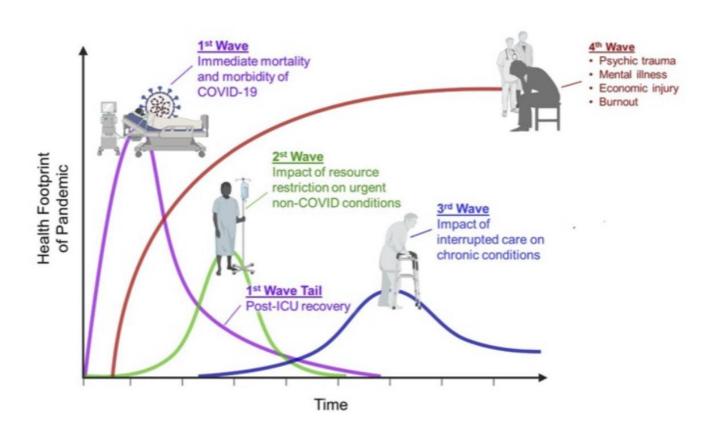
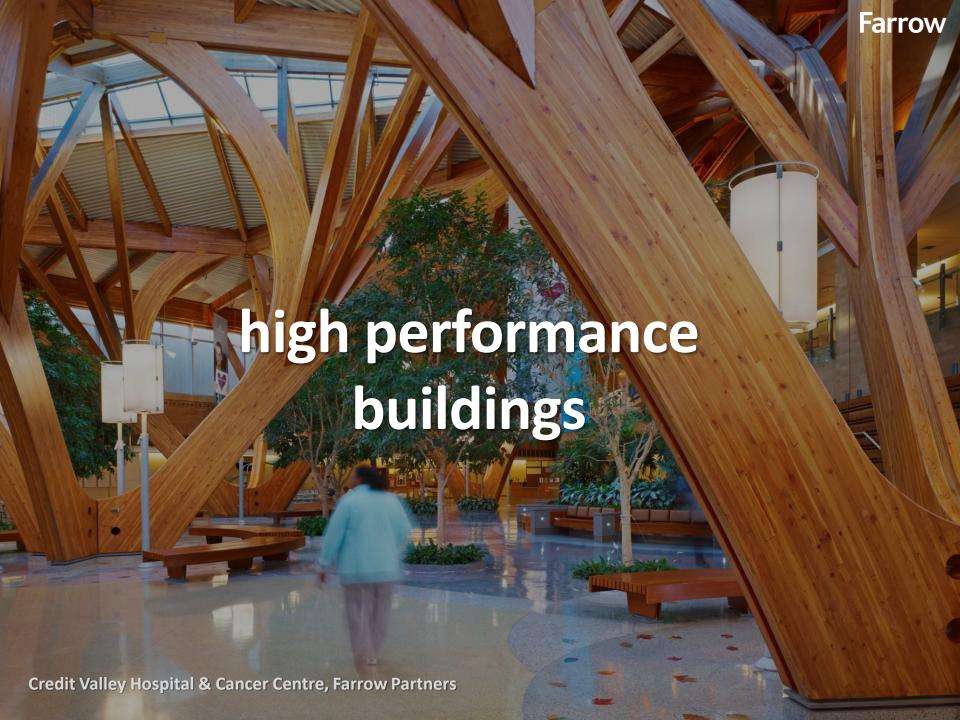


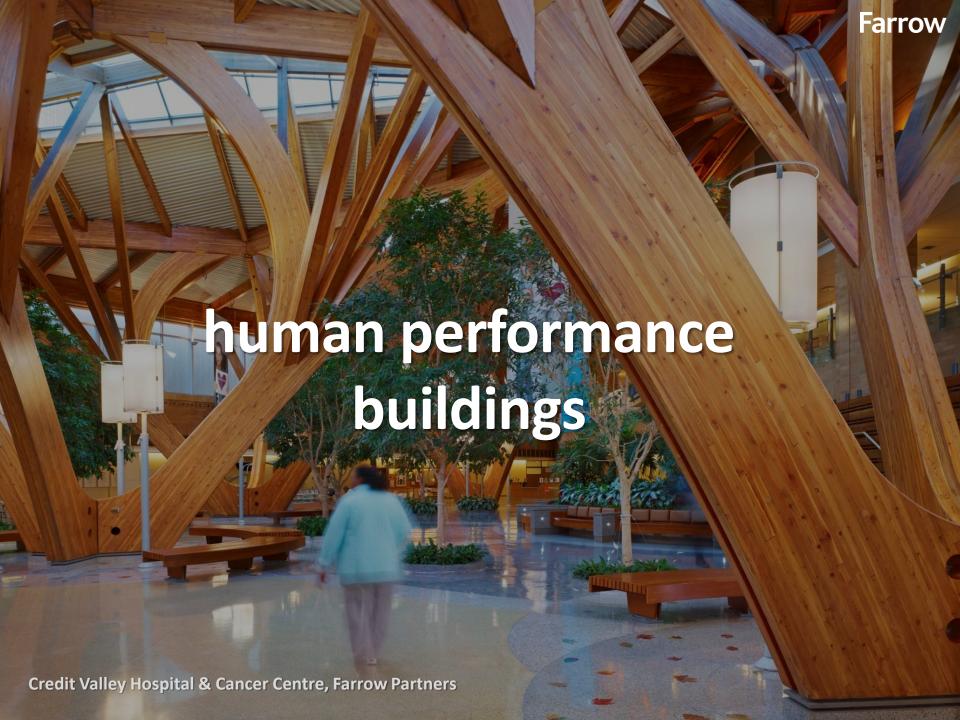


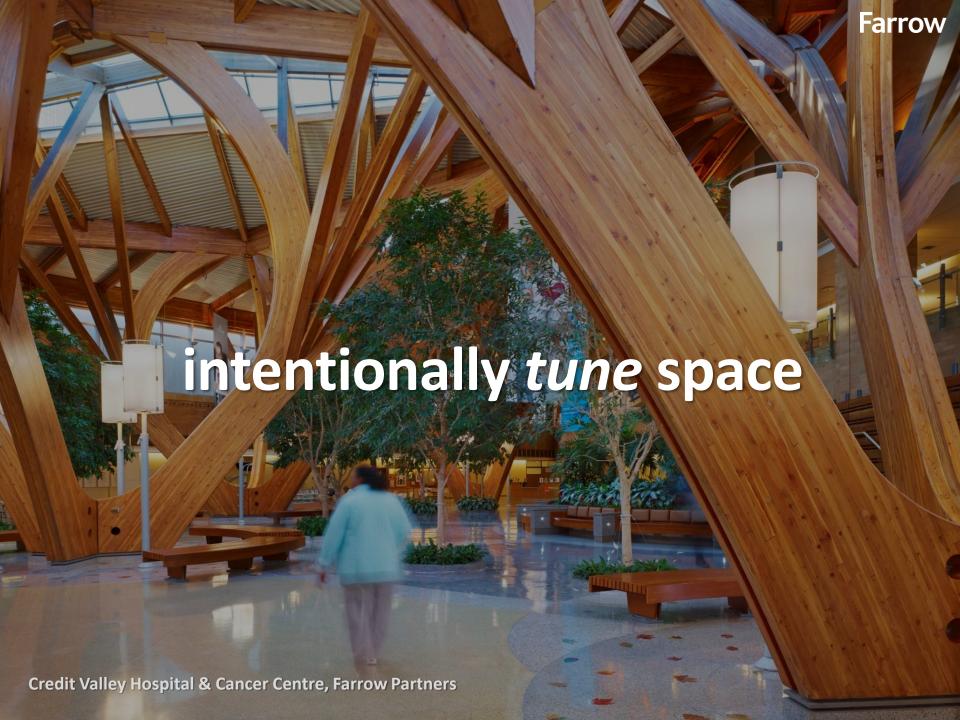


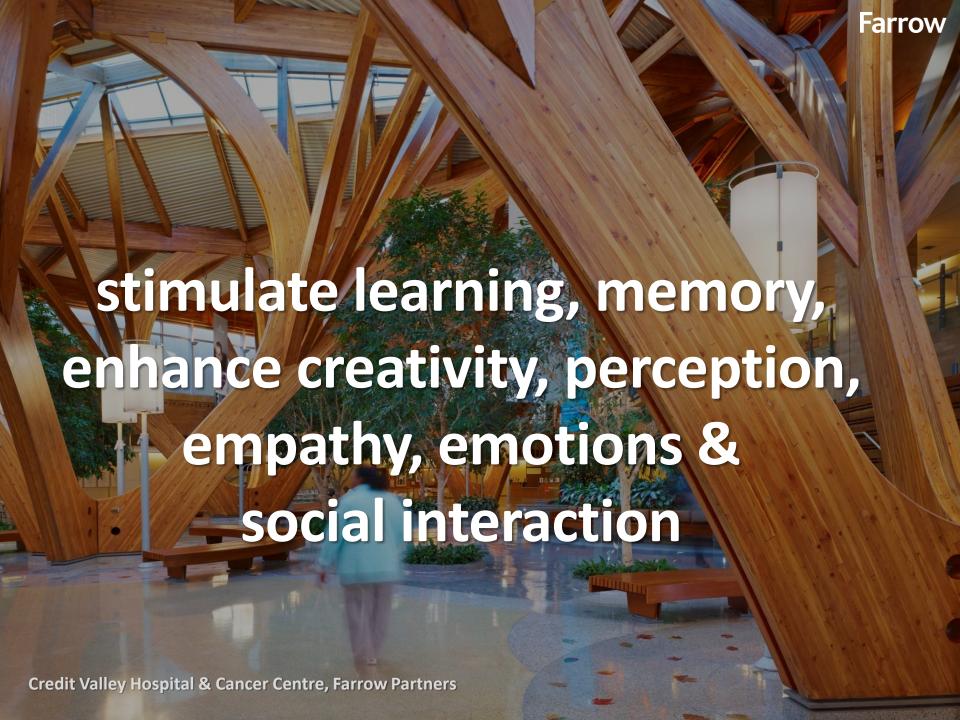
## **Health Footprint of a Pandemic – The Four Waves**



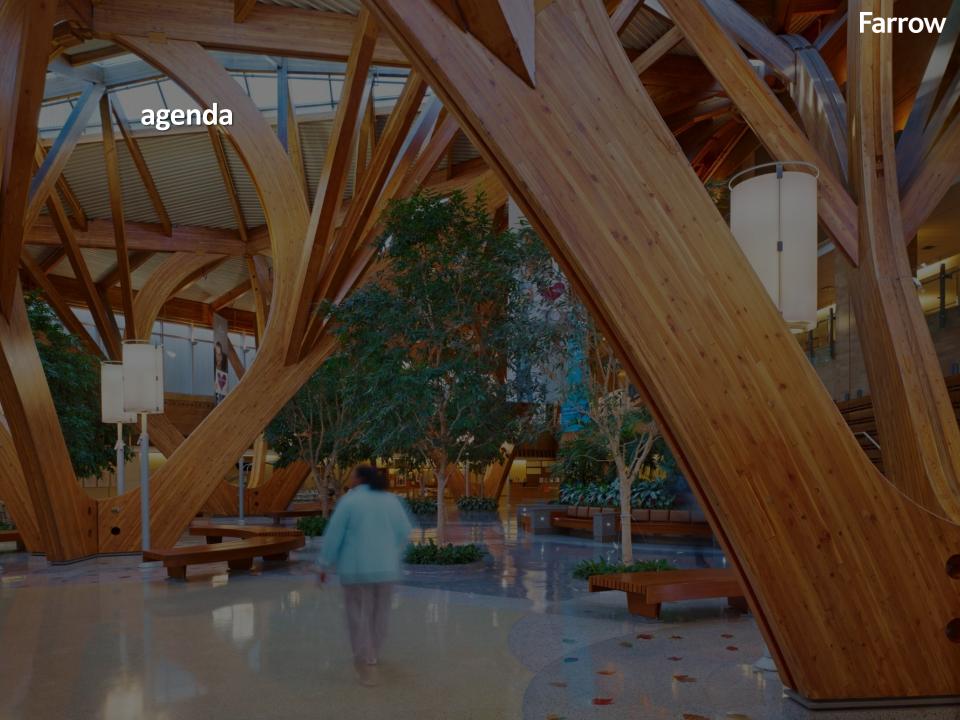




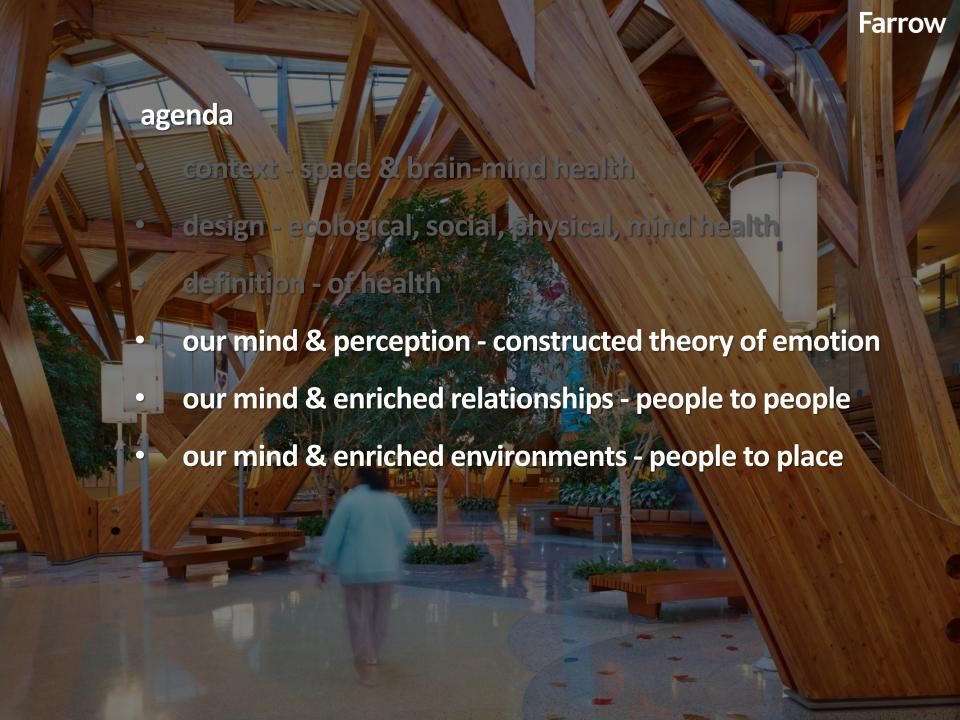


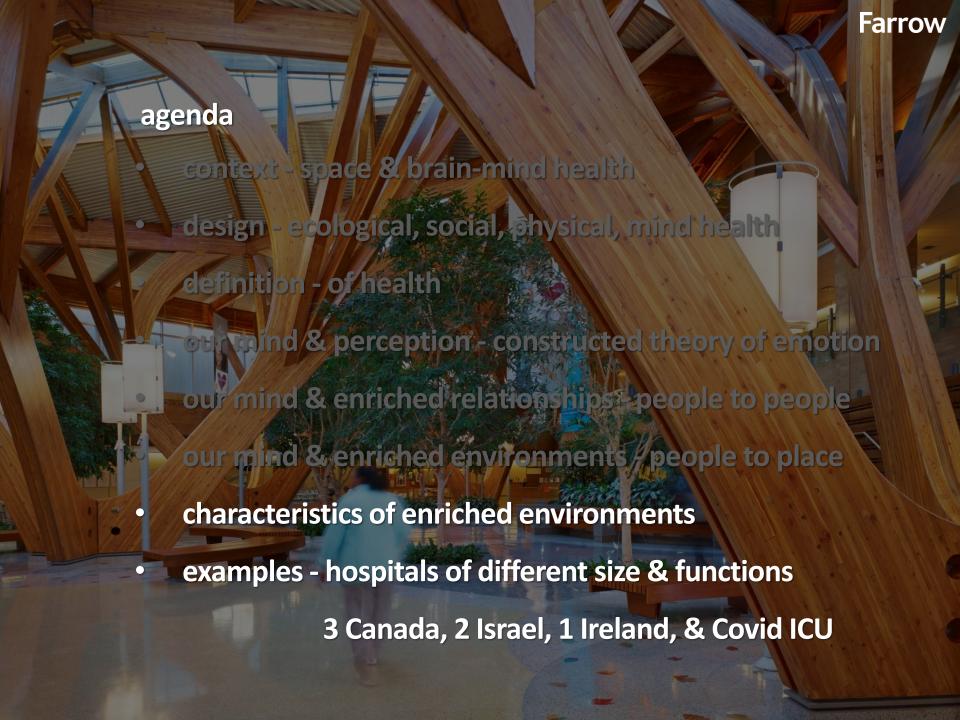






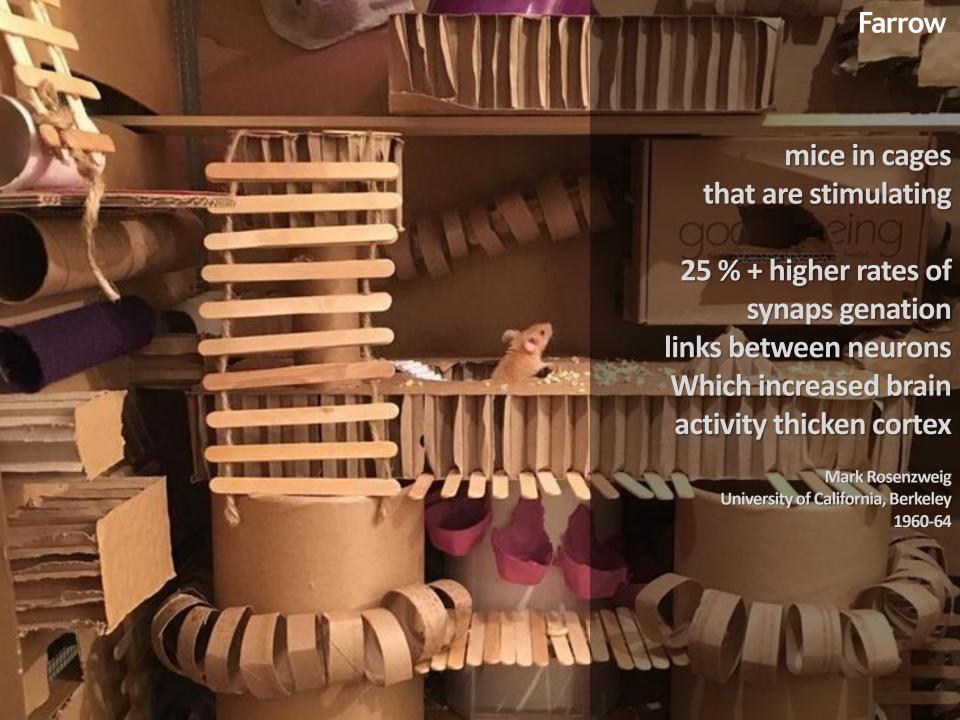


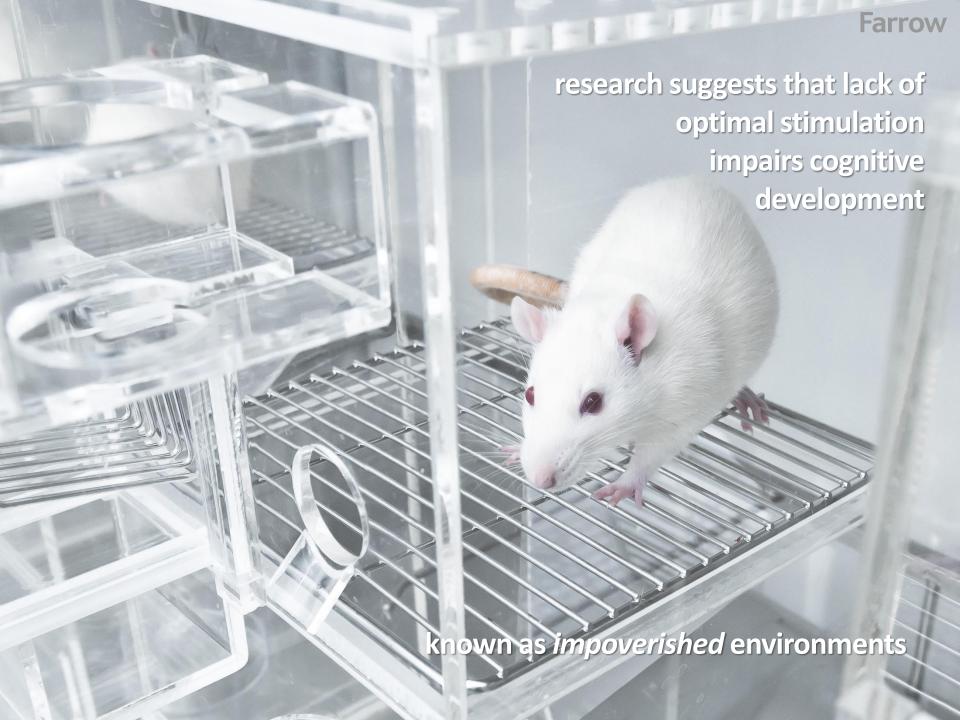




## Farrow









Robert King part of 'Angola Three'

spent 29 years solitary confinement 23 hours a day windowless prison cell virtually no human contact

damaged hippocampus memory, spatial orientation & emotion regulation lost ability to navigate, unable to recognize faces

areas of his brain not being used whither

**Farrow** 'white room torture' impoverished environments





























## is this relevant?

## to what & how we build













Rating systems

# **LEED Building Certification**

**Living Building Challenge** 

Encouraging cross discipline collaboration



**Fitwel Rating System** 

**Delos WELL Building Standard** 

**NYC Active Design Guidelines** 

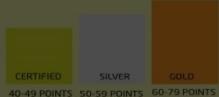






LEED is administered by the US Green Building Council.

The Ratings





Rating systems

Within each of the credit categories, there are specific prerequisites 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.



Encouraging cross discipline collaboration



TRANSPORTATION Access to variety of transport and/or credit for constrained



Using sustainable materials Smart use and reuse of water & reducing waste

Minimising impact on

ecosystems & water resources to natural light & views





environmental priorties

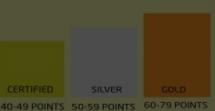


LEED is administered by the US Green Building Council.

The Ratings



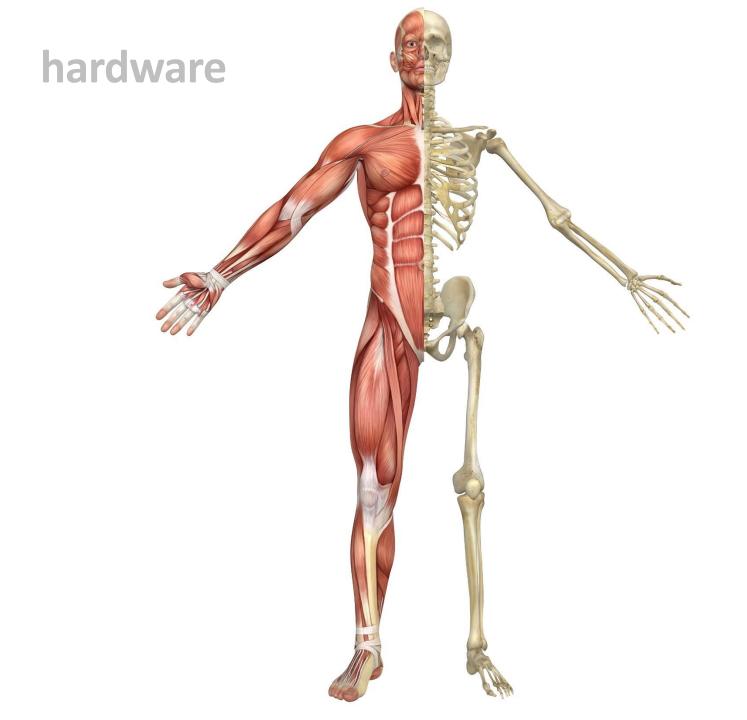
SILVER

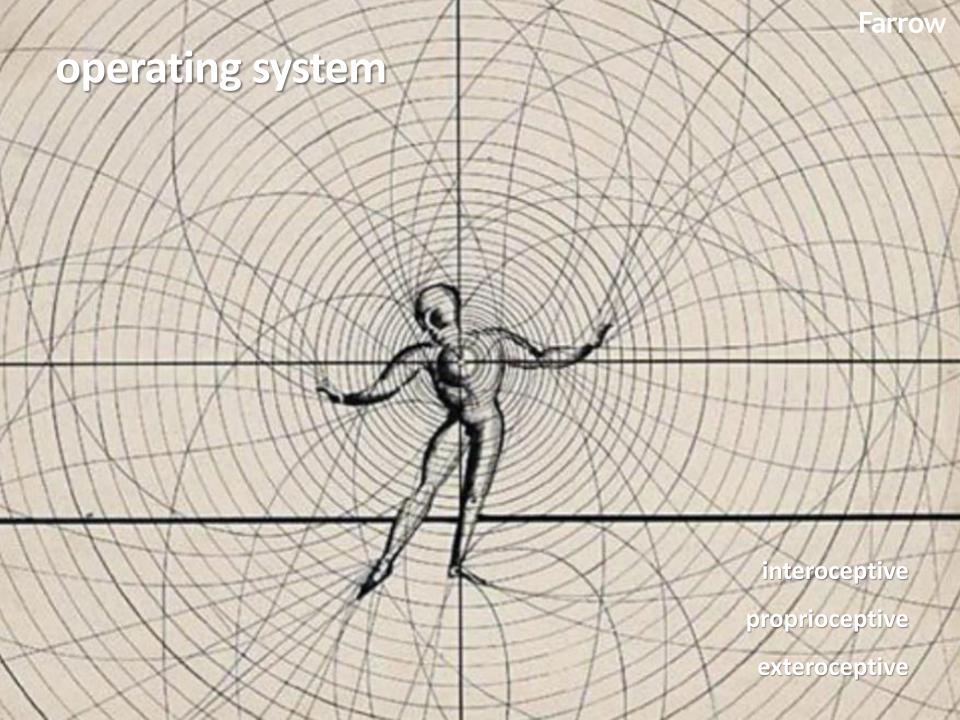


WT SUSTAINABILITY

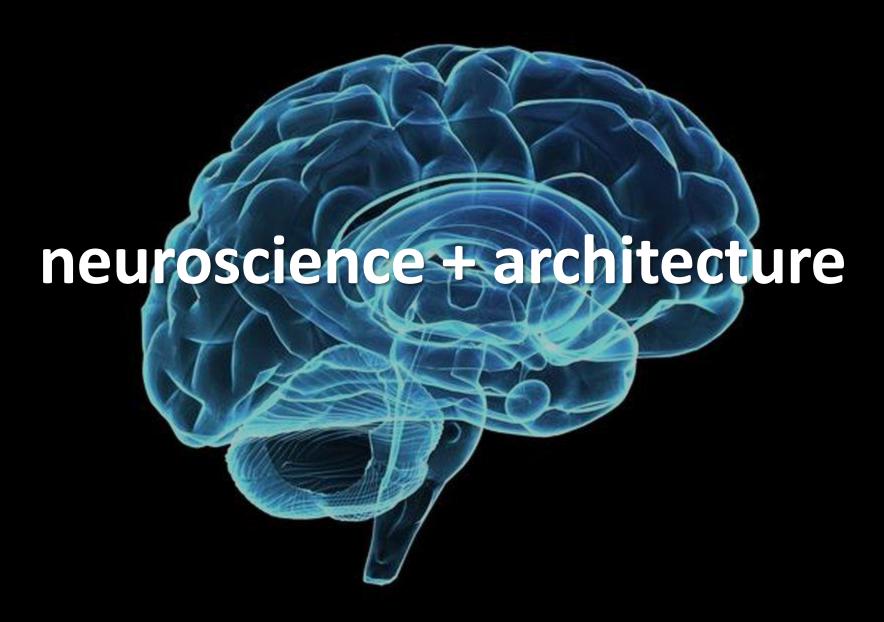
www.wtsustainability.com.au

**Farrow** 

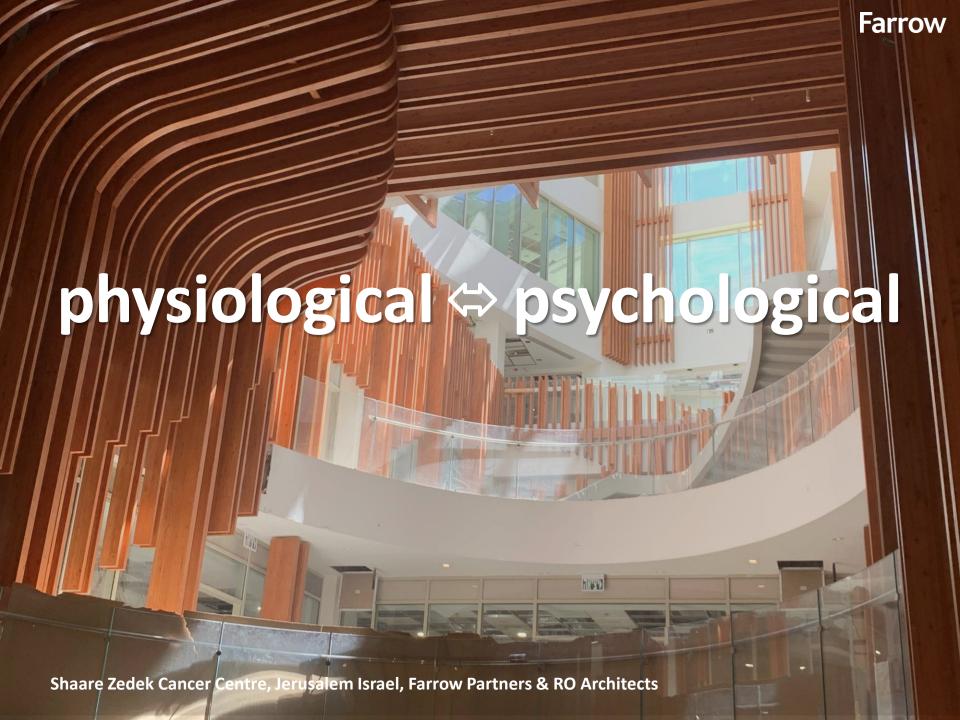


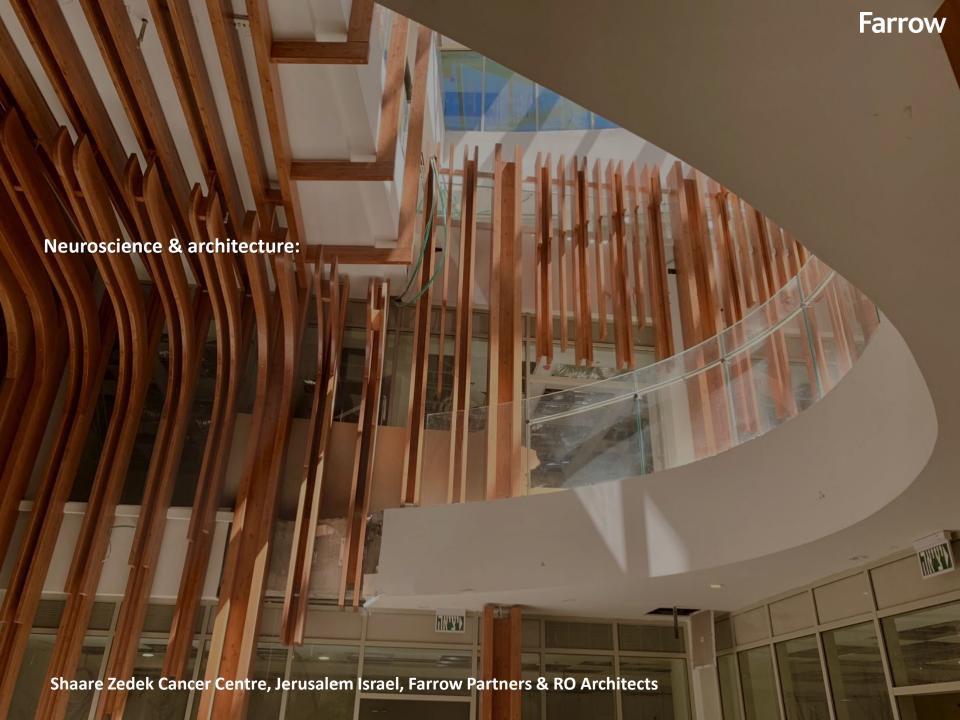


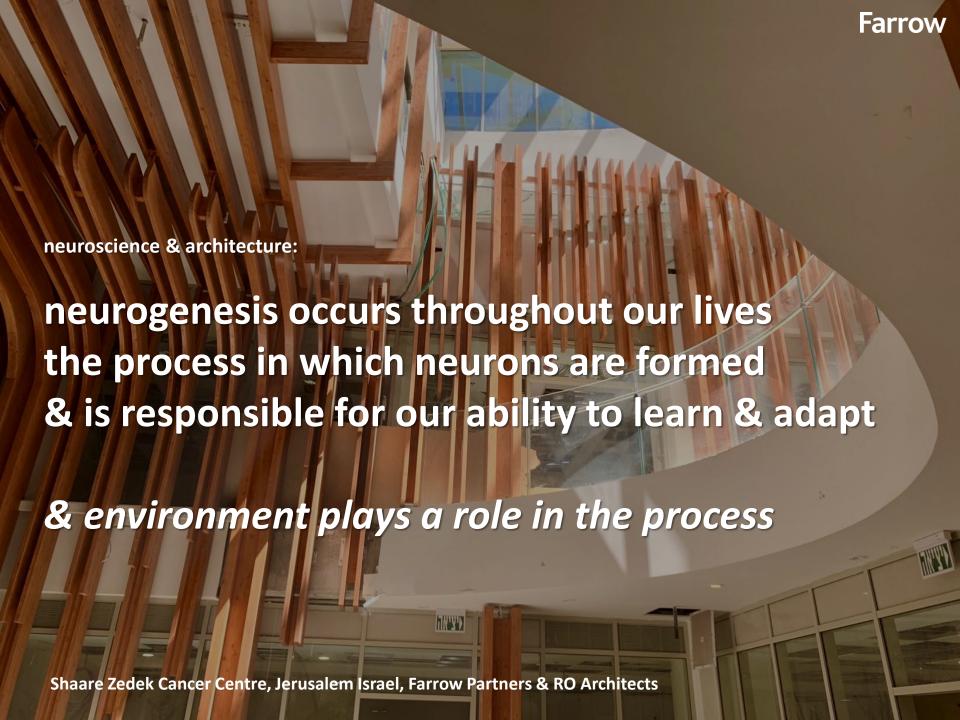


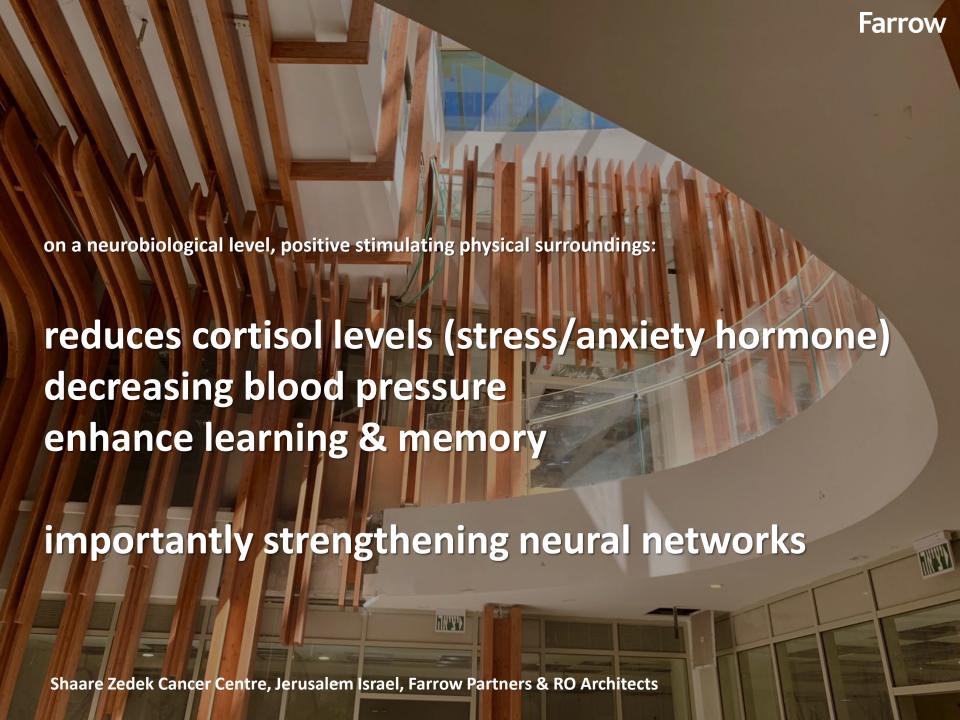








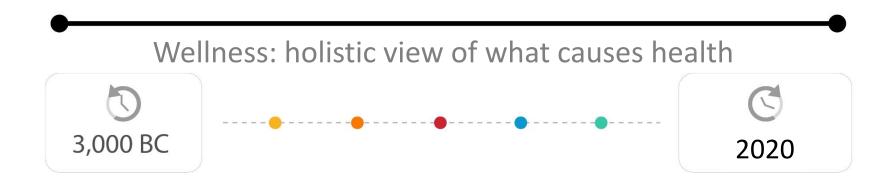






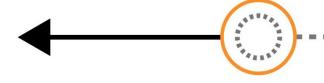


### **Context**



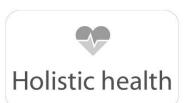
# **Pathogenic**

# Salutogenic





1900's



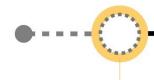
## **Pathogenic**

## Salutogenic



there are 8,000 causes of disease and only 80 known causes of health

## 3,000 BC Traditional Chinese Medicine



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



### 1,000 BC First Nation Aboriginal Health & Wellbeing



Intersecting circles of health — concept of individual, enviro, culture, economic & societal



### 375 BC Ancient Greek - Aristotle



Eudaimonia – concept of *human flourishing* central concept of ethics & philosophy



### **500 BC Ancient Greek - Hippocrates**



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



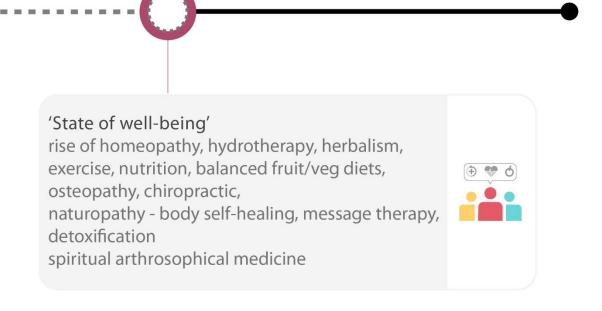
### **50 BC** Ancient Roman Medicine



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



### 1600 - 1800's Wellness Concept Established



### **1854 London England Cholera Epidemic**



John Snow English physician who discovered medical hygiene - connected the dots between the handle of a water well & spread of the disease 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



## 1920+ Life Expectancy Doubles, Poverty Cut, Prosperity



### 1940's Rise of Chronic Disease



Reduced daily physical exertion

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

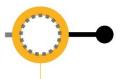


2014 first Global Wellness Economy Monitor report measures size of global wellness economy industries enabling wellness activities & lifestyles into daily life 2015 global healthcare expenditures \$7.3 trn 2015 wellness economy \$3.7 trn 2017 wellness economy \$4.2 trn - 6.4% growth annually 5.3% of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



Global Wellness Institute

#### **2022 Optimal Health Acceleration**



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



# accelerate optimal health

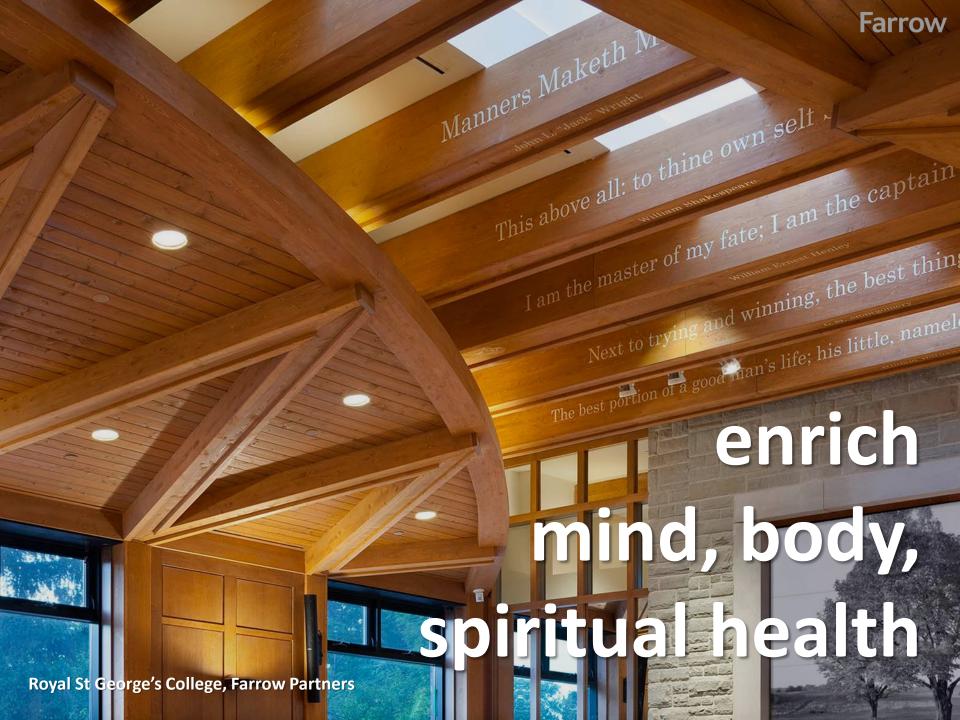
# how can space accelerate optimal health

## architecture

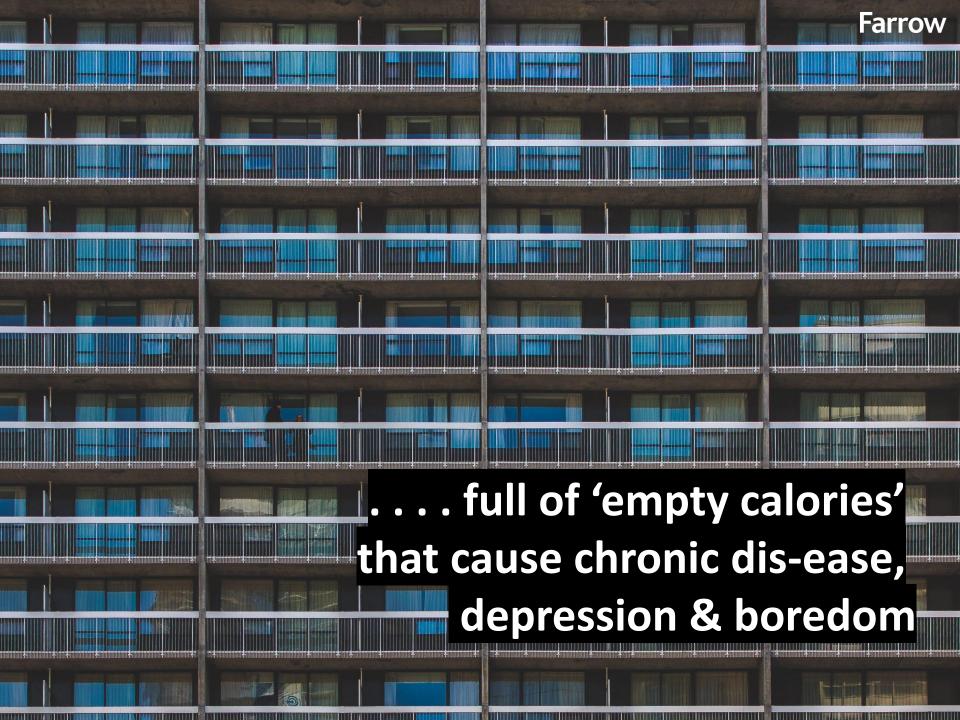
is like

food











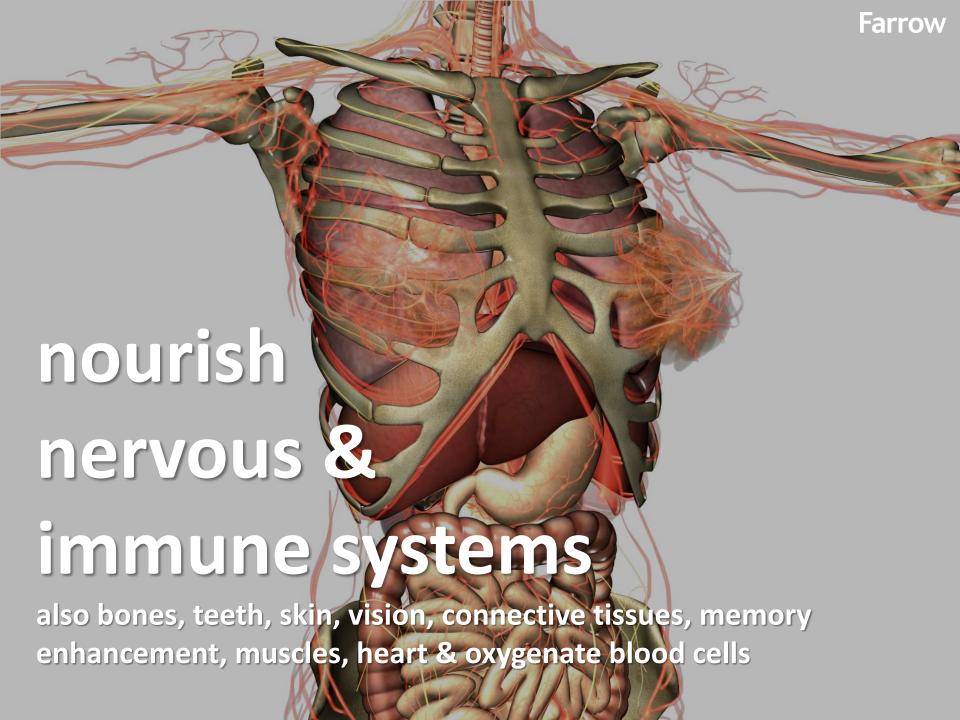


## transactional space











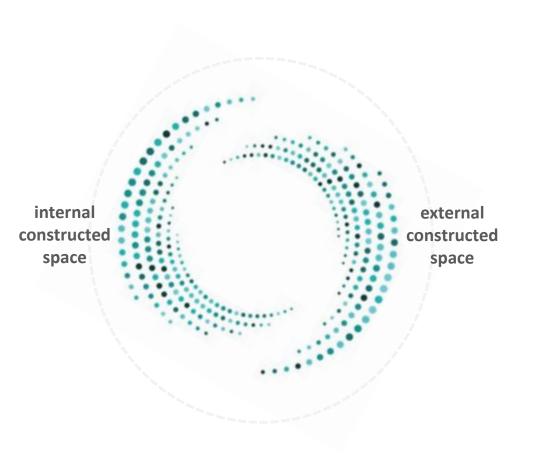


perception
internal & external constructed space



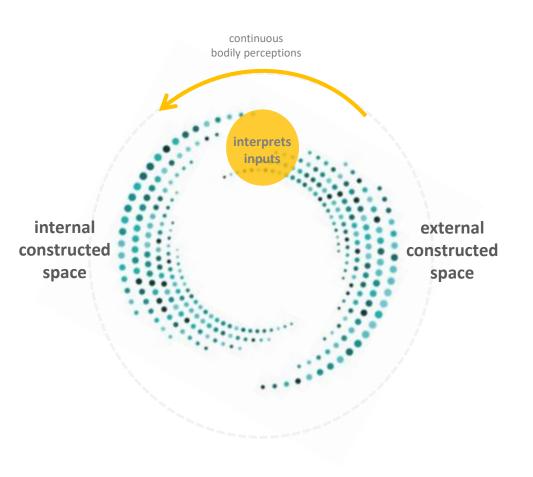
#### constructed theory of emotion

Dr Lisa Feldman Barrett, 1987



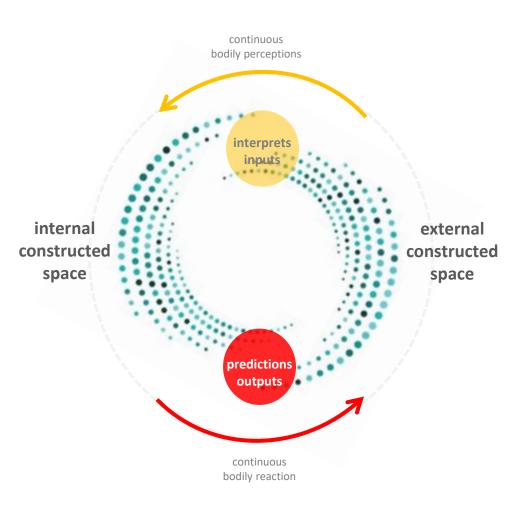
#### constructed theory of emotion

Dr Lisa Feldman Barrett, 1987



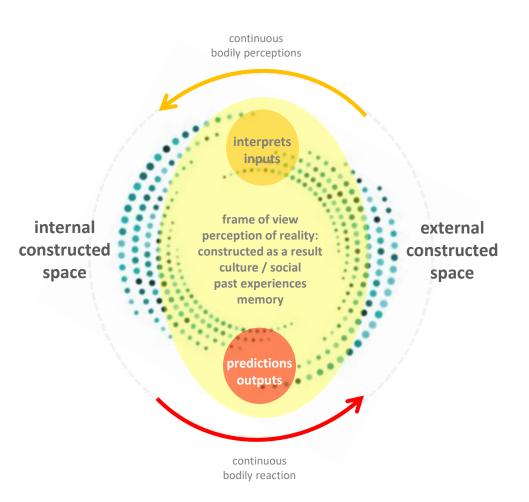
**inputs:** interoceptive, proprioceptive & extroceptive

inputs are interpreted



**outputs:** interoceptive, proprioceptive & extroceptive

construct outputs - predictions

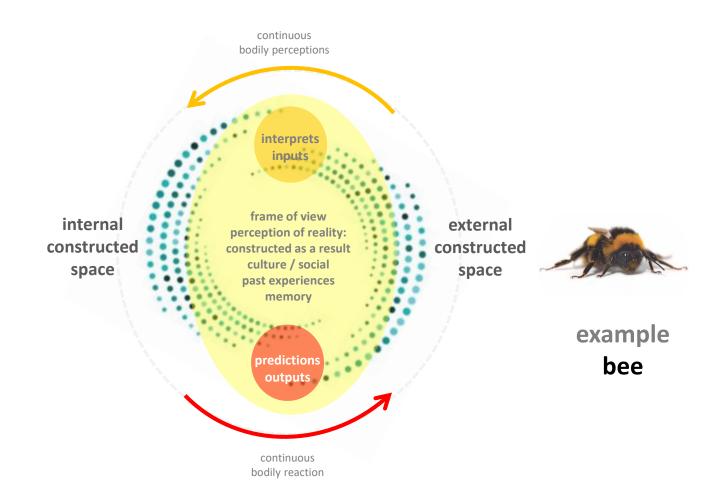


#### constructed reality & emotions

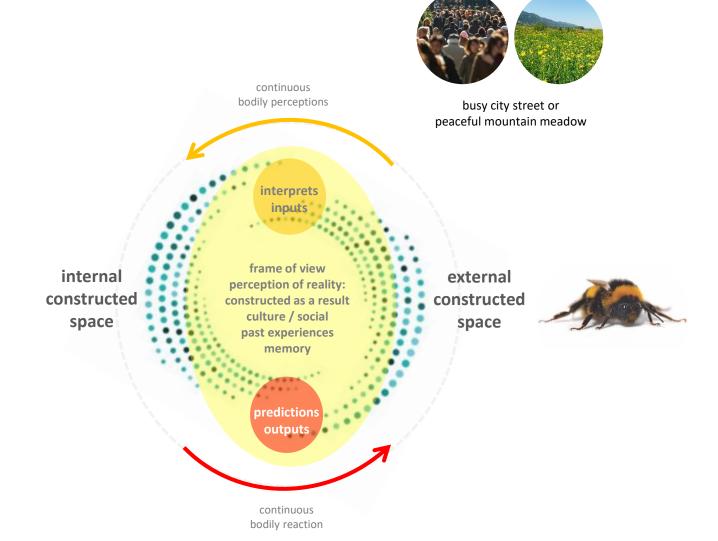
frame of view perception of reality

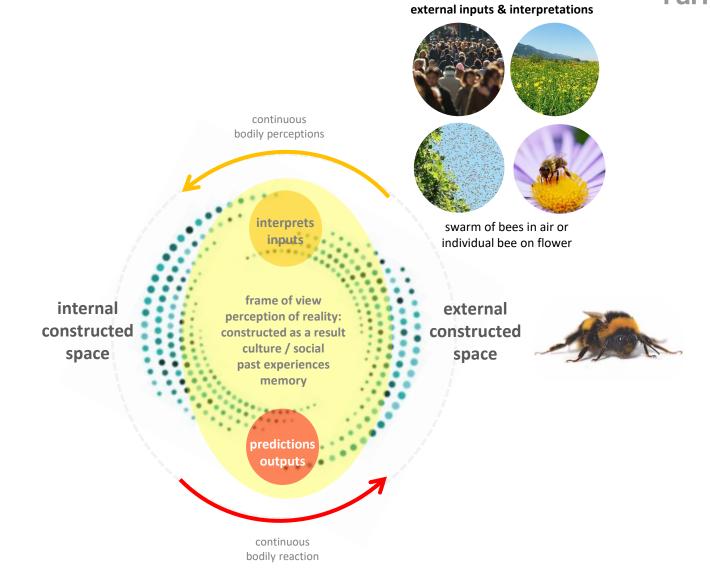
constructed as a result

- culture / social (learned)
- past experiences (remembered)

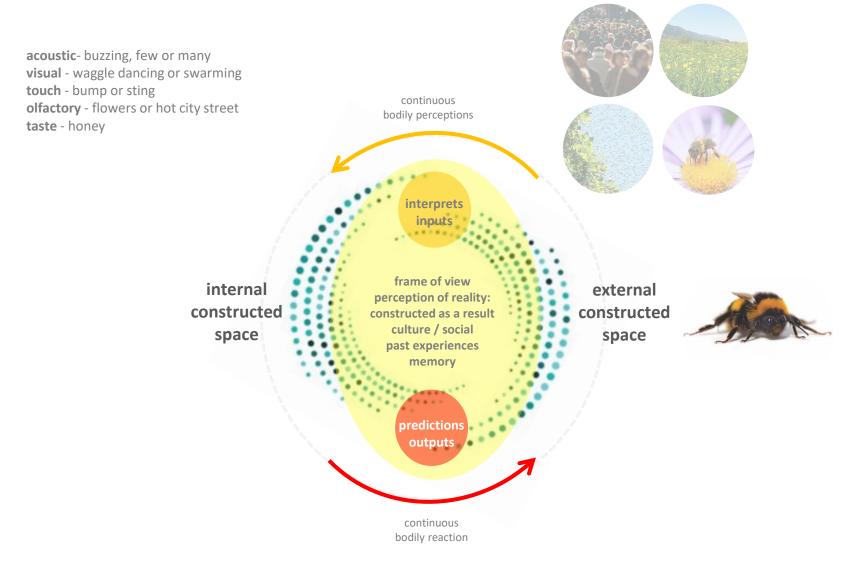


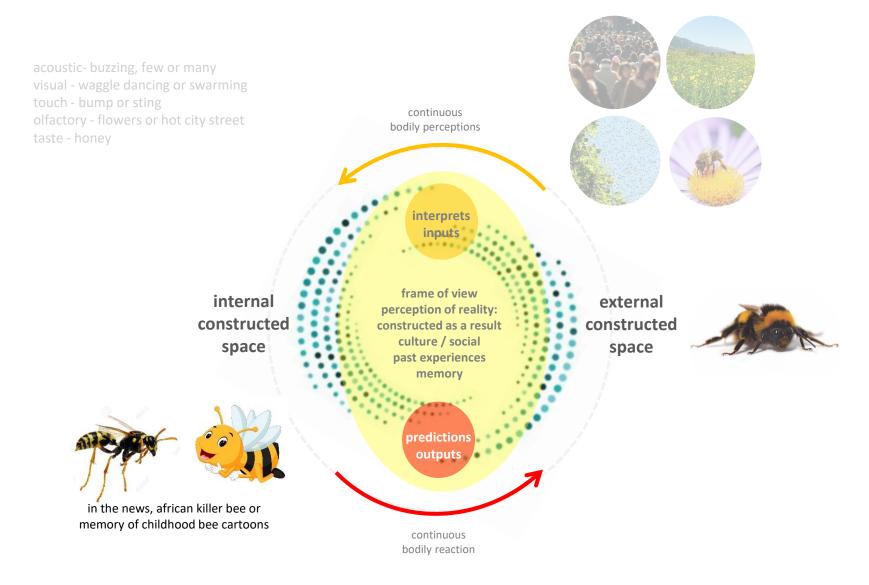
external inputs & interpretations

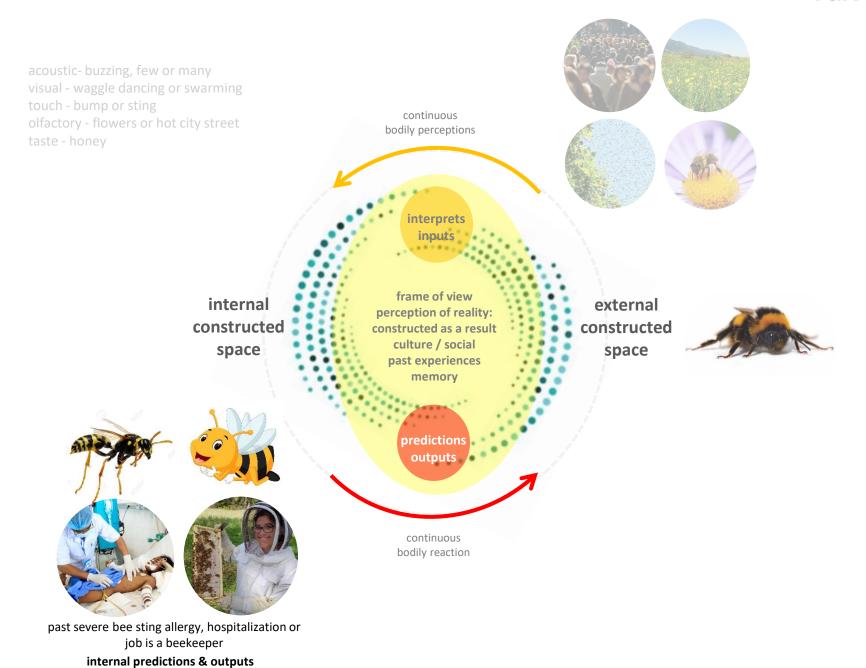


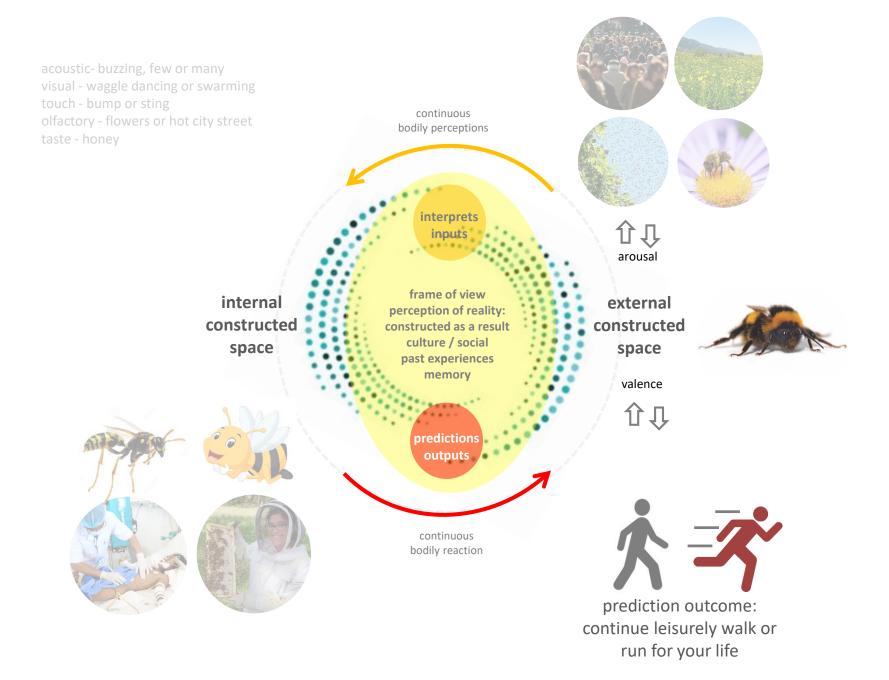


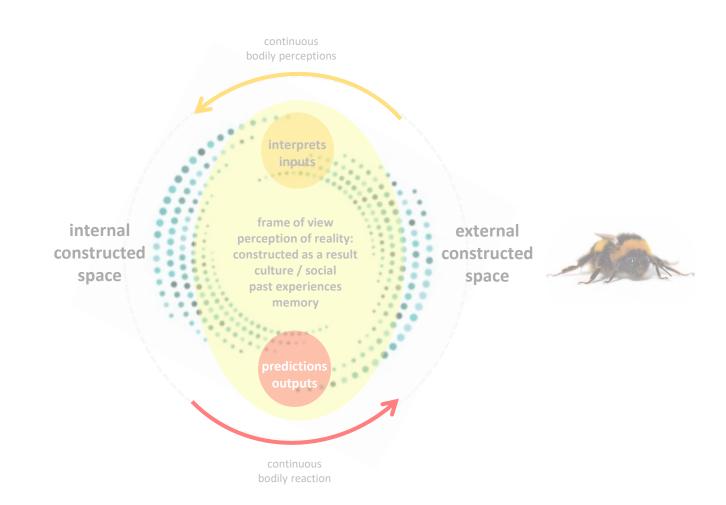
internal inputs & interpretations







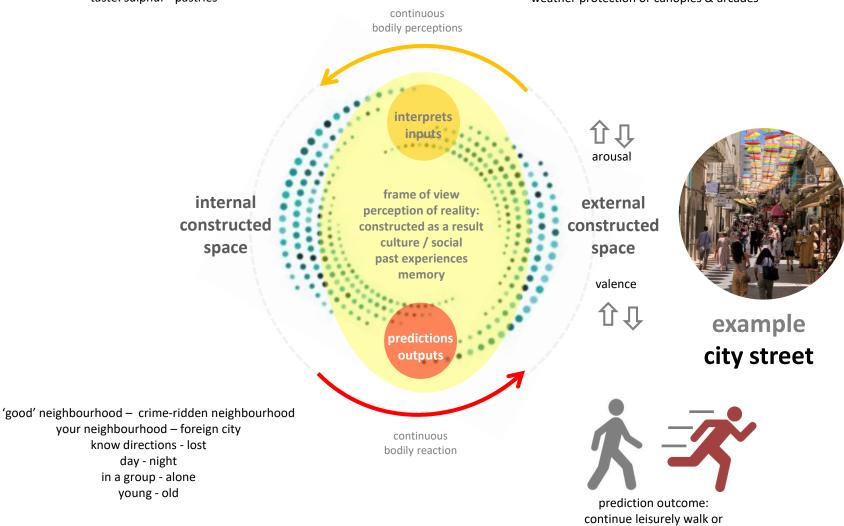


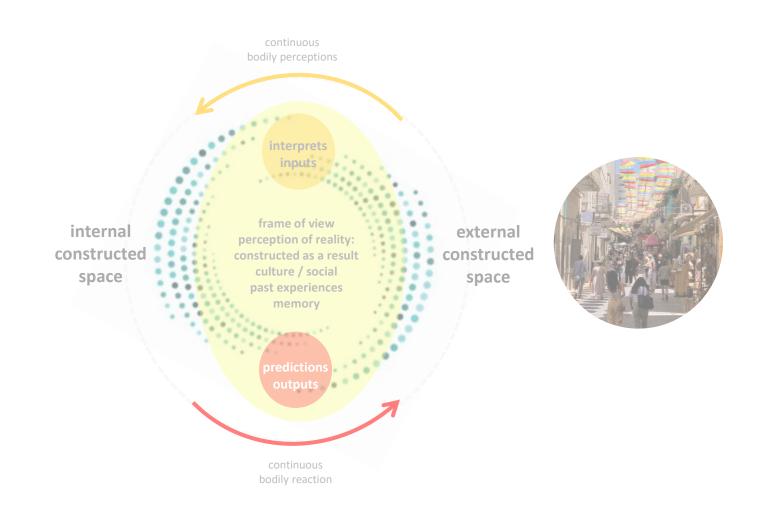


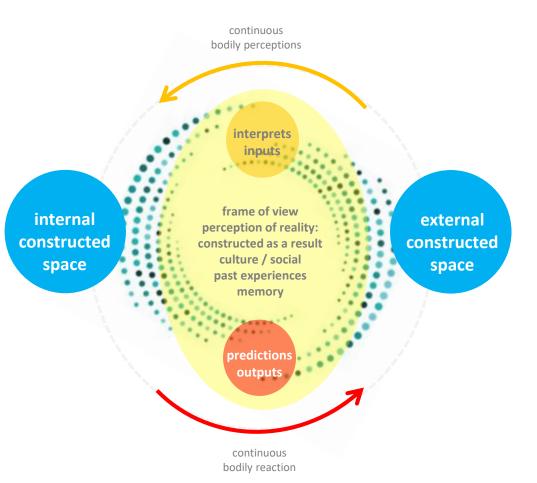
acoustic: car brakes – footsteps on cobblestones
visual: barren - active shop fronts
touch: asphalt - cobblestones
olfactory: car exhaust – trees & baked bread
taste: sulphur - pastries

car dominated or pedestrian only asphalt & concrete or street trees & planting no street furniture or benches & cafe seating opaque windows or retail, cafes & bakeries weather protection or canopies & arcades

run for your life







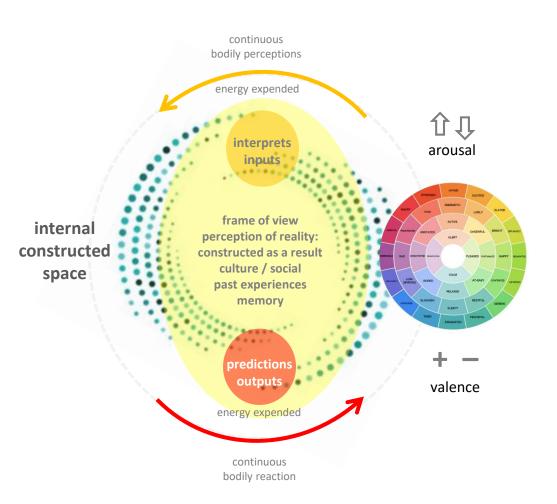
#### neuroscience & architecture

our mind constructs enriching relationships person to place



in a similar way as to how we construct our *person to person* relationships







#### emotional responses shaped through affect - arousal & valence

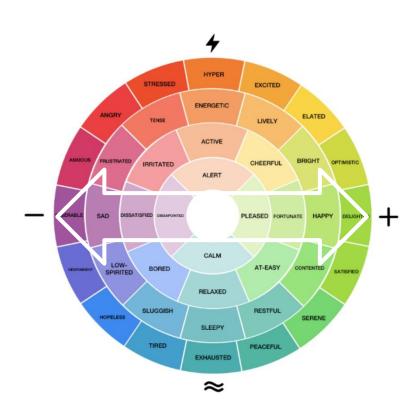
circumplex - for constructed emotions psycologist James A. Russell



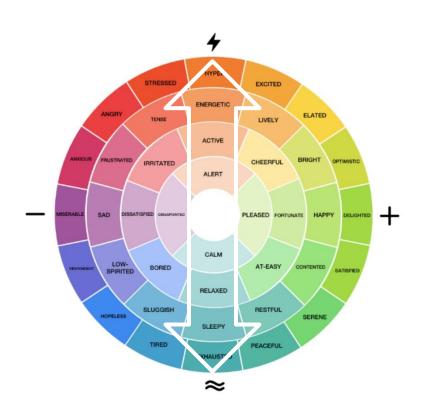
simplified diagram of all human emotions

affect – is our range of daily feelings

valence - pleasant or unpleasantarousal - calm or agitated



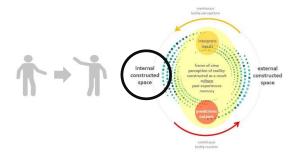
valence
displeasure - pleasure axis
miserable, sad, dissatisfied pleased, fortunate, happy, delighted



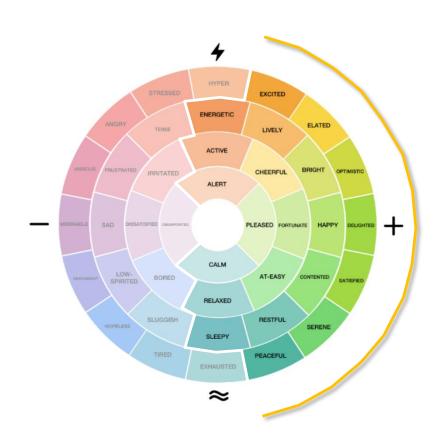
arousal

intensity of arousal – subtle to intense

hyper, energetic, active, alert - calm, relaxed, sleepy, exhausted



qualities of enriched relationships person to person

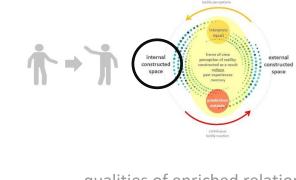


#### HYPER EXCITED ENERGETIC ELATED LIVELY ACTIVE BRIGHT CHEERFUL IRRITATED ALERT + PLEASED FORTUNATE HAPPY CALM BORED RELAXED SLUGGISH RESTFUL SLEEPY PEACEFUL $\approx$

#### **Farrow**



qualities of enriched relationships two prime factors of supportive relationships from psychotherapeutic impact studies

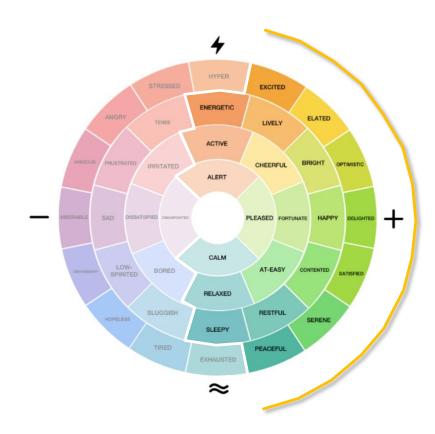


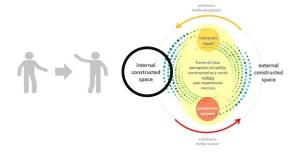
qualities of enriched relationships two prime factors of supportive relationships from psychotherapeutic impact studies

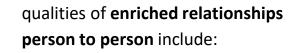
**1** feel emotionally safe, understood & accepted to open up to processes of development & growth

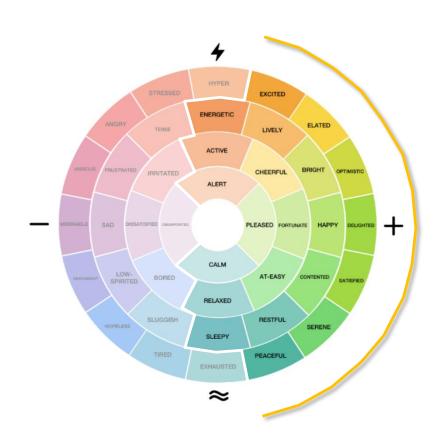
#### 2 activation of one's resources

to experience one's own success, competence & self-efficacy – sense of coherence



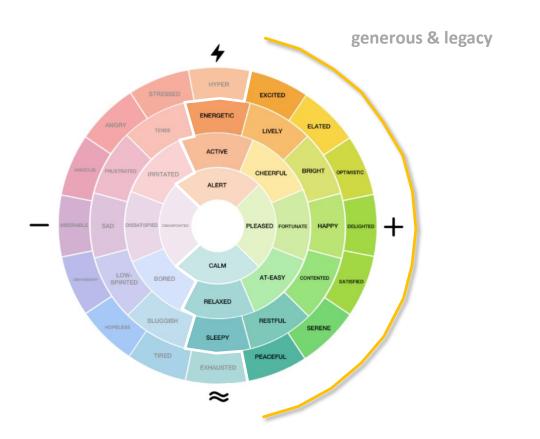








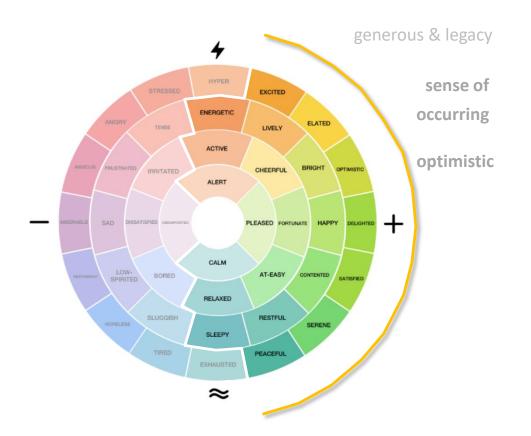
qualities of enriching relationships person to person



generous - & resonating legacy - durable, given and devised without



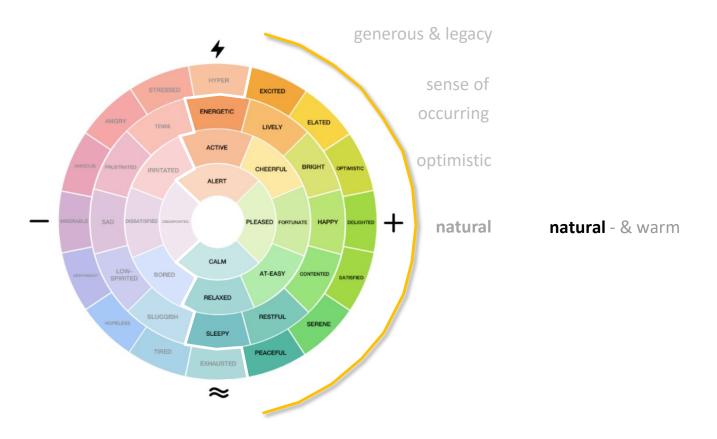
qualities of enrich person to person qualities of enriching relationships



sense of occurring - sensually occurring, present and resonating in atmospheric qualities optimistic - assurant and encouraging

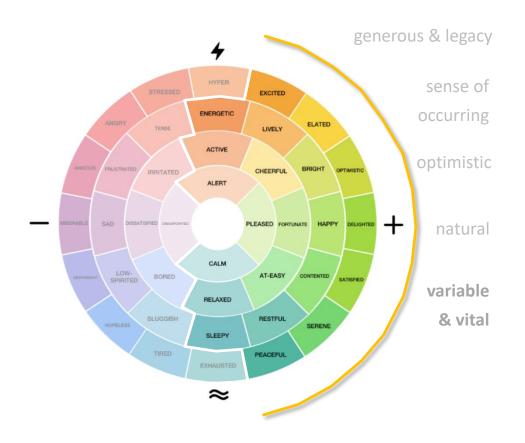


qualities of enriching relationships person to person





qualities of enriching relationships person to person



variable - abundant in resonance, actively involving and self-efficientvital - engaging and supporting awareness

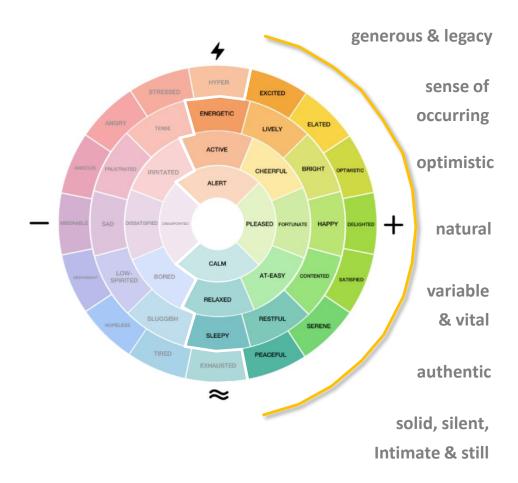


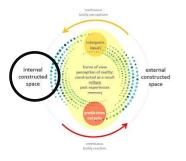
qualities of enriching relationships person to person



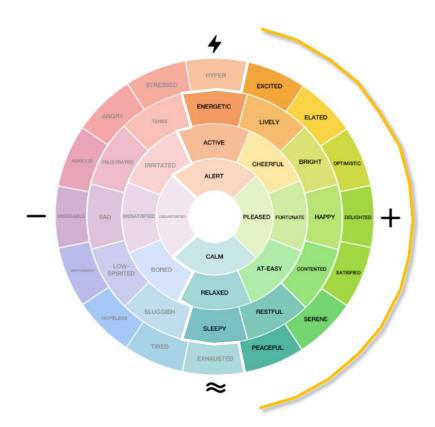
authentic - honest & true
solid - & trustworthy
silent - of external expectations
intimate - & familiar
still - internally still, self connected & restoring

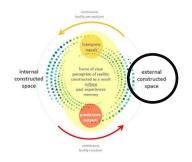






qualities of enriching relationships person to person

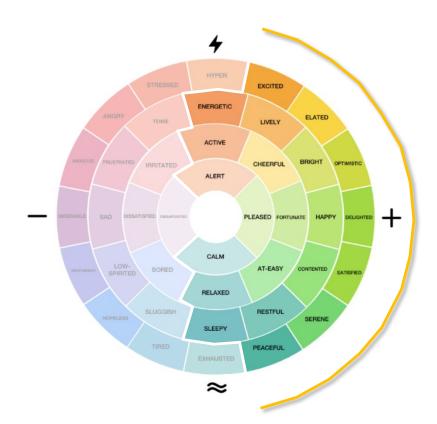


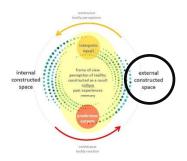


externally constructed space elements of enriched environments

person -> place relationships



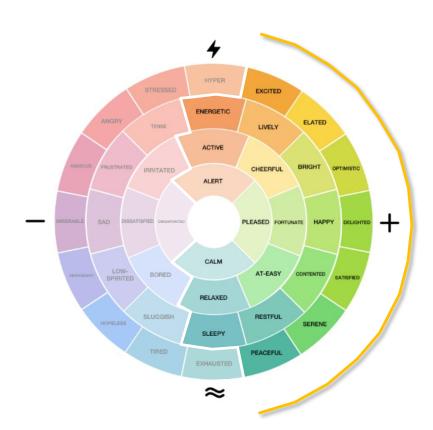




# external constructed space relationships similar constructed internally enriched relationships

feelings of emotionally safe, understood feelings of activating resource towards a place

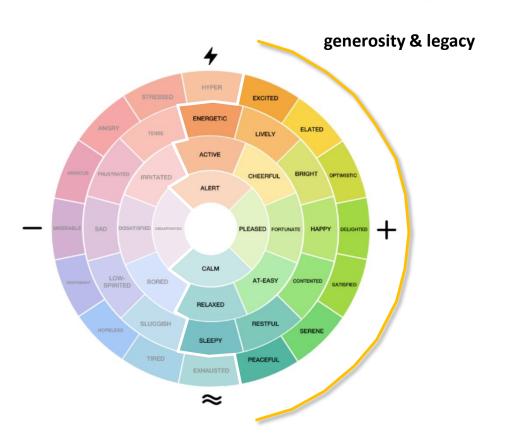




elements include:

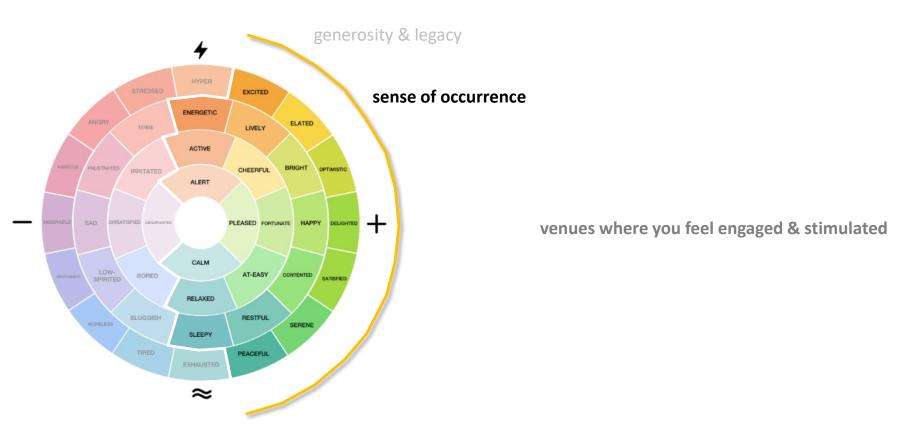


qualities of enriched environments person to place



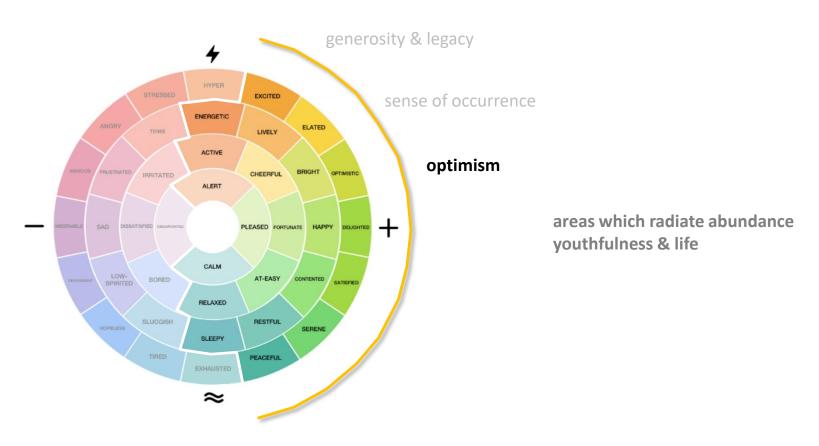
surroundings that give more than they are asked; that communicate a higher aspiration & purpose of something





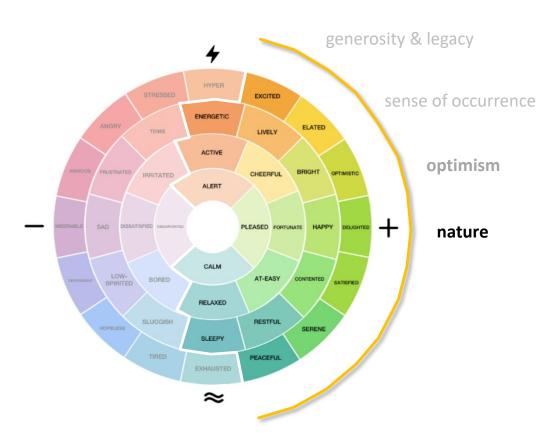


qualities of enriched environments person to place





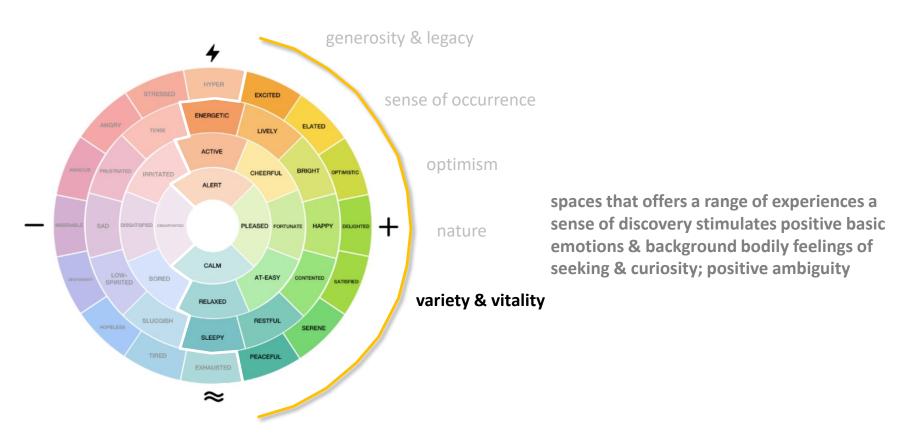
qualities of enriched environments person to place



places inspired by natural shapes, light & materials, biophilic elements, hortophilia concepts, laws of nature & mid-range dimensional complexity fractal patterns

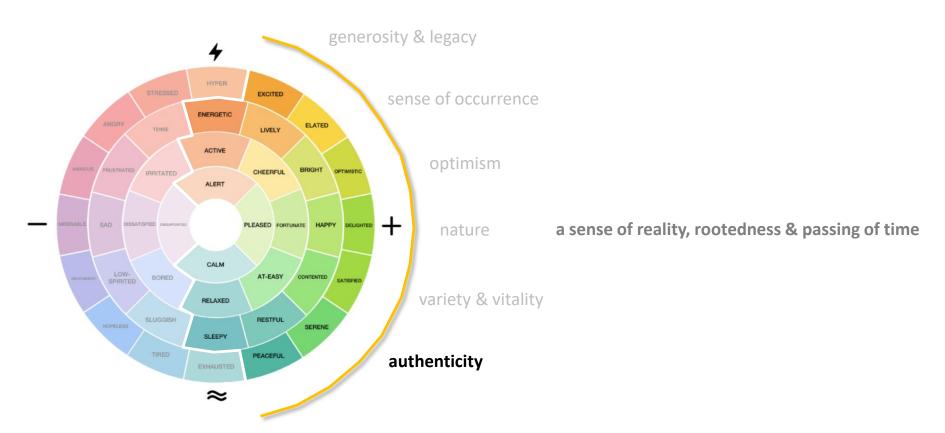


qualities of enriched environments person to place



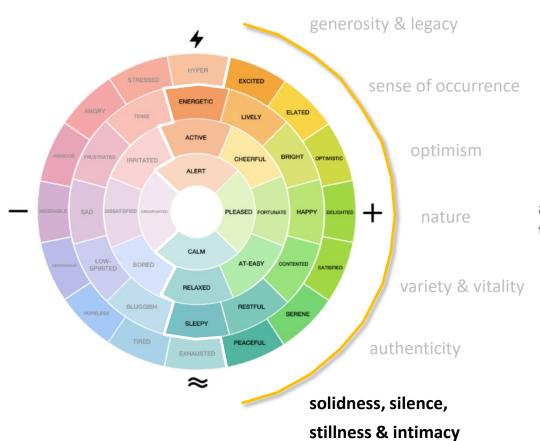


qualities of enriched environments person to place



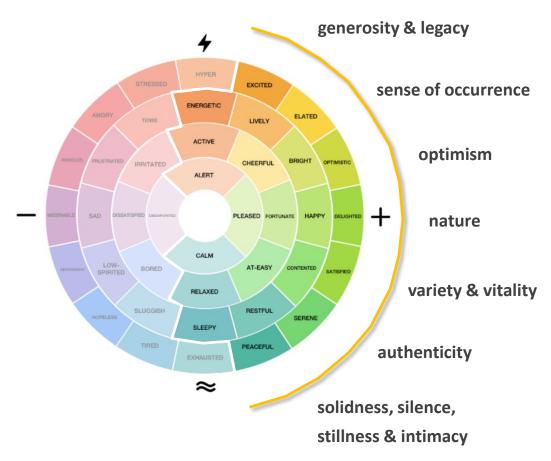


qualities of enriched environments person to place



an unplugged architecture that allows us to listen to our own being





#### building examples

elements of enriched environments











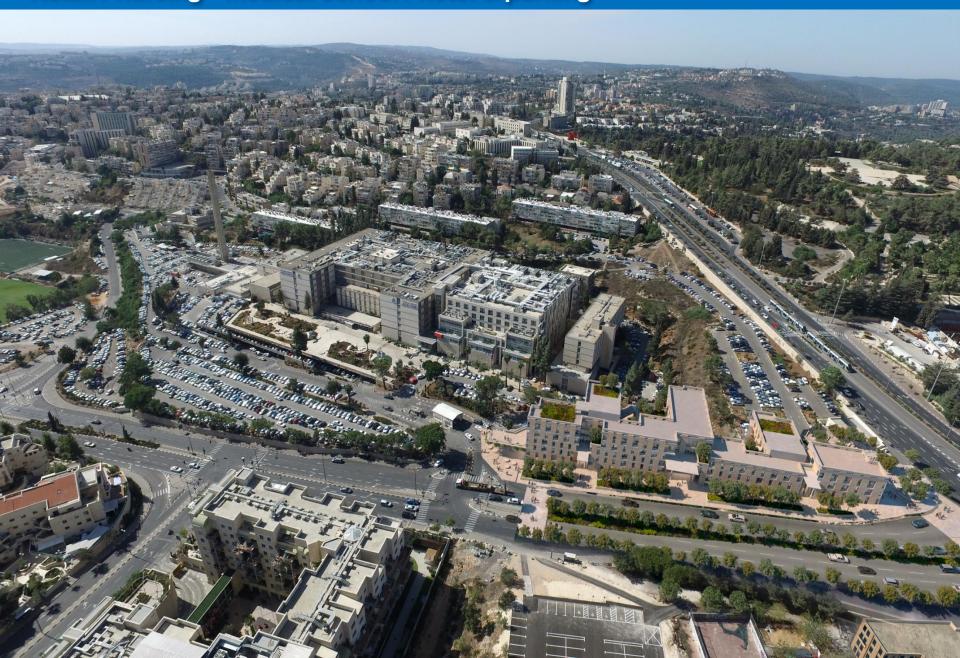
## **Existing**



## Retail / nursing - medical school / hotel & parking



## Retail / nursing - medical school / hotel & parking



## **Cancer centre**



## **Cancer centre**



## New entry & drop off & reno / add inpatient capacity



## New entry & drop off & reno / add inpatient capacity



## ER, in/out patient, & parking



#### ER, in/out patient, & parking



#### New Lab, research, support, logistics & parking



#### New Lab, research, support, logistics & parking



#### New maternal (demolish nursing)



#### New maternal (demolish nursing)



#### **New Emerg hospital / specialty building / cancer inpatient**



# **Building Complete**





#### **Farrow**







#### Farrow

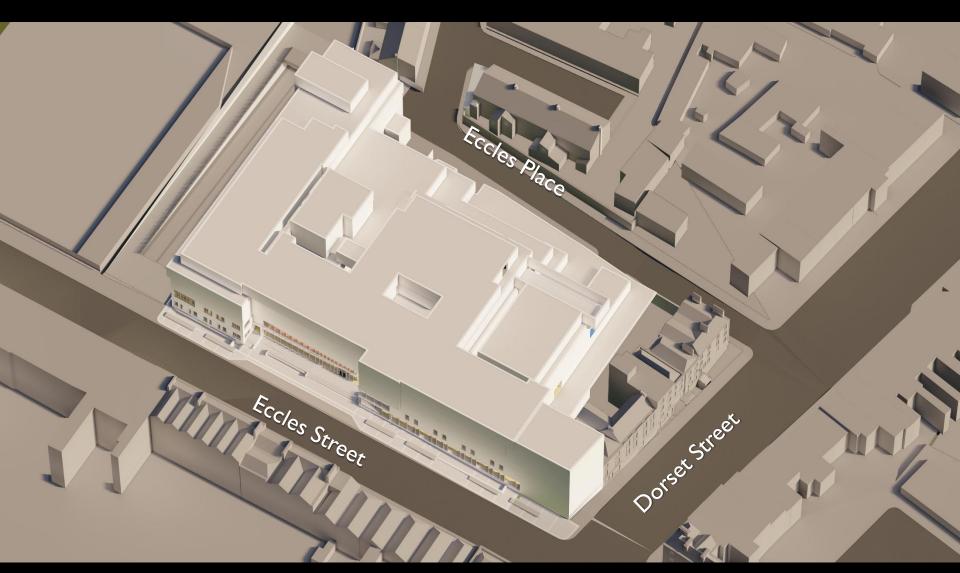




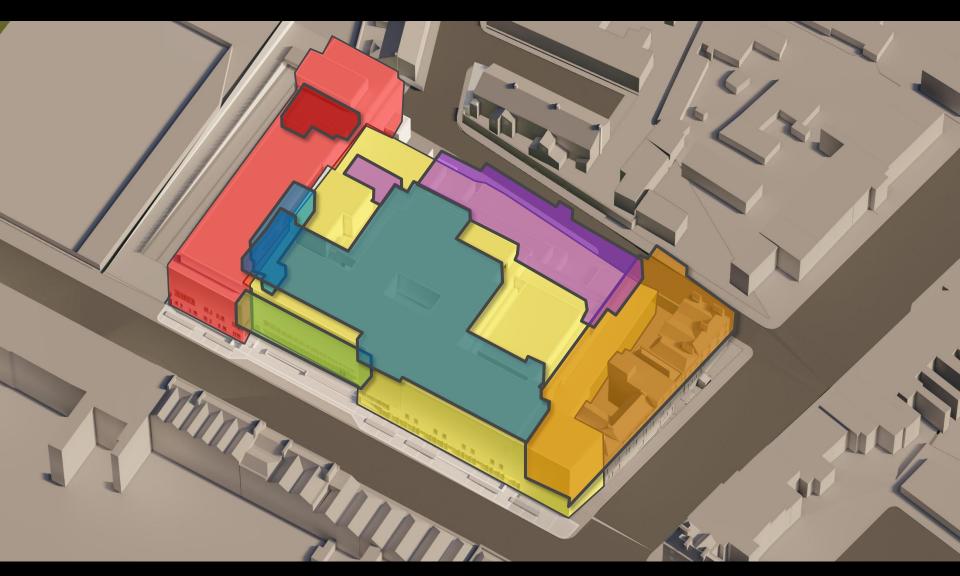




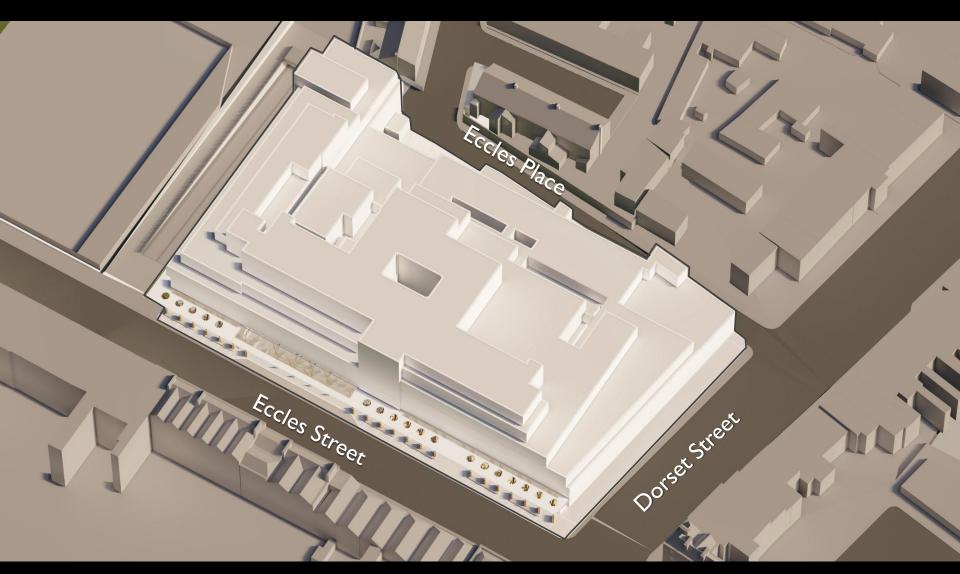
# **Existing Building**



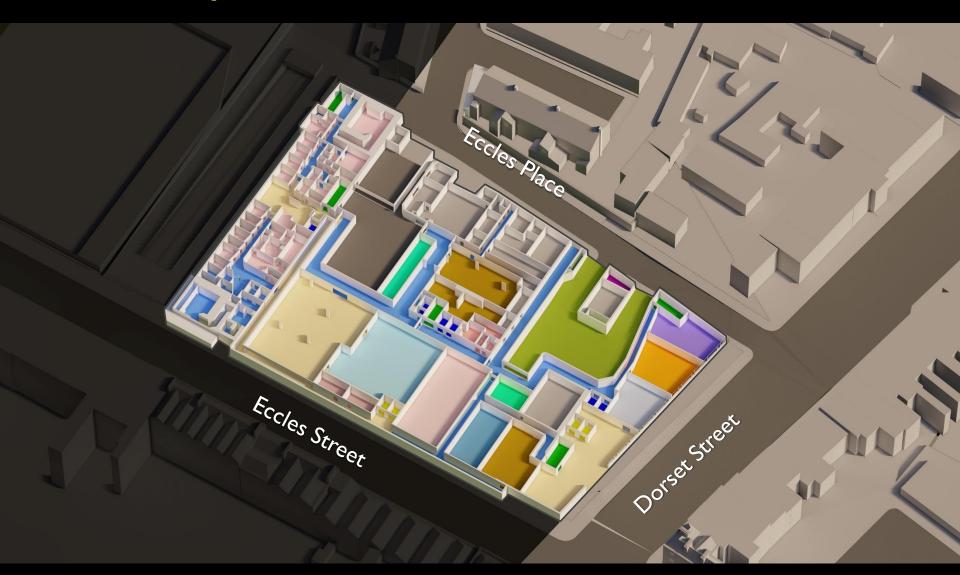
# New Additions & Sequenced Renovations



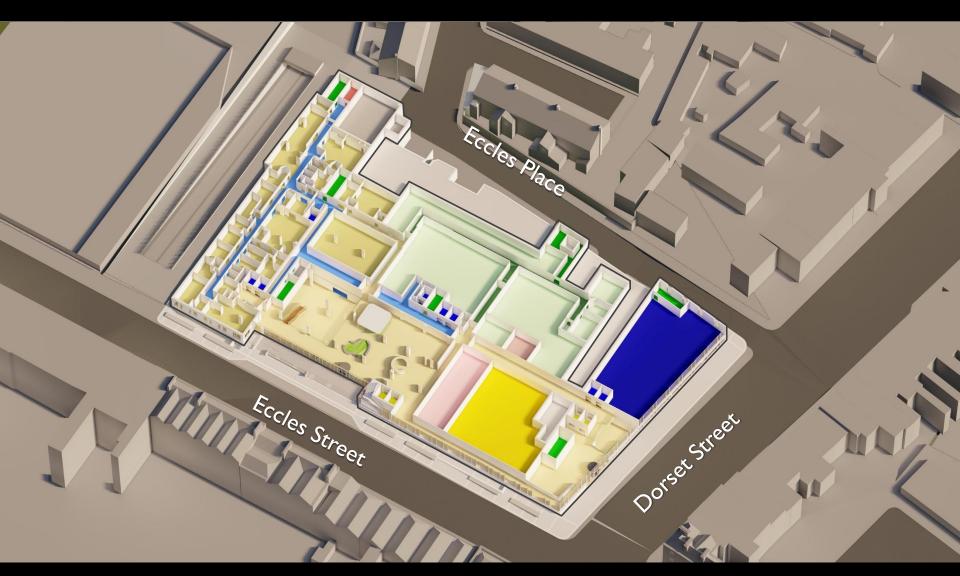
### Completed Redevelopment



# **Level 0: Proposed**



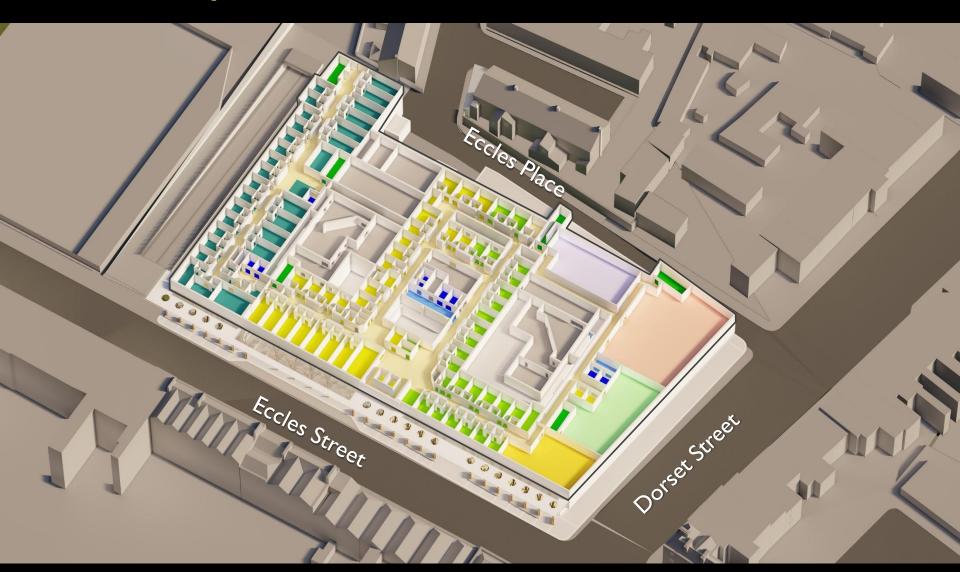
### **Level 1 - Proposed**



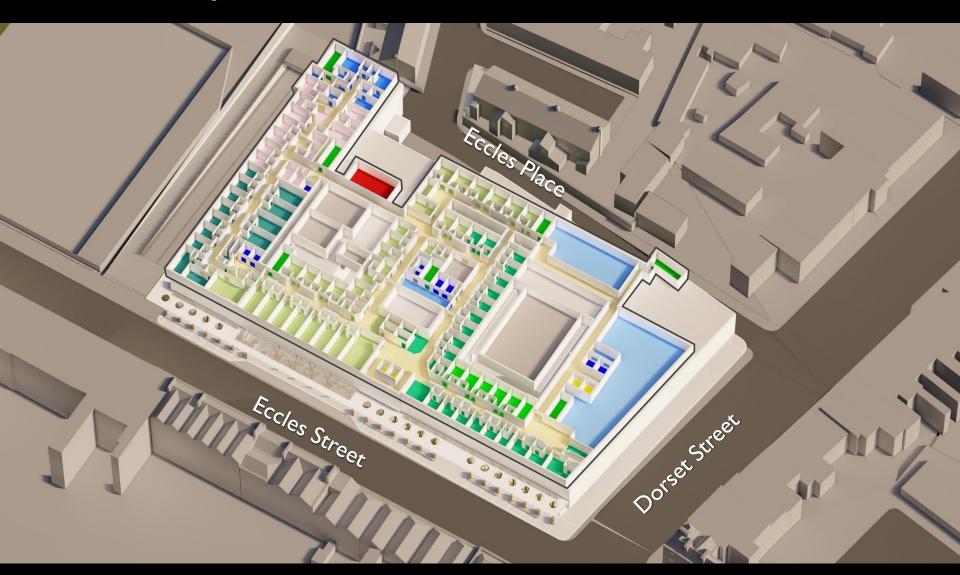
# **Level 2: Proposed**



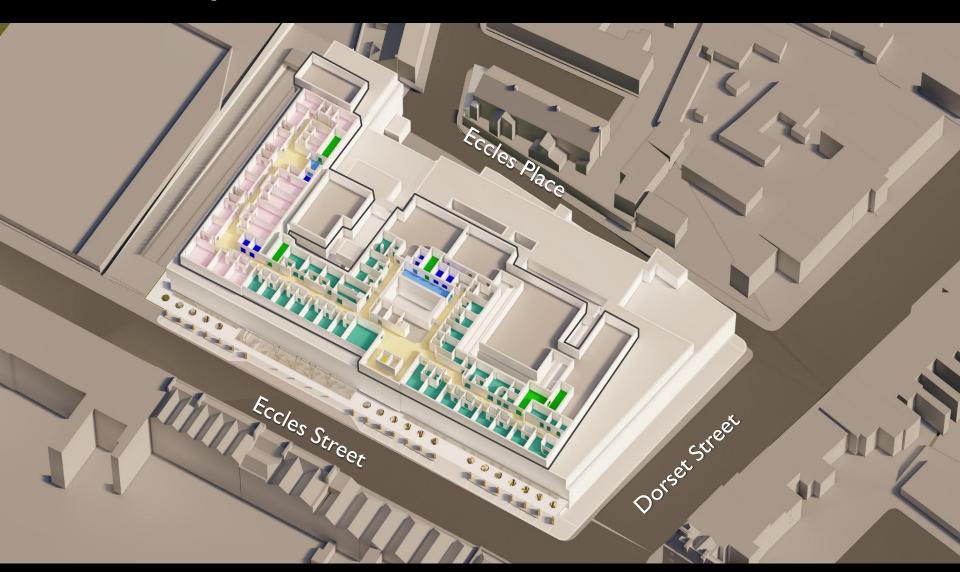
# **Level 3: Proposed**



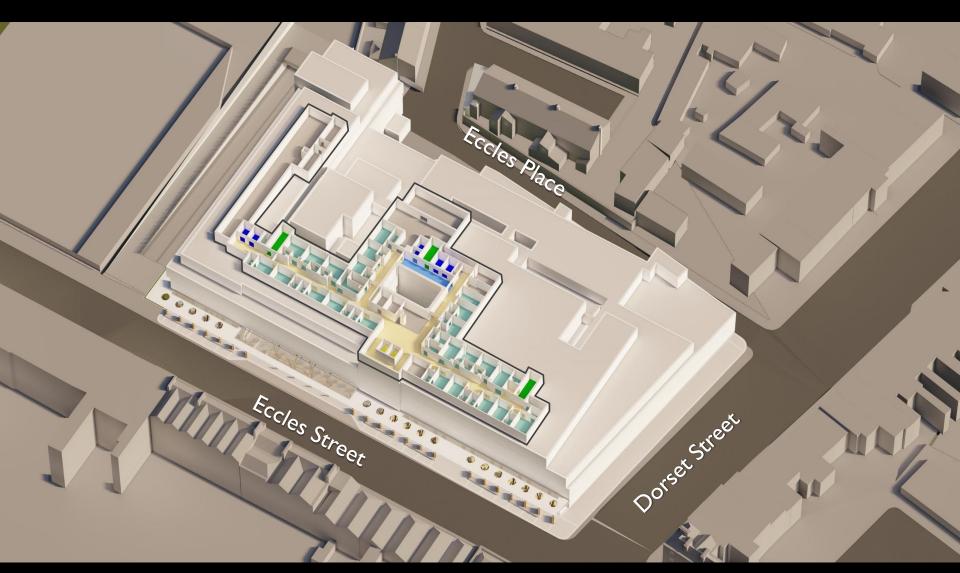
# **Level 4: Proposed**



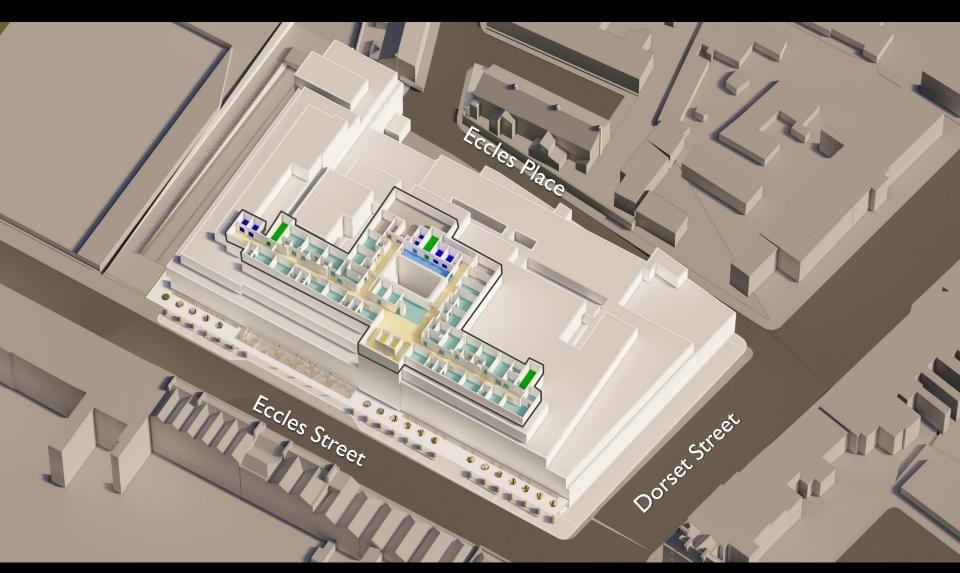
### **Level 5: Proposed**



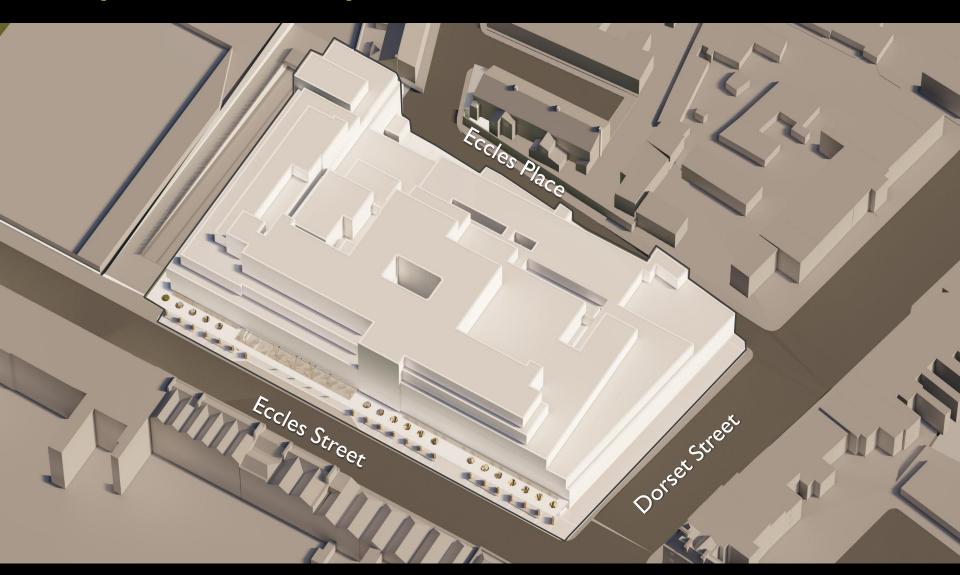
### **Level 6: New Inpatient Floor**



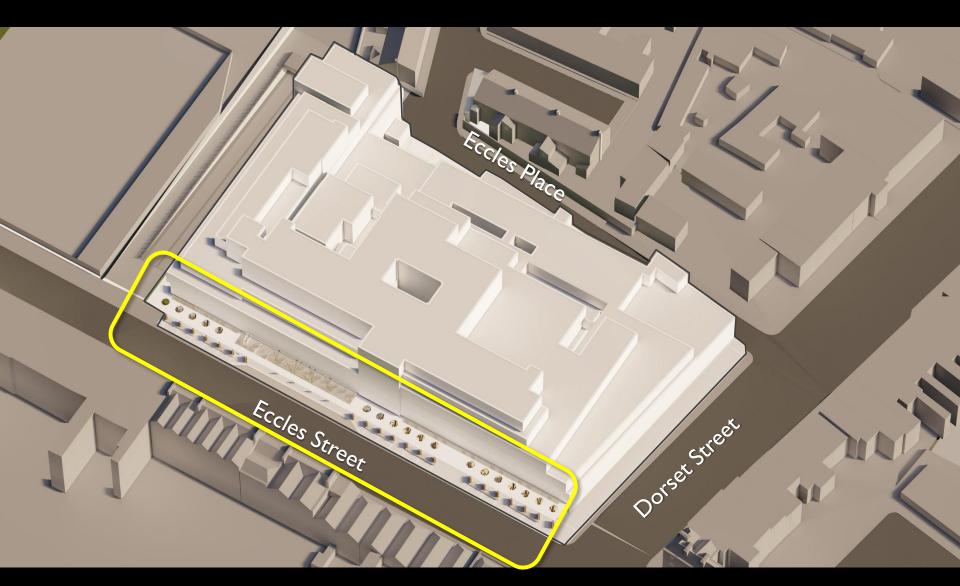
# **Level 7: New Inpatient Floor**



### **Completed Redevelopment**



#### **Main Entrance**



















Venues where you feel engaged & stimulated



venues where you feel engaged & stimulated







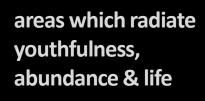








































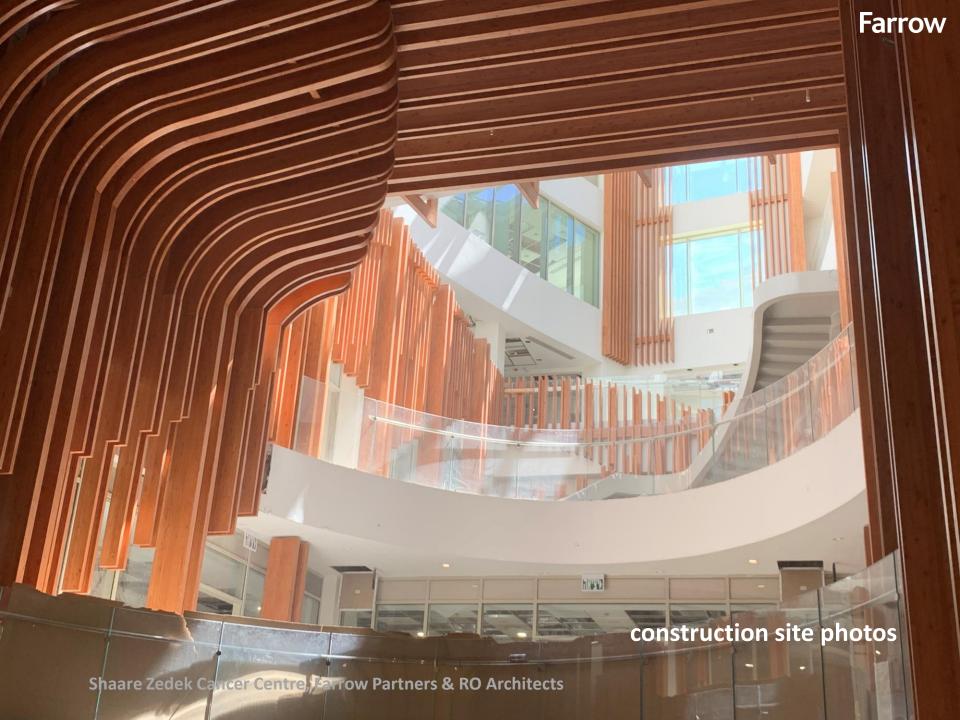






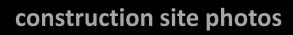


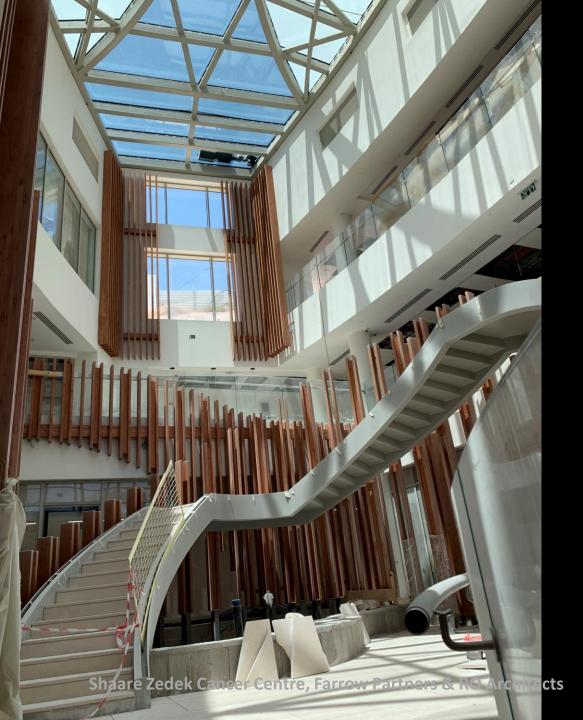
























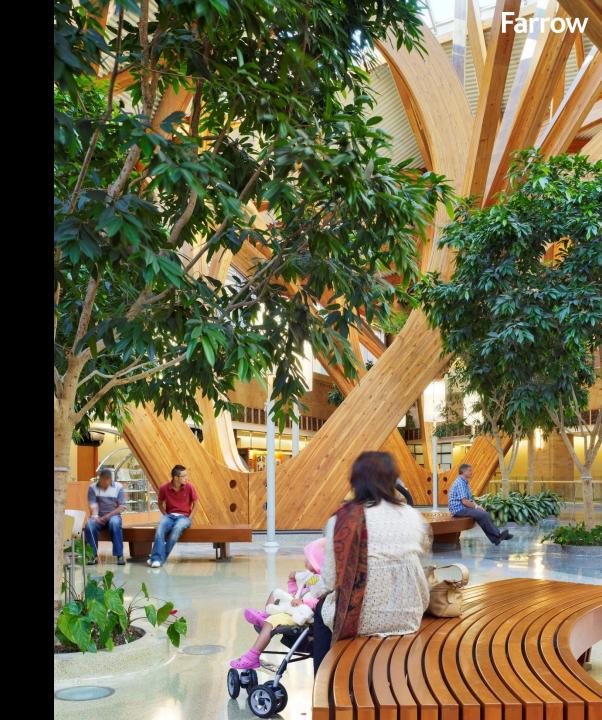












places inspired by natural shapes, light & materials

**Credit Valley Hospital, Farrow Partners** 



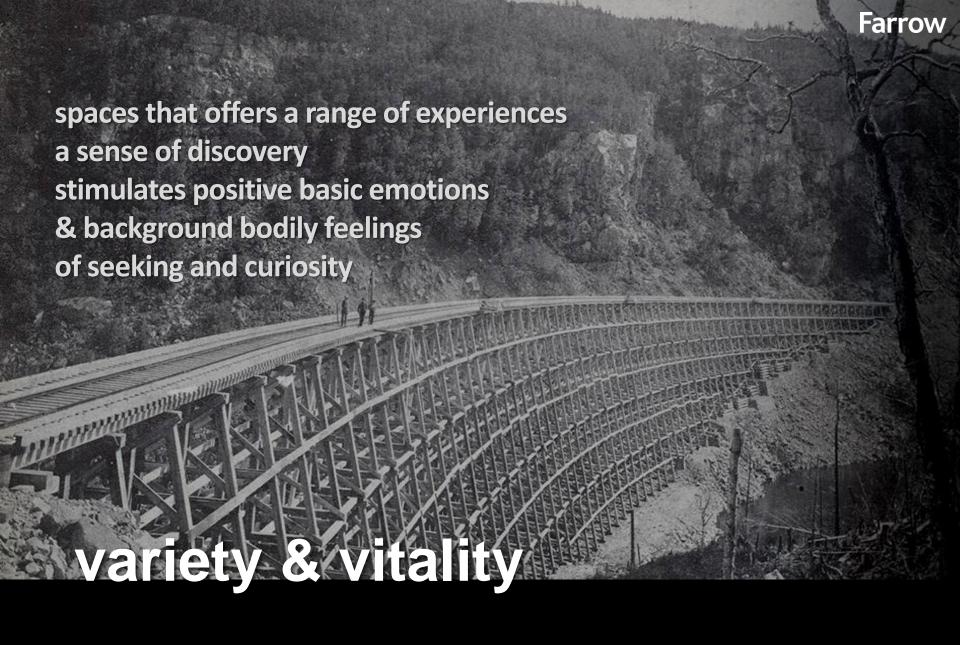


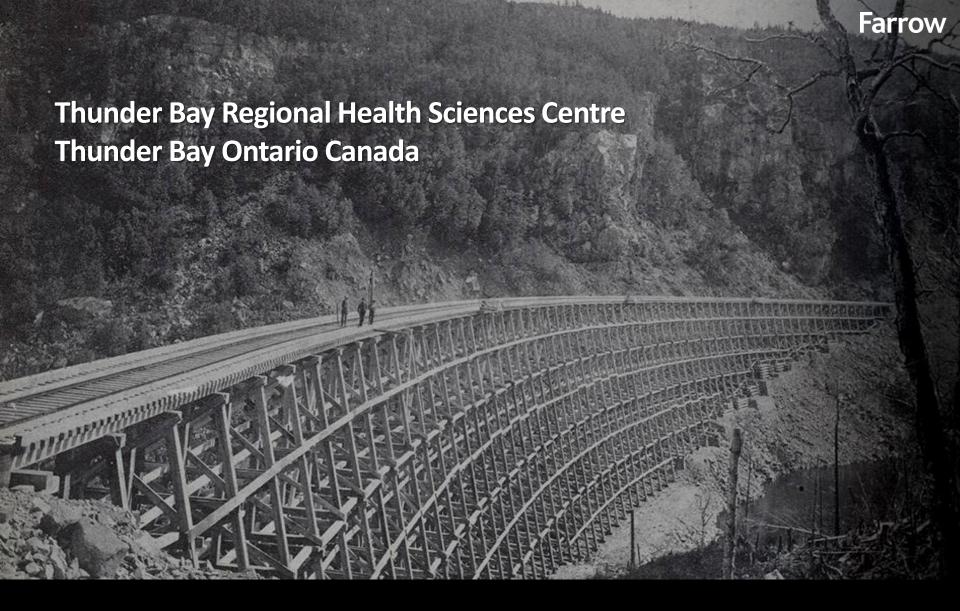




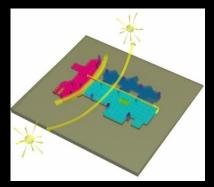








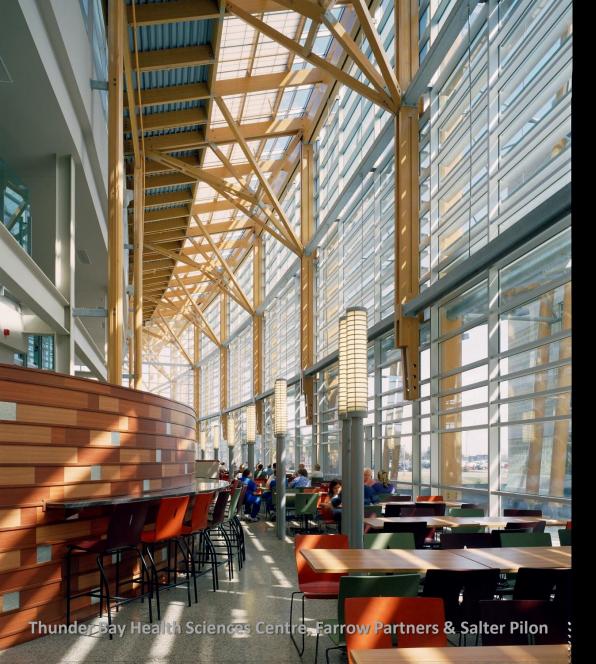






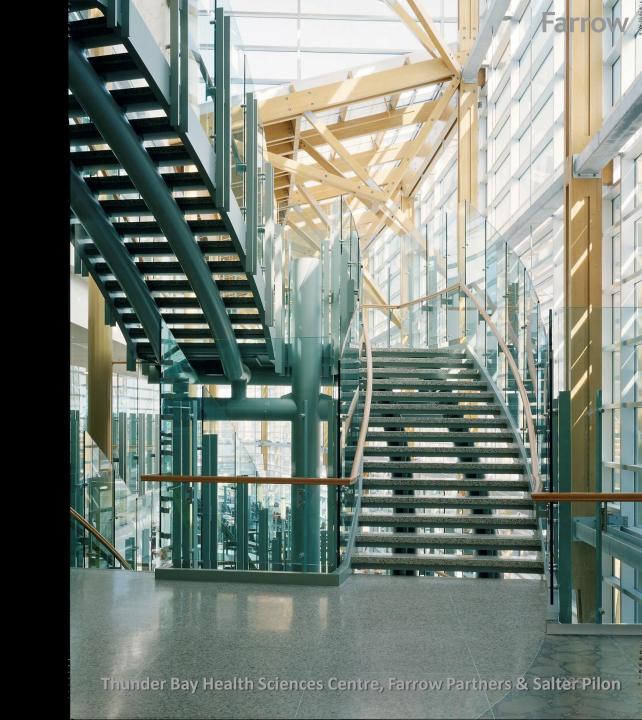






spaces that offers a range of experiences a sense of discovery



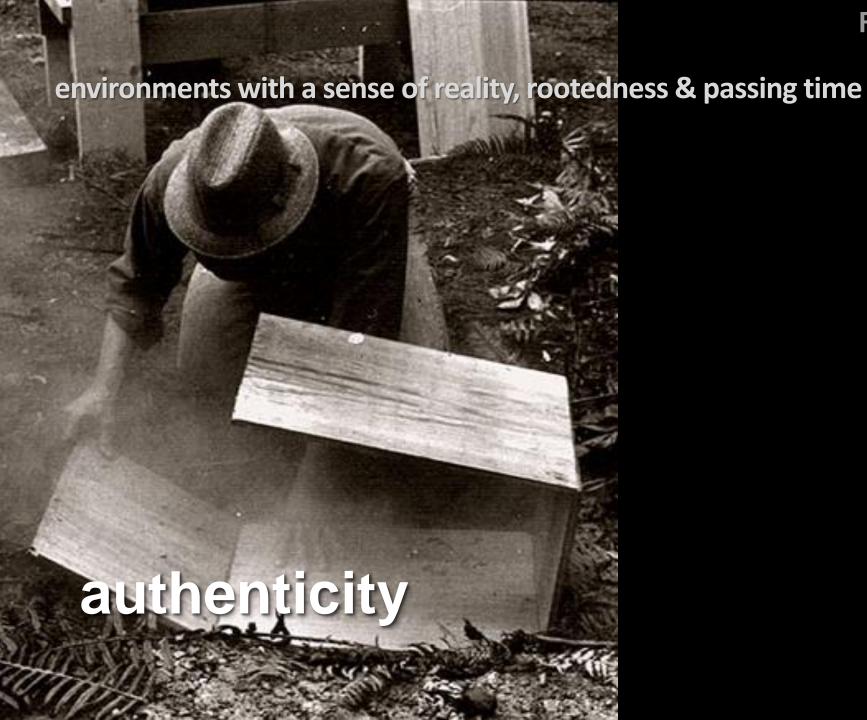






Thunder Bay Health Sciences Centre, Farrow Partners & Salter Pilon









'bent box'

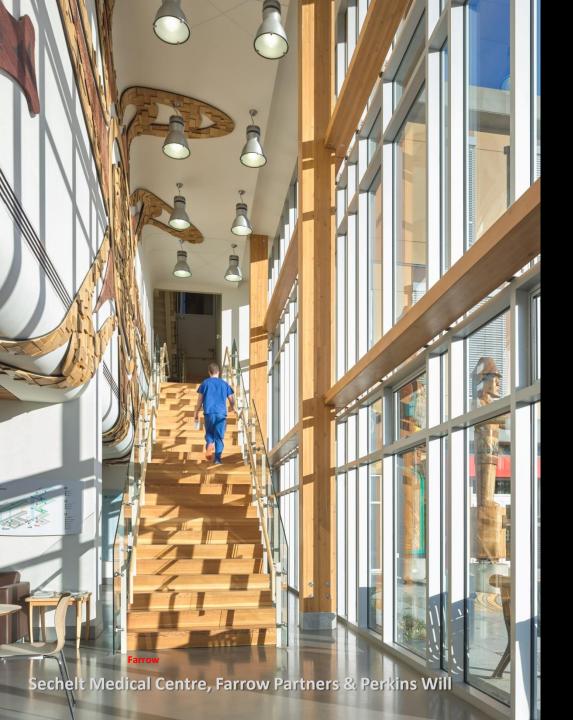




Sechelt Medical Centre, Farrow Partners & Perkins Will







environments with a sense of reality & rootedness



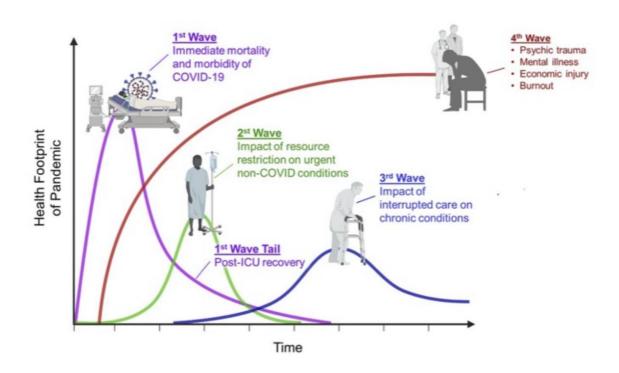








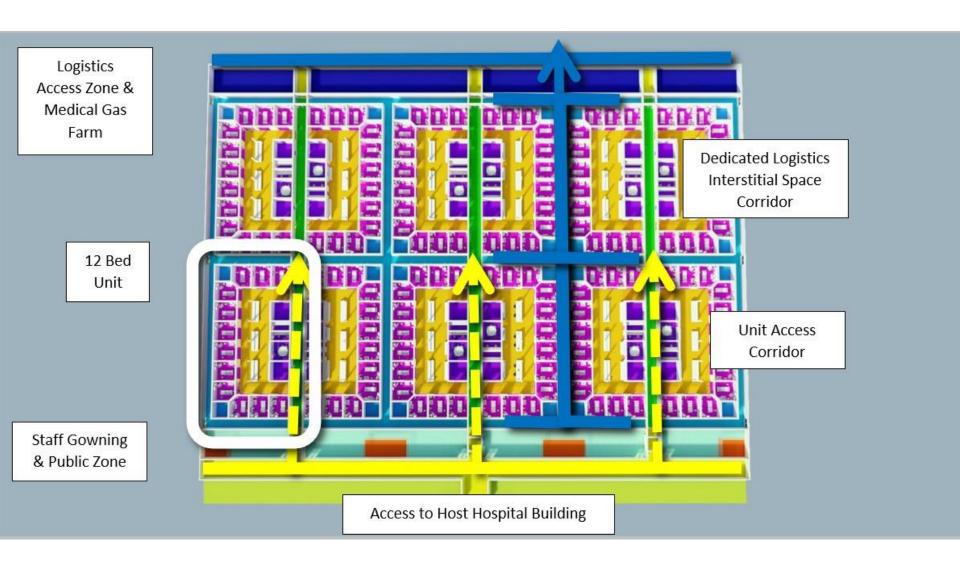


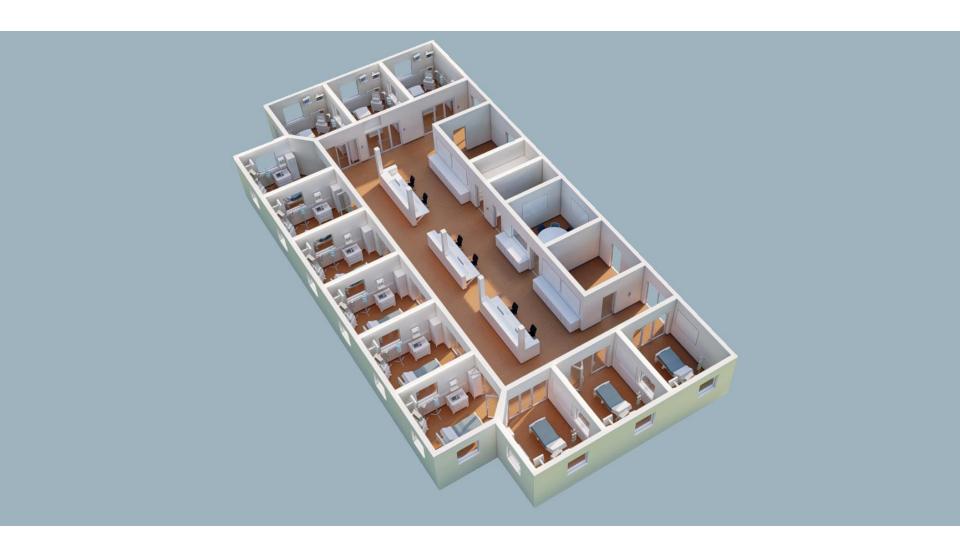






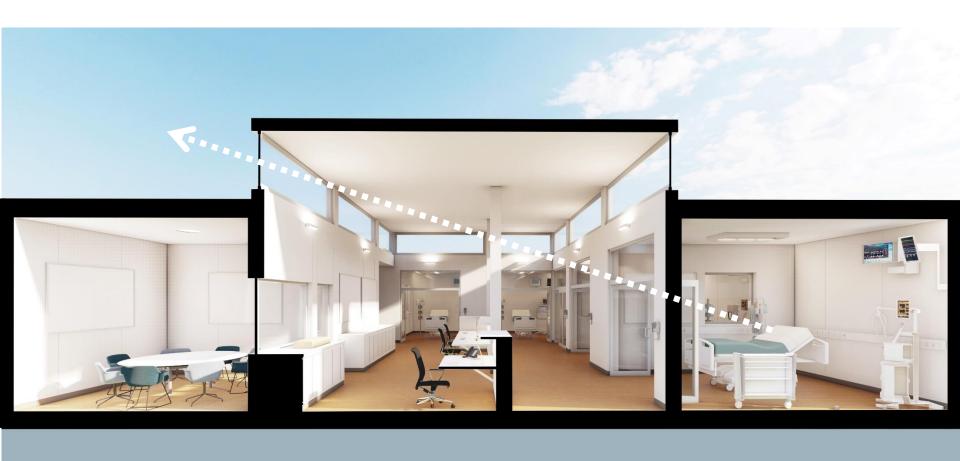
Solace Rapid Assembly - High Performance Covid-19 Inpatient Bed Units, Farrow Partners





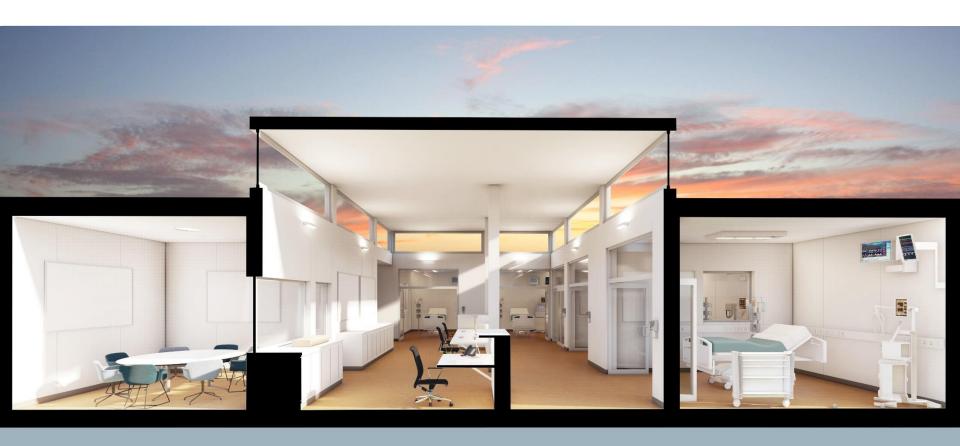








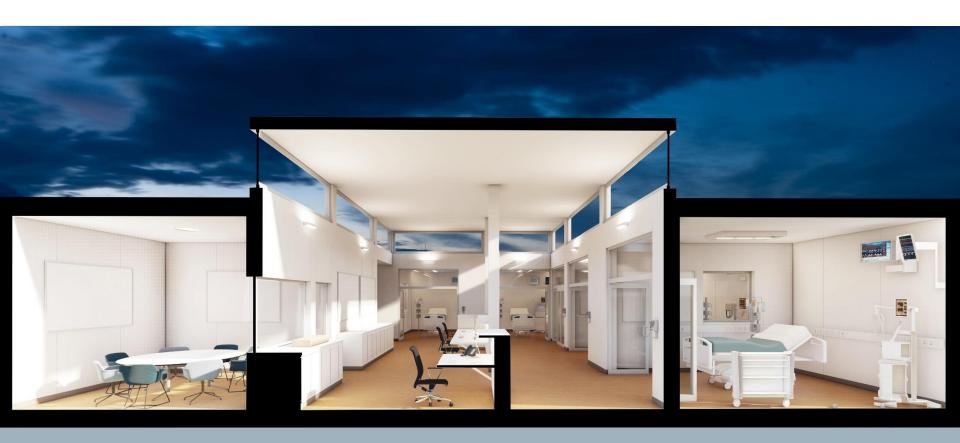


















Solace Rapid Assembly - High Performance Covid-19 Inpatient Bed Units, Farrow Partners



# enriched environments intentional design choices

# cause physiological & psychological health

stimulate learning, memory, & enhance social relationships

why?

## flourish



