

PERKINS— EASTMAN



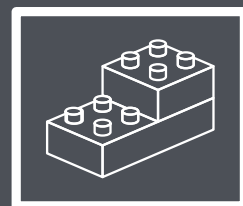
DATA UNIT



VISUALIZATION &
ANALYTICS



DATA MINING
ANALYTICS &
VISUALISATION



PROGRAMMING



AUTOMATION



PARAMETRIC
MODELING



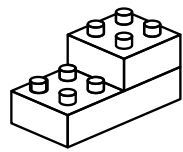
LARGE SCALE



SUSTAINABILITY

DATA ANALYTICS

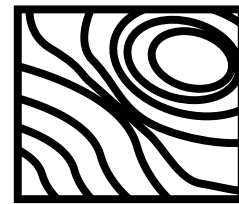
11 SUSTAINABLE CITIES
AND COMMUNITIES



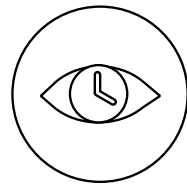
PROGRAMMING



DATA MINING
ANALYTICS &
VISUALISATION



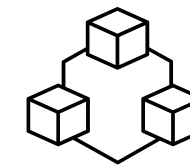
LARGE SCALE



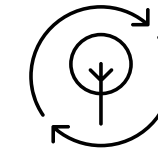
PREDICTIVE
ANALYTICS

ENVIRONMENTAL SCRIPTING

13 CLIMATE
ACTION



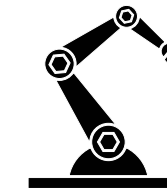
PARAMETRIC
MODELING



SUSTAINABILITY



AUTOMATION



DIGITAL
FABRICATION

HOW CAN **DATA** ACCELERATE THE ADOPTION OF SDG'S IN THE AEC INDUSTRY?

WHAT IS DATA?



FACTS AND STATISTICS **COLLECTED**
TOGETHER FOR REFERENCE OR ANALYSIS.

WHY IS **DATA** SO IMPORTANT IN AEC?



2000
TOOL
CAD/CAM

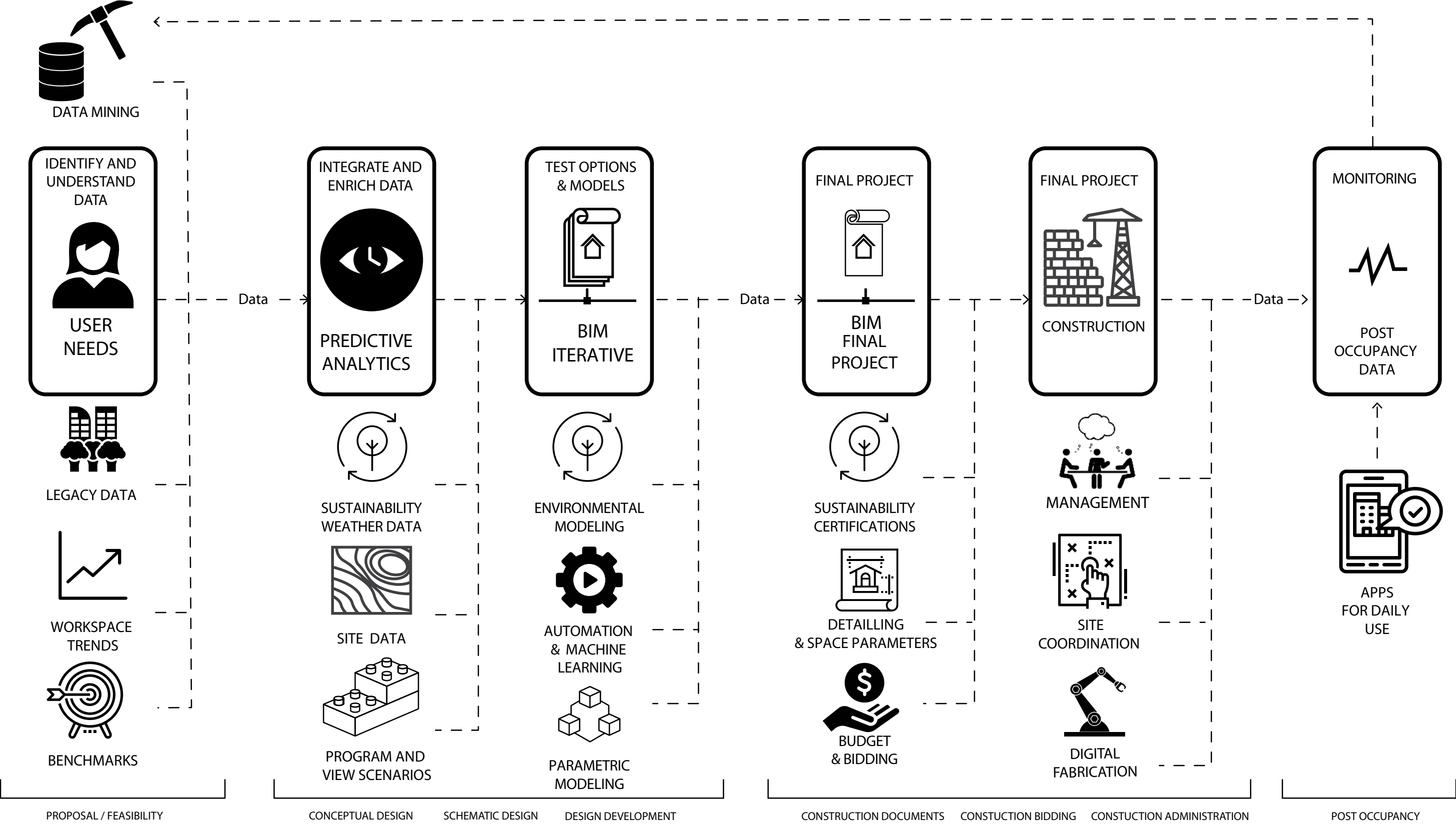


NOW
BIM
AUTOMATION
SIMULATION
SCRIPTING
FABRICATION
DATA ANALYTICS
MACHINE LEARNING
IOT

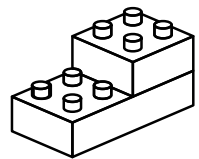


2040
AI
PARTNER OR AGENT

LIFE CYCLE OF DATA IN AEC



11 SUSTAINABLE CITIES
AND COMMUNITIES



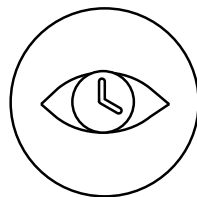
PROGRAMMING



DATA MINING
ANALYTICS &
VISUALISATION



LARGE SCALE

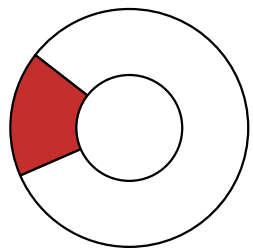
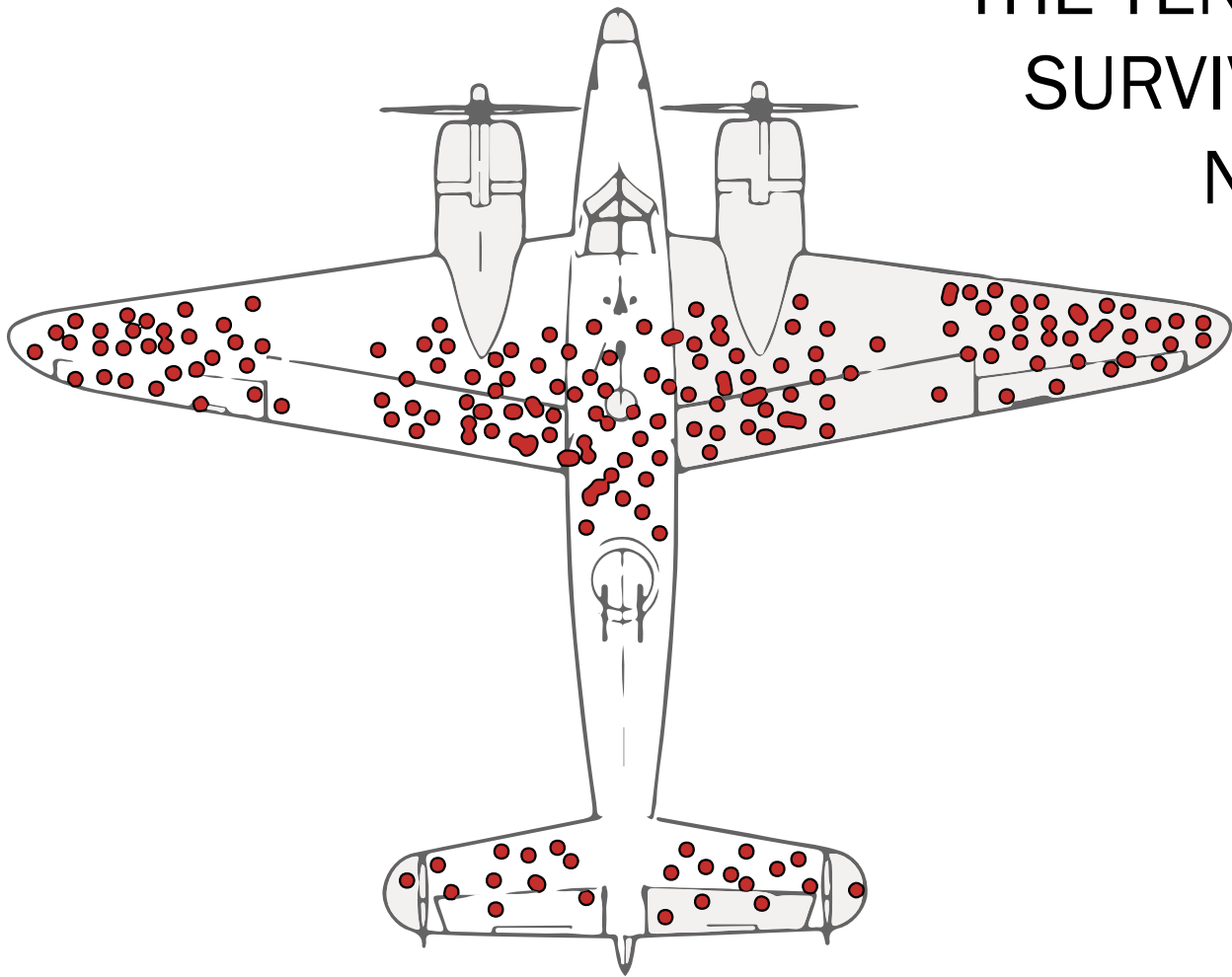


PREDICTIVE
ANALYTICS

DATA ANALYTICS FOR SUSTAINABLE CITIES AND COMMUNITIES

SURVIVORSHIP BIAS

THE TENDENCY TO FOCUS ON
SURVIVORS INSTEAD OF A
NON-SURVIVOR



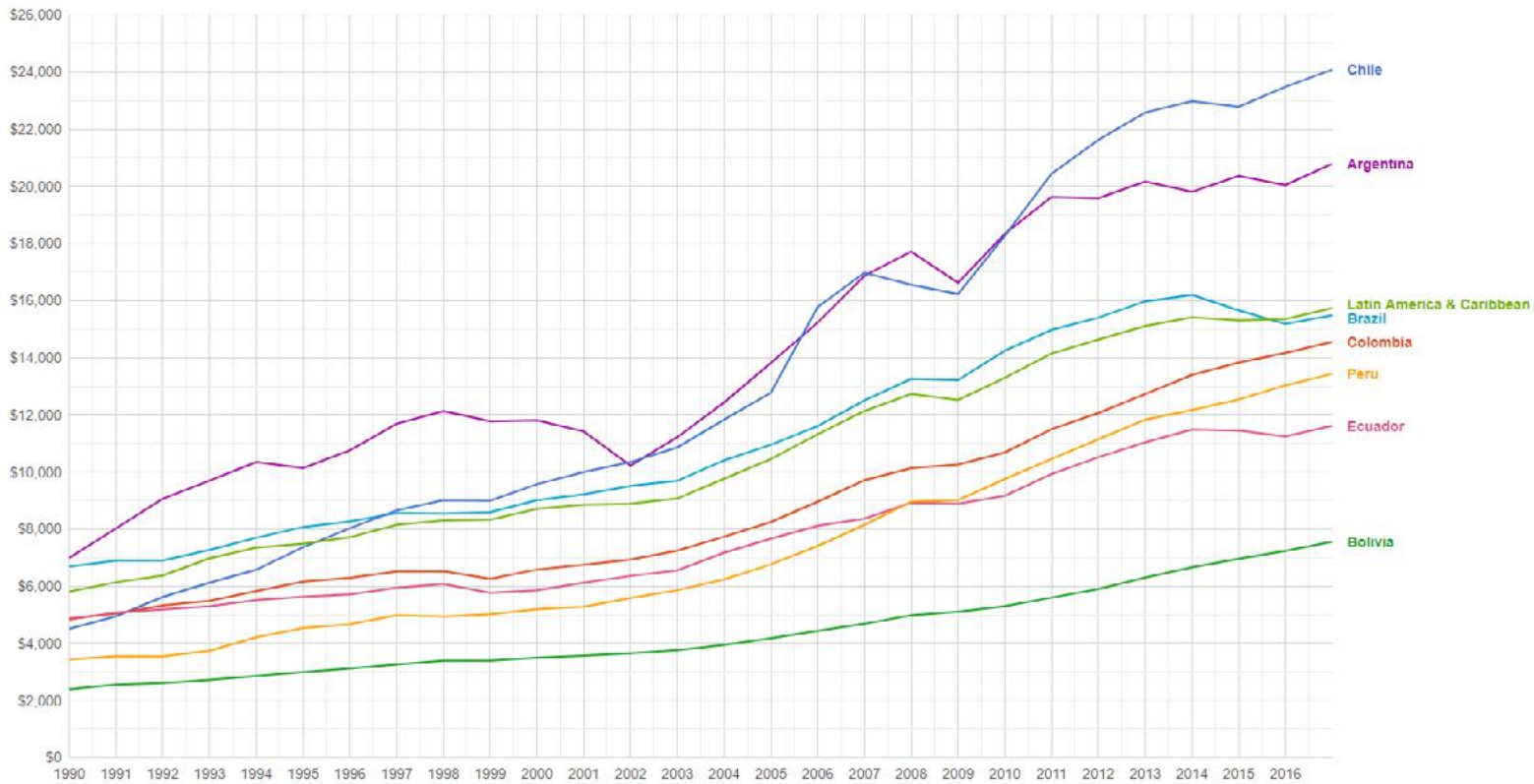
● Survivor

*ABRAHAM WALD, HUNGARIAN MATHEMATICIAN

10 REDUCED
INEQUALITIES



GDP PER CAPITA, PPP



GINI INDEX (DISTRIBUTION OF INCOME)

DENMARK
29

US
45

CHILE
52

SOUTH
AFRICA
62.5

“CHILE IS MORE UNEQUAL NOW THAN IT WAS BEFORE
THE DICTATORSHIP”

TOP INCOMES IN CHILE: A HISTORICAL PERSPECTIVE OF INCOME
INEQUALITY (1964-2015), JORGE ATRIA ET. AL, WORLD INEQUALITY
DATABASE

DATA MODELING FOR FUTURE SCENARIOS

11 SUSTAINABLE CITIES AND COMMUNITIES

GOOD HEALTH AND WELL-BEING

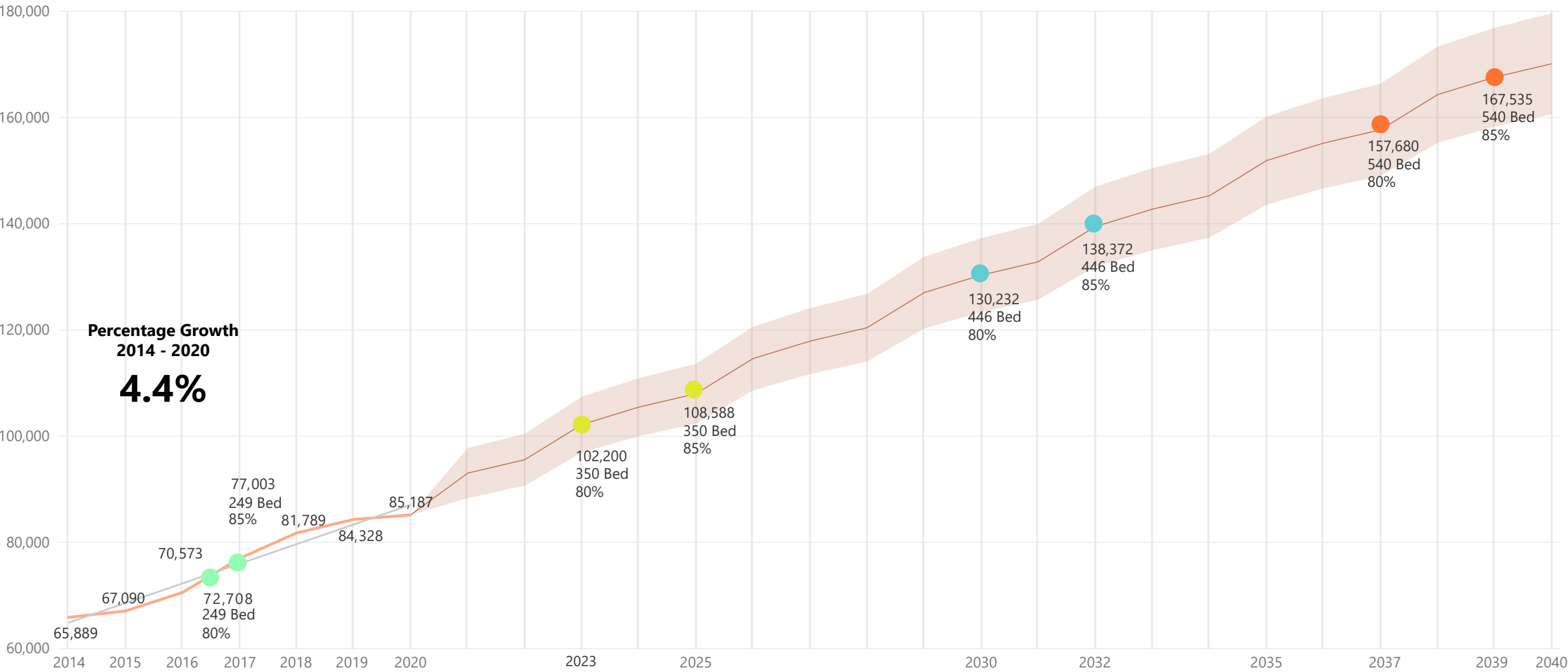
QUALITY EDUCATION

SDG

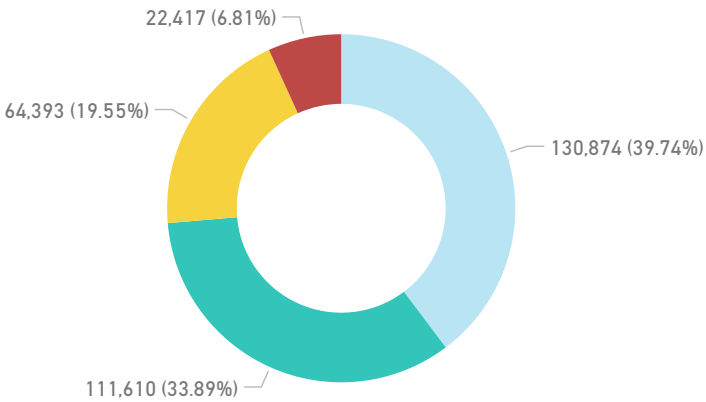
DATA MINING ANALYTICS & VISUALISATION

PREDICTIVE ANALYTICS

AEC



Current 318 Beds



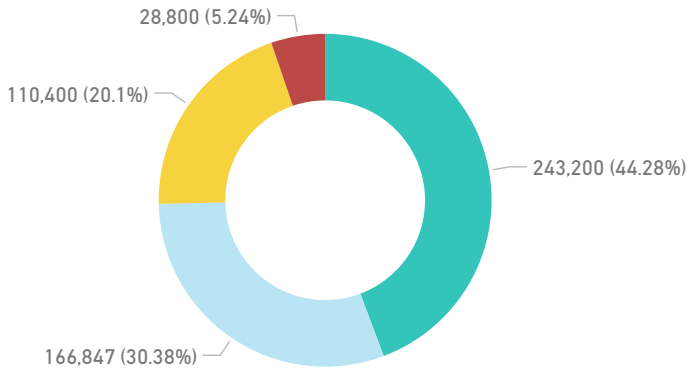
Current 318 Beds DGSF

329,294 Value

400 Beds DGSF

549,247 Value

400 Bed Scenario

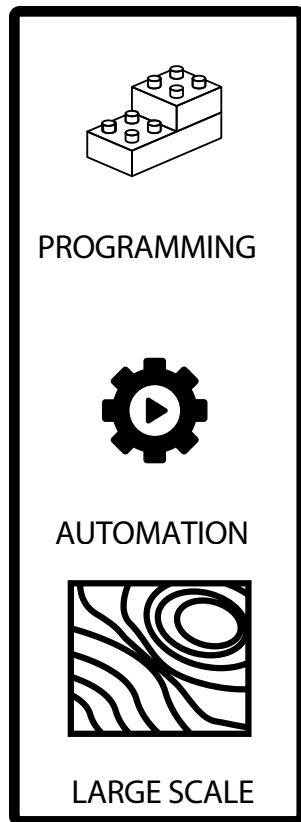


Type Diagnostic & Treatment Nursing Units Support Services Public & Administration

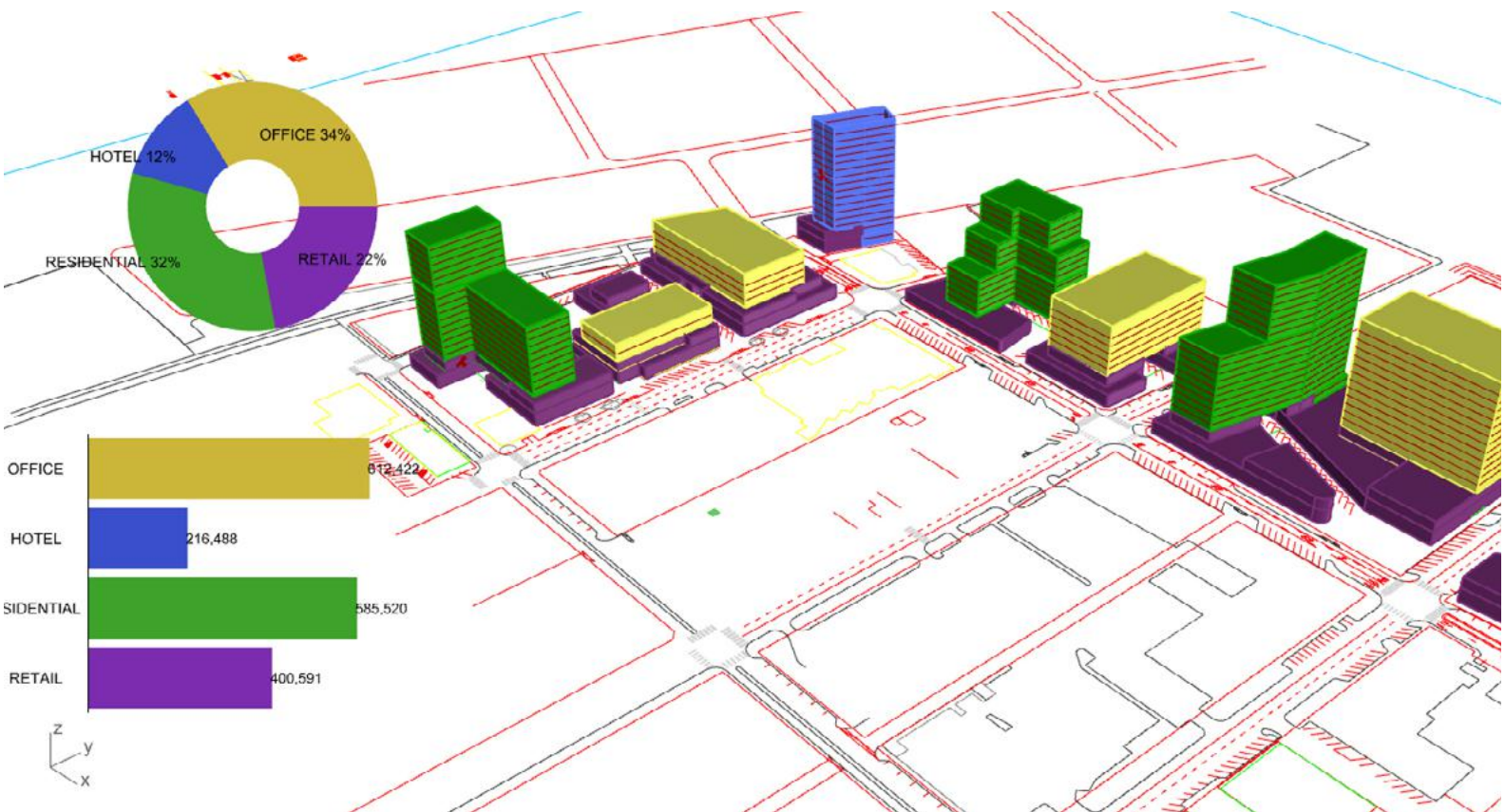
DATA MODELING FOR PLANING



SDG



AEC



	A	B	C	D	E	F	G	H
1	0 LEVEL NAME	1 ELEVATION	2 DEPARTMENT	3 HEIGHT	4 LENGTH	5 WIDTH	6 REQ'D TOTAL AREA	7 DEPARTMENT COLOR
2	Level 01	0	College Administration	10	70.71067812	70.7106781	5000	CollegeAdmin
3	Level 01	0	College Administration	10	42.42640687	42.4264069	1800	CollegeAdmin
4	Level 01	0	Student Activity Spaces	10	37.41657387	37.4165739	1400	StudentAct
5	Level 01	0	Academic Departments	10	38.72983346	38.7298335	1500	AcademicDept
6	Level 01	0	Academic Departments	10	38.72983346	38.7298335	1500	AcademicDept
7	Level 02	50	Instructional Facilities	10	31.6227766	31.6227766	1000	Instructional
8	Level 02	50	Instructional Facilities	10	37.41657387	37.4165739	1400	Instructional
9	Level 02	50	Instructional Facilities	10	37.41657387	37.4165739	1400	Instructional
10	Level 02	50	College Administration	10	42.42640687	42.4264069	1800	CollegeAdmin
11	Level 02	50	Special Facilities	10	37.41657387	37.4165739	1400	Special
12	Level 03	100	Research and Grad Programs	10	38.72983346	38.7298335	1500	Research
13	Level 03	100	Special Facilities	10	37.41657387	37.4165739	1400	Special
14	Level 03	100	Special Facilities	10	37.41657387	37.4165739	1400	Special
15	Level 03	100	Special Facilities	10	37.41657387	37.4165739	1400	Special
16	Level 03	100	College Administration	10	34.64101615	34.6410162	1200	CollegeAdmin
17	Level 03	100	College Administration	10	34.64101615	34.6410162	1200	CollegeAdmin
18	Level 03	100	Student Activity Spaces	10	37.41657387	37.4165739	1400	StudentAct
19	Level 03	100	Academic Departments	10	38.72983346	38.7298335	1500	AcademicDept
20	Level 04	150	Academic Departments	10	38.72983346	38.7298335	1500	AcademicDept
21	Level 04	150	Instructional Facilities	10	37.41657387	37.4165739	1400	Instructional
22	Level 04	150	Instructional Facilities	10	37.41657387	37.4165739	1400	Instructional
23	Level 04	150	Instructional Facilities	10	37.41657387	37.4165739	1400	Instructional
24	Level 04	150	Research and Grad Programs	10	38.72983346	38.7298335	1500	Research
25	Level 04	150	Research and Grad Programs	10	38.72983346	38.7298335	1500	Research
26								



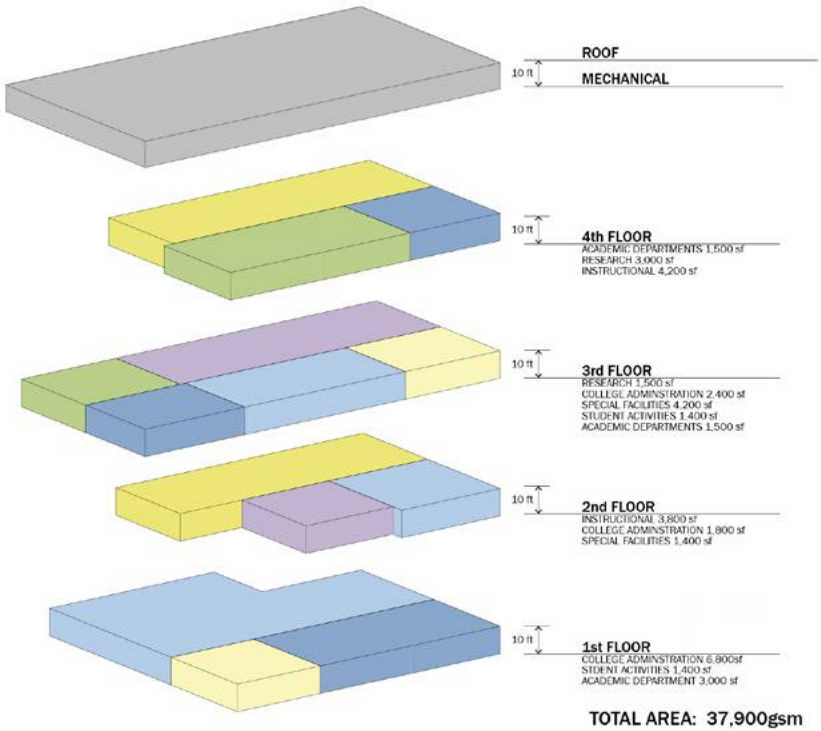
REGIONAL LEVEL



EXCEL DATABASE



ROOM LEVEL



GEOGRAPHIC DATA FOR HAZARD VISUALIZATION



SDG

A small icon of three interlocking LEGO bricks.

PROGRAMMING

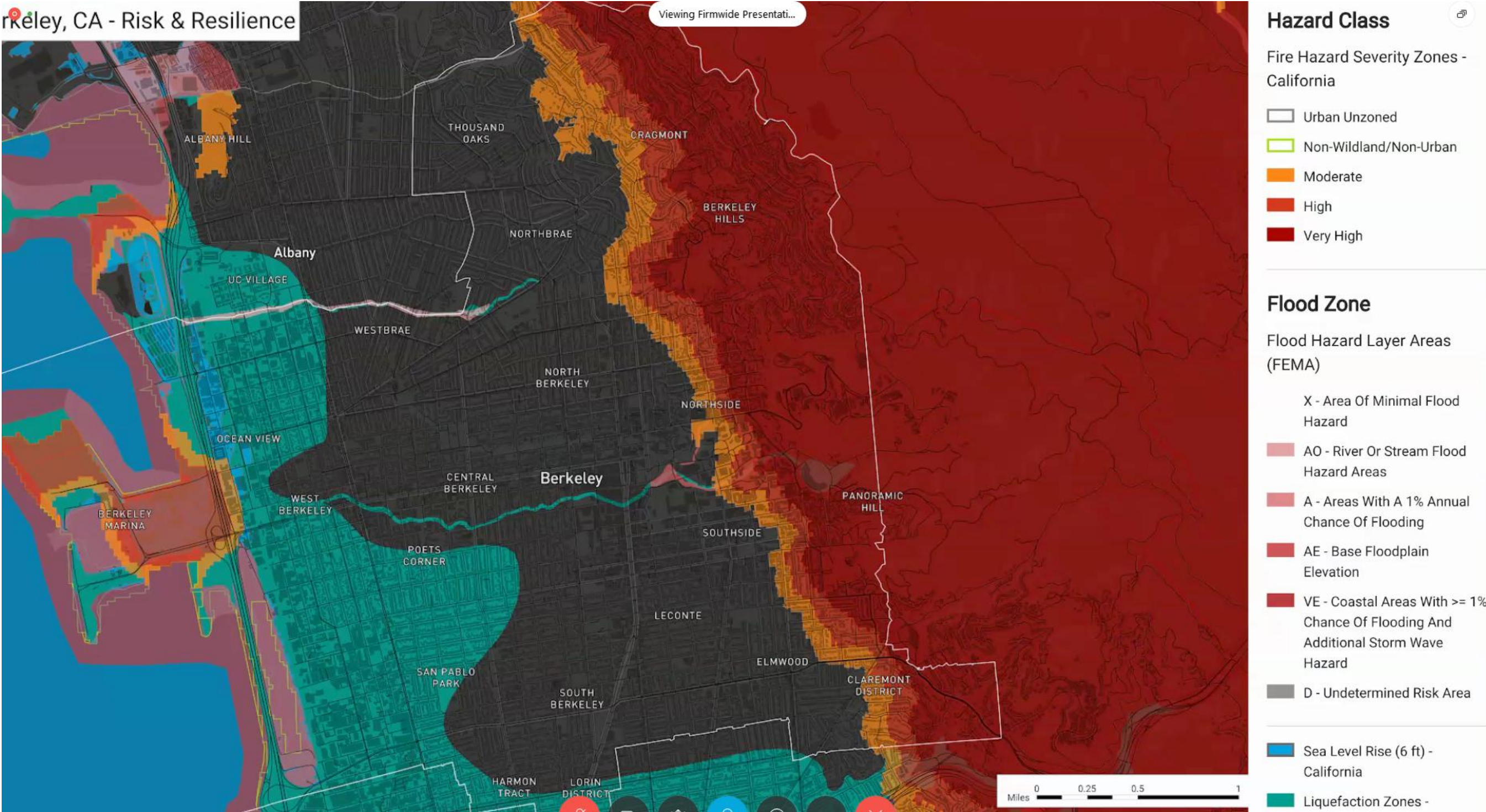
A black gear icon with a white play button symbol in the center.

AUTOMATION

A small icon of a topographic map showing contour lines.

LARGE SCALE

AEC

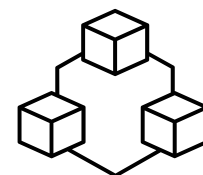


* Tool by

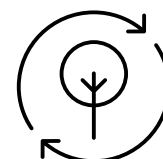


ENVIRONMENTAL SCRIPTING EMBODYING CLIMATE ACTION

13 CLIMATE
ACTION



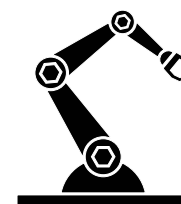
PARAMETRIC
MODELING



SUSTAINABILITY



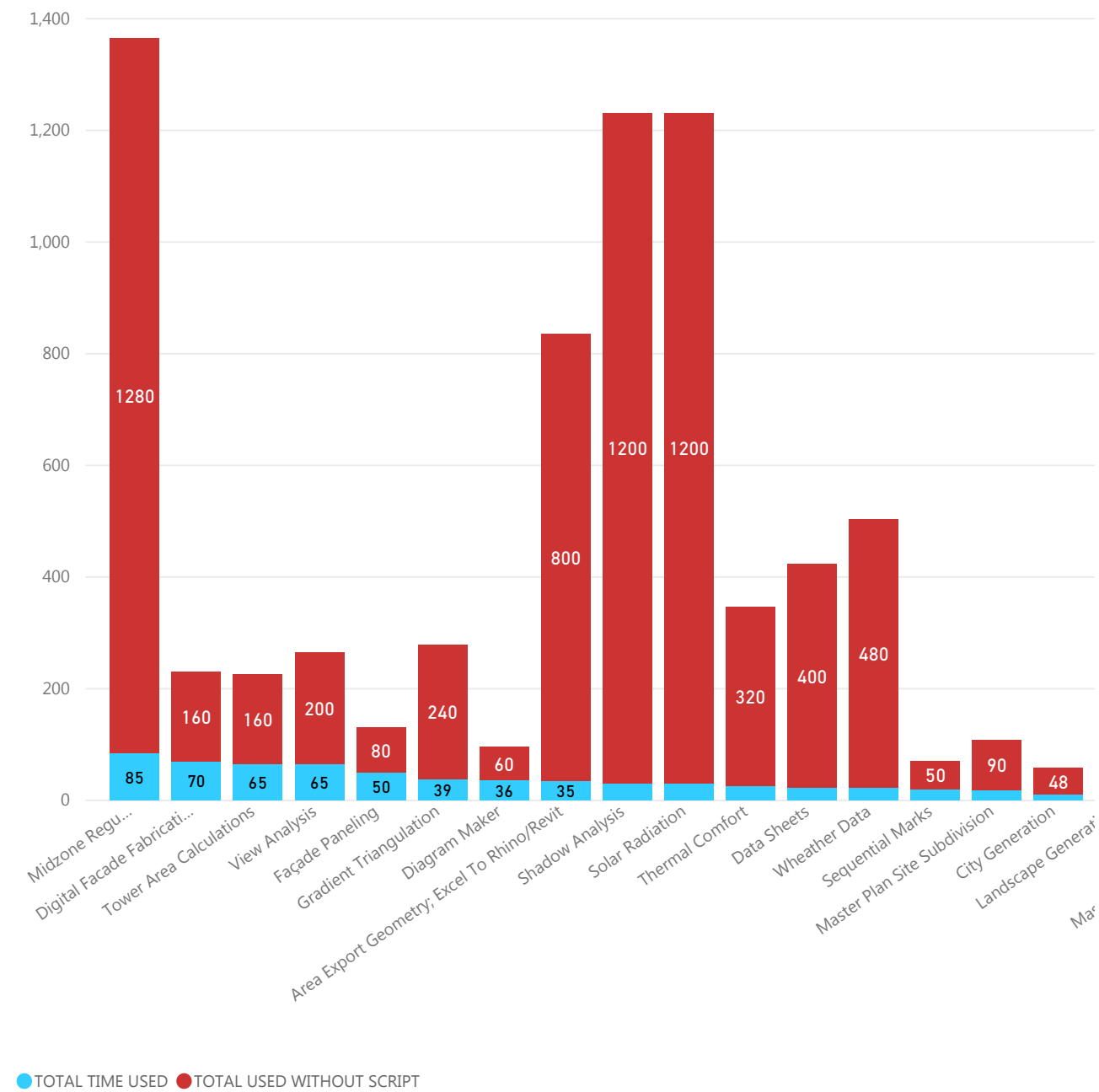
AUTOMATION



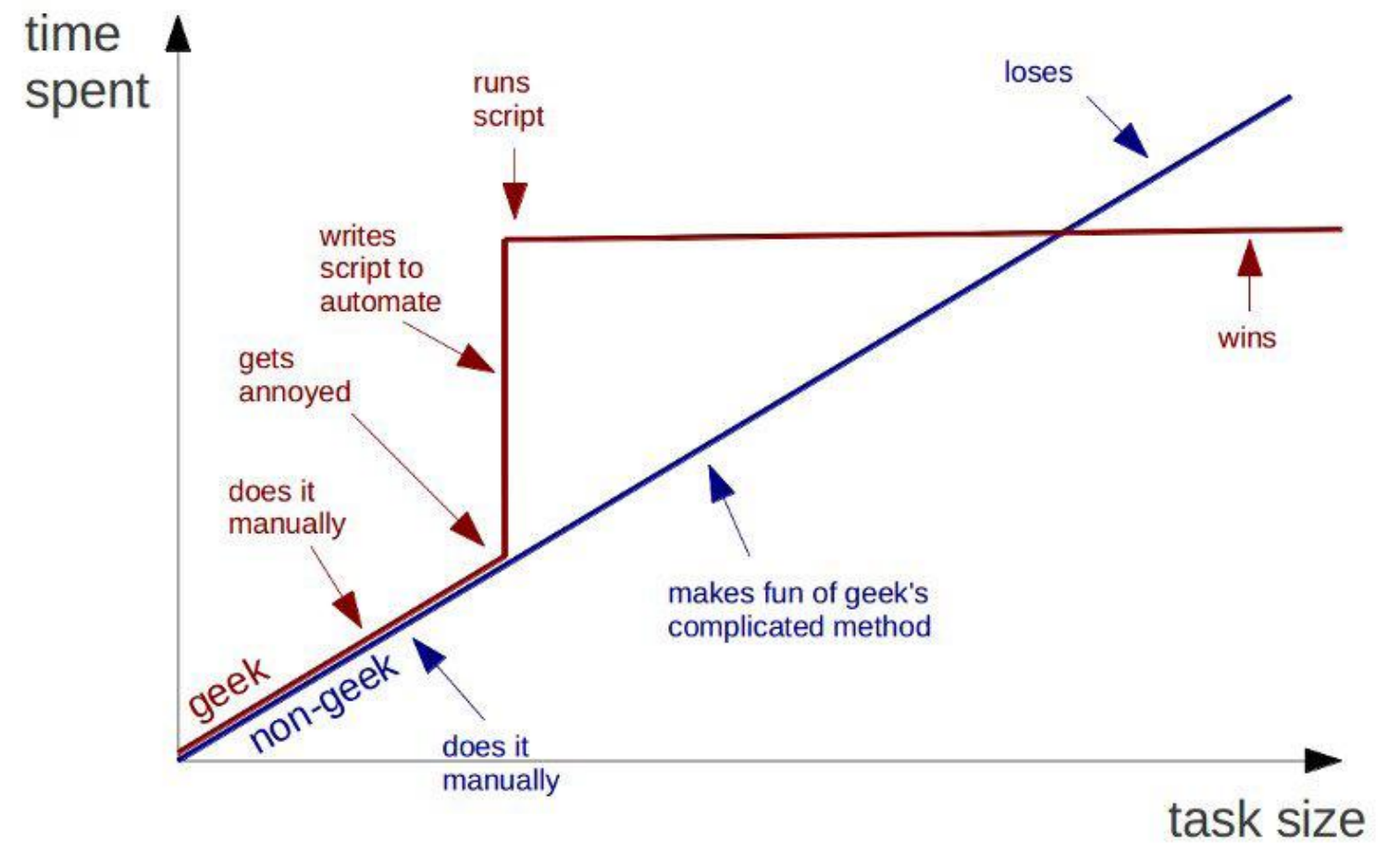
DIGITAL
FABRICATION

DATA & SCRIPTING

SCRIPTING HOURS, RUN AND IMPLEMENTED



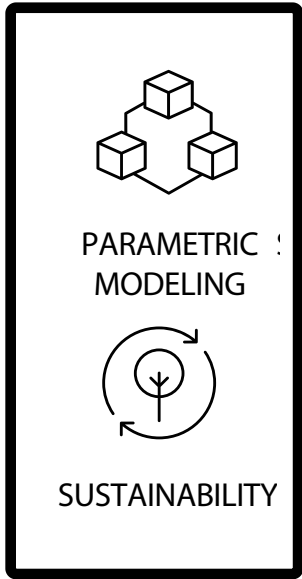
Geeks and repetitive tasks



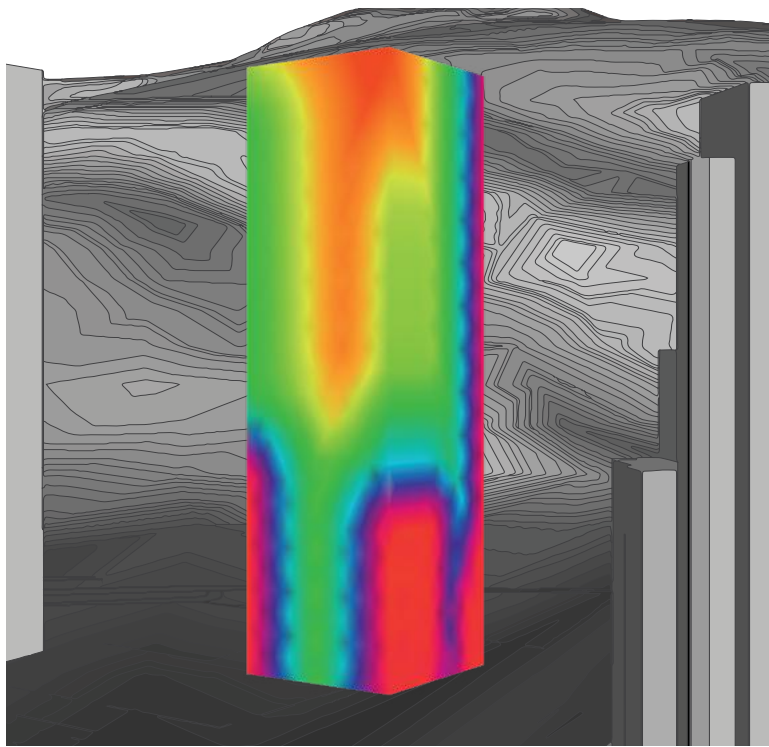
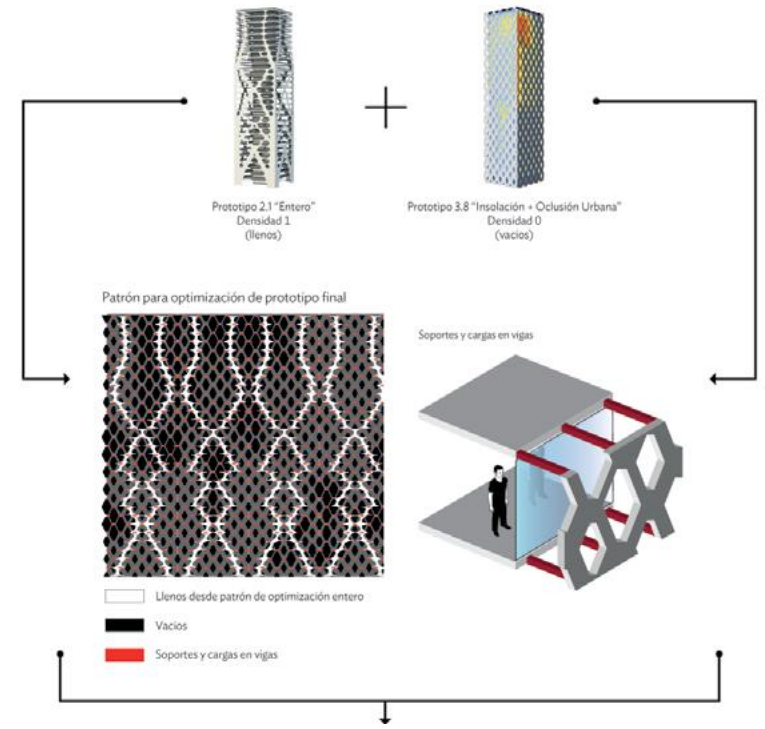
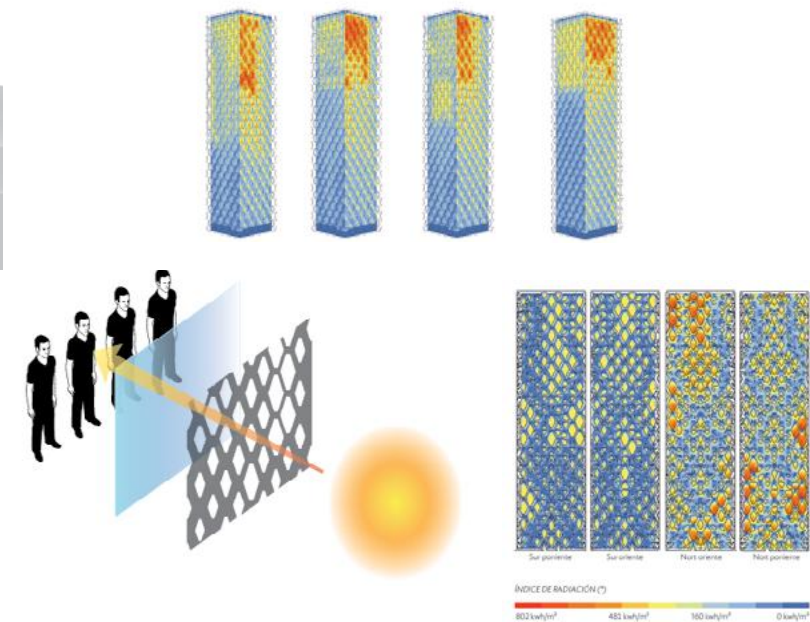
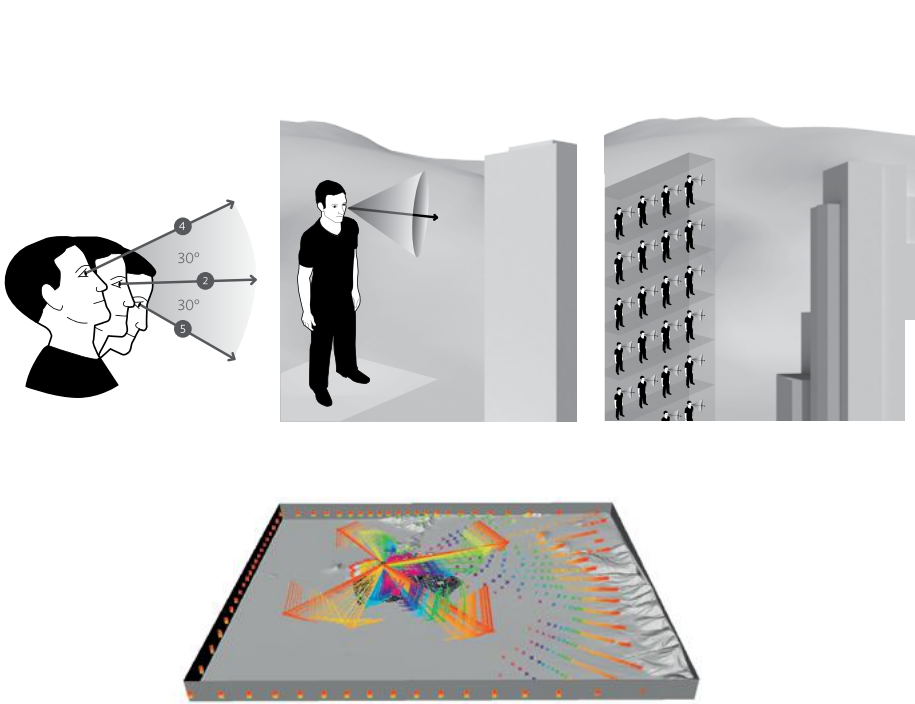
DATA DRIVEN ENVIRONMENT DESIGN



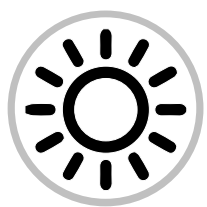
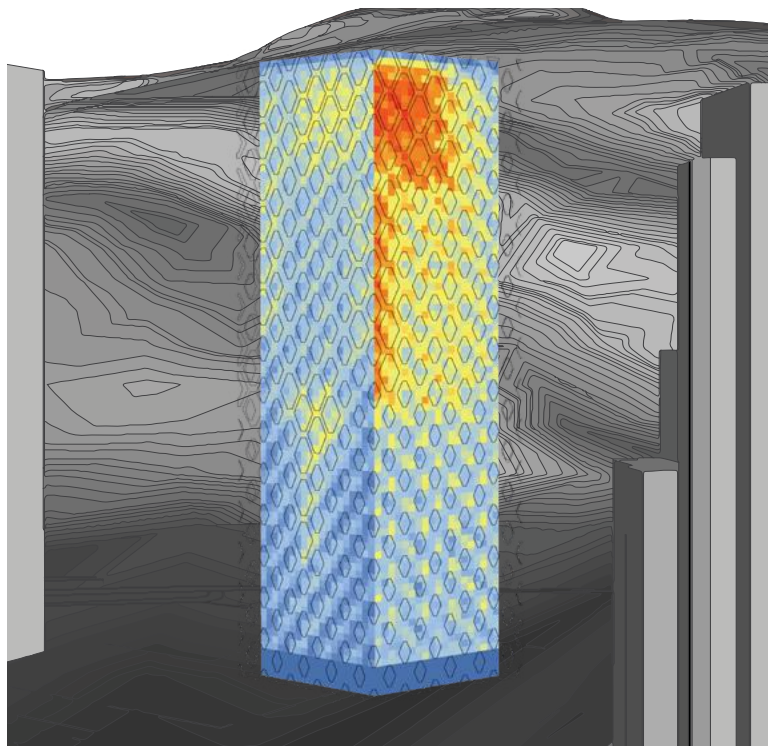
SDG



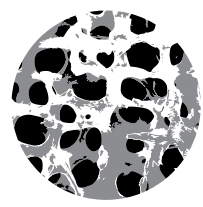
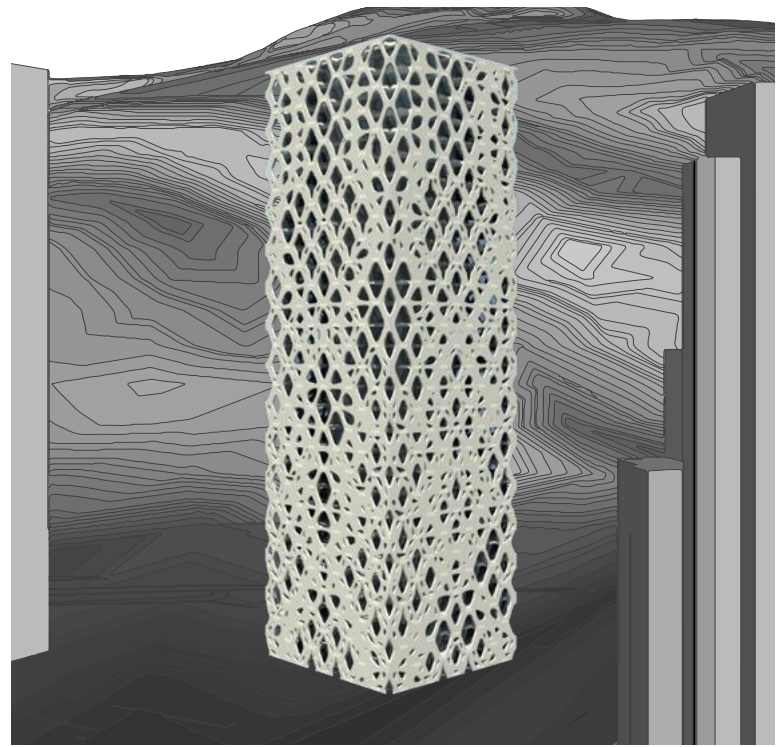
AEC



URBAN OCCLUSION
INDEX



SOLAR RADIATION
STRATEGY



STRUCTURAL TOPOLOGICAL
OPTIMIZATION

DATA DRIVEN FACADE AND DIRECT SOLAR GAIN

13 CLIMATE ACTION

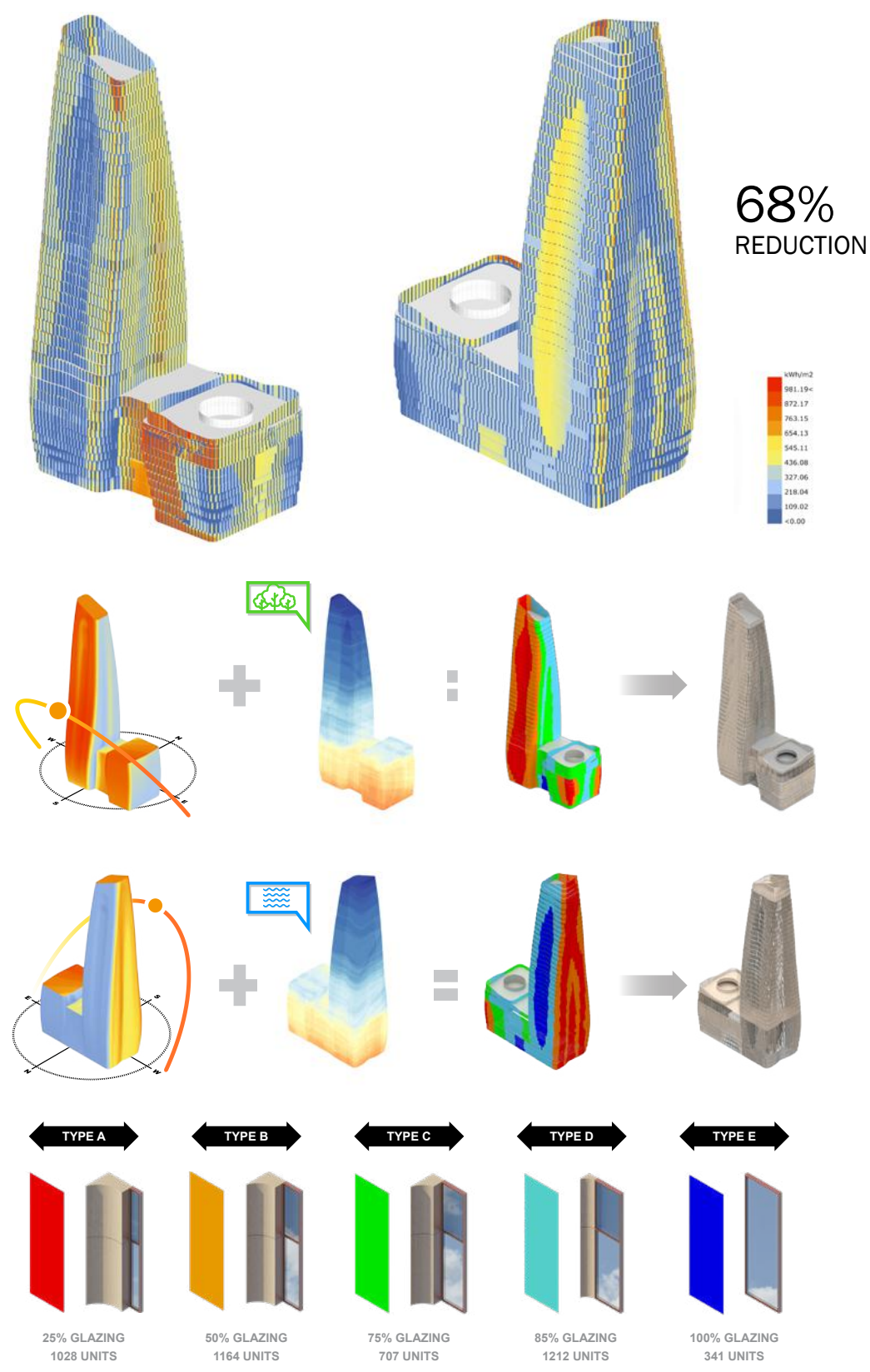
7 AFFORDABLE AND CLEAN ENERGY

SDG

PARAMETRIC : MODELING

SUSTAINABILITY

AEC



PERFORMANCE BASED ANALYSIS



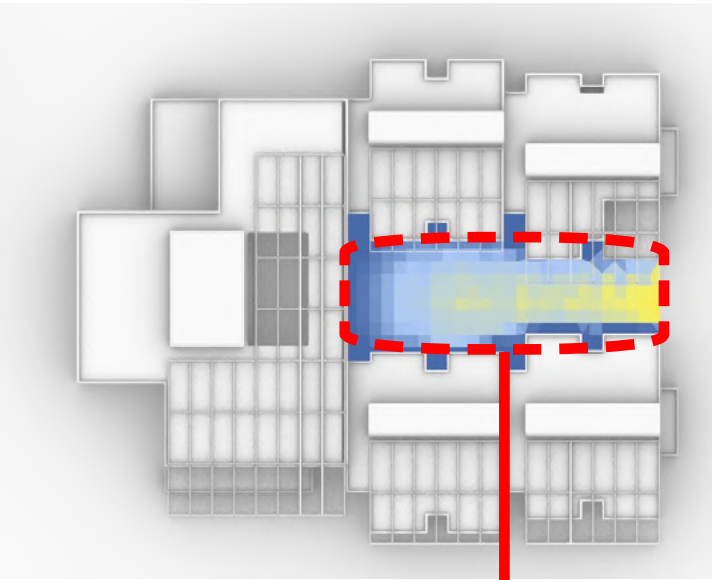
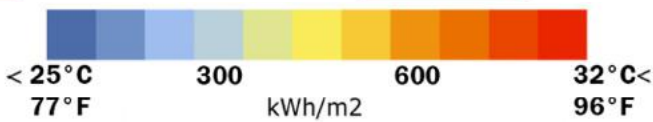
SDG



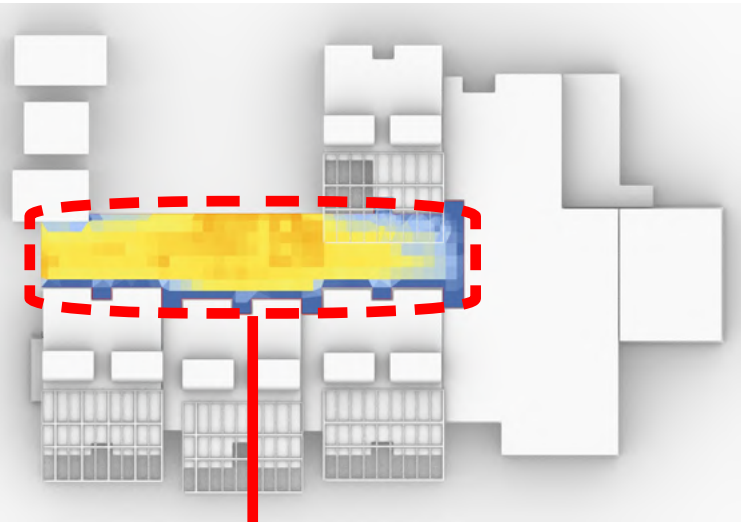
AEC



MULTIPLE MICRO CLIMATE MAPS WITHIN ONE PROJECT

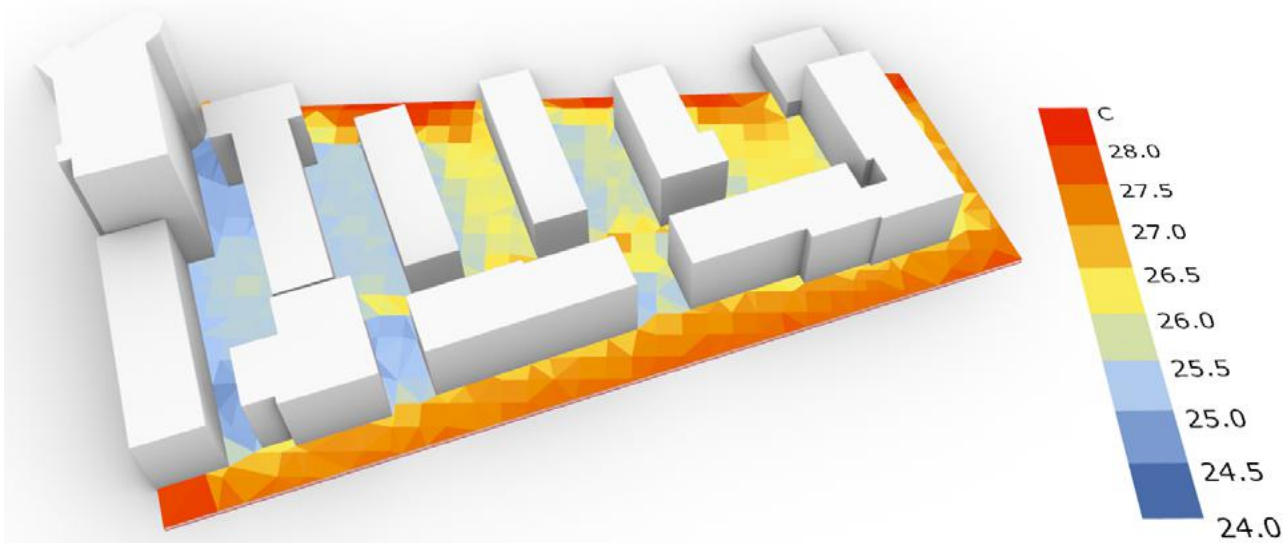
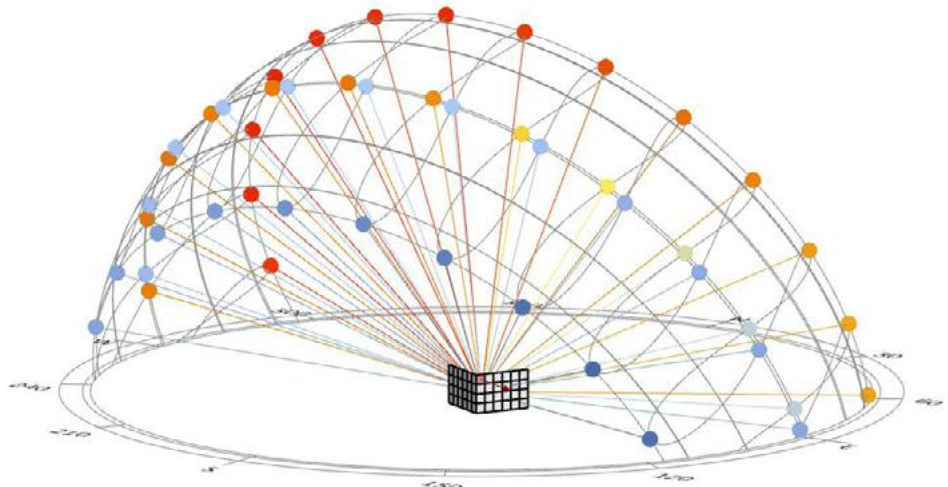


80.75°F/26.76°C



81.69°F/27.60°C

MICRO CLIMATE MAPS WITHIN DIFFERENT GEOMETRIES



3D UTCI (UNIVERSAL THERMAL COMFORT INDEX) DIAGRAM

THERMAL COMFORT

URBAN MICRO CLIMATE MAP

DIGITAL FABRICATION WITH ON-SITE MATERIALS

13 CLIMATE ACTION

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

SDG

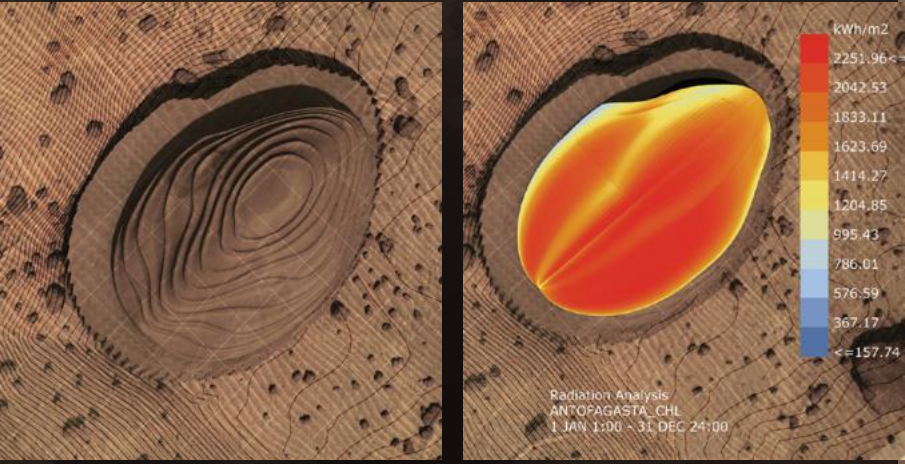
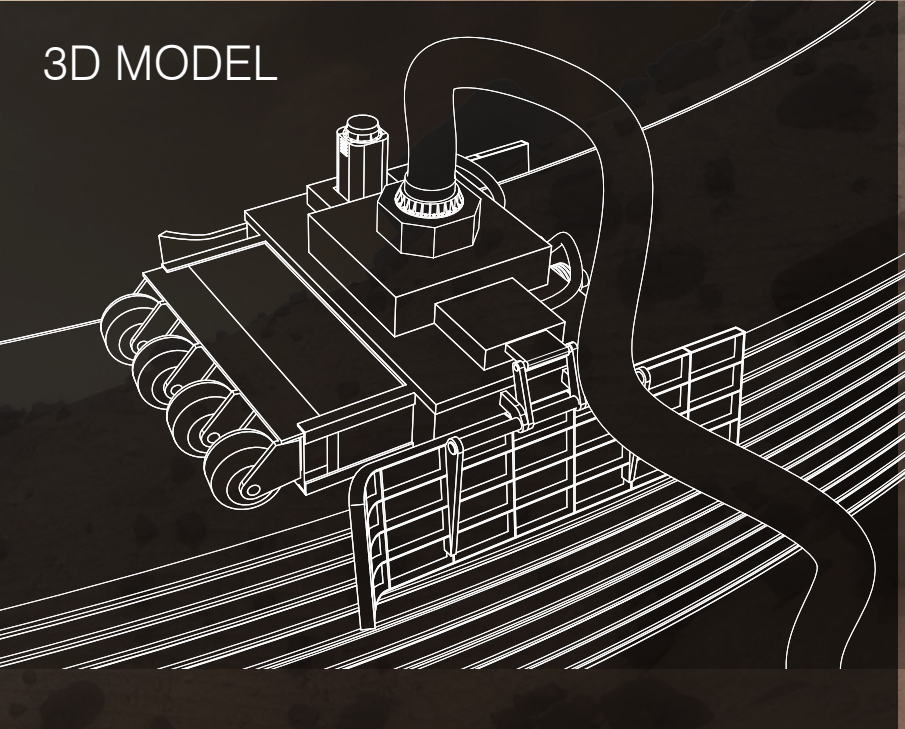
PARAMETRIC MODELING

DIGITAL FABRICATION

AEC



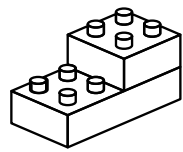
NASA'S 3D-PRINTED MARS HABITAT CHALLENGE PHASE 1



DATA ANALYTICS

ENVIRONMENTAL SCRIPTING

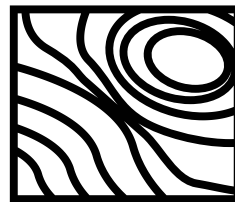
11 SUSTAINABLE CITIES
AND COMMUNITIES



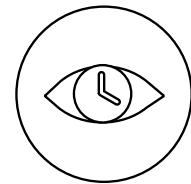
PROGRAMMING



DATA MINING
ANALYTICS &
VISUALISATION



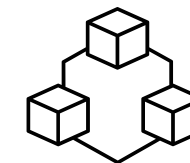
LARGE SCALE



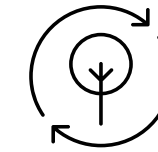
PREDICTIVE
ANALYTICS

DATA

13 CLIMATE
ACTION



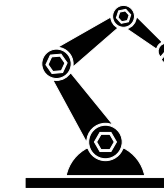
PARAMETRIC
MODELING



SUSTAINABILITY



AUTOMATION

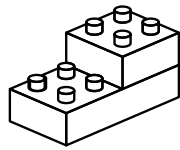


DIGITAL
FABRICATION

HOW CAN **DATA** ACCELERATE THE ADOPTION OF SDG'S IN THE AEC INDUSTRY?

DATA ANALYTICS

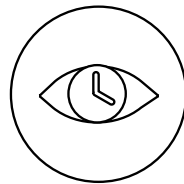
11 SUSTAINABLE CITIES
AND COMMUNITIES



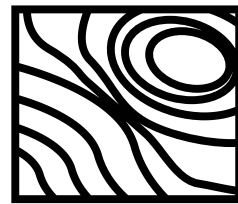
PROGRAMMING



DATA MINING
ANALYTICS &
VISUALISATION



PREDICTIVE
ANALYTICS

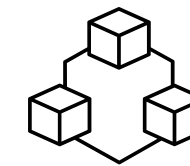


LARGE SCALE

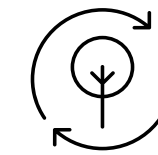
DATA

ENVIRONMENTAL SCRIPTING

13 CLIMATE
ACTION



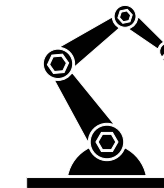
PARAMETRIC
MODELING



SUSTAINABILITY



AUTOMATION



DIGITAL
FABRICATION

AS A CONSEQUENCE OF RIGOROUS DATA MODELING AND SCRIPTING WORKFLOWS

PERKINS

EASTMAN

SHOULD I
AUTOMATE THIS?

HOW COULD WE
IMPROVE DESIGN



PROMOTING A SCRIPTING COMMUNITY AWARE OF THE SDGs

