









Study: "Smell the Roses: Exposure to Fast Food Impedes Happiness." Julian House, Sanford E. DeVoe, Chen-Bo Zhong University of Toronto, 2013

symbols of impatience culture undermines ability to:



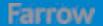
psychological effect called priming

influences our subconscious thought how we think & react to what we see









why is this relevant?

... to what & how we build?











Introduction to LE Farrow

LEED, or Leadership in Energy & Environmental Design, is a green building certification program that recognizes best-in-class building strategies and practices.
To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Prerequisites and credits differ for each rating system, and teams choose the best fit for their project

Rating systems

Community Community New Construction Core & Shell Schools Retail Isealtificate Data Centres Hospitality

Lonmercal Interiors

Existing Buildings Data Centres Warehouses & Distribution Hospitality Schools Retail



Single Homes Low Rise Multi Unit Mid Rise Multi Unit

Credit Categories

Each rating system is made up of a combination of credit categories:

Within each of the credit categories, there are specific presequisites projects must satisfy and a variety of credits projects can pursue to earn points. The number of points the project earns determines its level of LEED certification.



INTEGRATIVE PROCESS
Encouraging cross discipline



LOCATION 8
TRANSPORTATION
Access to variety of
transport and/or credit fo
constrained
etters



MATERIALS & RESOURCES
Using sustainable materials
& reducing waste



WATER EFFICIENCY Smart use and reuse of water



ENERGY & ATMOSPHERE



SUSTAINABLE SITES Minimising impact on prosested R plate (mount



INDOOR ENVIRONMENT Indoor air quality & access to natural East & views



NNOVATION



REGIONAL PRIORITY Geographic



LEED is administered by the US Green Building Council

The Ratings



RTIFIED SILVER





S 50-59 POINTS 60-79 POINTS 80 - POINT

ntroduction to

LEED, or Leadership in Energy & Environmental Design, is a green building certification program that recognizes best-in-class building strategies and practices.
To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Prerequisites and credits differ for each cating system, and teams choose the best fit for their project.

Rating systems

BD+C
New Constitution
Care & Shell
Schools

THE BOOK DESIGN TO STATE OF THE Commence of Interiors Retail Hospitality OHM
Existing Buildings
Data Centres

New land developments Land Redevelopment Residential Single Homes Low Rise Multi Unit Mid Rise Multi Unit

Living Building Challenge
Fitwel Rating System

LOCATION 8
TRANSPORTATION
Access to variety of
transport and/or credit to
constrained

Delos WELL Building Standard
NYC Active Design Guidelines



ION REGIONAL P



REGIONAL PRIDRITY
Geographic
environmental prioriti



The Ratings









www.wtsustainability.com.au

SUSTAINABILITY

Rating systems













The Ratings



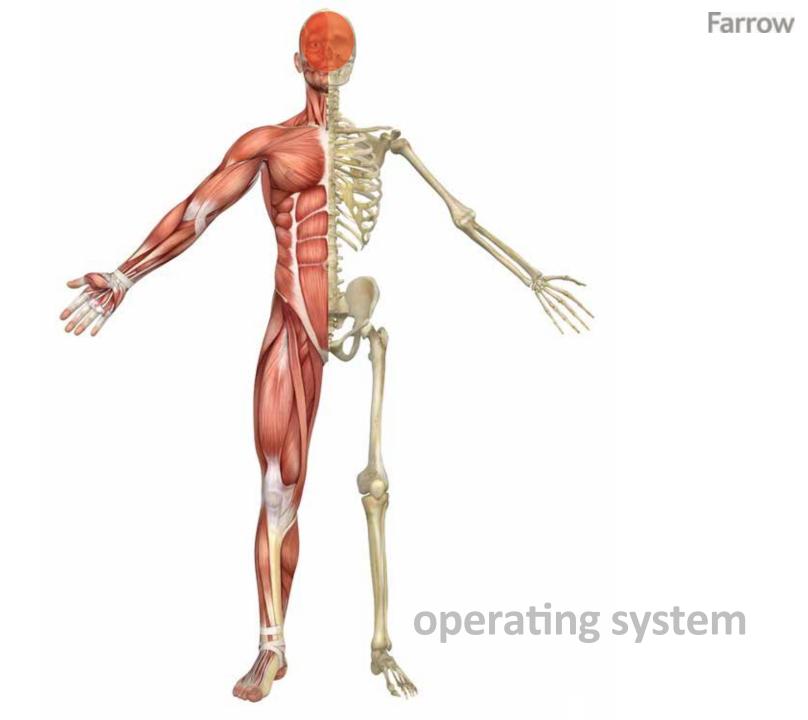








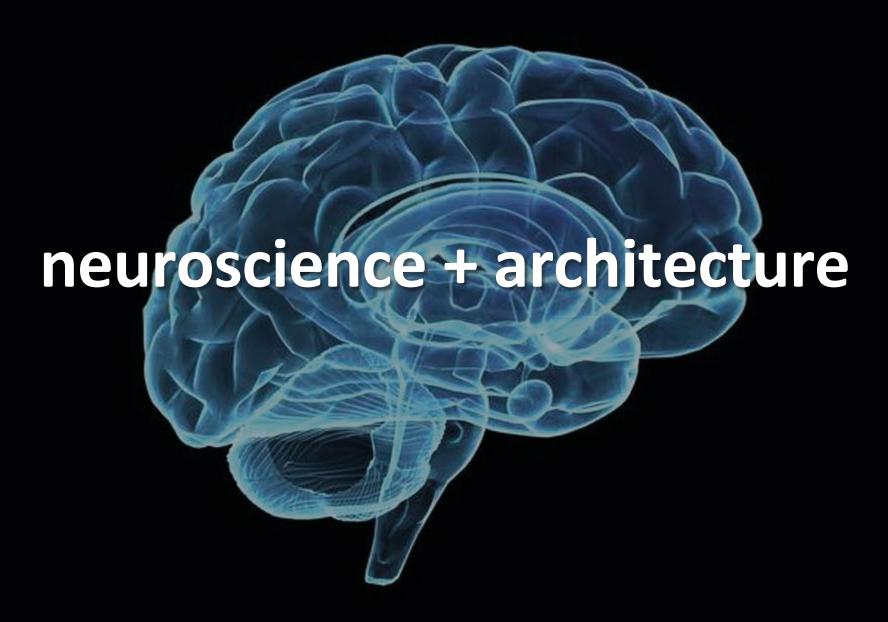






























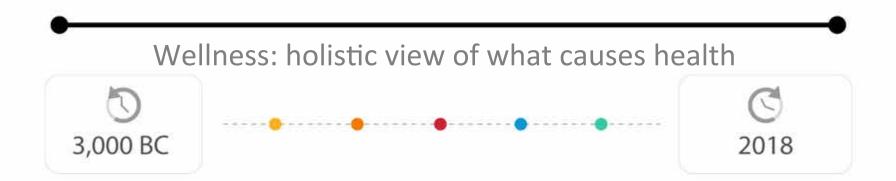






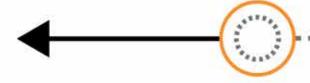
Farrow

Context

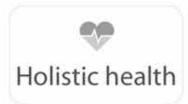


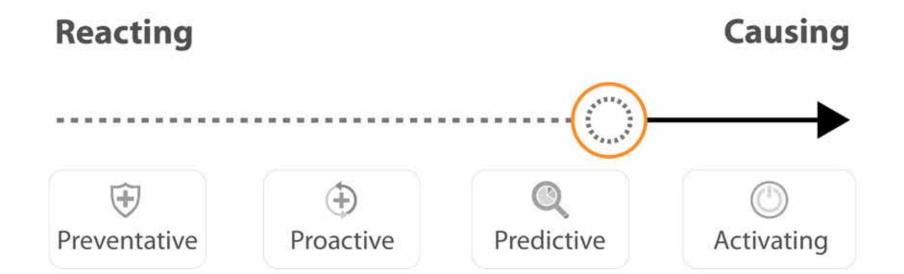
Pathogenic

Wellness

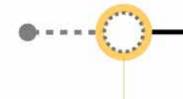








3,000 BC Traditional Chinese Medicine



TCM applies a holistic perspective to achieving health & wellbeing, by cultivating harmony in one's life



500 BC Ancient Greek - Hippocrates



Focus on preventing sickness vs treating disease diet, lifestyle & environmental



50 BC Ancient Roman Medicine



Preventing spread of disease public health: aqueducts, sewers & public baths



1600 - 1800's Wellness Concept Established



1854 London England Cholera Epidemic

of those that used it





1870 Germ Theory Established



1910 Carnegie Foundation Flexner Report



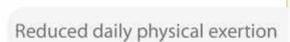
Critique of North American medical education

questioned all forms of medicine other than bio-medical

sets stage for disease oriented evidenced based medicine all other forms of medical education ostracized



1940's Rise of Chronic Disease



Marketing of tobacco

Changing food quality

Car-centric suburbs

'Common source epidemic'



1960-70's Birth of Wellness Movement

1960-Halbert L Dunn: "High-level Wellness" 1970's: Travis, Ardell, Hettler: comprehensive wellness assessment tools, wellness centres & National Wellness Institute



1971 Antonovsky Identifies 'Origins of Health'

Salutogenesis salus-health, genesis-origins

Sense of coherence

comprehensibility can understand events in your life & can anticipate future

Manageability

have the skills, support to take care of things; a sense of control

Meaningfulness

things are interesting, satisfying & a reason & purpose

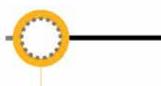
Sense of purpose - most important determinant of health outcomes

1980-2014 Wellness Goes Mainstream

'wellness' enters the collective psyche & vocabulary workplace wellness programs (\$40 bn industry-9% 3 bn wf) fitness/spa, healthy diet, living, travel industries rapid growth chronic disease crisis - unsustainable healthcare costs diminishing healthcare workforce governments shift focus to screening & prevention strategies Harvard, Yale & Mayo Med Cntrs' shift to 'Integrative Medicine'



2014 - 2017 Growth of Global Wellness Economy



2014 first Global Wellness Economy Monitor report measures size of global wellness economy industries enabling wellness activities & lifestyles into daily life 2015 global healthcare expenditures \$7.3 trn 2015 wellness economy \$3.7 trn 2017 wellness economy \$4.2 trn - 6.4% growth annually 5.3% of global economic output annually growth rate 2x global economic growth of 3.6%



Global Weliness Institute

2018 Health Acceleration



causing health by accelerating the physiological & psychological conditions of optimal health



accelerate optimal health?

how can space accelerate optimal health?

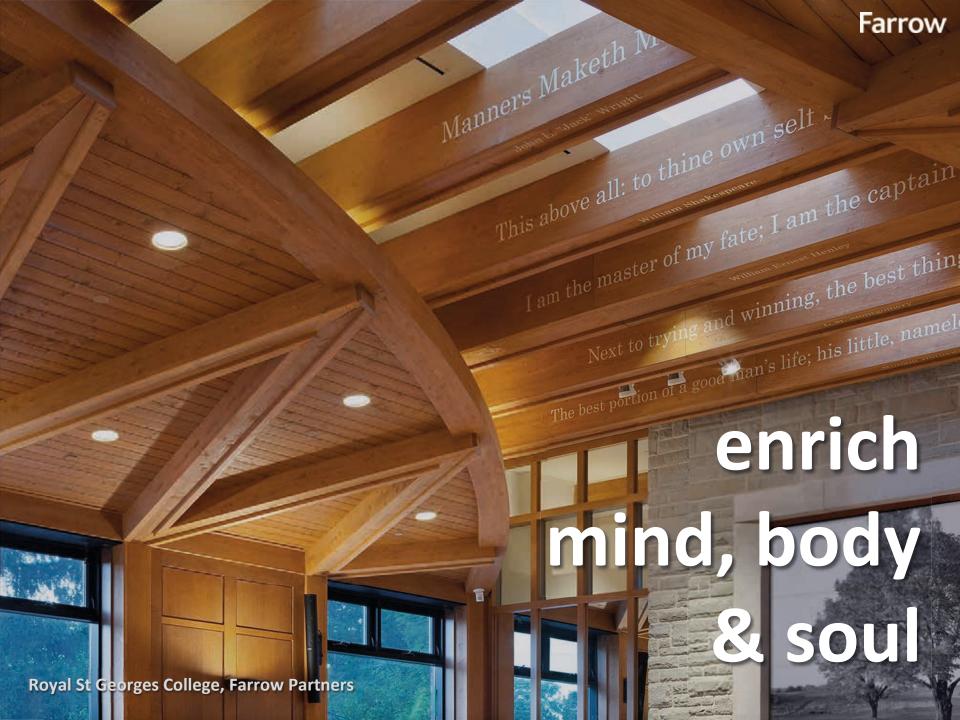
Farrow

architecture

is like

food









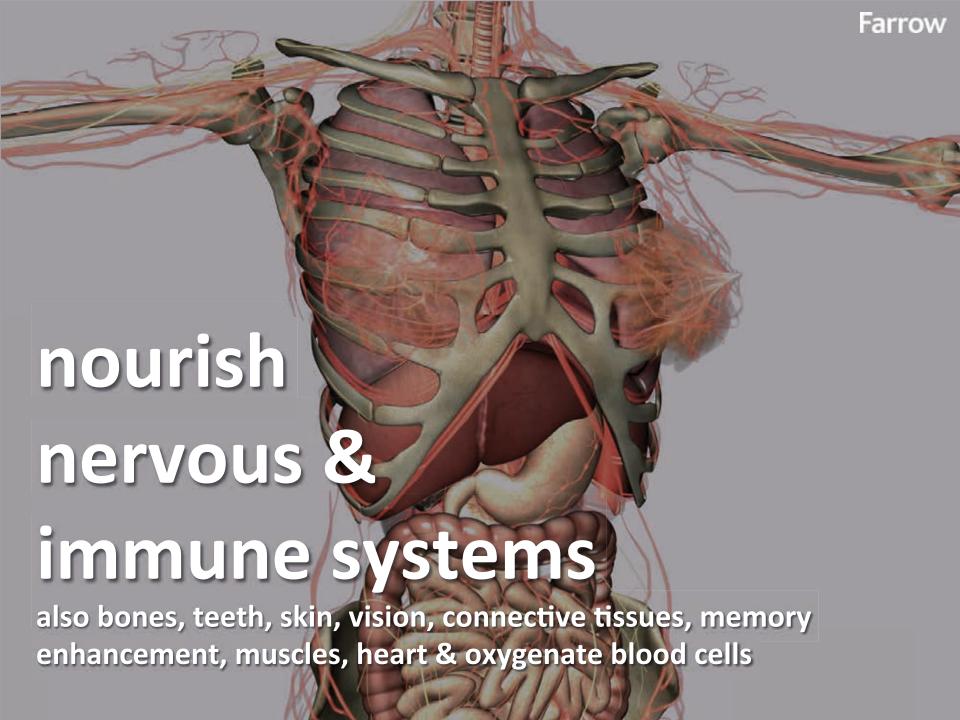












Neuroscientists: environment alters & enhances our capacity for thought

creating, concentrating & social engagement

... heighten
... or suppresses
emotions & behaviour



intrinsic componentsthat simulate brains'biological & chemicaloperating systems

improves health measured though neurological, physiological, psychological & sociological feedback

Nature

The Role of Nature-Based Experiences in the Development and Maintenance of Wellness

Author(s): Dr. Fric Brymer, Thomas F. Cuddihy & Vinathe Sharma-Bryer

https://www.tandfonline.com/doi/abs/10.1080/18377122.2010.9730328

"In this paper the authors show how an individual's experience of wellness is strongly connected to their relationship with the natural world "

Outdoor Recreation, Health, and Wellness: Understanding and Enhancing the Relationship Author(s): Geoffrey Godhey

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1408694

"The paper describes approaches to measuring physical activity and recent trends in park visitation and outdoor activity participation. It looks at variables that affect participation in outdoor activities and considers the projected demographic changes that will affect policy making in this arena."

Nature and Health

Author(s): Terry Hartig, Richard Mitchell, Sjerp de Vries & Howard Frumkin https://www.annualreviews.org/doi/full/10.1146/annurev-publhealth-032013-182443

Why is Nature Beneficial?: The Role of Connectedness to Nature

Author(s): F. Stephan Mayer, Cynthia McPherson Frantz, Emma Bruehlman-Senecal & Kyffin Dolliver https://journals.sagepub.com/doi/abs/10.1177/0013916508319745

"The discussion focuses on the mechanisms that underlie the exposure to nature/well-being effects."

The impacts of nature experience on human cognitive function and mental health

Author(s): Gregory N. Bratman, J. Paul Hamilton & Gretchen C. Daily

https://nyaspubs.onlinelibrary.wiley.com/doi/abs/10.1111/j.1749-6632.2011.06400.x

How natural environments impact human well-being. How nature "effects human cognitive function and mental health, synthesizing work from environmental psychology, urban planning, the medical literature,

Healthy nature healthy people: 'contact with nature' as an upstream health promotion intervention for

Author(s): Cecily Maller, Mardie Townsend, Anita Pryor, Peter Brown & Lawrence St. Leger

https://academic.oup.com/heapro/article/21/1/45/646436

"This paper presents a summary of empirical, theoretical and anecdotal evidence drawn from a literature review of the human health benefits of contact with nature "

Healing gardens - places for nature in health care

Author(s): Dr. Terry Hartig

https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(06)69920-0/fulltext

"Evaluations indicate that these gardens improve quality of life for patients, afford an opportunity for them to exercise without becoming agitated, and lighten the burden of care for nurses."

Views to nature: Effects on attention

Author(s): Carolyn M. Tennessen & Bernadine Cimprich

https://www.sciencedirect.com/science/article/abs/pii/0272494495900160

"The purpose of this study was to explore whether university dormitory residents with more natural views from their windows would score better than those with less natural views on tests of directed attention."

Gardening as a mental health intervention: a review

Author(s): Jane Clatworthy, Joe Hinds & Paul M. Camic

https://www.emeraldinsight.com/doi/abs/10.1108/MHRJ-02-2013-0007

"The purpose of this paper is to evaluate the current evidence-base for gardening-based mental health interventions and projects through examining their reported benefits and the quality of research in this field "

Nature-Based Counseling: Integrating the Healing Benefits of Nature Into Practice

Author(s): Arie T. Greenleaf, Rhonda M. Bryant & Joanna B. Pollock

https://link.springer.com/article/10.1007/s10447-013-9198-4

"Research establishes a strong link between contact with nature and enhanced human wellness. Given the potential benefits of nature experiences on enhancing mental health, the authors advocate for a greater inclusion of nature-based approaches into professional practice. A case example and implications for practice are presented."

What is the Best Dose of Nature and Green Exercise for Improving Mental Health?

Author(s): In Barton & Jules Pretty

https://pubs.acs.org/doi/abs/10.1021/es903183r

"This multistudy analysis assessed the best regime of dose(s) of acute exposure to green exercise required to improve self-esteem and mood "

People and green spaces: promoting public health and mental well-being through ecotherapy

Author(s): Ambra Burls

https://www.emeraldinsight.com/doi/abs/10.1108/17465729200700018

"This paper debates how the use of ecotherapeutic approaches can provide a two-pronged system to achieve both individual health (at micro level) and public and environment health outcomes (at macro

Beyond Toxicity: Human health and the natural environment

Author(s): Howard Frumkin

https://www.ajpmonline.org/article/S0749-3797(00)00317-2/fulltext

"Forest Bathing is part of a global effort to tend to the stressful conditions of living in modern industrialized

Effect of forest bathing trips on human immune function

Author(s): Qing Li

https://environhealthprevmed.biomedcentral.com/articles/10.1007/s12199-008-0068-3

"This review focuses on the effects of forest bathing trips on human immune function."

"Saturday Forest Bathing"

https://my.arboretum.harvard.edu/Info.aspx?

DayPlanner=1862&DayPlannerDate=5/25/2019&utm_source=SilverpopMailing&utm_medium=email&utm campaign=Daily%20Gazette%2020190524%20(1)

Neighborhoods with more green space may mean less heart disease

Author(s): American Heart Association

https://www.sciencedaily.com/releases/2018/12/181205093718.htm

"In this study...researchers from the University of Louisville investigated the impact of neighborhood green spaces on individual-level markers of stress and cardiovascular disease risk."

Space, place and atmosphere. Emotion and peripheral perception in architectural experience

Author(s): Juhani Pallasmaa

https://riviste.unimi.it/index.php/Lebenswelt/article/view/4202

"The judgement of environmental character of a space or place calls for categories of sensing that extend beyond the five Aristotelian senses, such as the embodied existential sense, and, as a result, the entity is perceived in a diffuse, peripheral and unconscious manner."

How Architecture Uses Space, Light and Material to Affect Your Mood

https://www.independent.co.uk/life-style/design/how-architecture-uses-space-light-and-material-toaffect-your-mood-american-institute-architects-a6985986.html

"Numerous studies show that buildings can impact a person's health, and as citizens of modern societies spend 90 percent of their time indoors, this is more important than ever."

Sensory Stimulation in Dementia Care: Why It Is Important and How to Implement It

Author(s): Stephen Vozzella

https://journals.lww.com/topicsingeriatricrehabilitation/Abstract/2007/04000/

Sensory_Stimulation_in_Dementia_Care__Why_It_Is.2.aspx

"This article will review the meaning of sensory stimulation, for whom it is appropriate, and the benefits. The activity assessment is integral in determining activities that are successful in stimulating the senses."

Building For All The Senses: Bringing Space to Life

https://marialorenalehman.com/post/architectural-building-for-all-the-senses

"As the human body moves, sees, smells, touches, hears and even tastes within a space - the architecture

Considering the Five Senses in Architecture

https://www.cwejournal.org/vol10noSpecial/considering-the-five-senses-in-architecture/

"This paper discusses the perception of senses in architecture, explaining how they work and influence on each other and the differences between them."

Colour research with architectural relevance: How can different approaches gain from each other? Author(s): Karin Fridell Anter & Monica Billger

https://onlinelibrary.wiley.com/doi/abs/10.1002/col.20565

Sense of Occurence:

Experts Explore the Impact of Architecture and Design on the Brain

Author(s): Stephen Waldron

https://www.aaas.org/news/experts-explore-impact-architecture-and-design-brain

"Studies have reported that exposure to daylight can have a positive impact on workplace performance by improving sleep quality among employees, making them more focused and alert at work."

Optimism:

Effects of Interior Design on Wellness: Theory and Recent Scientific Research

Author(s): Roger S. Ulrich

https://www.researchgate.net/profile/Roger_Ulrich4/publication/

273354344_Effects_of_Healthcare_Environmental_Design_on_Medical_Outcomes/links/ "By focusing on the concept of stress, a theory of supportive design can be developed that conceptualizes human impacts of design in ways that are related directly to scientifically credible indicators or interpretations of

A new perspective on how humans assess their surroundings; derivation of head orientation and its role in 'framing' the environment

Author(s): Gwendoline Ixia Wilson, Mark D. Holton, James Walker, Mark W. Jones, Ed Grundy, Ian M. Davies, David Clarke, Adrian Luckman, Nick Russill, Vianney Wilson, Rosie Plummer & Rory P. Wilson https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4476166/

Information Visualization: Perception for Design

Author(s): Colin Ware

https://books.google.ca/books?

hl=en&lr=&id=UpYCSS6snnAC&oi=fnd&pg=PP1&dq=human+perception+and+design&ots=33Az7mZEig&sig =r1Yrhn1_a0Kg98oa1W1lKxGTzkU#v=onepage&q=human%20perception%20and%20design&f=false

Author(s): Christian Norberg-Schulz

https://books.google.ca/books?hl=en&lr=&id=c-

M9iMgQJPIC&oi=fnd&pg=PA7&dq=how+do+we+perceive+architecture&ots=RsSpzzHwiq&sig=r4IPloKiOS9 2c7mwsy3kWa3a9RQ#v=onepage&q=how%20do%20we%20perceive%20architecture&f=false

What cognitive science taught me about design

Author(s): Mel DeStefano

https://www.invisionapp.com/inside-design/cognitive-science-design/

"Perception is the process of recognizing and interpreting sensory stimuli."

The Psychological Impact of Architectural Design

https://scholarship.claremont.edu/cgi/viewcontent.cgi?article=2850&context=cmc_theses

"This thesis endeavors to create an understanding of how that complex relationship evolved and how it works in today's world."

Space and Human Perception

Author(s): Avishag Shemesh, Mosher Bar & Yasha Jacob Grobman

https://faculty.biu.ac.il/~barlab/papers/2015%20Shemesh.pdf

"This paper presents initial results from an ongoing research that examines the connection between human feelings and architectural space."

We mustn't forget the emotional impact of the buildings around us

Author(s): Daniel Libeskind

https://www.cnn.com/style/article/daniel-libeskind-architecture-emotions/index.html

Human Cognition and its effect on design *not written well but interesting*

Author(s): Tushar Hudkar

https://medium.muz.li/human-cognition-and-its-effect-on-design-ed23cfff7f18

www.farrowpartners.ca

Health benefit:





NATURE

Places inspired by nature, natural forms, light &



Spaces that offers a range of physical & sensory experiences & discovery.

Health benefit:

Stimulates the mind & ignites curiosity; encourages physical & mental movement.

Health benefit:



OPTIMISM

Environments that radiate abundance



ENRICHED ENVIRONMENTS



SENSE OF OCCURRENCE

Venues where you feel part of a happening & are engaged with a larger community.

Health benefit:



AUTHENTICITY

Places that are valued for there realness & rootedness.

VITALITY Settings that are

energetic & restorative; facilitate the growth & flow of people & ideas.

Health benefit:

Amplifies sense smell, sight & hearing.

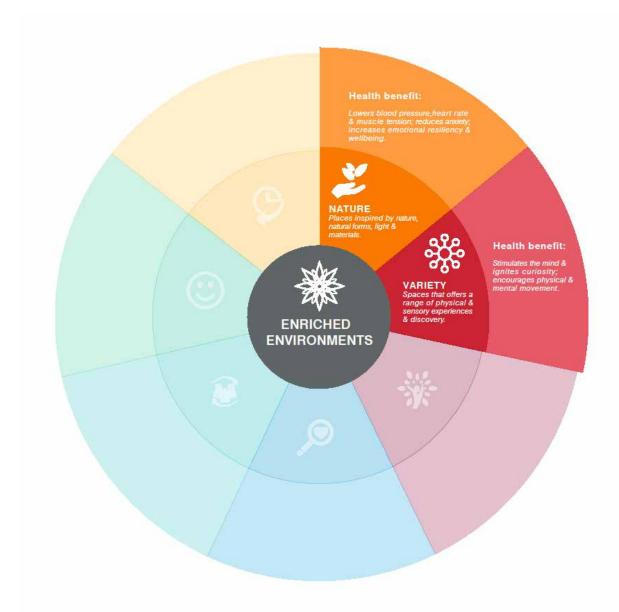
Health benefit:

common elements Health benefit: NATURE Places inspired by nature, natural forms, light & Health benefit: Health benefit: Stimulates the mind & ignites curiosity; encourages physical & VARIETY Spaces that offers a **OPTIMISM** range of physical & Environments that radiate abundance sensory experiences & discovery. **ENRICHED ENVIRONMENTS** VITALITY SENSE OF OCCURRENCE Settings that are Venues where you feel part of a happening & are engaged with a larger community. energetic & restorative; facilitate the growth & flow of people & Health benefit: Health benefit: **AUTHENTICITY** Amplifies sense smell, sight & hearing. Places that are valued for there realness & rootedness. Health benefit:

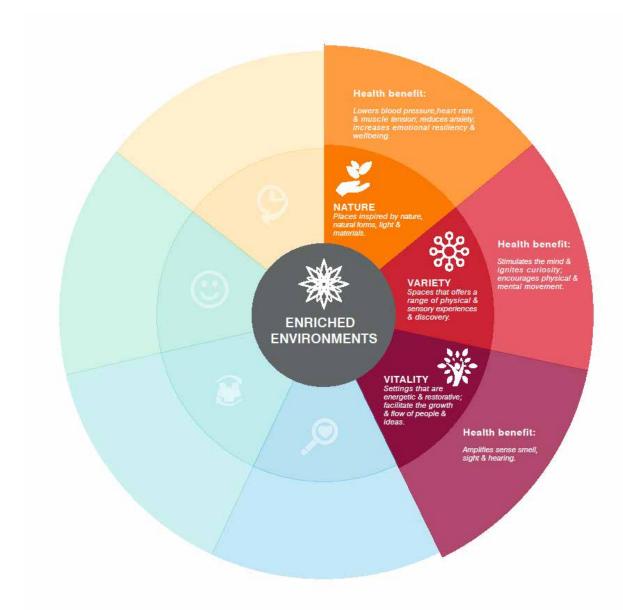
nature



nature variety



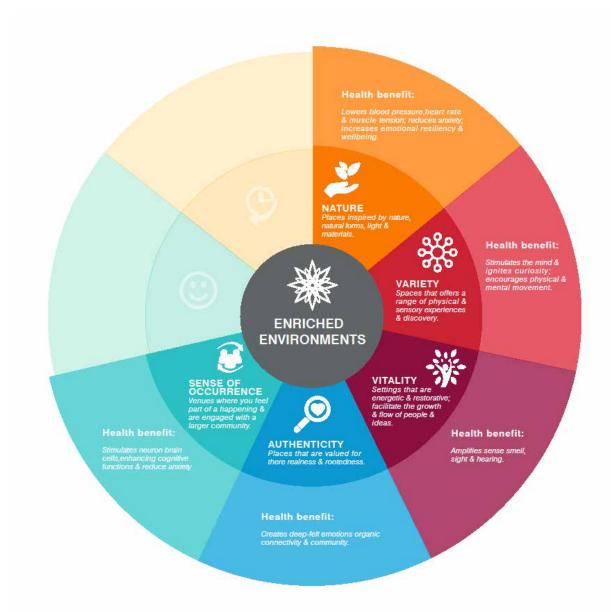
nature variety vitality



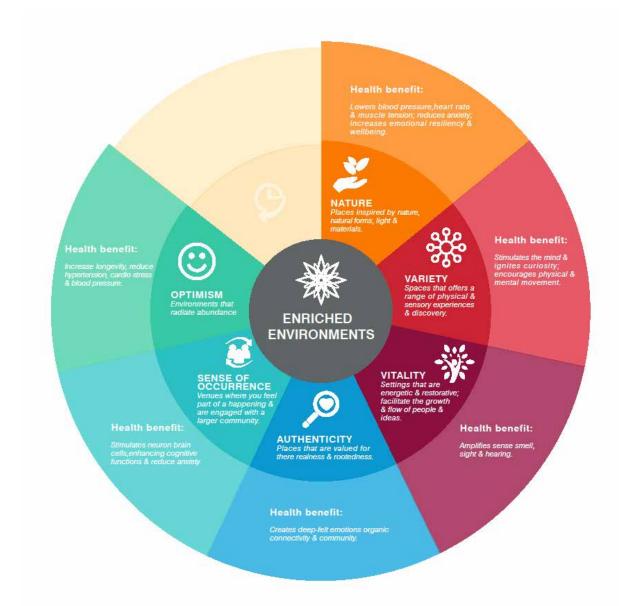
nature
variety
vitality
authenticity



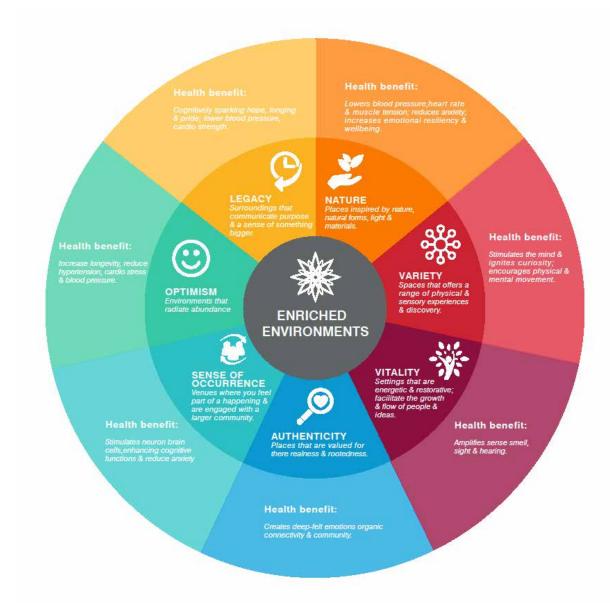
nature
variety
vitality
authenticity
sense of
occurrence



nature variety vitality authenticity sense of occurrence optimism



nature variety vitality authenticity sense of occurrence optimism legacy



nature variety vitality authenticity sense of occurrence optimism legacy



Health benefit

Cognitively sparking hope, longin & pride, lower blood pressure, cardio strength.

Health benefit:

Lowers blood pressure, heart rate & muscle tension, reduces anxiety increases emotional resiliency of wellbeing.



LEGAC

Surroundings that communicate purpose & a sense of something bigger.



NATURE

Places inspired by nature, natural forms, light & materials.



Spaces that offers a range of physical & sensory experiences & discovery.

Health benefit:

Stimulates the mind & ignites curiosity; encourages physical & mental movement.

Health benefit:

Increase longevity, reduce hypertension, cardio stress & blood pressure.



OPTIMISM

Environments that radiate abundance



ENRICHED ENVIRONMENTS



SENSE OF OCCURRENCE

Venues where you feel part of a happening & are engaged with a larger community.

Health benefit:

Stimulates neuron brain cells, enhancing cognitive functions & reduce anxiety



AUTHENTICITY

Places that are valued for there realness & rootedness.



ideas.

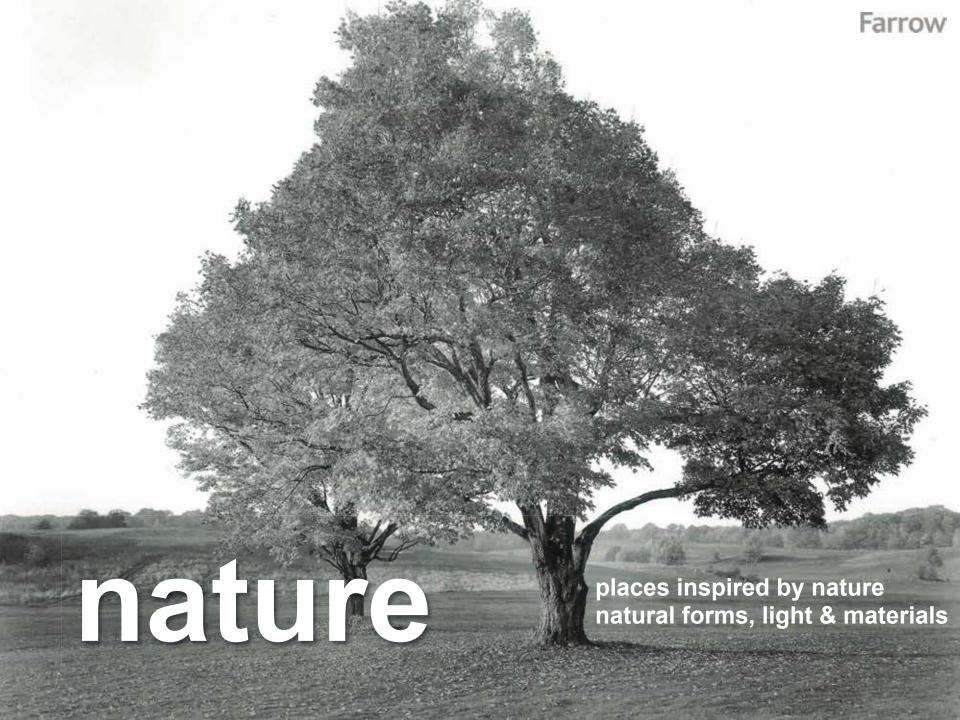
Health benefit:

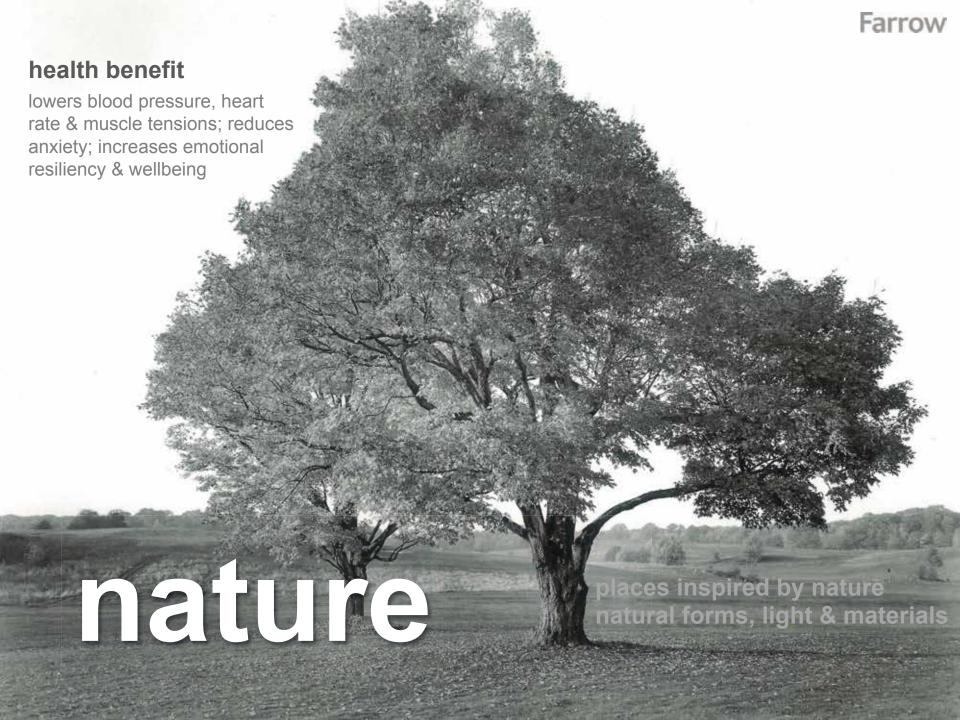
Amplifies sense smell, sight & hearing.

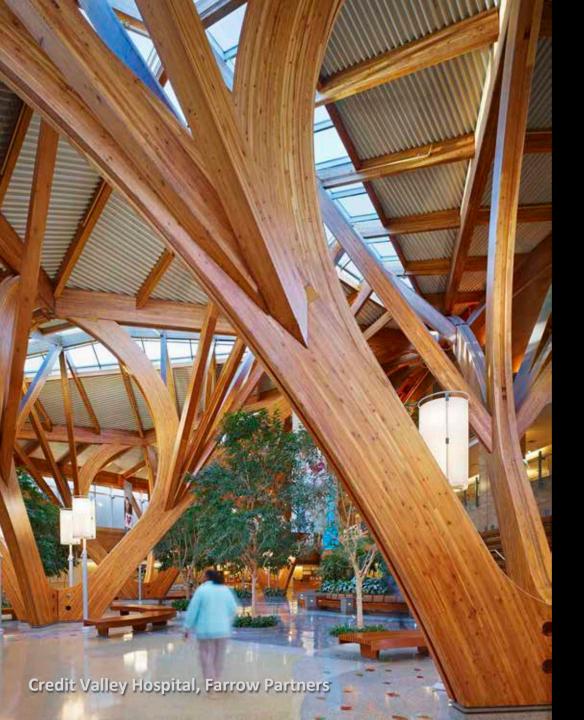
Health benefit:

Creates deep-felt emotions organic connectivity & community



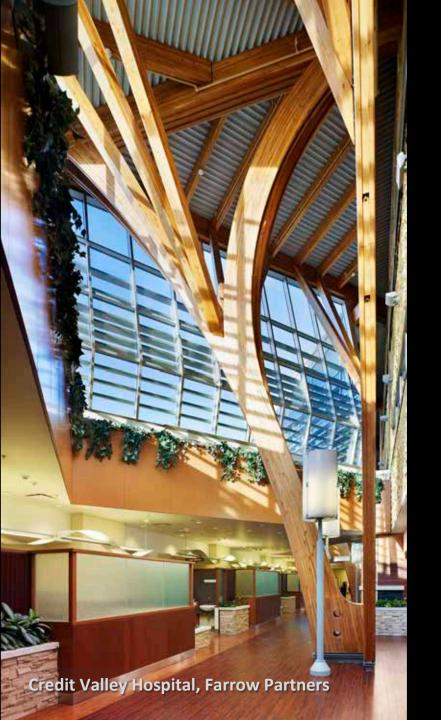


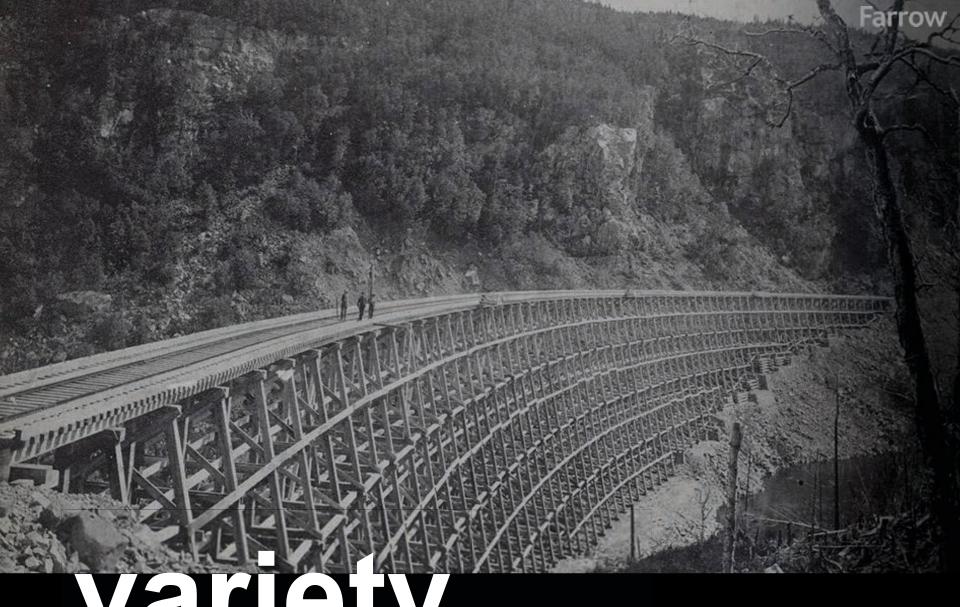




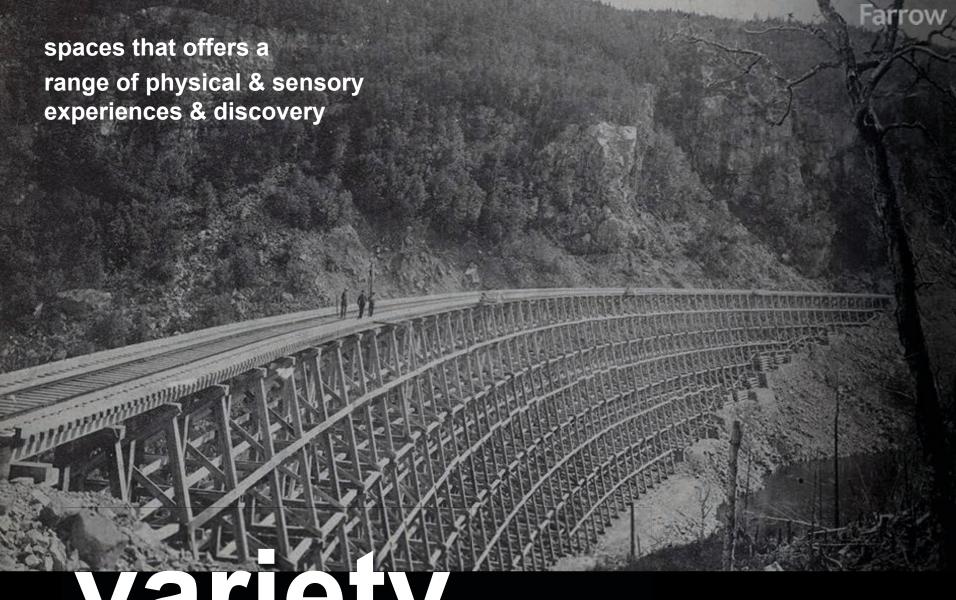




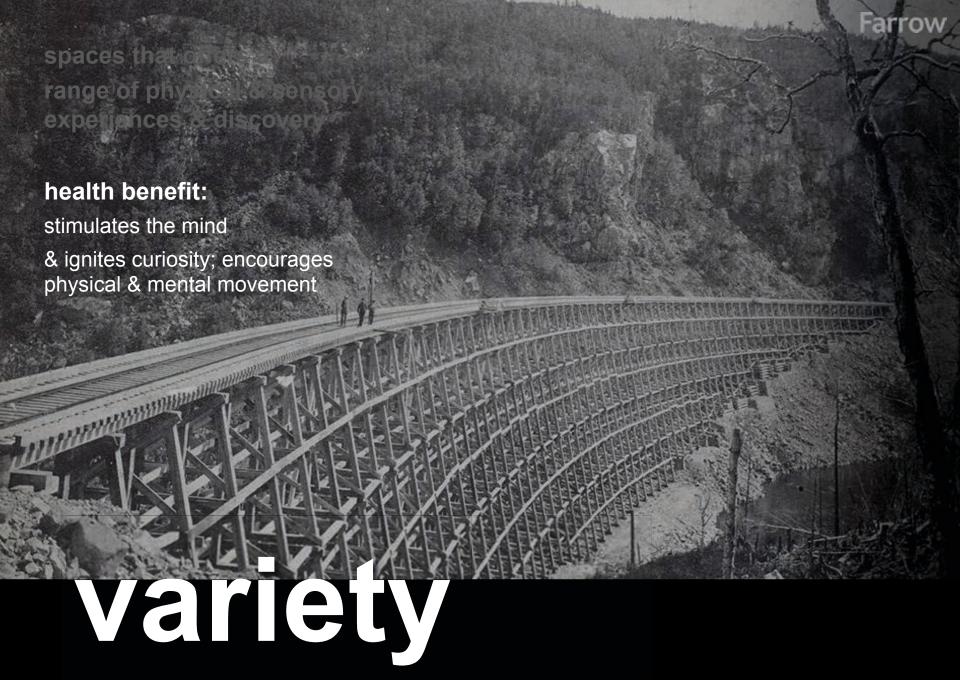


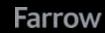


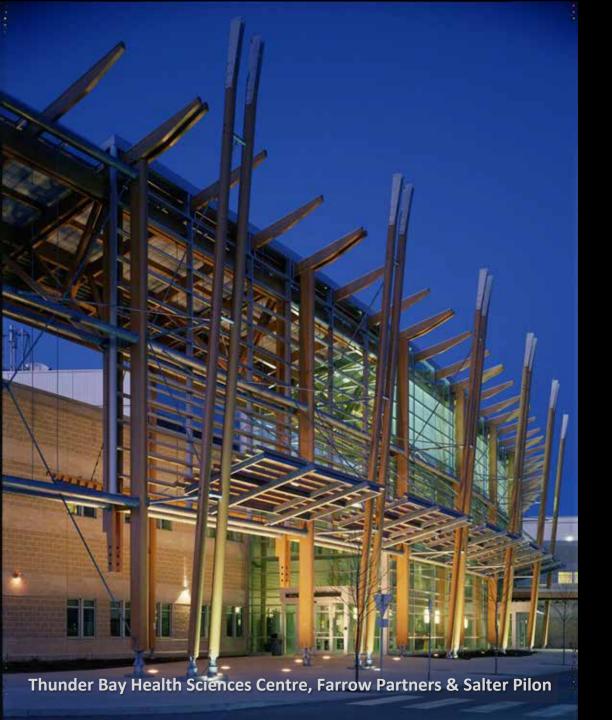
variety



variety





























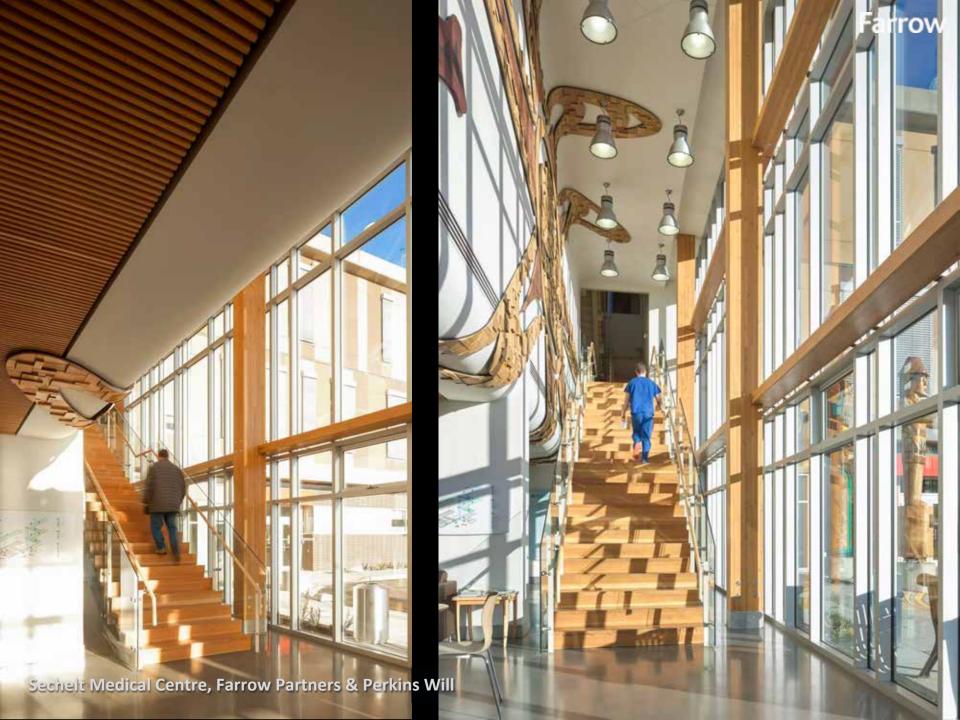


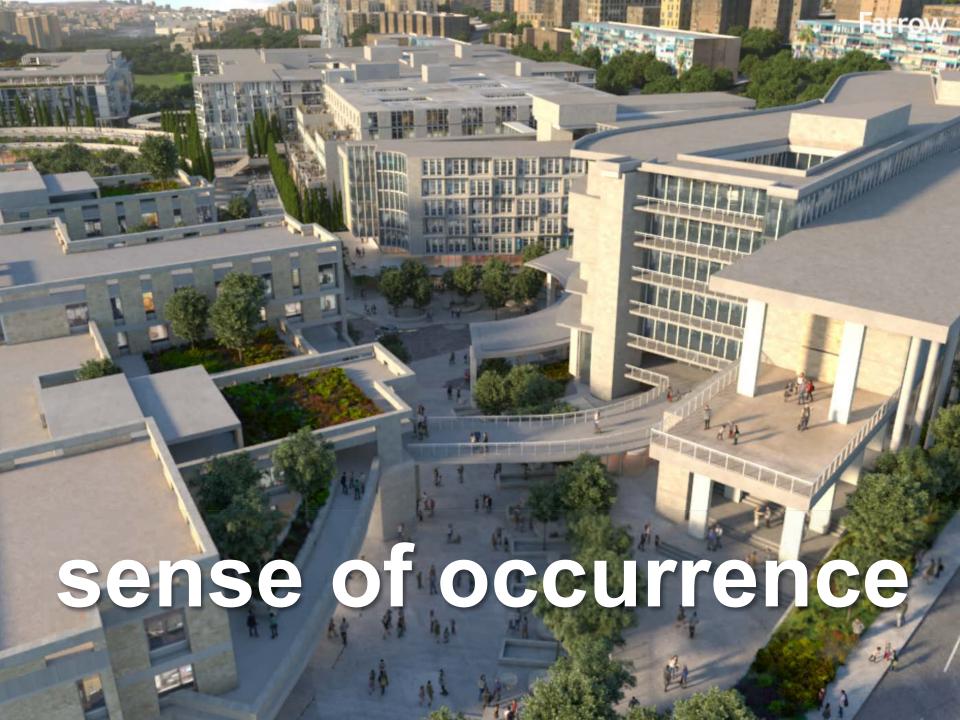
























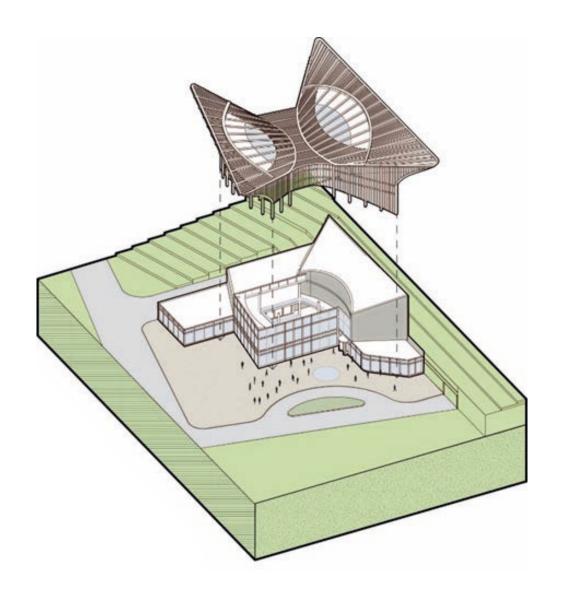






























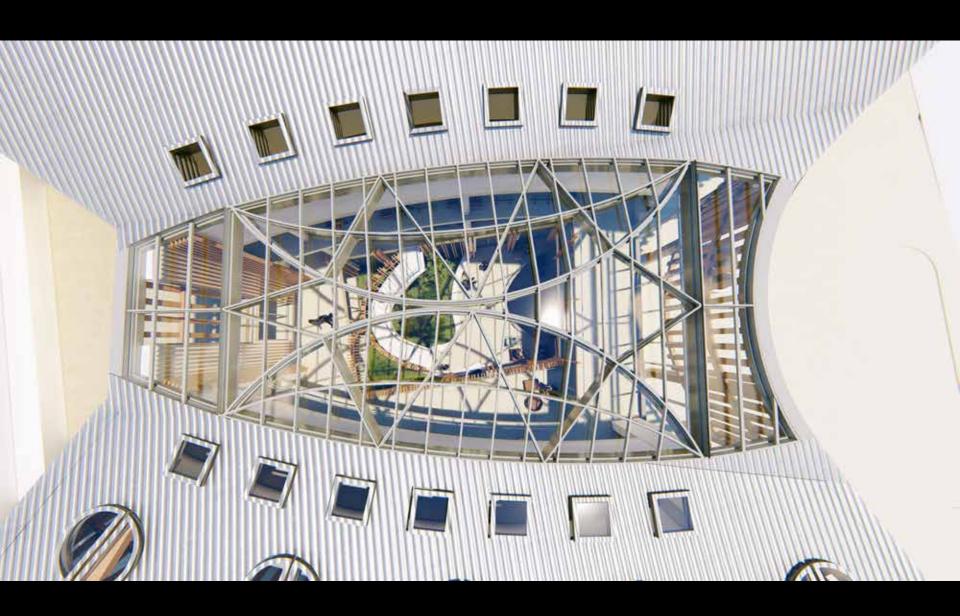














nature variety vitality authenticity sense of occurrence optimism legacy

bolster attention, memory, learning & the quality of social interaction

thrive

