

INSPIRED BY DESIGN

Elevating experiential quality
of architecture for all users

LearningSCAPES Conference
October 26-29, 2017
Atlanta, GA

NAC
ARCHITECTURE



Photo credit: <https://www.today.com/health/striking-photo-shows-all-bacteria-8-year-olds-hand-t25096>

MEET THE TEAM



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MA

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INNOVATION**



BORIS SRDAR
FAIA, LEED AP

DESIGN PRINCIPAL



CONNECT WITH US!

#LearningSCAPES #InspiredByDesign



@NACSeattle



@nacarchitecture



@nacarchitecture

THE HUMAN LEARNING EXPERIENCE

Critical thinking

Challenge:

Self - Evaluation of our best practices



CAE History

- Founded in 1948 as the “Committee on School Buildings”
- Became the CAE in 1970
- Semi-annual conferences for more than three decades
 - The best of educational design
- Focus on the last ten years:
 - Respond to pedagogical needs
 - Transition from implementers to leaders
 - Lead pedagogical change
 - Places to learn are now learning places
 - Learner at the Center of Design



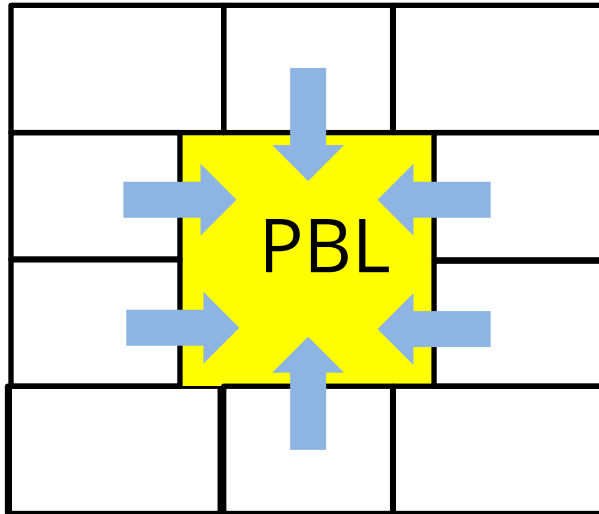
Things to Think About

- “What is the message we send to students about their value to society when they attend school in an elegantly designed building?”
 - *Paraphrased from a presentation by Jonathan Kozol at a CEFPI conference in 2010.*
- How could Architecture enable teachers and students to be successful
- What is your dominant mode of learning? Where did you go to school as a child? What was it like? What is your child's school like?
- Should Schools promote collaboration and interactivity?
- How could Architecture enable 'whole brain development'
- How could Architecture promote health and well being



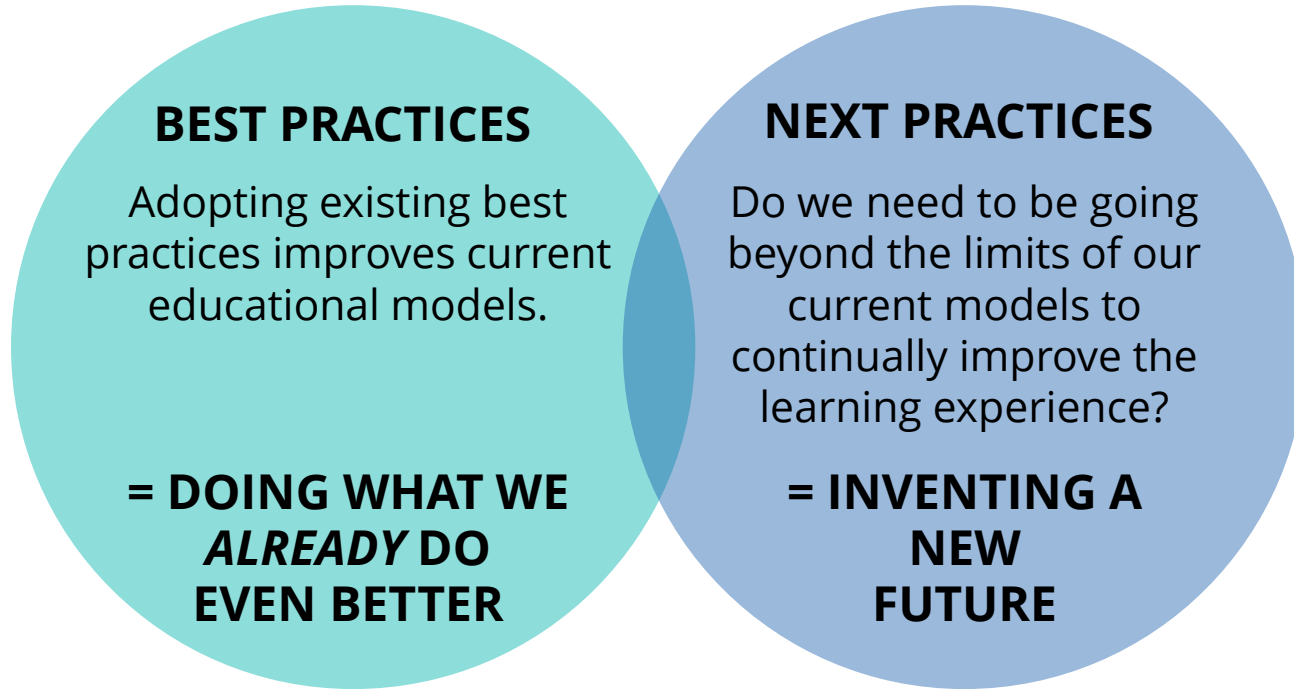
LearningScapes-2016:39 Most Creative Schools – keynote selection

LearningScapes -2015:
PBL mentioned 40 times
in a single presentation



ARE WE MISSING **SOMETHING CRITICAL?**

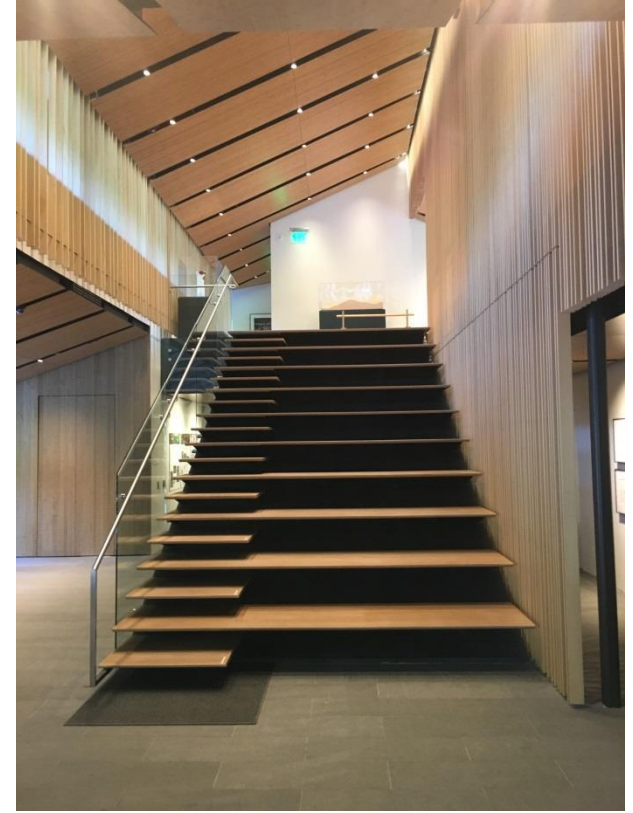
EXPERIENTIAL QUALITY OF ARCHITECTURE



“Welcome To Your World: How The Built Environment Shapes Our Lives”

By Sarah Williams Goldhagen

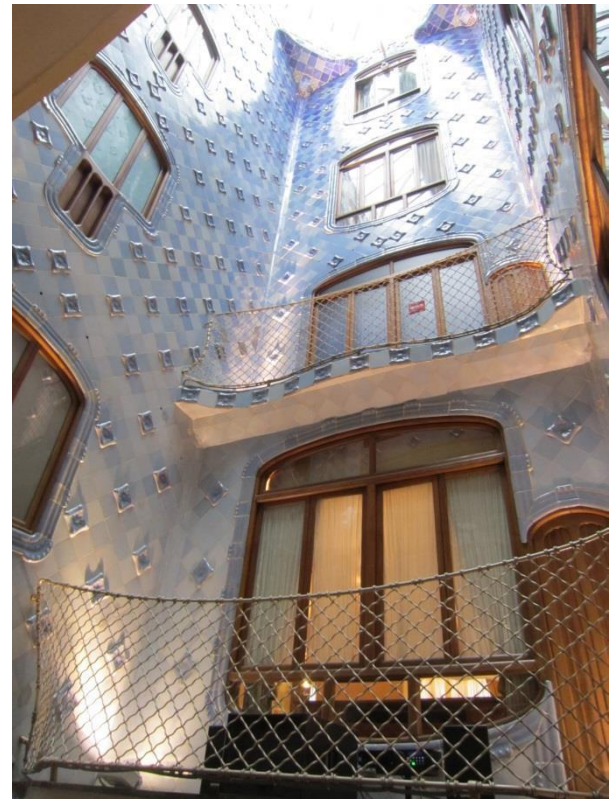
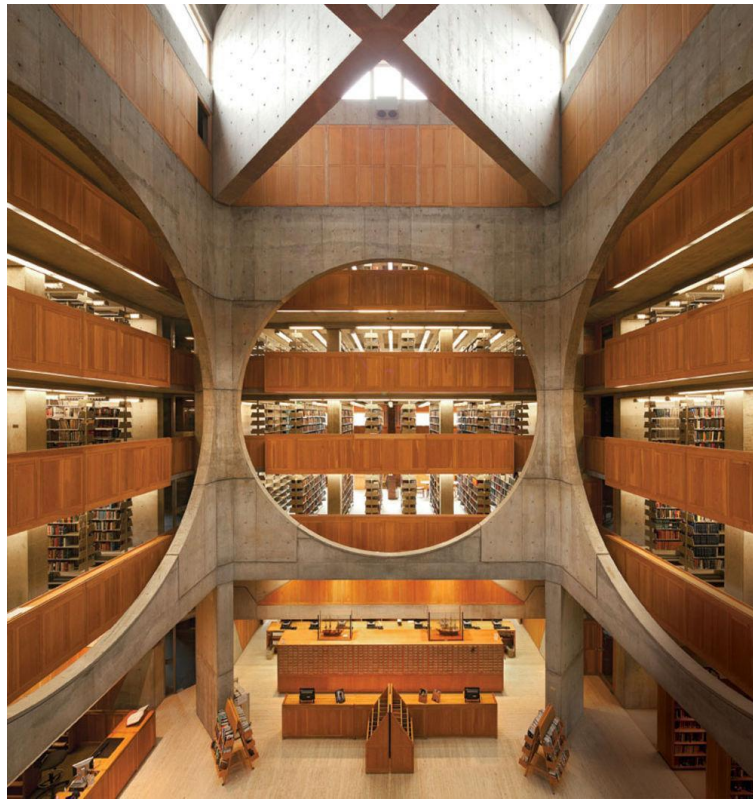
Cognition





Creating Multi-sensory Experience





How much does quality of space matter ?



CURRENT CONDITIONS



“At school you may
have been prodded
to come **out of
your shell...**”

.....
SUSAN CAIN

Author of
*Quiet: The Power of Introverts in a World That
Can't Stop Talking*



SIGNIFICANT TRENDS

- Students need more quiet time to reflect
- Need to reduce the pressure to be outgoing in order to succeed
- Need to better balance out high-stimulation rooms





FINDING INSPIRING SETTINGS

- Softer lighting
- Daylighting
- Quiet room
- Technology-free zones
- Space for uninterrupted autonomous work
- Earplugs to create a sense of interiority
- Sense of containment and defensible space







BIOPHILIC DESIGN

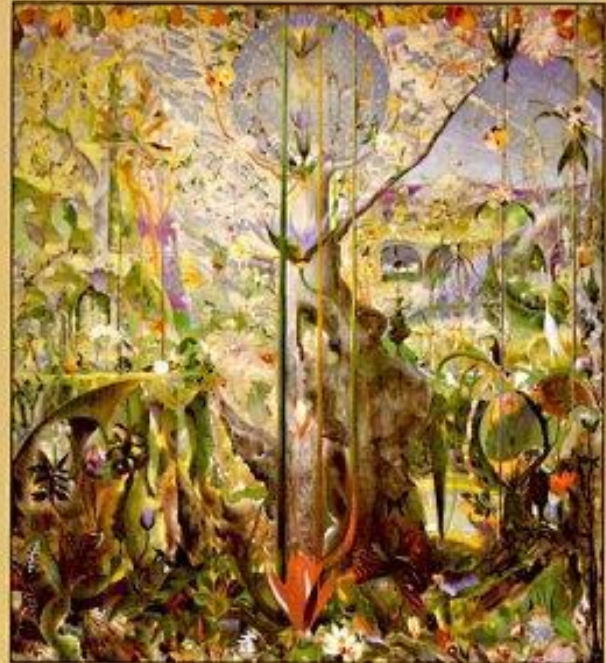
Edward O. Wilson –
Biologist and pioneer
(1984)

biophilic design: an innovative approach that emphasizes the necessity of maintaining, enhancing, and restoring the beneficial experience of nature in the built environment

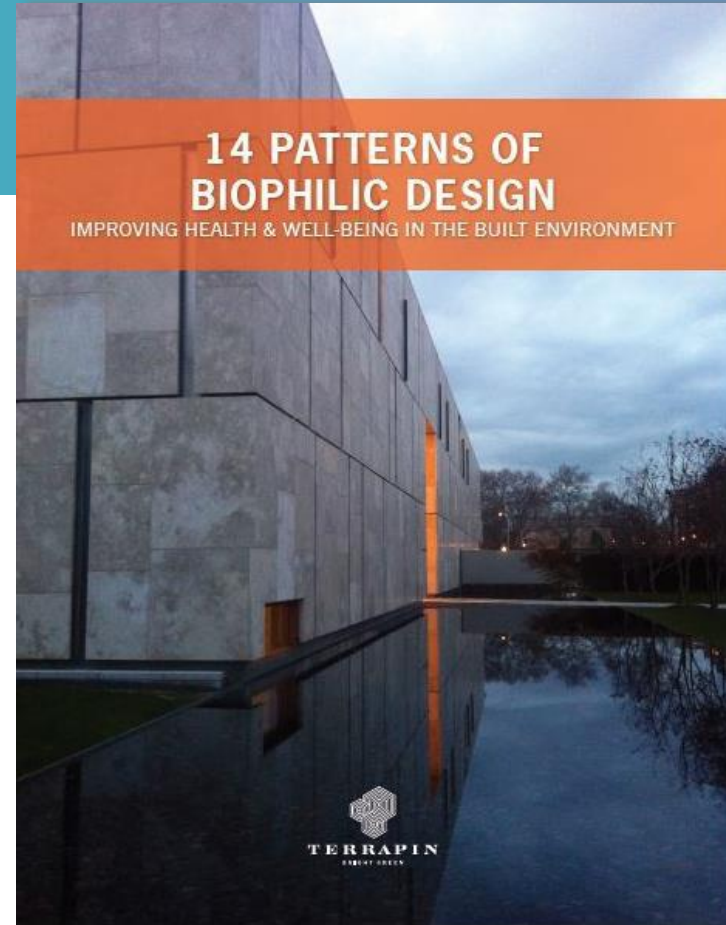
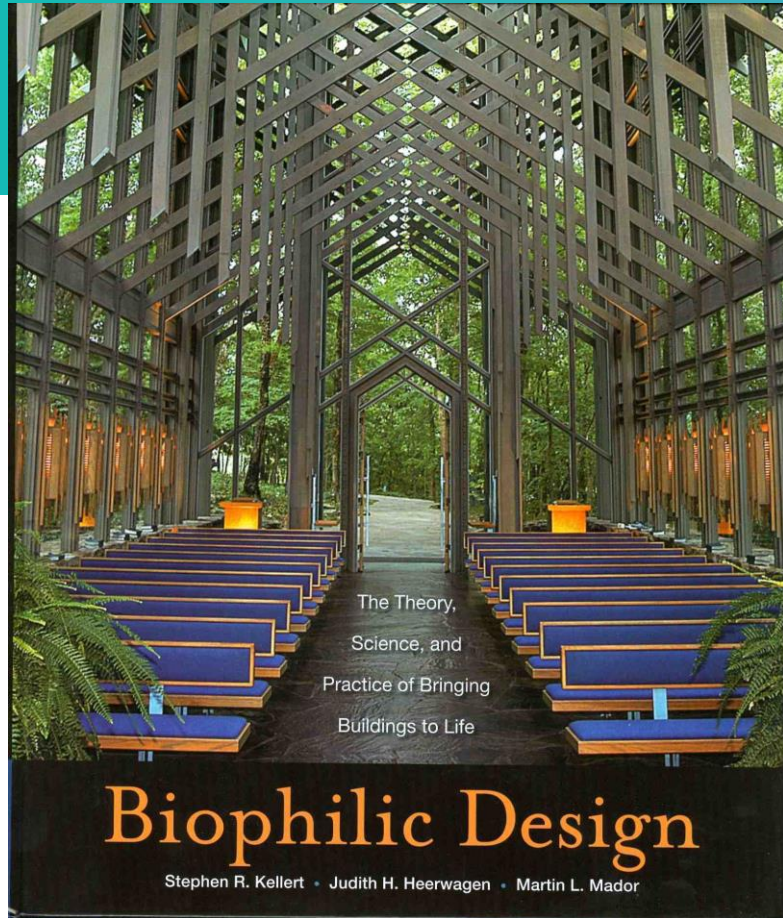
Winner of Two Pulitzer Prizes

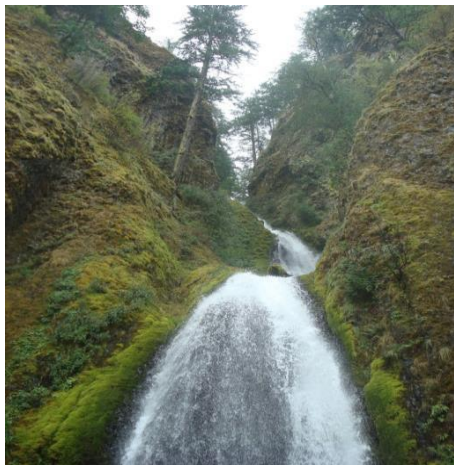
Biophilia

EDWARD O. WILSON



The human bond with other species





NATURE + STUDENTS

“

Play in **nature**, particularly during the critical period of **middle childhood**, appears to be an especially important time for developing the capacities of **creativity, problem solving**, and emotional and intellectual **development.**”

- DR. STEPHEN R. KELLERT

”

EMERGING RESEARCH



**MOTOR
PERFORMANCE**



ADHD



**DISCIPLINARY
RATES**



**NEGATIVE
EMOTIONS**



**SOCIAL
HIERARCHIES**



EMERGING RESEARCH



MOTOR
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**MOTOR
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ADHD



**DISCIPLINARY
RATES**



**NEGATIVE
EMOTIONS**



**SOCIAL
HIERARCHIES**



Mastery & control	Sunlight	Information richness	Spatial variability	Space as shape & form	Biomorphy
Exploration & discovery	Façade greening	Spatial harmony	Security & protection	Avoiding placelessness	
Habitats & ecosystems	Dynamic balance & tension	Tree & columnar supports	Prospect & refuge	Reflected light	
Animal motifs	Curiosity & enticement	Shells & spirals	Shapes resisting straight lines & right angles	Spirit of place	
Arches, vaults, domes	Simulation of natural features	Geomorphology	Affection & attachment	Biomimicry	
Light as shape & form	Sensory variability	Information & cognition	Color	Landscape ecology	Fractals
Age, change, & the patina of time	Central focal point	Integration of parts to wholes	Air	Order & complexity	
Patterned wholes	Transitional spaces	Linked series & chains	Reverence & spirituality	Warm light	Fire
Complementary contrasts	Cultural connection to place	Egg, oval, & tubular forms	Animals	Light pools	
Hierarchically organized ratios & scales	Bounded spaces	Botanical motifs	Spaciousness	Fear & awe	
Natural light	Inside-outside spaces	Natural materials	Geology & landscape	Views & vistas	Plants
Geographic connection to place	Change & metamorphosis	Historic connection to place	Filtered & diffused light		
Ecological connection to place	Water	Indigenous materials	Landscape orientation	Growth & efflorescence	
Landscape features that define building form	Light & shadow	Attraction & beauty	Integration of culture & ecology		

Mastery & control Sunlight Information richness Spatial variability Space as shape & form Biomorphy

Exploration & discovery Façade greening Spatial harmony Security & protection Avoiding placelessness

Habitats & ecosystems Dynamic balance & tension Tree & columnar supports **PROSPECT** Reflected light

Animal motifs **CURIOSITY &** Shells & spirals Shapes resisting straight **& REFUGE** Spirit of place

Arches, vaults, domes **ENTICEMENT** Rational features Geomorphology Affection & attachment Biomimicry

Light as shape & form Sensory variability Information & cognition Color Landscape ecology Fractals

Age, change, & the patina of time Central focal point Integration of parts to wholes Air Order & complexity

Patterned wholes Transitional spaces Linked series & chains Reverence & spirituality Warm light Fire

Complementary contrasts Cultural connection to place Egg, oval, & tubular forms Animals Light pools

Hierarchically organized ratios & scales **BOUNDED** Botanical motifs Spaciousness Fear & awe

Natural light Inside-outside spaces **SPACES** Geology & landscape **VIEWS &** Plants

ECOLOGICAL Change & metamorphosis Historic connection to place **VISTAS** Filtered & diffused light

CONNECTION TO Water Indigenous materials Landscape orientation Growth & efflorescence

PLACE Landscape features that define building form Light & shadow Attraction & beauty Integration of culture & ecology

PROSPECT & REFUGE



- Environment is experienced as providing security & protection
- Students are able to recognize objects, habitats and horizons
- Taps into evolutionarily instrumental needs
- Most satisfying designs capture the complimentary relation of prospect & refuge.

Act for Kids / Australia /
m3architecture





All images by m3architecture



CURIOSITY & ENTICEMENT



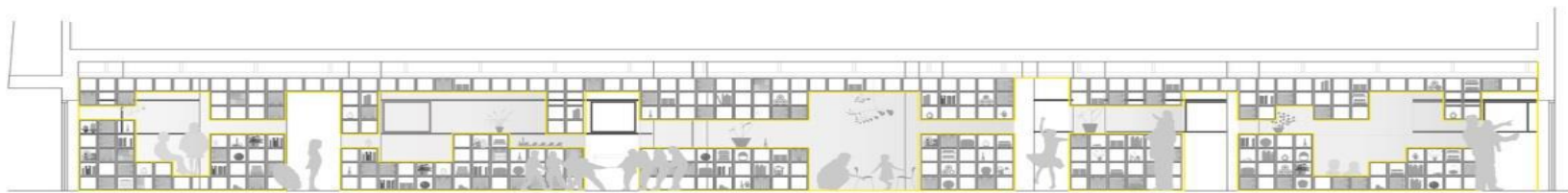
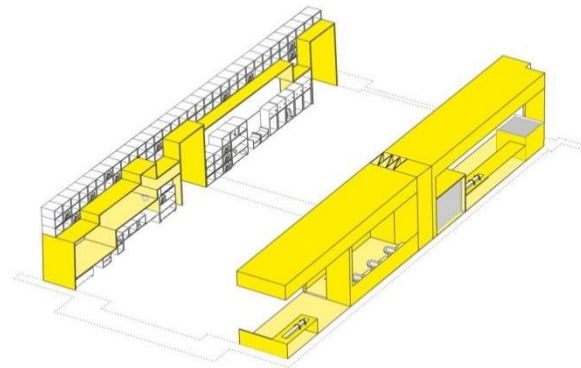
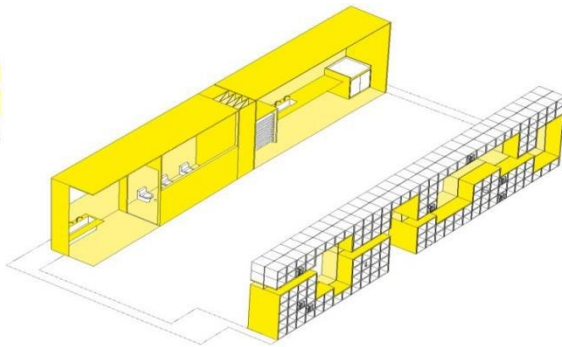
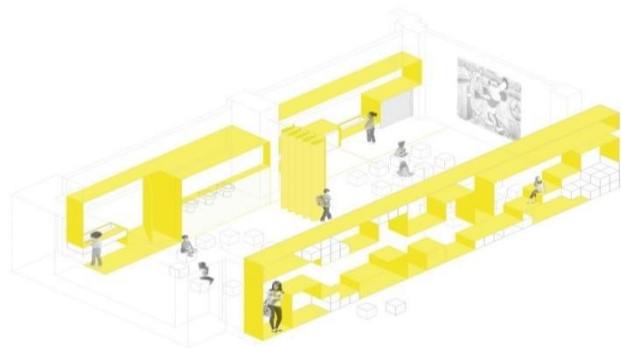
- Reflects our need for exploration, discovery, mystery and creativity
- Enticement fosters creativity
- Curiosity & enticement engages human intellect and imagination

English for Fun Flagship /
Madrid / Rio + Carnicero





All images by Imagen Subliminal



Del Río + Carnicero

ECOLOGICAL CONNECTION TO PLACE



- People are sustained by a positive connection to ecology, particularly watersheds, mountains, deserts, rivers & oceans.
- Aspire to “net ecological productivity.”

Cherry Crest
Elementary School
US /NAC Architecture





VIEWS & VISTAS



- Preference for exterior views
- Scale of view should be compatible with human experience – not overly restricted, unfamiliar, or out of proportion.

Kindergarten Valdaora di
Sotto / Italy / feld72





All images by Hertha Hurnaus

BOUNDED SPACES



- Evolutionary need for feeling of security from surrounding
- Subtle delineations may create sufficient sense of clear spatial definition

Farming Kindergarten /
Vietnam / Vo Trong Nghia
Architects





All images by Hiroyuki Oki



DESIRED CONDITIONS / CASE STUDIES



UNDERSTANDING LEARNING

Maslow's Hierarchy of Needs

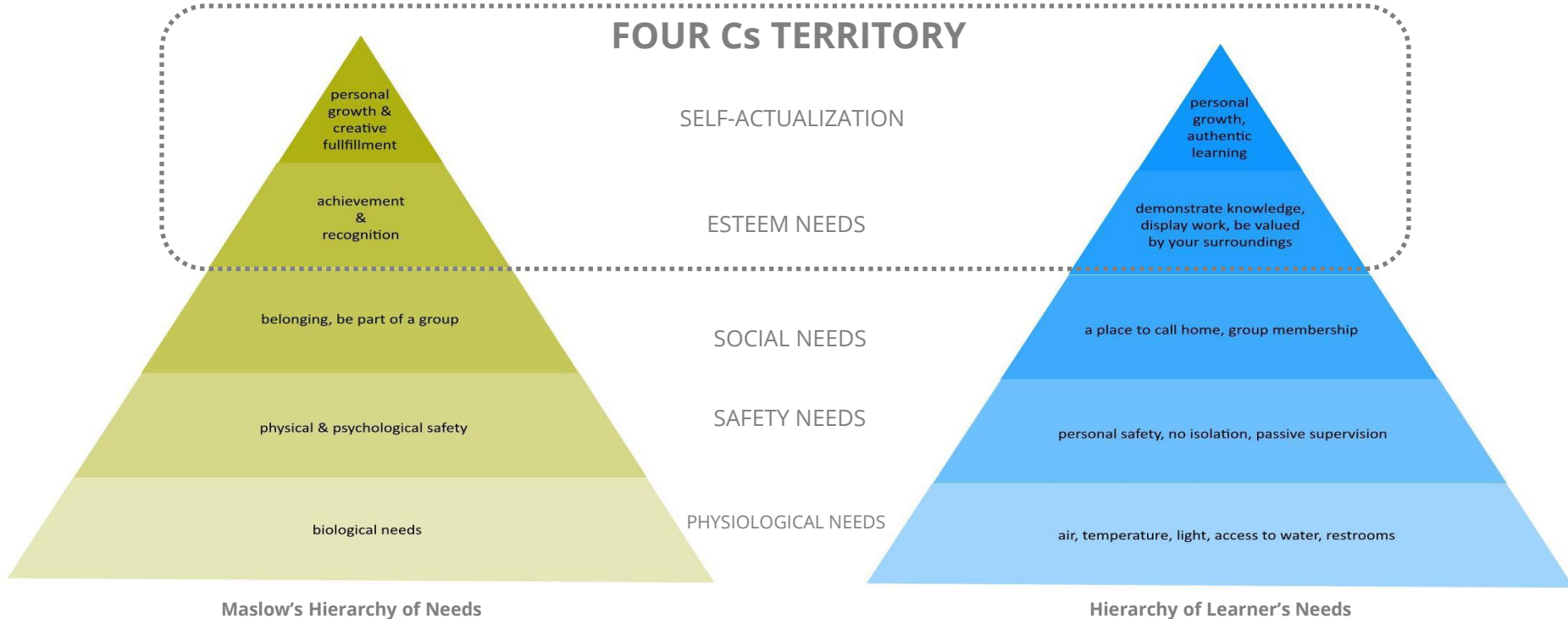
Communication

Creativity

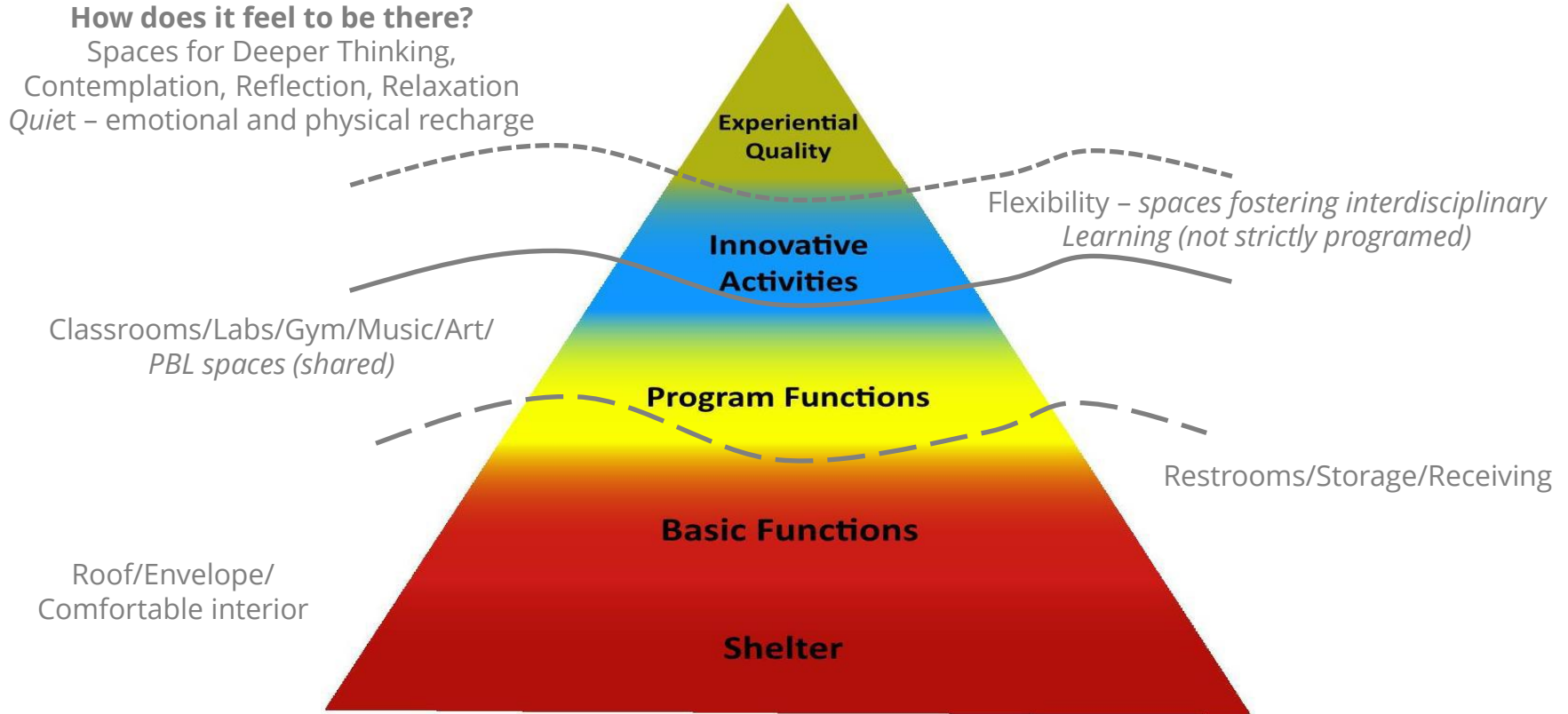
Collaboration

Critical Thinking

FOUR Cs TERRITORY



ARCHITECTURAL NEEDS IN SCHOOLS



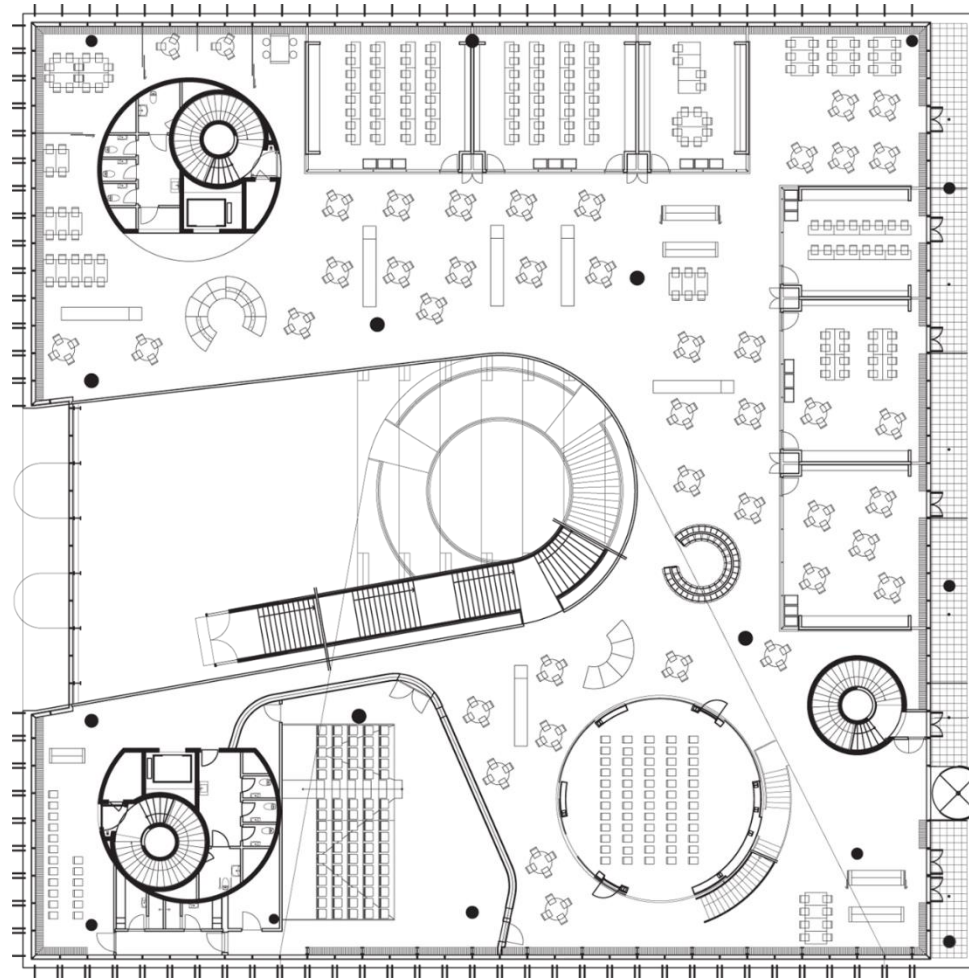
ORESTAD HIGH SCHOOL

Copenhagen,
Denmark

3xN architects

Supporting
Pedagogy





Supporting the pedagogy

Communication, interaction and synergy were key issues for the design of this public high school.



All images by Adam Mork



OPENNESS + FLEXIBILITY



All images by Adam Mork

GYMNASIUM

46°09'N-

16°50'E

Koprivnica, Croatia

STUDIO UP



Sense of Mystery



PRIMARY SCHOOL FOR SCIENCES & BIODIVERSITY

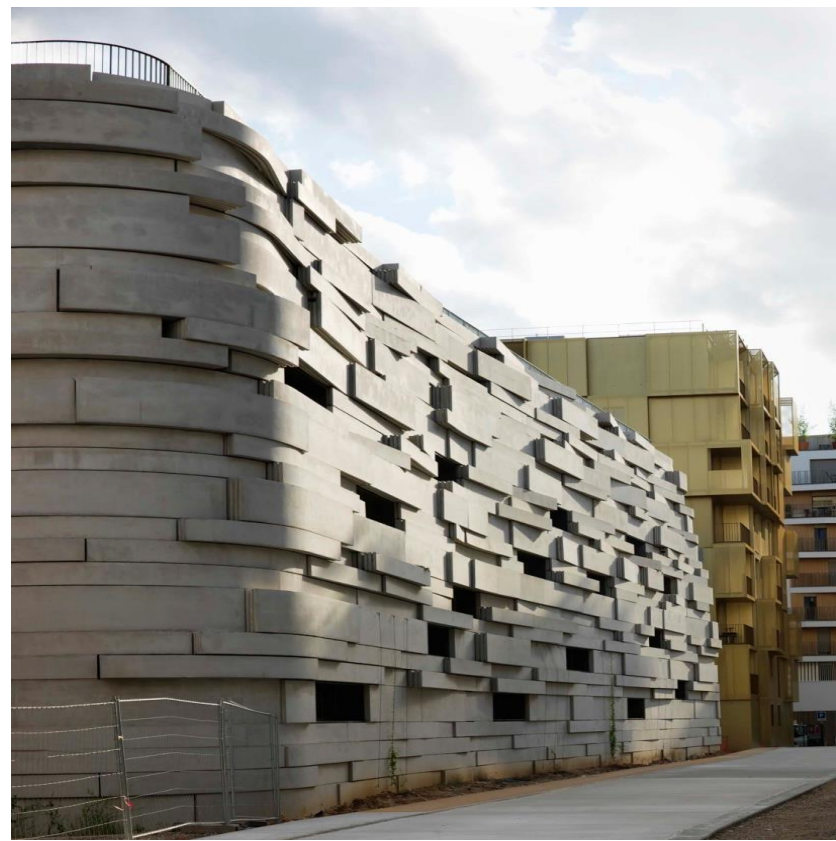
Boulogne-
Billancourt, France

Chartier Dalix
Architectes

Nature Integration
In a Dense Urban
Setting



CREATING ITS OWN ECOSYSTEM



CHRYSLIS CHILDCARE CENTRE

Auckland, New
Zealand

Collingridge and
Smith Architects

Equal **Weight** of
Indoors and
Outdoors:
School Site Design







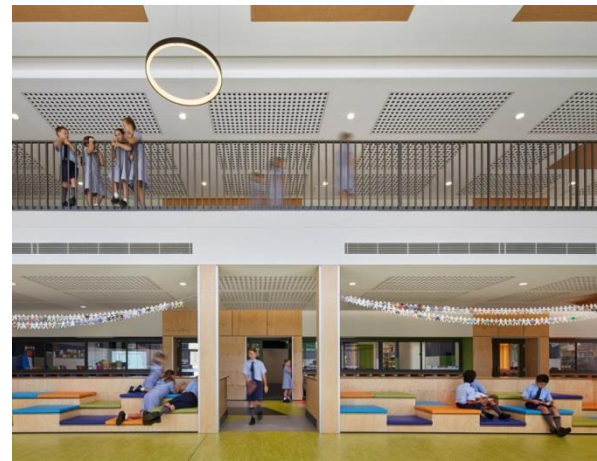
GUILDFORD GRAMMAR PREPARATORY SCHOOL

City Beach WA
6015, Australia

Christou Design
Group

Informal Spaces

- Microsoft
- Shanghai BEED







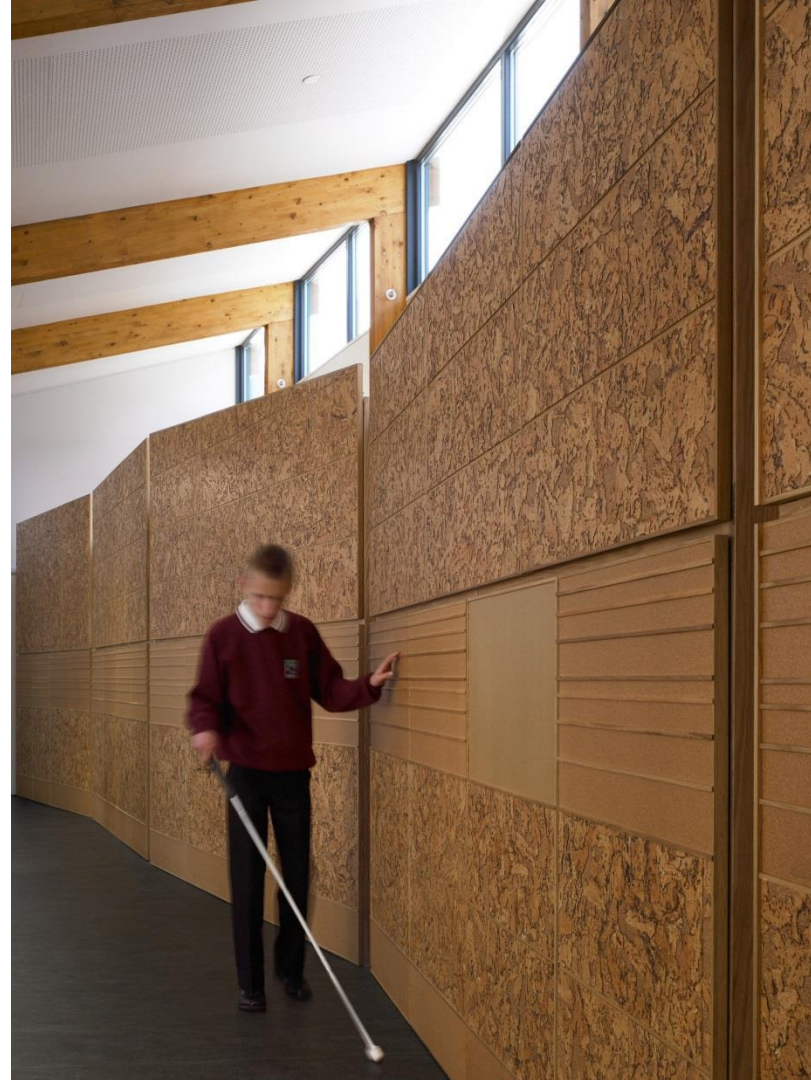
HAZELWOOD SCHOOL

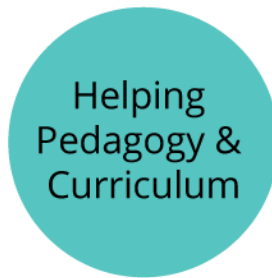
Glasgow, Scotland

Alan Dunlop
Architect

"You can
remember the
place only if you
engage all five
senses"









BIOPHILIA

sight

EXPERIENTIAL
ARCHITECTURAL
QUALITY

hearing

touch

Helping
Pedagogy &
Curriculum

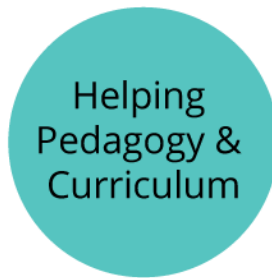
QUIET

smell

taste

**"You can remember the
place only when you
engage all 5 senses."**

– AIA 2017 Orlando conference



“ If I had asked people what they wanted,
they would have said faster horses.

- HENRY FORD

”

What are we trying to do as architects?

Keeping the water out

Writing Spec

Minimizing Risk for Owners

Providing safety

.....

Supporting Pedagogy



What are we trying to do as architects and planners?

Creating Places we want to be at

Creating Spaces we want to be in



WHAT IS **PREVENTING** US?

“

Be the change you want to
see in the world.

- MAHATMA GANDHI

”