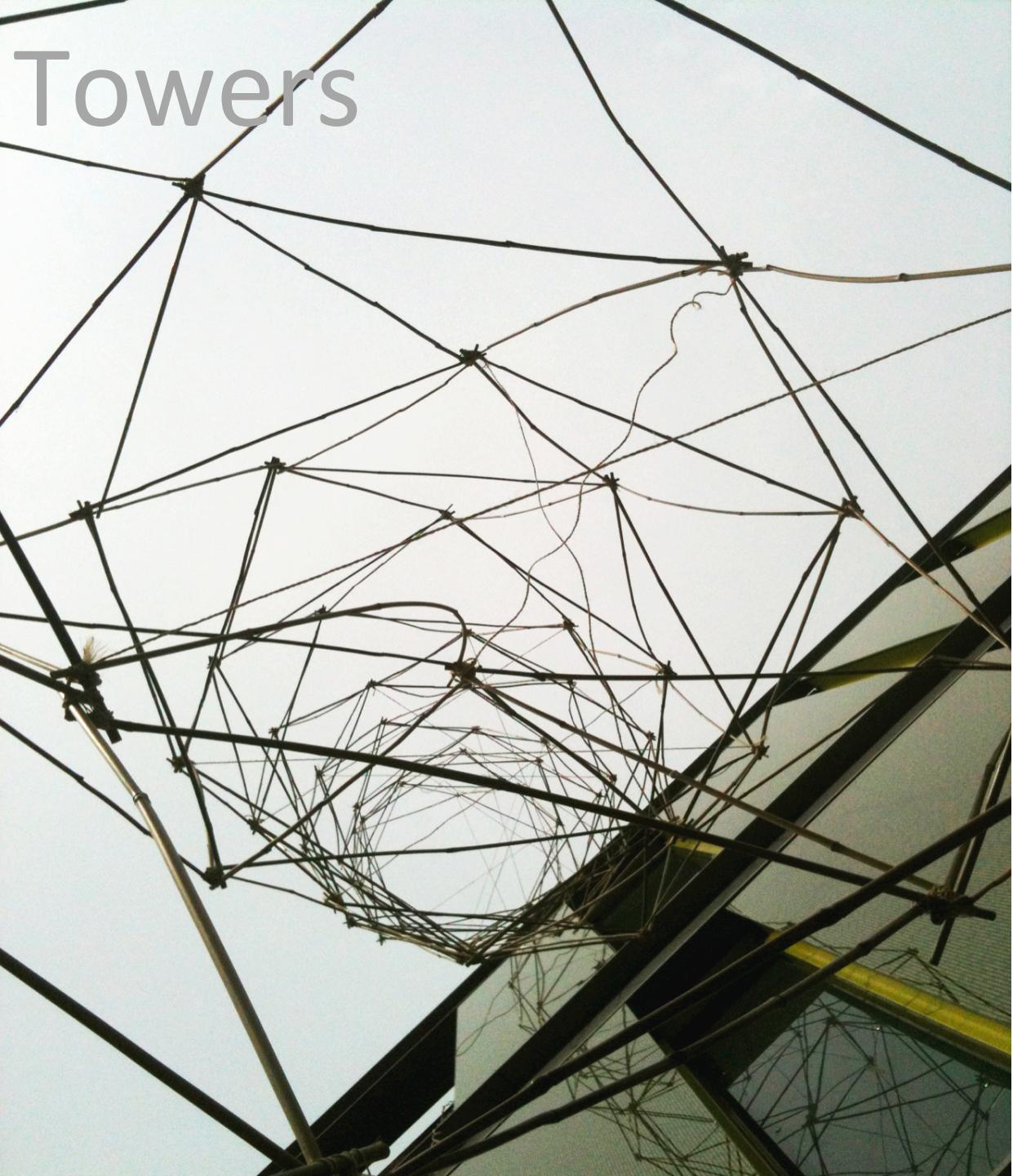
Building with Bamboo

at Avans University of Applied Science

2012

Plato Solids





Nodes

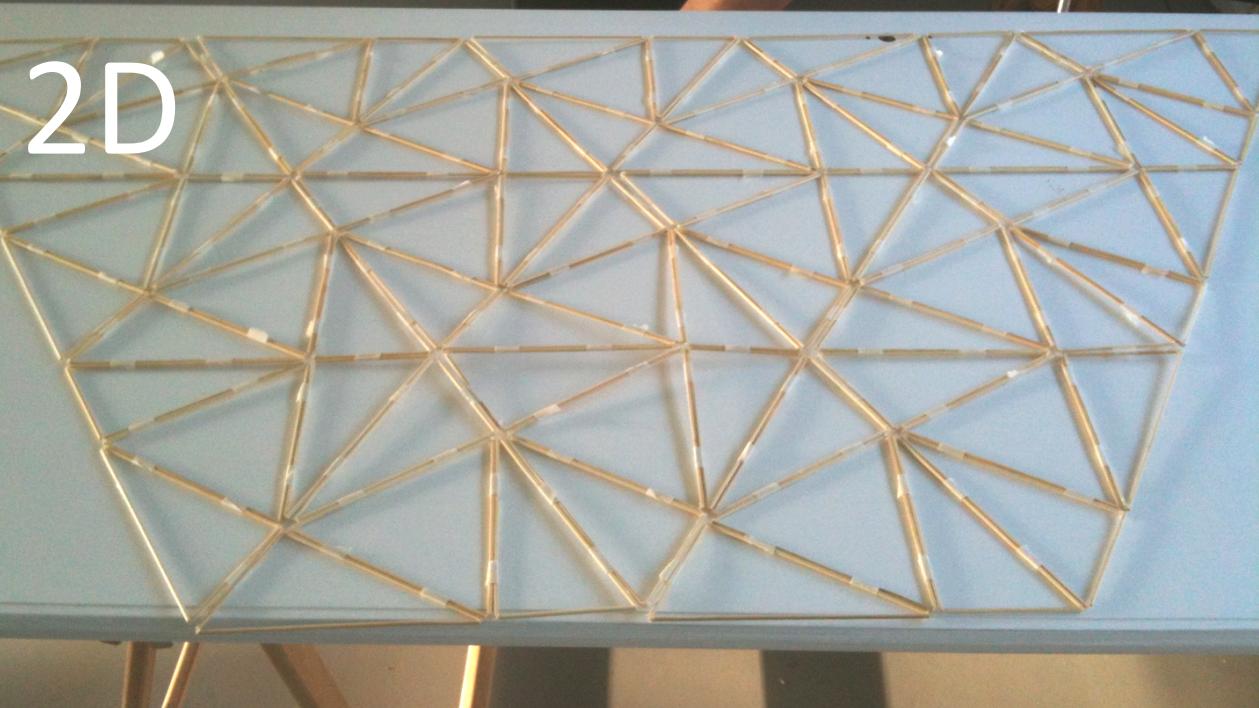




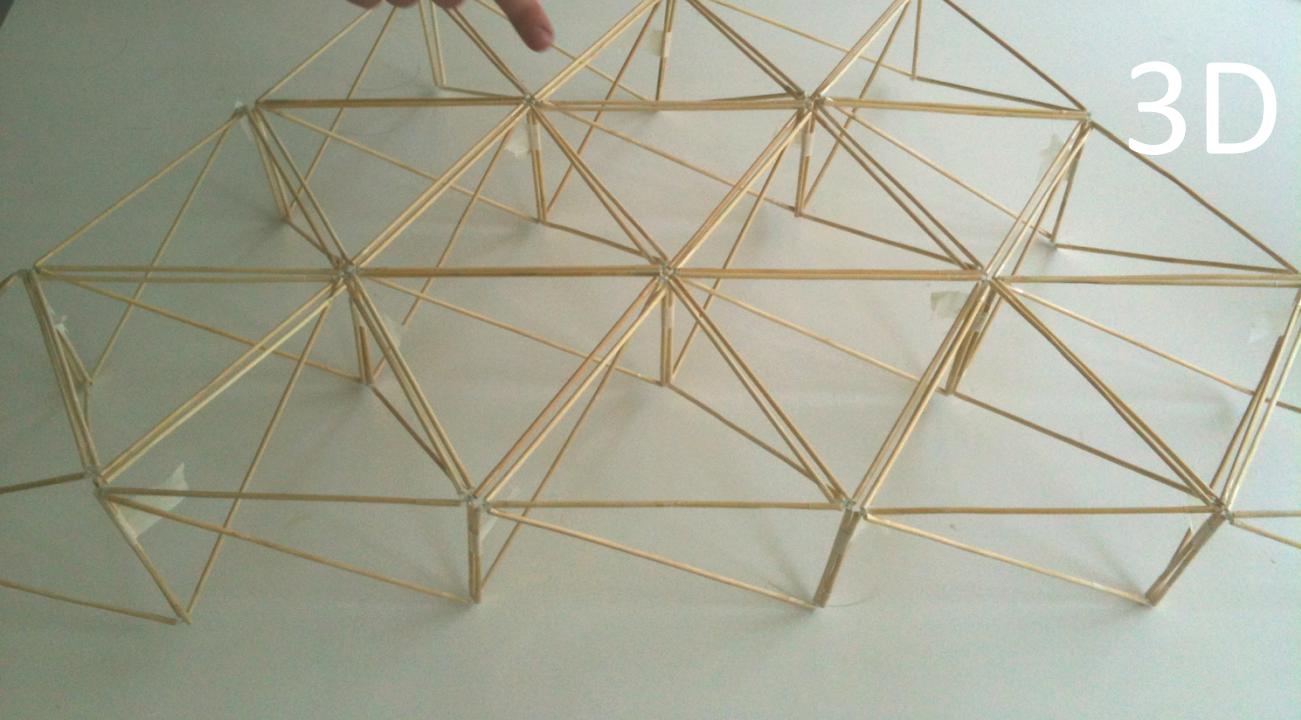
2gather: a project for a foldable stage

Breda, the Netherlands

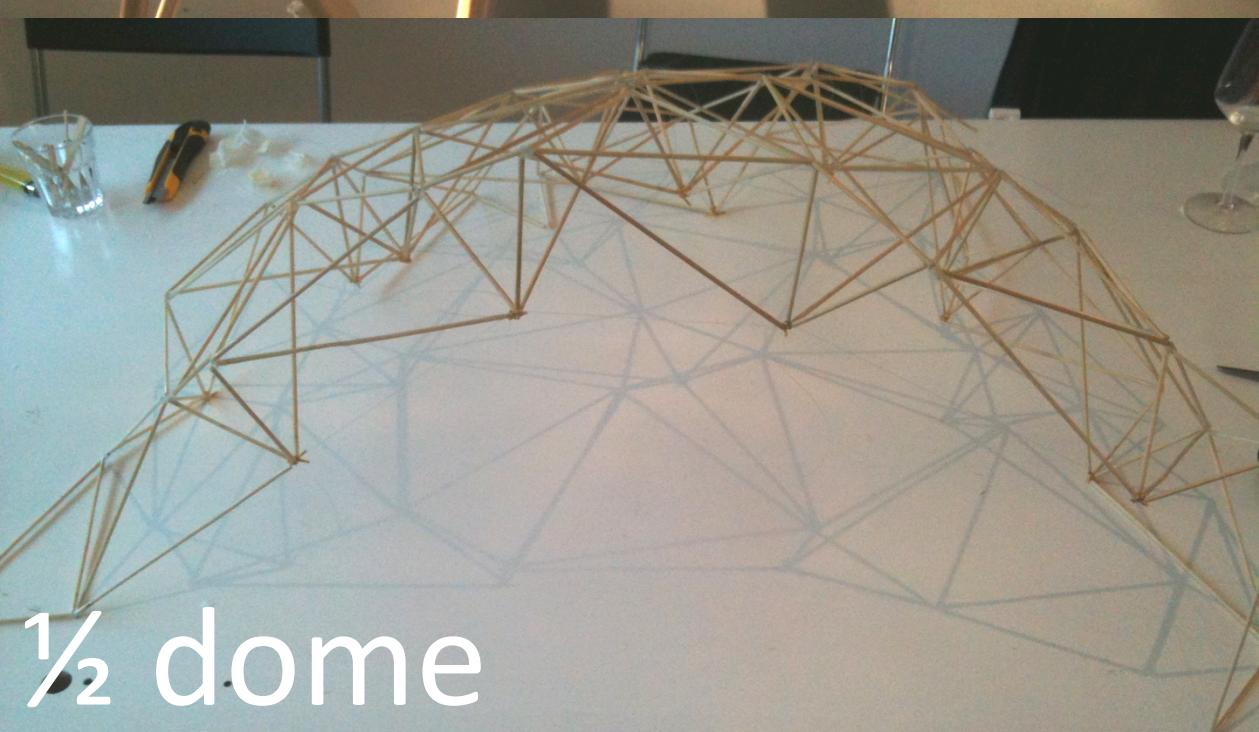
2013



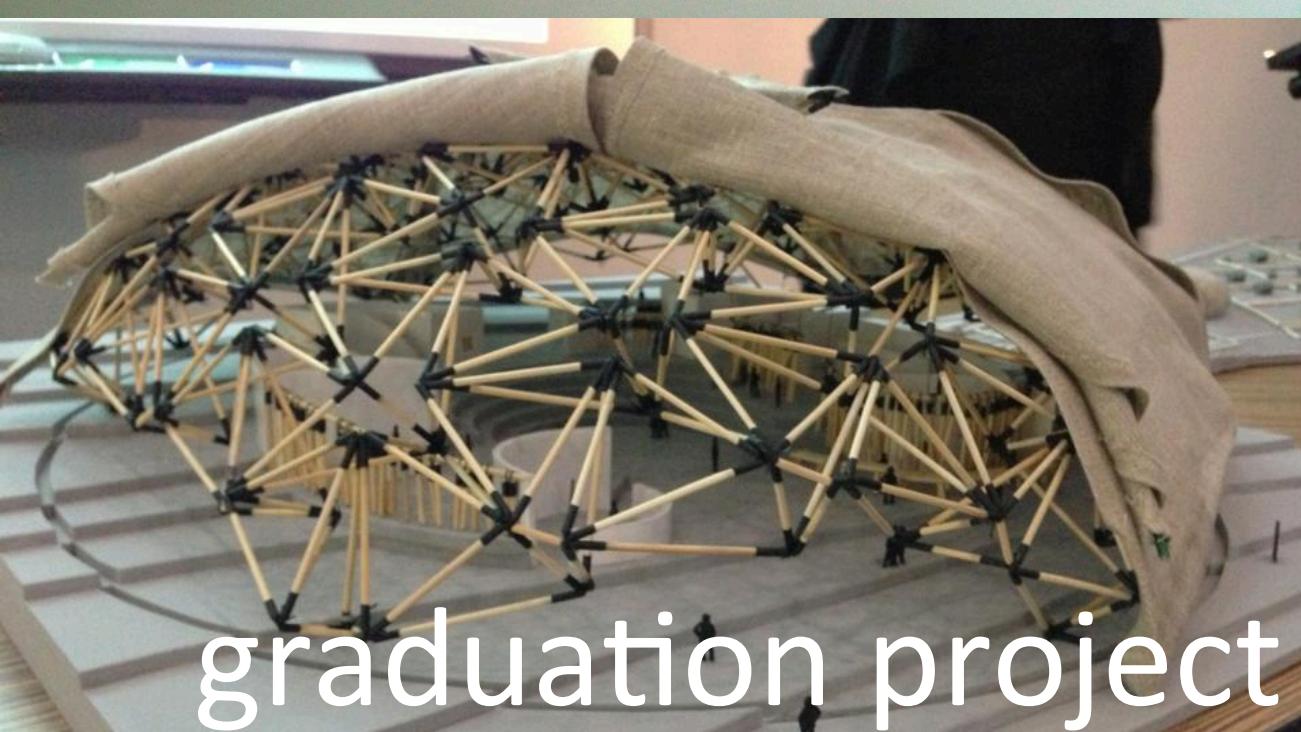
2D



3D



$\frac{1}{2}$ dome



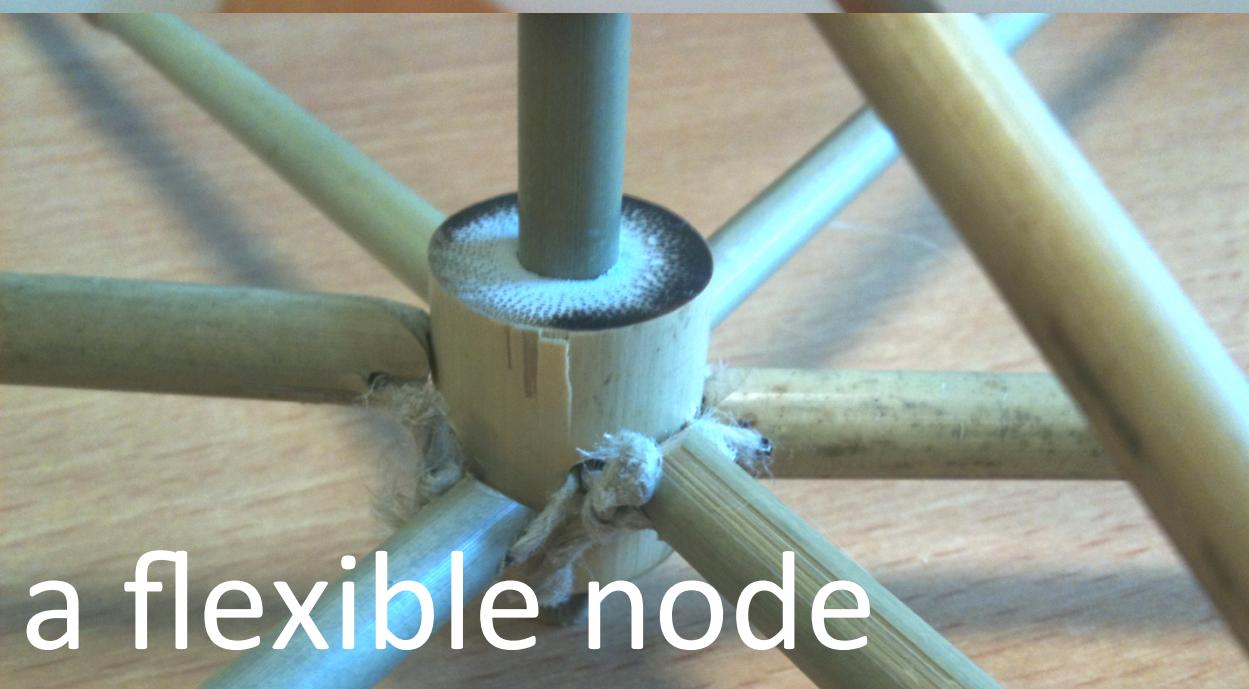
graduation project

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2013

a non flexible node

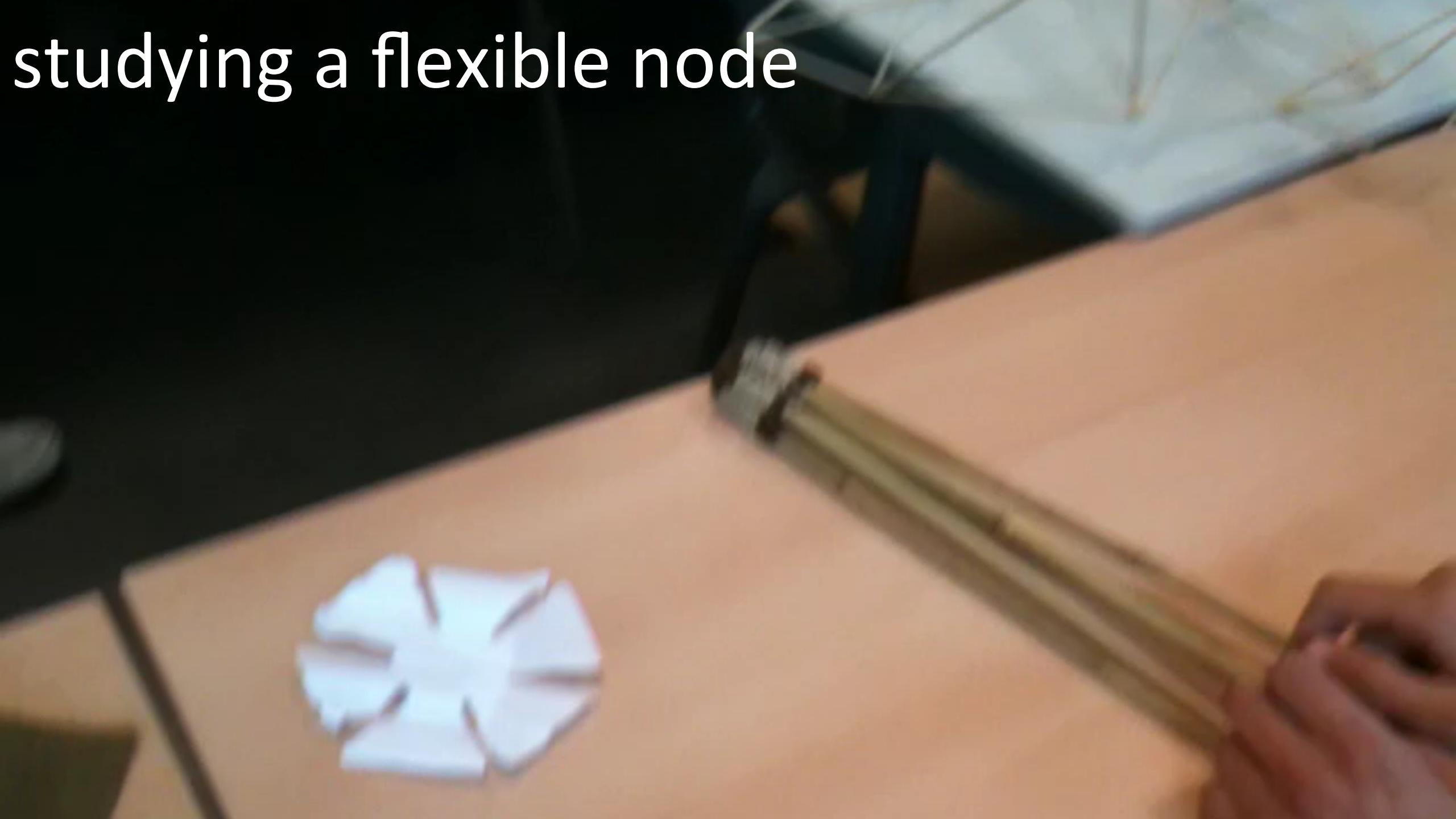


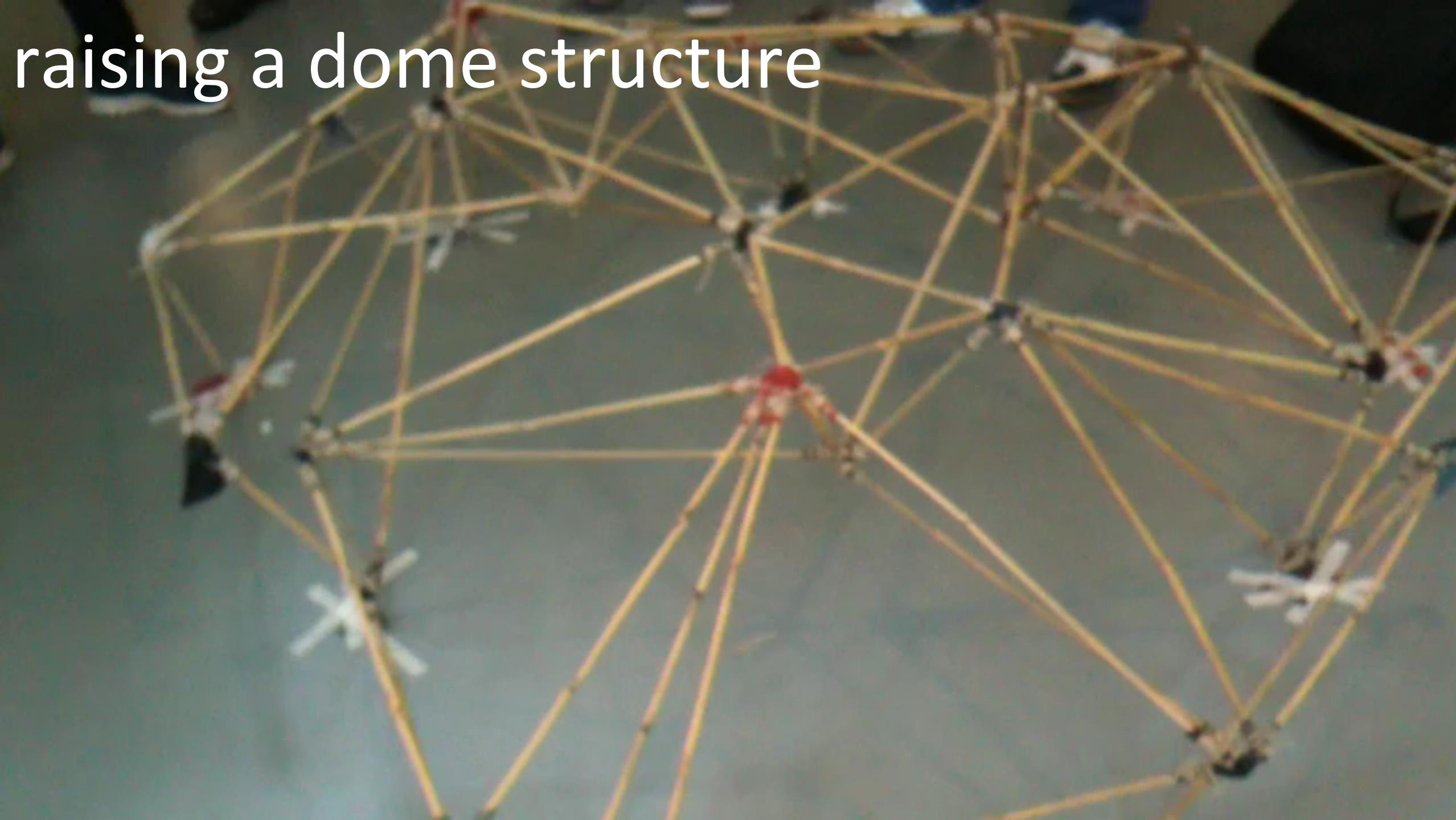
a flexible node



a umbrella type node

studying a flexible node





raising a dome structure

ECOWEEK 2013

CRACOW, POLAND

<https://www.youtube.com/watch?v=-MYD8LAAFFI> (3'04")

<https://www.youtube.com/watch?v=78eKO8wE3SA> (0'20") unfolded

<https://www.youtube.com/watch?v=TGRfmZIRO8Q> (0'11") folded

2013

a rapidly foldable structure





folding the structure



Playing with my nephew on Koksijde beach

2014

Aryan



Aryan & a truncated icosahedron



rolling the truncated icosahedron



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<https://www.youtube.com/watch?v=cfQwZQh2Us8> (6'33")
<https://www.youtube.com/watch?v=LrnMpVJ1l00> (2'22")

2014

Bamboo Ball Races

prefabricated parts

finishing the ball



assembling parts

checking the rolling

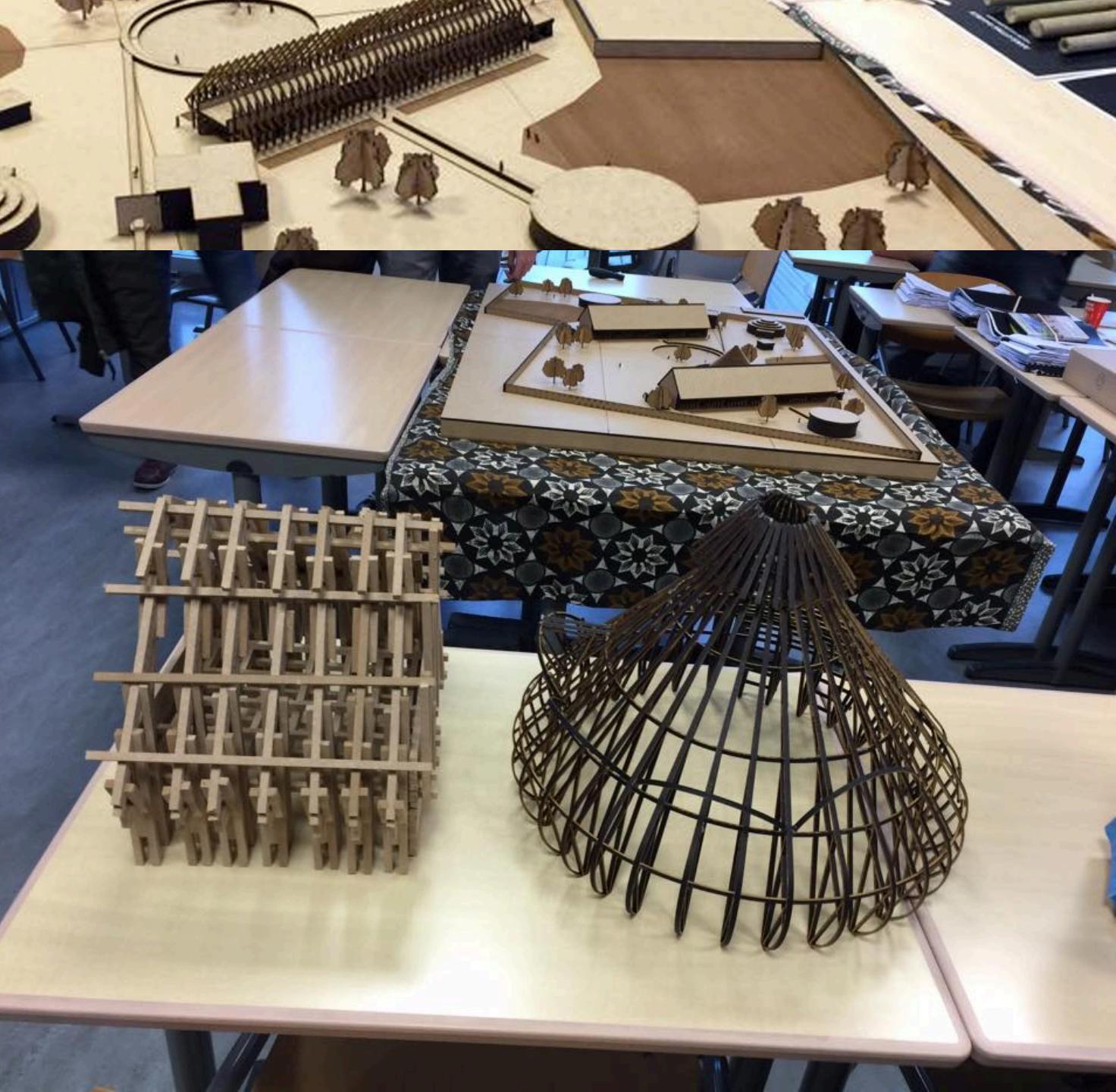


Bamboo Bridges



Graduation projects

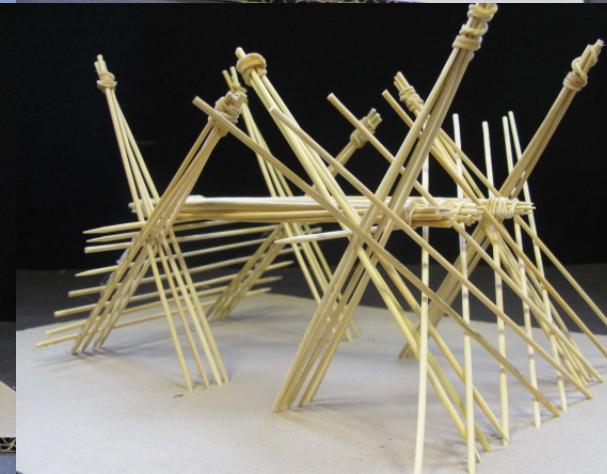
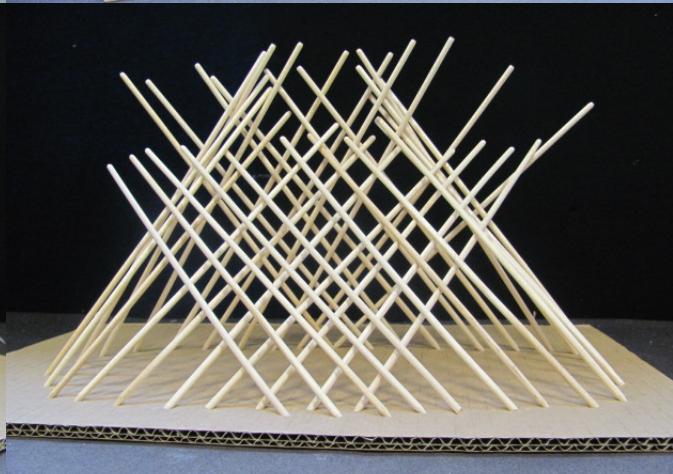
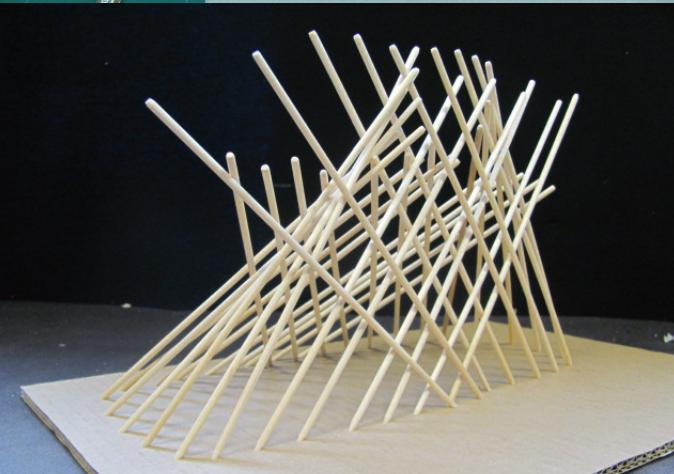
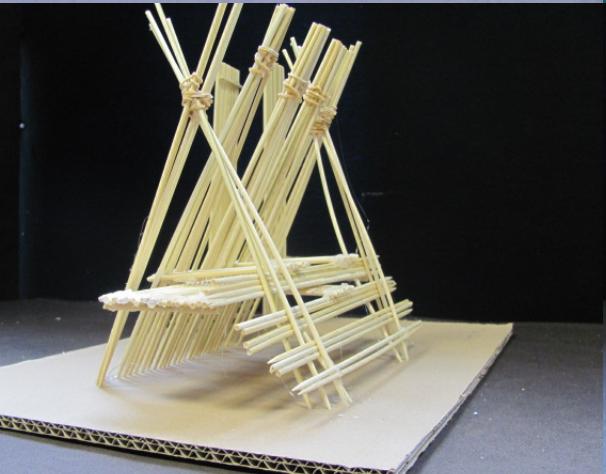
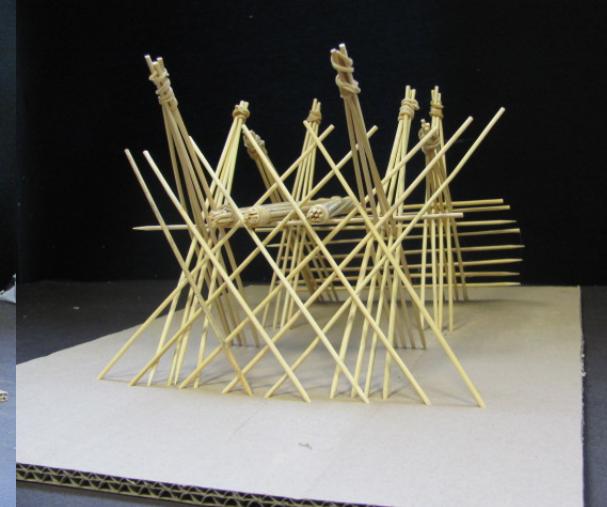
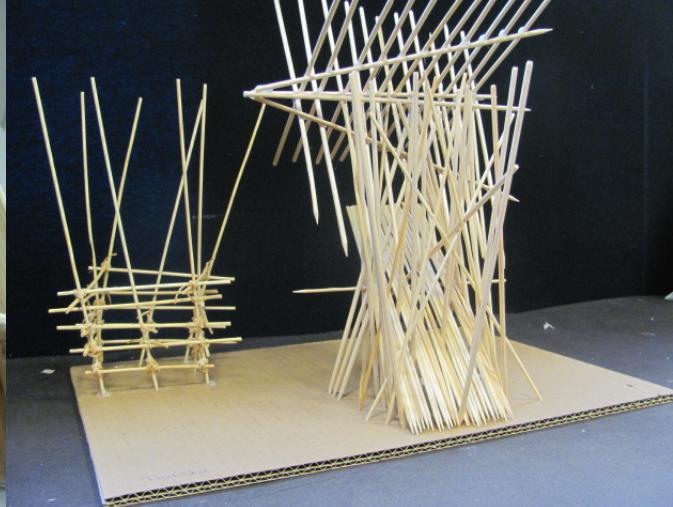
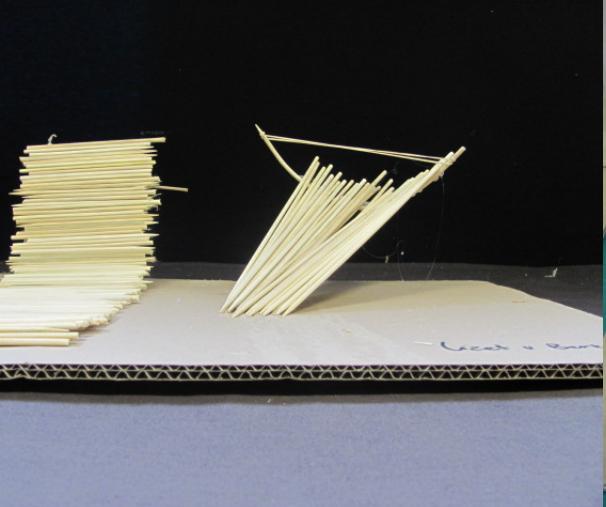
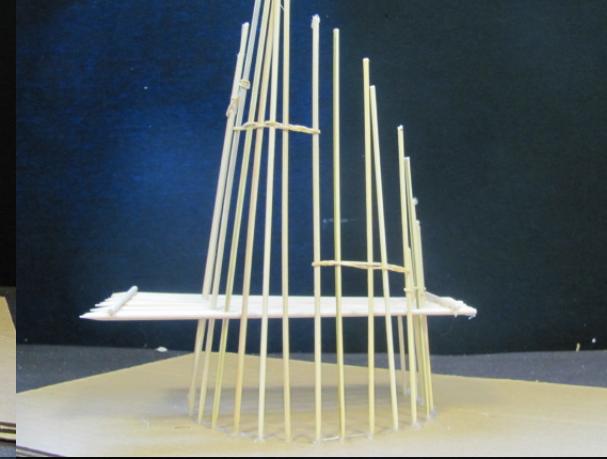
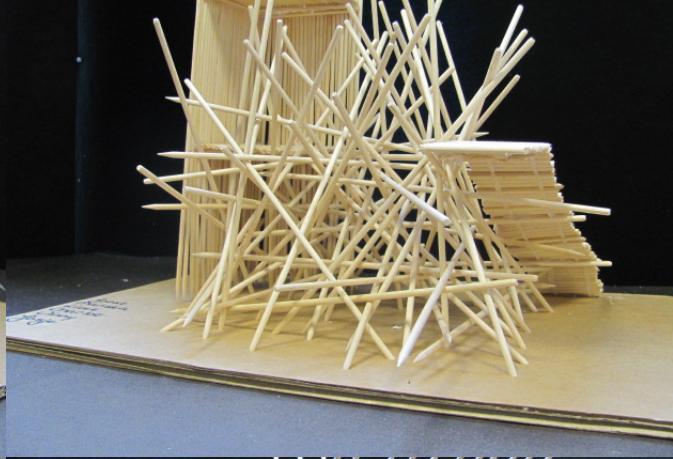
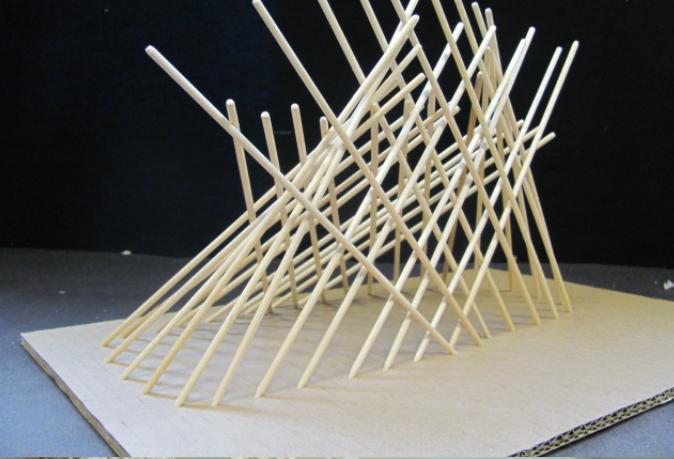
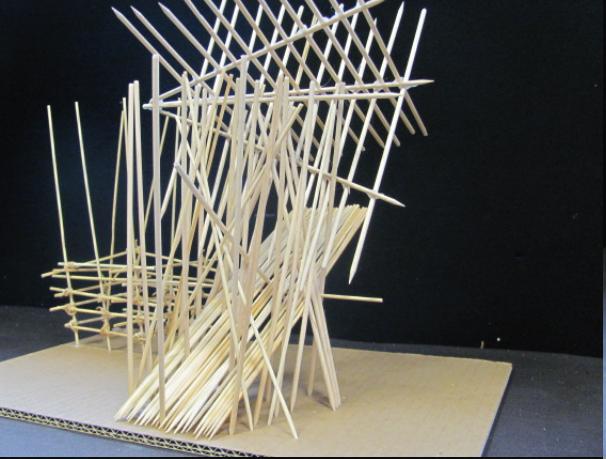
2014



Building with Bamboo

at Avans University of Applied Science

2015





Introducing Bamboo into the education of the building engineer

- part 2 -

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