

GATEACRE

ADAPTIVE ARCHITECTURE + EMBODIED COGNITION

NILS JAEGER, 11 MARCH 2022

ADAPTIVE ARCHITECTURE

DEFINITION

ADAPTIVE ARCHITECTURE

BUILDINGS THAT ARE
DESIGNED TO ADAPT TO
THEIR ENVIRONMENTS,
THEIR INHABITANT AND
OBJECTS.

FLEXIBLE

“HAVING A VERY FLEXIBLE USE, AND BEING **ABLE TO CHANGE VERY RAPIDLY** IN TERMS OF THE WAYS IT OPERATES”

ROBERT KRONENBURG
[HTTP://FUTUREURBANISM.COM/INTERVIEW/FROM-MOBILITY-TO-ADAPTABILITY/](http://futureurbanism.com/interview/from-mobility-to-adaptability/)
ACCESSED 4 NOV 2021

ADAPTABLE

ABILITY TO ADAPT: ANYTHING CAN BE ADAPTED:
NEEDS THE RIGHT TOOLS AND ENOUGH TIME.
NOT INITIALLY INTENDED.

SEE ALSO: STUART BRAND. HOW BUILDINGS LEARN. 1995

ADAPTIVE-REUSE

REUSING AN EXISTING BUILDING FOR A PURPOSE
OTHER THAN WHICH IT WAS ORIGINALLY BUILT
OR DESIGNED FOR. RECYCLING/CONVERSION.

ADAPTIVE ARCHITECTURE

DEFINITION

ADAPTIVE ARCHITECTURE

BUILDINGS THAT ARE
DESIGNED TO ADAPT TO
THEIR ENVIRONMENTS,
THEIR INHABITANT AND
OBJECTS.

FLEXIBLE

“HAVING A VERY FLEXIBLE USE, AND BEING **ABLE TO CHANGE VERY RAPIDLY** IN TERMS OF THE WAYS IT OPERATES”

ROBERT KRONENBURG
[HTTP://FUTUREURBANISM.COM/INTERVIEW/FROM-MOBILITY-TO-ADAPTABILITY/](http://futureurbanism.com/interview/from-mobility-to-adaptability/)
ACCESSED 4 NOV 2021

ADAPTABLE

ABILITY TO ADAPT: ANYTHING CAN BE ADAPTED:
NEEDS THE RIGHT TIME AND PLACE.
NOT INITIALLY

**NOT ADAPTIVE
ARCHITECTURE!!!**

ADAPTIVE-REUSE

REUSING AN EXISTING BUILDING FOR A PURPOSE
OTHER THAN WHICH IT WAS ORIGINALLY BUILT
OR DESIGNED FOR. RECYCLING/CONVERSION.

ADAPTIVE ARCHITECTURE

TERMINOLOGY

COOPERATIVE
RESPONSIVE
SMART
FLEXIBLE
MIXED REALITY ARCHITECTURE
INTERACTIVE
MEDIA
HYBRID
INTELLIGENT

ADAPTIVE ARCHITECTURE

FRAMEWORK [SCHNÄDELBACH, 2010]

DESIGN

USER INTERACTION



ADAPTIVE ARCHITECTURE

TERMINOLOGY

MOTIVATIONS
+ DRIVERS

METHOD

DESIGN
STRATEGIES

REACTS TO

EFFECTS ON

ELEMENTS

INHABITANTS

INDIVIDUALS, GROUPS, ORGANISATIONS

ENVIRONMENT

EXTERIOR, INTERIOR

OBJECTS

PASSING THROUGH, PASSING BY

ADAPTIVE ARCHITECTURE

TERMINOLOGY

MOTIVATIONS
+ DRIVERS

METHOD

DESIGN
STRATEGIES

REACTS TO

EFFECTS ON

ELEMENTS

INTERNAL ENVIRONMENT

LIGHT LEVELS, AIR QUALITY, SOUND, INFORMATION DENSITY

PERMEABILITY OF CONFIGURATIONS

DOORS, GATEWAYS, WALLS

INHABITANTS

COMFORT, SAFETY + SECURITY, CONVENIENCE, WELLBEING

ADAPTIVE ARCHITECTURE

TERMINOLOGY

MOTIVATIONS
+ DRIVERS

METHOD

DESIGN
STRATEGIES

REACTS TO

EFFECTS ON

ELEMENTS

SURFACES

EXTERNAL, INTERNAL

COMPONENTS + MODULES

COMPONENTS: INTERNAL PARTITIONS

MODULES: PLUG-IN SYSTEMS

SPATIAL FEATURES

BUILDING LOCATION, ORIENTATION, FORM, SCALE, TOPOLOGY,
INSIDE/OUTSIDE

TECHNICAL SYSTEMS

SENSORS, SYSTEMS SOFTWARE, ACTUATORS

EMBODIED COGNITION

EMBODIED COGNITION

4E APPROACH

- EMBODIED: DEPENDS ON BODY
- EMBEDDED: BODY WITHIN AN ENVIRONMENT
- EXTENDED: BODY REACHES OUT INTO ENVIRONMENT
- ENACTED: BODY ACTS ON THE WORLD



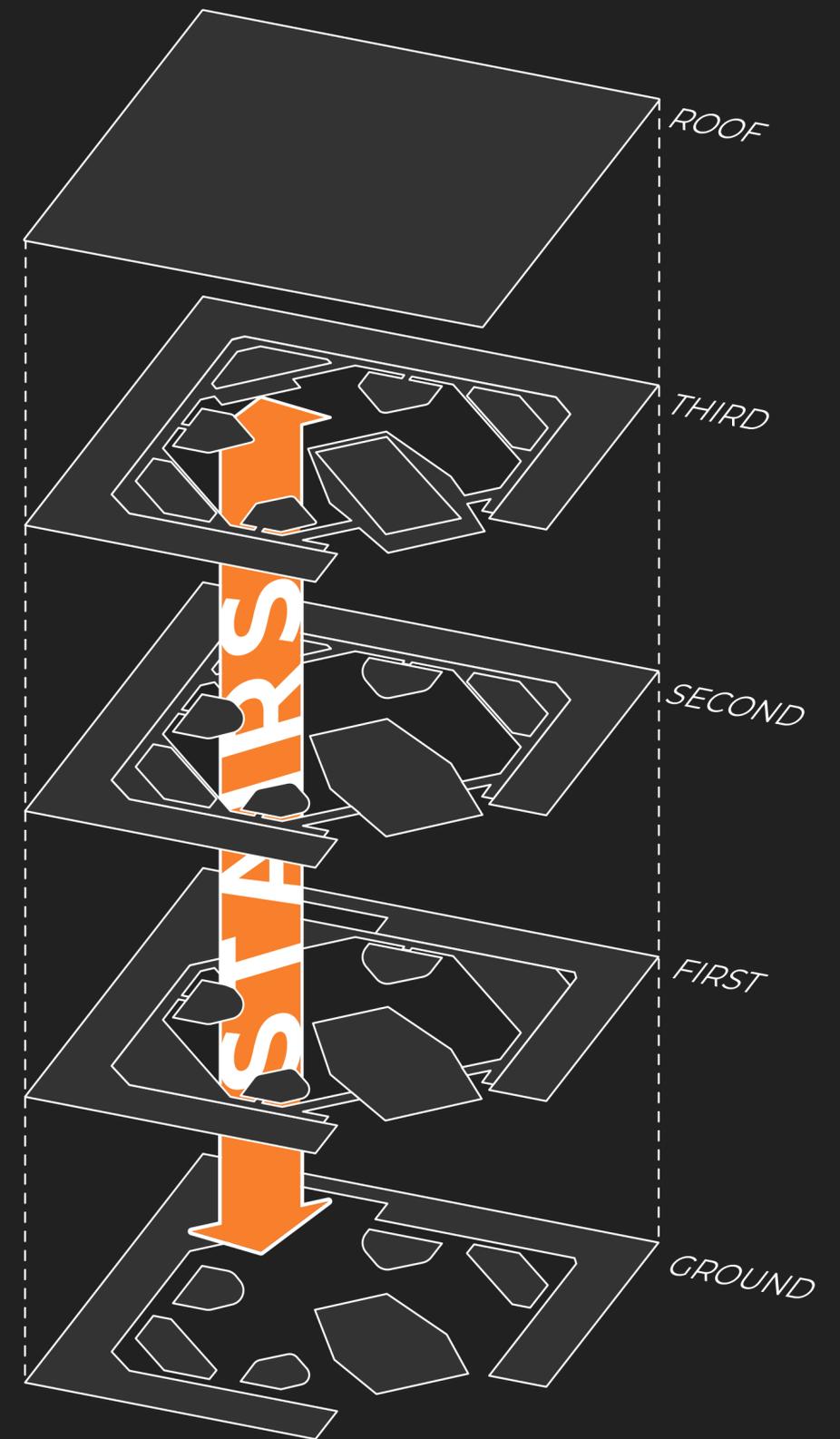
ENACTIVE PARADIGM

ENACTIVE LEARNING

BUILDING FEATURES: ATRIUM

- AUTONOMY: STUDENTS PERFORM EXPERIMENT
- EMBODIMENT: BODY USED IN RELATION TO BUILDING
- EMERGENCE: ???
- EXPERIENCE: USING BODY CREATES SKILL/ EXPERIENCE
- SENSE-MAKING: LEARNING (MEANING) GENERATED THROUGH ACTIONS

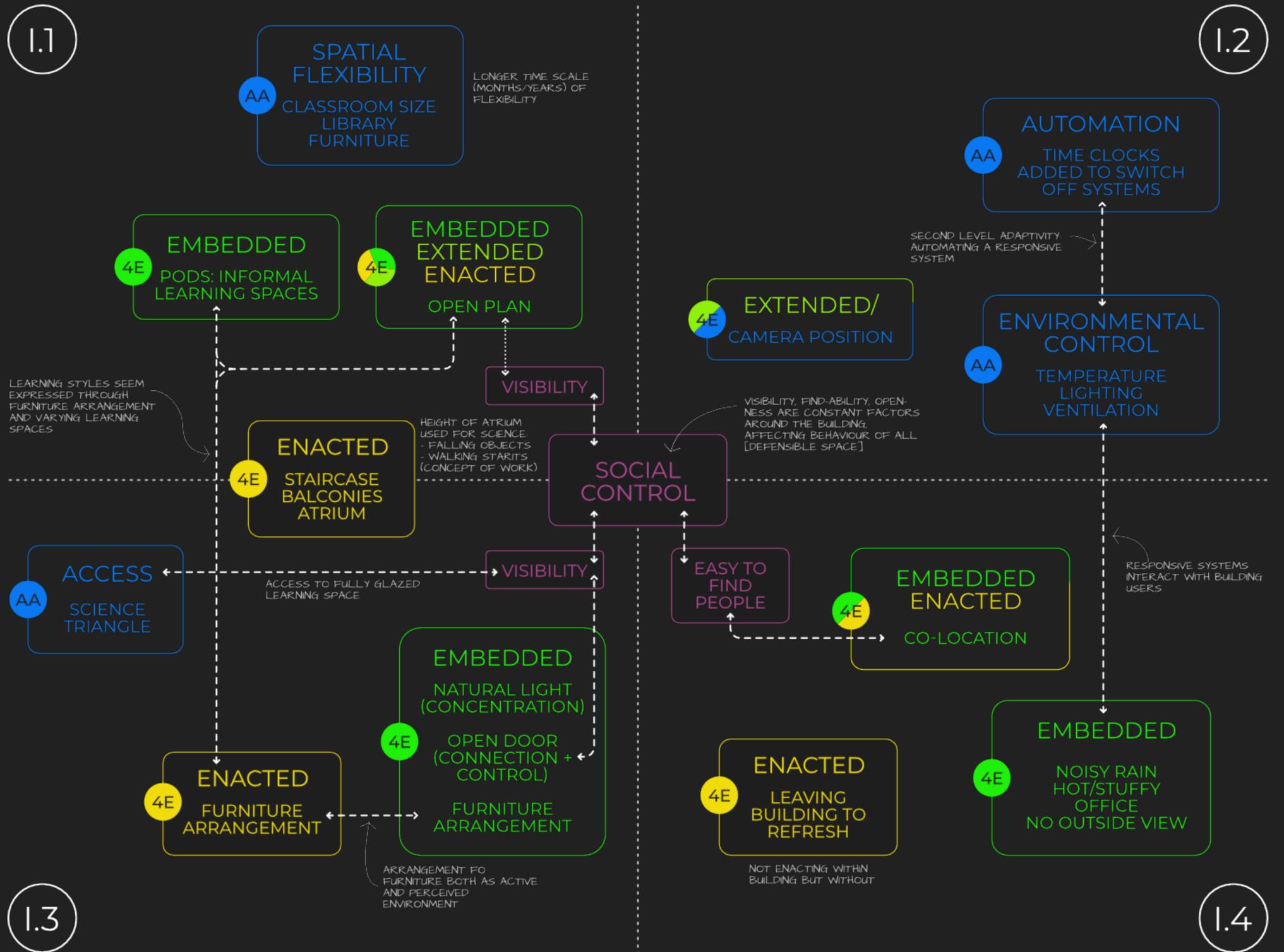
THERE MAY BE SIMILAR SPACES (E.G., THEATRE)



INTERVIEW ANALYSIS

INTERVIEWS

4E + AA



1.1

4E
EMBEDDED
PODS: INFORMAL
LEARNING SPACES

EMBEDDED
EXTENDED
ENACTED
OPEN PLAN

1.2

4E
EMBEDDED
ENACTED
CO-LOCATION

4E
EMBEDDED
NATURAL LIGHT
(CONCENTRATION)
OPEN DOOR
(CONNECTION +
CONTROL)
FURNITURE
ARRANGEMENT

4E
EMBEDDED
NOISY RAIN
HOT/STUFFY
OFFICE
NO OUTSIDE VIEW

1.3

1.4

1.1

4E EMBEDDED
PODS: INFORMAL
LEARNING SPACES

EMBEDDED
EXTENDED
ENACTED
OPEN PLAN

1.2

4E EXTENDED/
CAMERA POSITION

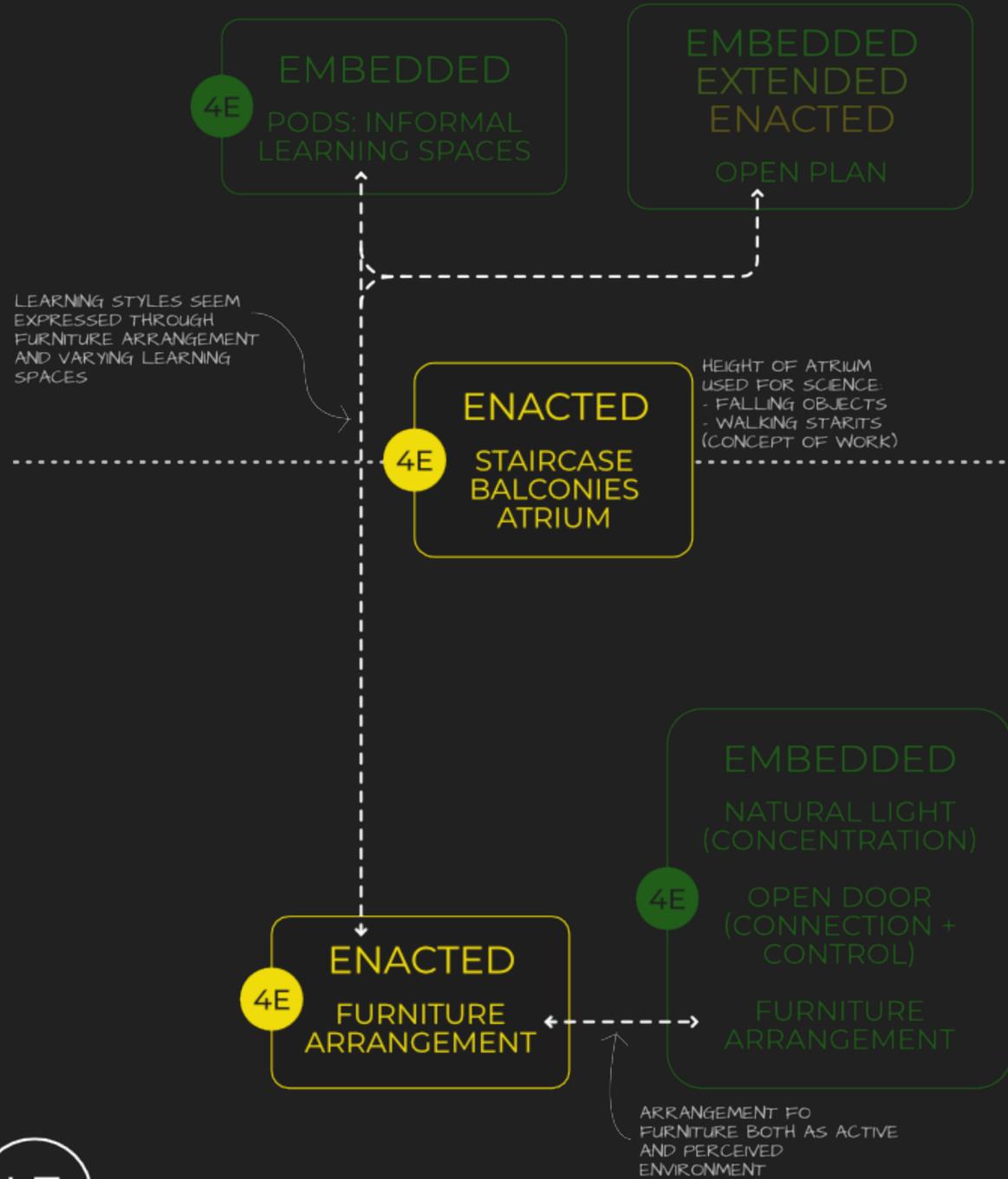
1.3

4E EMBEDDED
NATURAL LIGHT
(CONCENTRATION)
OPEN DOOR
(CONNECTION +
CONTROL)
FURNITURE
ARRANGEMENT

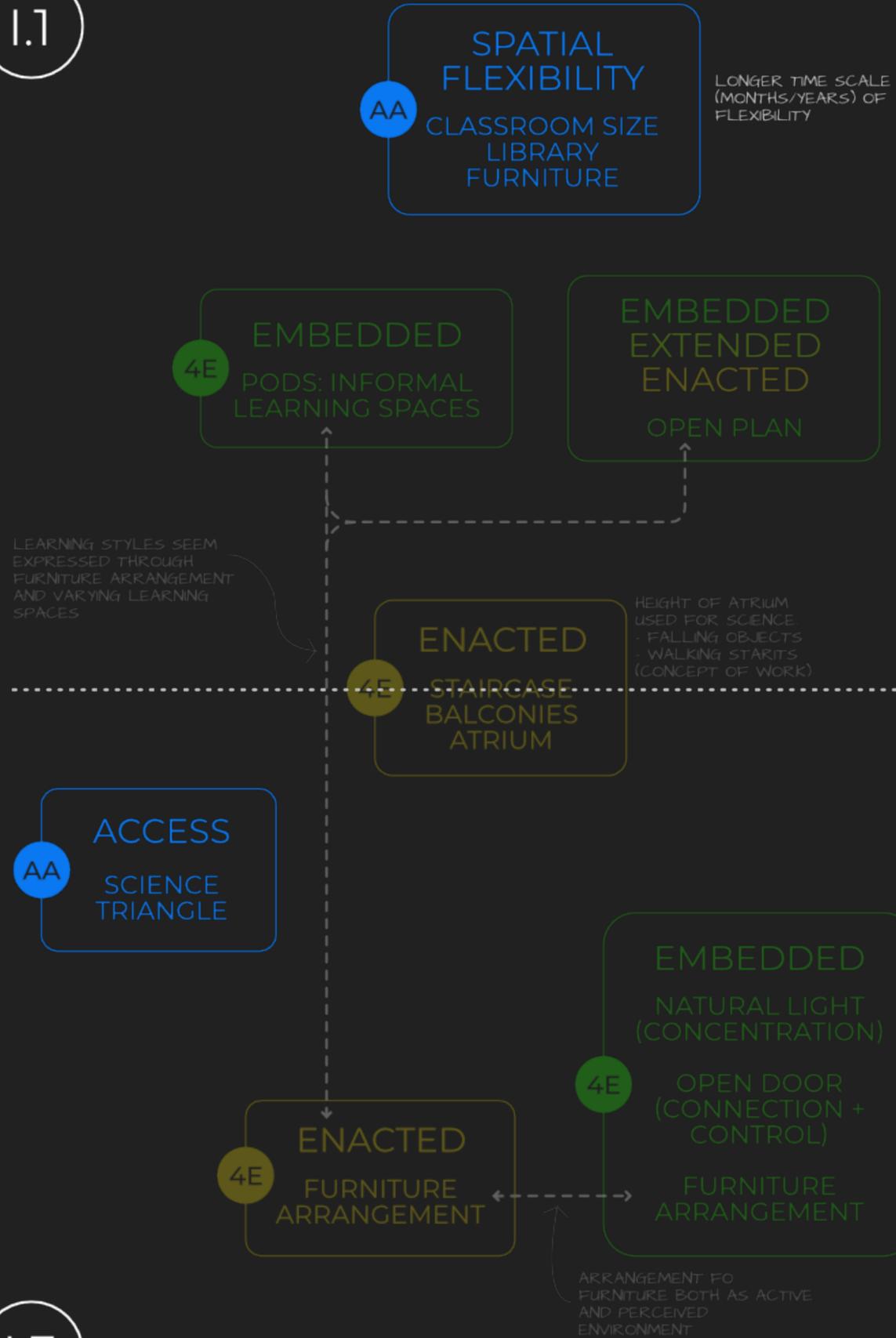
4E EMBEDDED
ENACTED
CO-LOCATION

4E EMBEDDED
NOISY RAIN
HOT/STUFFY
OFFICE
NO OUTSIDE VIEW

1.4

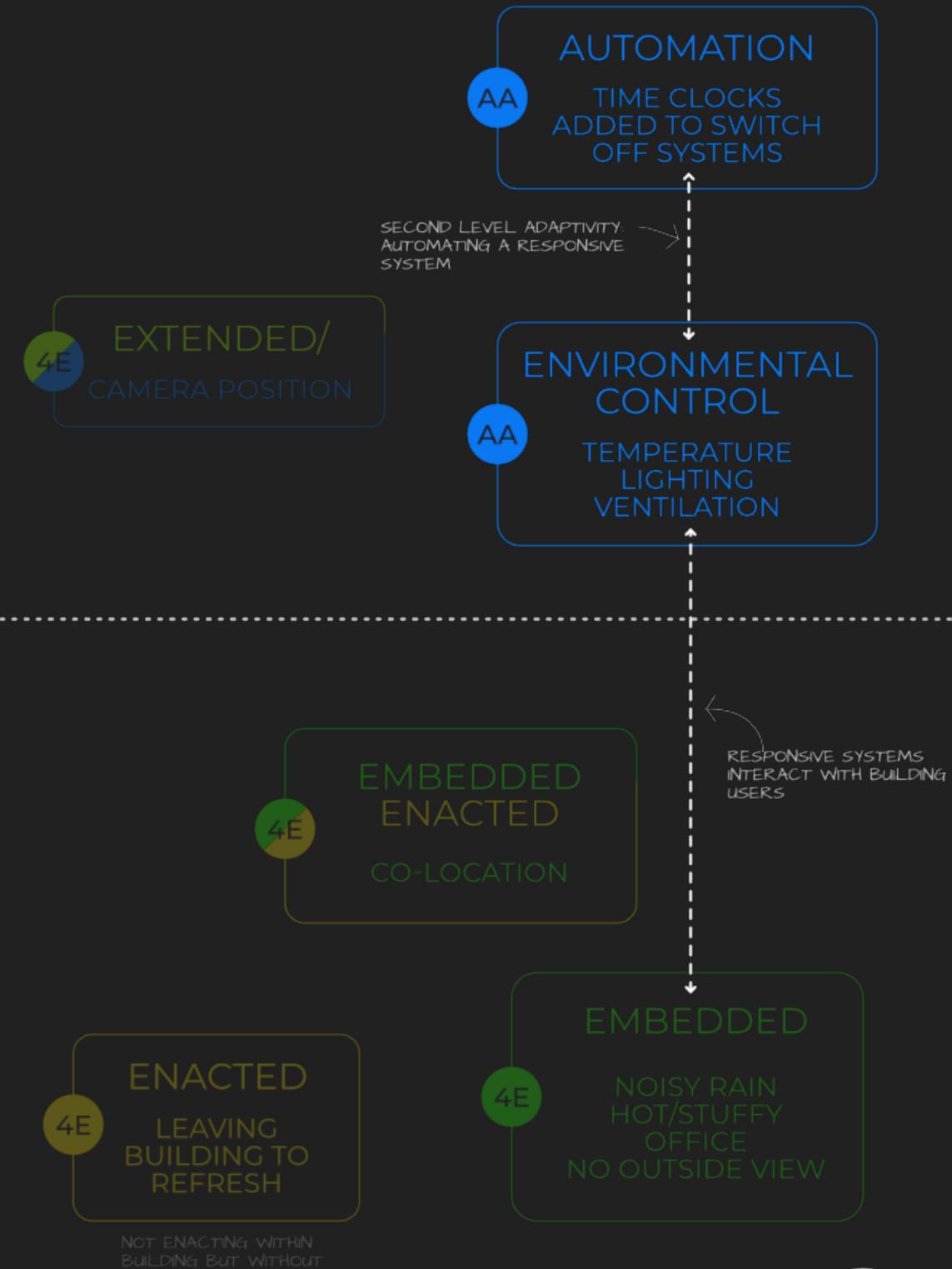


1.1



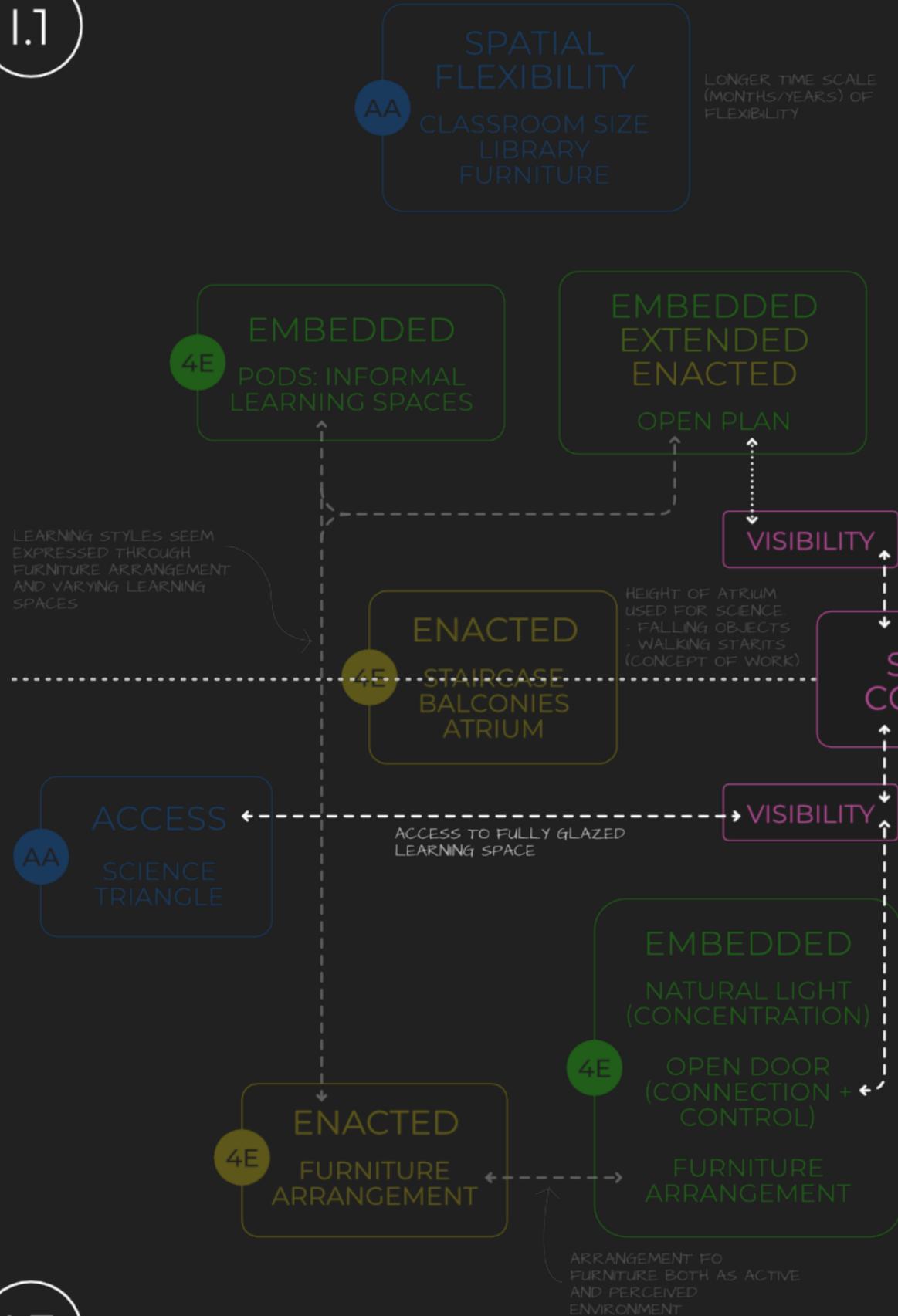
1.3

1.2



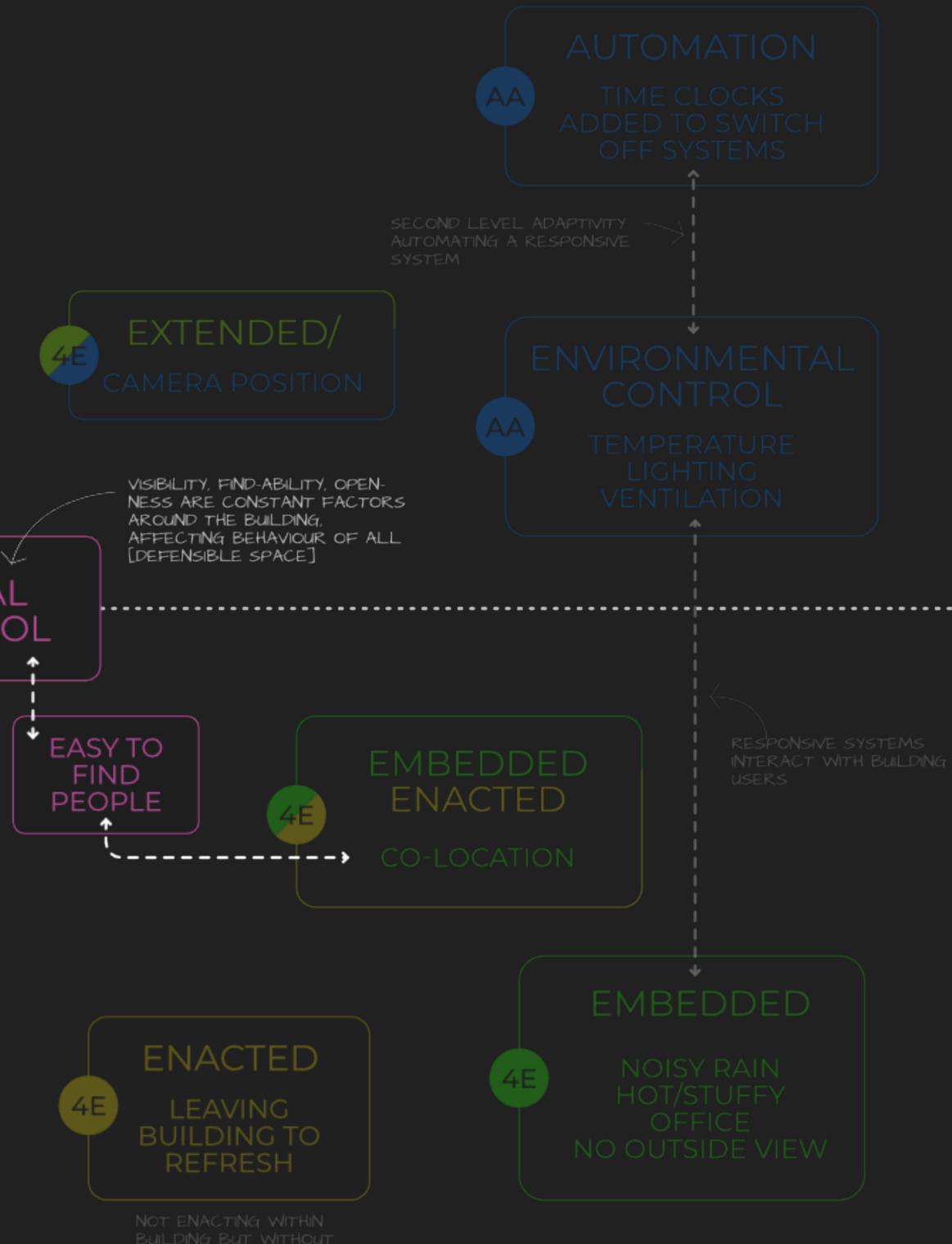
1.4

1.1



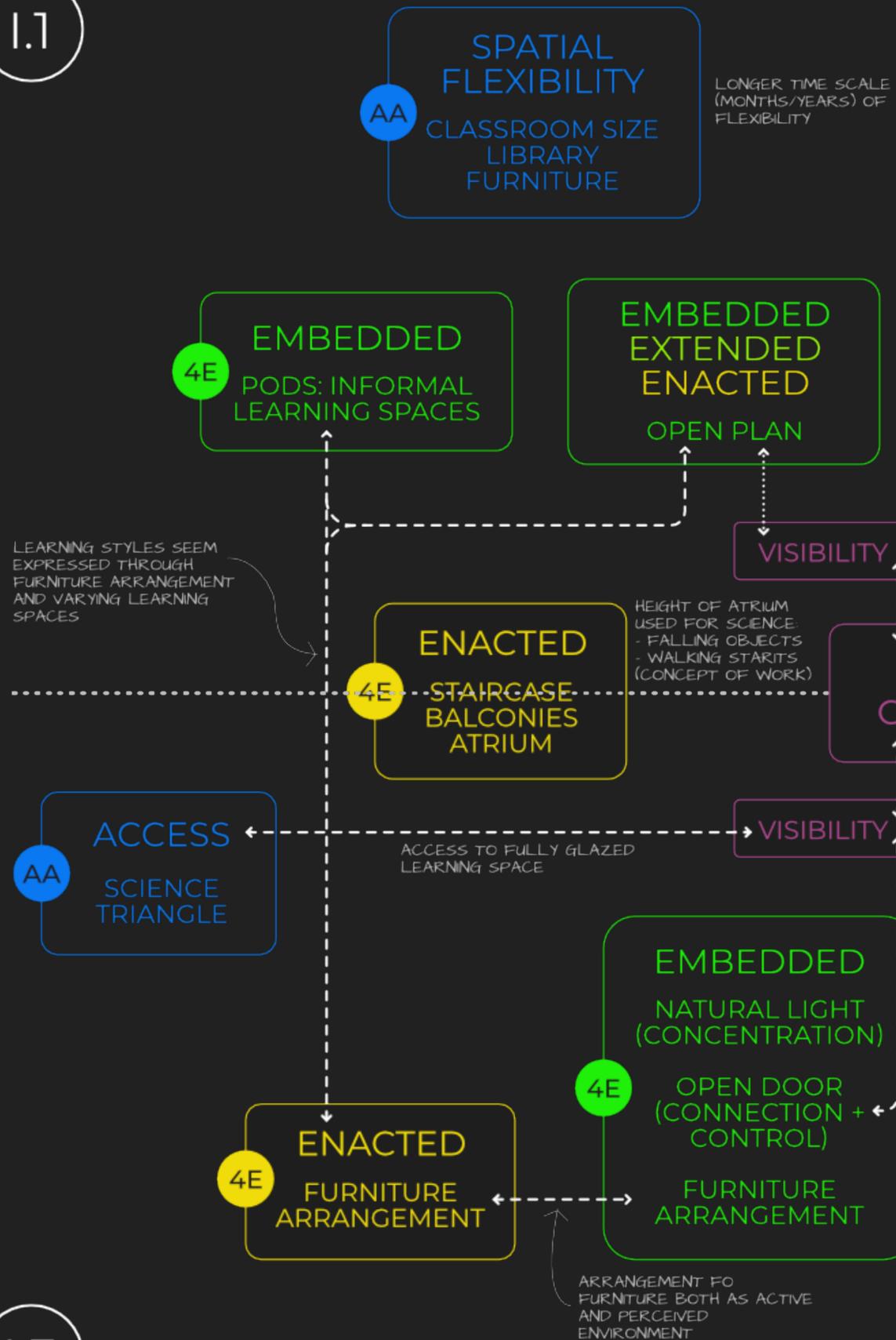
1.3

1.2



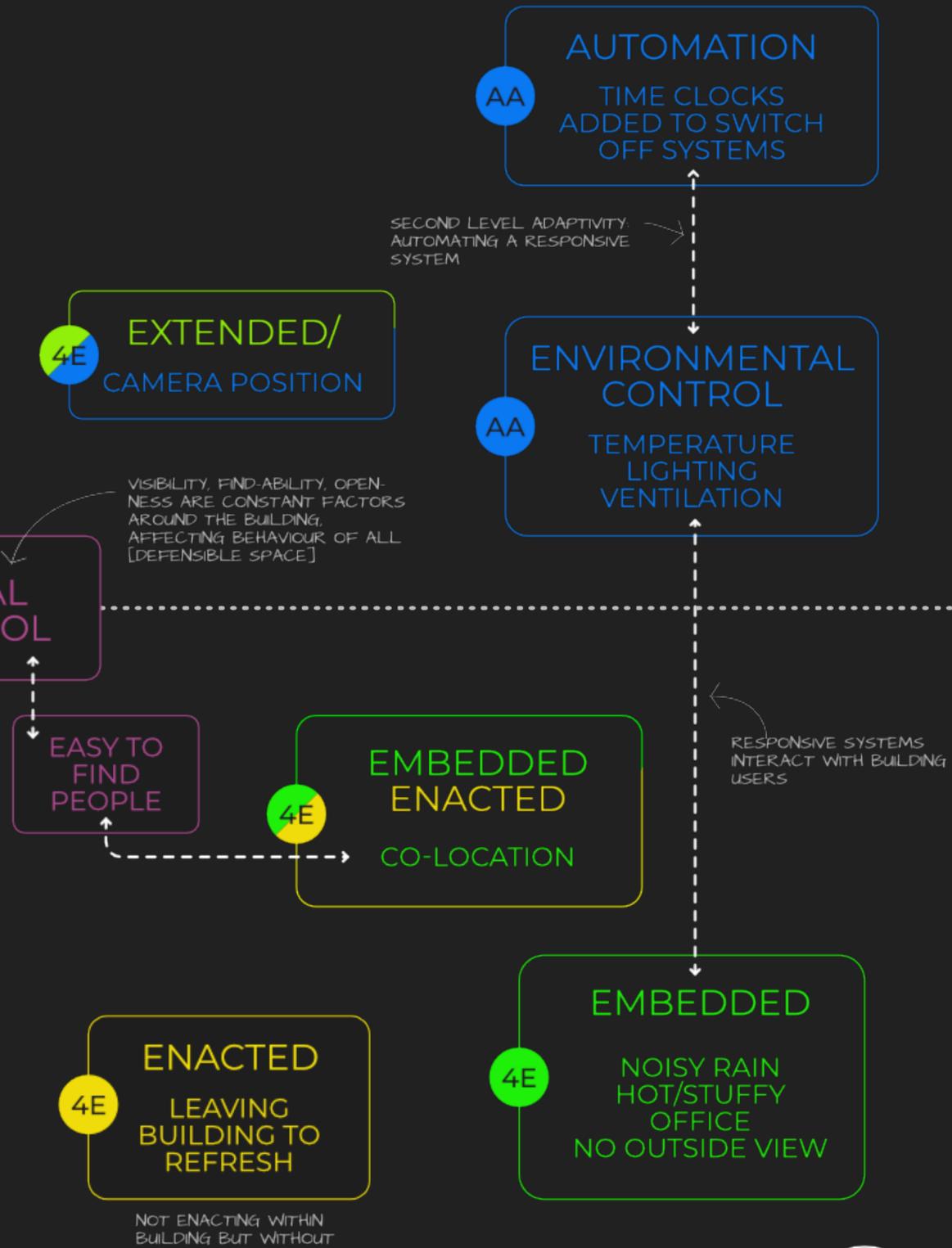
1.4

1.1



1.3

1.2



1.4