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A healing city starts with a healing care environment

# Healing architecture

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# What is healing architecture?

# Approach

1. Architecture and its relation to health
2. Healthy design and our community
3. Healthy design for buildings
4. Healthy design for healthcare facilities
5. Process for healthy design

## Vision 1

How does  
architecture define its  
relation to health?

# History of architecture



**Marcus-Vitruvius-Pollio,**  
Roman architect and writer of De Architectura.  
Ten Books on Architecture,  
written approximately 20-30 BC

# History of architecture

It is the only text on the subject of architecture to survive antiquity. It was also one of the first texts in history to draw a

**connection between the architecture of the body  
and that of the building.**

Vitruvius believed that an architect should focus on three central themes when preparing a design for a building:

- **firmitas (strength)**
- **utilitas(functionality)**
- **venustas (beauty)**

# History of architecture

But the theory of *venustas* (or beauty) is a very complicated one. Vitruvius thought that a timeless notion of beauty could be learnt from the 'truth of nature', that nature's designs were based on universal laws of proportion and symmetry.

He believed that the body's proportions could be used as a model of natural proportional perfection. He wrote of the way ancient scholars examined many examples of 'well shaped men' and discovered that these bodies shared certain proportions. He showed that the 'ideal' human body fitted precisely into both a circle and a square, and he thus illustrated the link that he believed existed between perfect geometric forms and the perfect body. In this way,

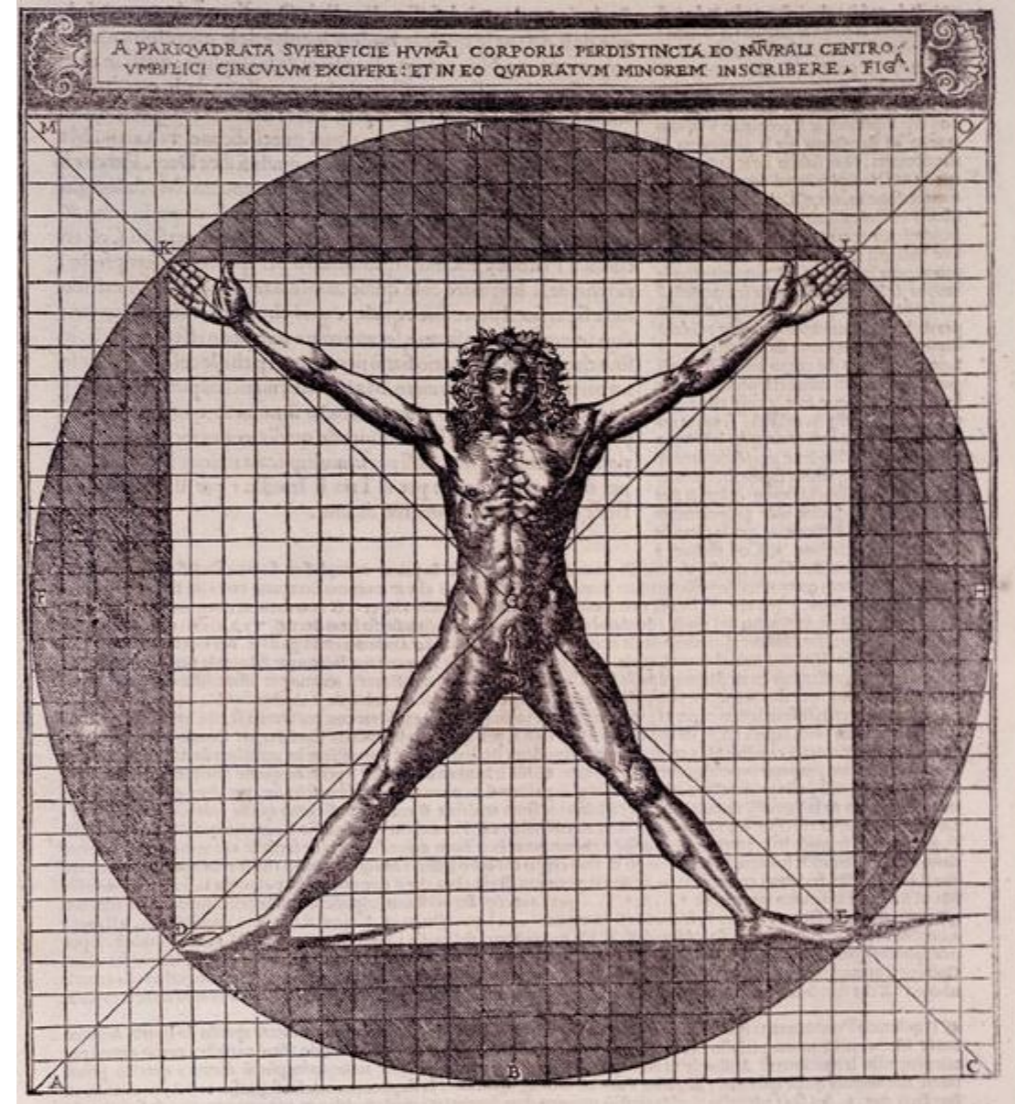
**the body was seen as a living rulebook, containing the fixed and faultless laws set down by nature.**



# History of architecture

So it followed, according to Vitruvius, that an architect's designs must refer to the unquestionable perfection of the body's symmetry and proportions.

**If a building is to create a sense of eurythmia - a graceful and agreeable atmosphere - it is essential that it mirrors these natural laws of harmony and beauty.**



Vitruvian man

# History of architecture

However, there is no link drawn between the **sense of eurythmia and our state of mind to foster health wellbeing**

...there is absence on the matter of Health and wellbeing, and on sustainability as a whole...

....in fact, there is no mention in regards to an **overarching ethical responsibility for Architects.**

Medical doctors swear and oath...

Architects can and are legally not obliged to avoid harming overall health and make lasting negative impact.

# Conclusion on Ancient History of architecture

Vitruvius' work is incomplete, he should have written the eleventh and twelfth book of architecture:

**11th The book of ethical responsibility of architecture**

**12th The book on how architecture should be having a healthy impact on the natural environment**

As such his theory should have been complete as:

- **firmitas (strength)**
- **utilitas(functionality)**
- **venustas (beauty)**
- **Sanus (healthy)**

# Conclusion 1

We need to undertake research (both Evidence based and Practice based) and define :

- **The ethical responsibility of architecture**
- **The architectural theory on the healthy impact of the built environment**

Consider Design as a whole including Town planning, Infrastructure planning, engineering, interior design, industrial design, landscape design, manufacturing, etc.

## Vision 2

Healthy design  
and our  
community













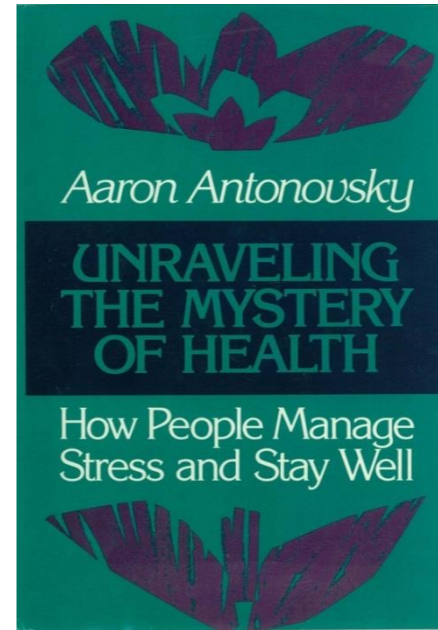


**30% of diseases are related to medical,  
biological conditions.**

**70% are related to our environmental  
conditions.**

**OUR NATURAL AND BUILT  
ENVIRONMENT**

**In developed countries,  
healthier environments could significantly  
reduce the incidence of  
cancers, cardiovascular diseases, asthma,  
lower respiratory infections, musculoskeletal  
diseases, road traffic injuries, poisonings,  
and drowning.**



**Aaron Antonovsky : salutogenesis**

**Latin *salus* = health**  
**& Greek *genesis* = origin.**



# THE GLOBAL GOALS

## For Sustainable Development



#GLOBALGOALS





# DESIGNING HEALTHY COMMUNITIES



**RICHARD J. JACKSON** WITH STACY SINCLAIR

## EVIDENCE OF BENEFITS

There is mounting research evidence which backs up the case that the NHS Forest will help sites to realise the following, proven health, social, environmental and financial benefits:

The research articles below provide evidence of the NHS Forests's benefits in the following fields:

- ACCELERATED PATIENT RECOVERY
- COMMUNITY HEALTH
- SOCIAL COHESION
- IMPROVED AIR QUALITY
- REDUCTION IN NOISE
- GLOBAL TEMPERATURE
- REDUCED WATER FLOODING
- REDUCED CARBON EMISSIONS
- HEALTHCARE PREVENTION
- FLOODING PREVENTION COSTS
- REDUCED ENERGY COSTS
- REDUCED MAINTENANCE COSTS
- VALUE FROM LEISURE

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Subscribe to NHS Forest



fig. 6.4-13



fig. 6.4-14



fig. 6.4-15



Commons Park, Denver





## Vision 3

# Healthy design of buildings









Buildings and communities that help people thrive

Get started with WELL v2

SCENEO | BEZONS, FRANCE



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## WELL Certification

WELL is the leading tool for advancing health and well-being in buildings globally. Register your office, building or other space to leverage WELL's flexible framework for improving health and human experience through design.

Explore WELL v2

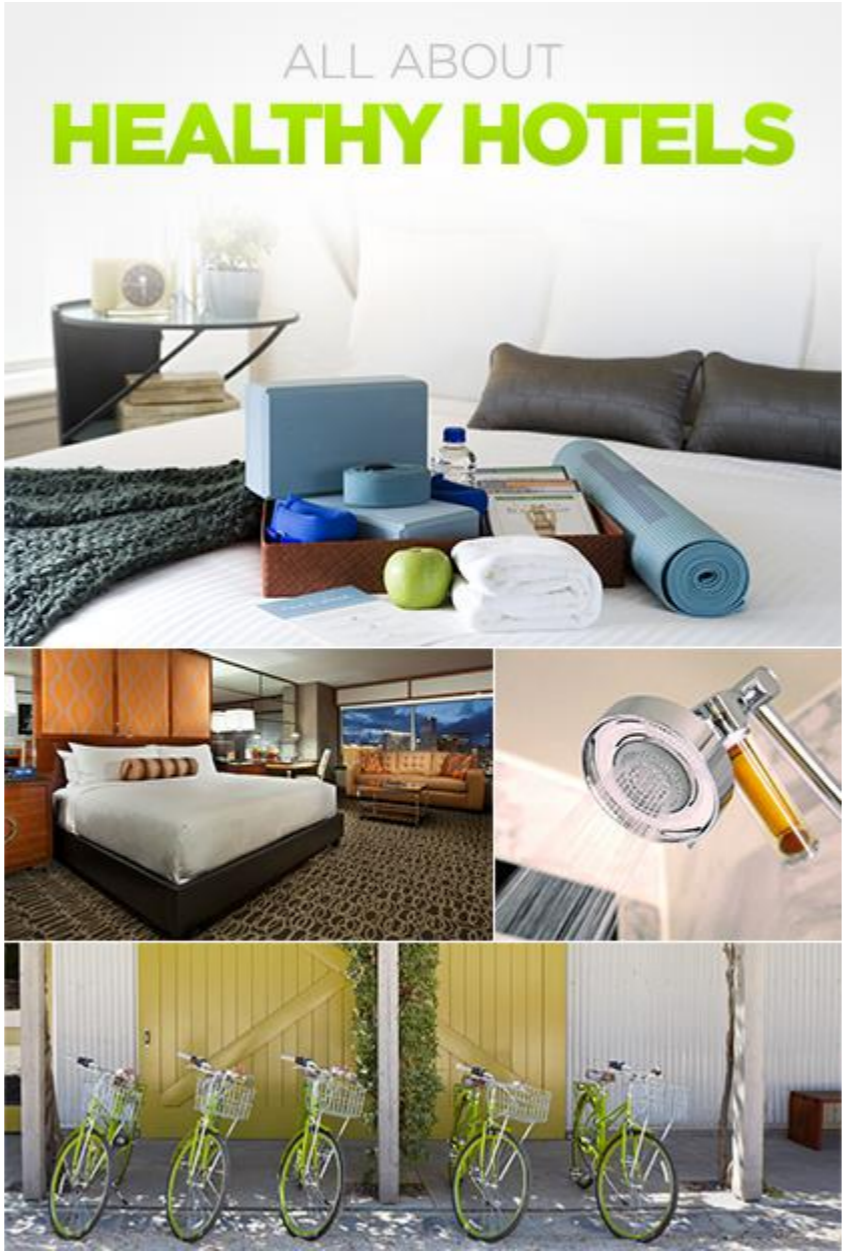
Explore WELL v1

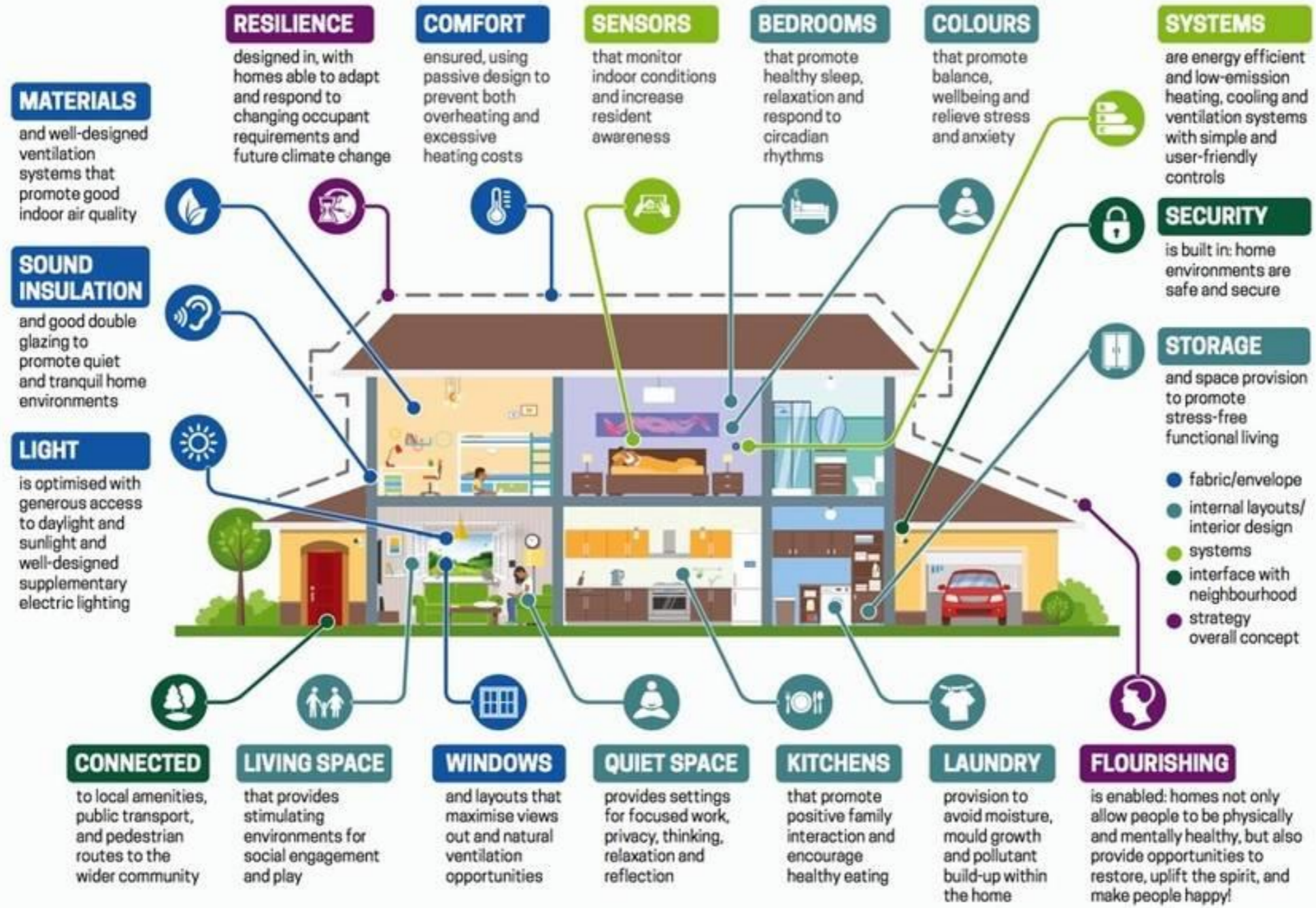
















Lavazza Museum, Turin

## Vision 4

# Healthy design of healthcare facilities

Patients with visual access to natural light and nature stayed in hospital for a shorter time with better outcomes.

*Ulrich 1984*

Patients having care provided in a healing and environmentally accommodating setting are more likely to be discharged earlier and with better health outcomes

*Hays (1996)*

*Beauchemin and Hays (1998)*

*Walch et al (2005)*









Above: Gold Coast University Hospital



Above: New Royal Adelaide Hospital



2010 : 120 sqm per bed for hospital based care



**2019 : 175 sqm per bed for hospital based care**

**45% increase !?!?**





















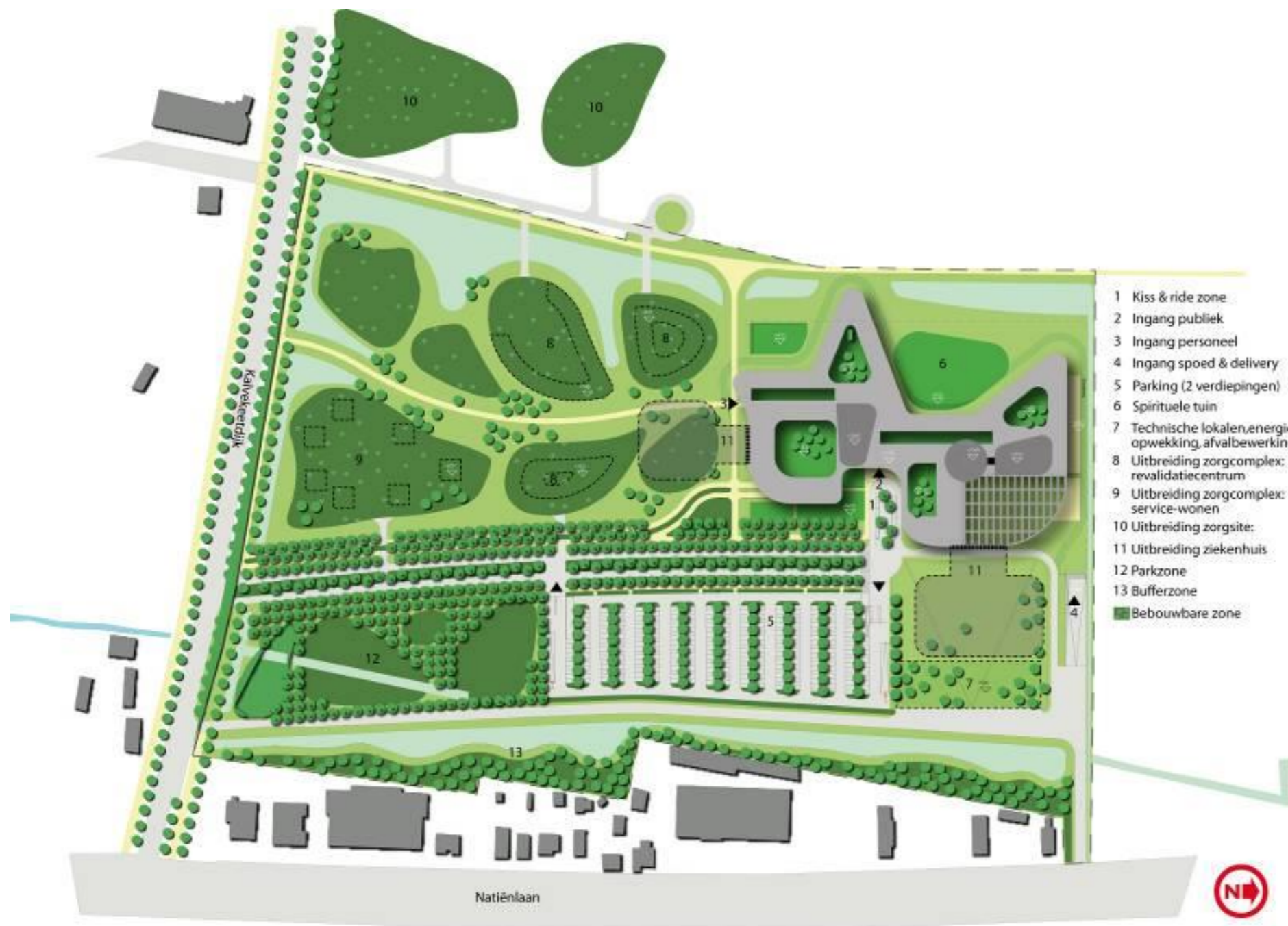






Alexandra Health Polyclinic, Singapore







Suave, mari magno turbantibus aequora ventis  
e terra magnum alterius spectare laborem

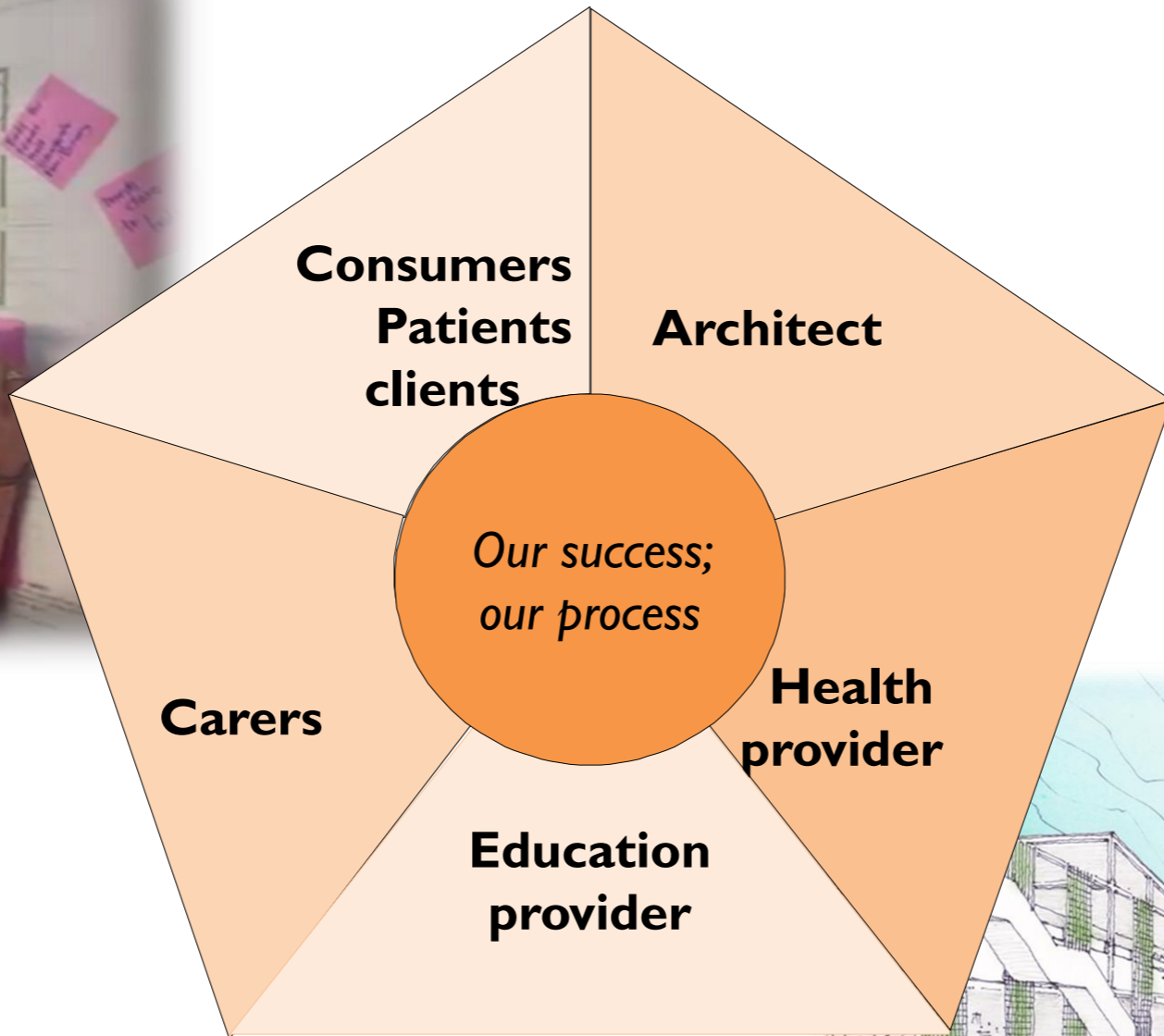
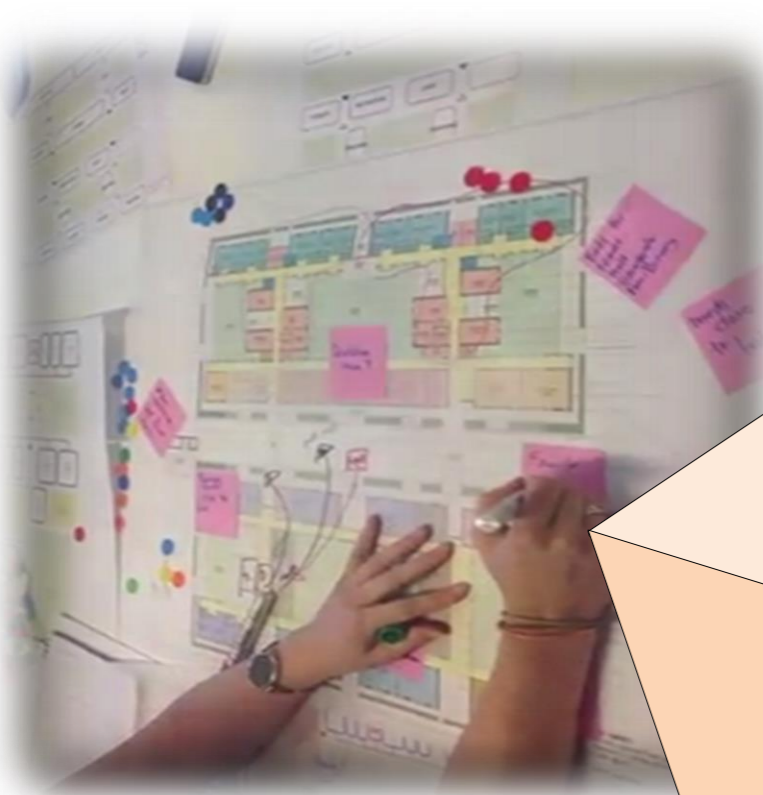
Lucretius - De Rerum natura - Liber II - verzen 1-2

'Tis sweet, when, down the mighty main, the winds roll up its waste of waters, from the land to watch another's labouring anguish far



## Vision 5

# Healthy design process



### Site selection and Test Fit

- Suitable site to support and provide amenities
- Hospital campus as per recommendation of the COI

### Model of Service Workshop 1

### Model of Service Workshop 2

### Co Design Workshop 1 – 4<sup>th</sup> Nov - Scope Validation workshop

- Operational parameters
- Operational principles
- Design parameters
- Design principles
- Evaluation Test-fit

### Model of Service Workshop 3

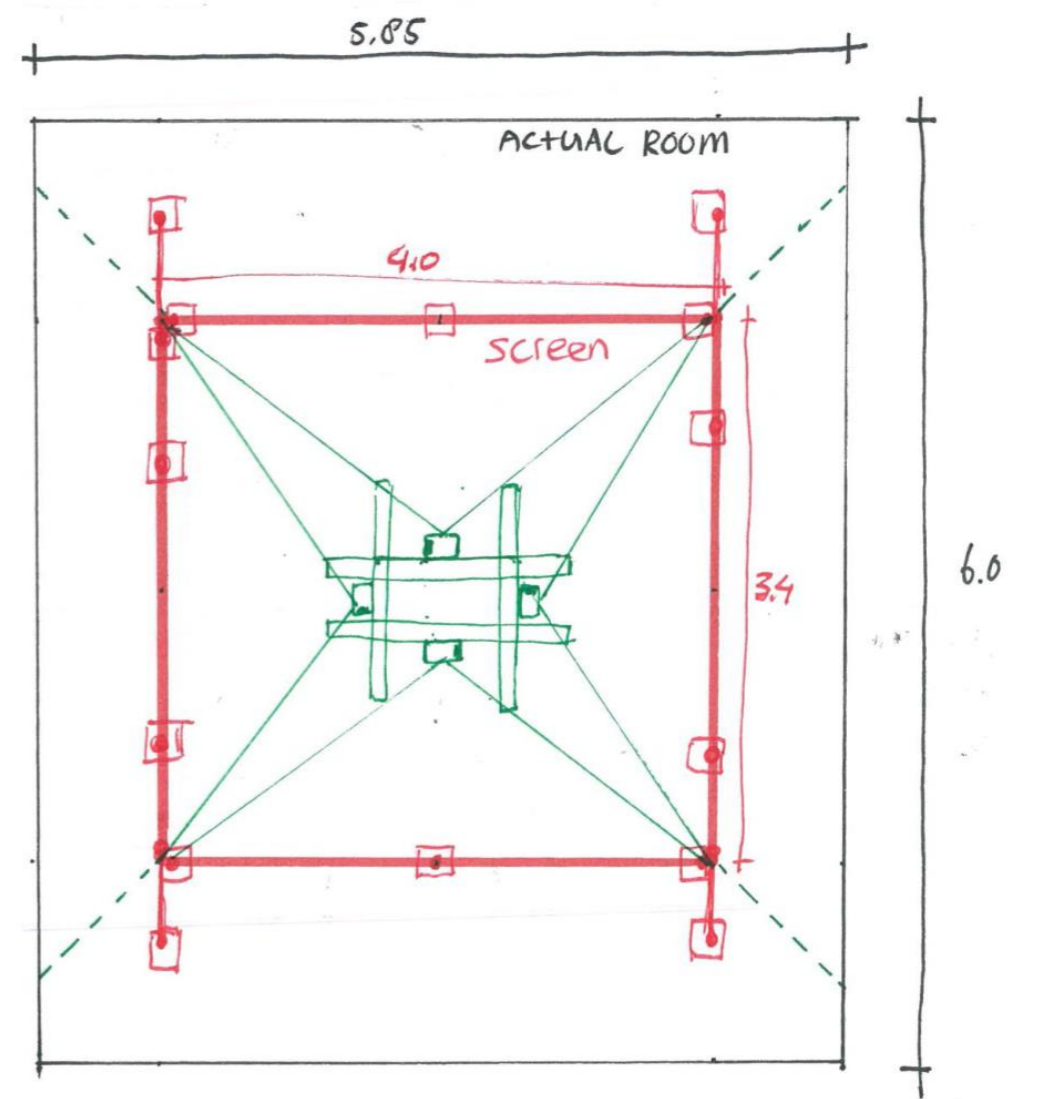
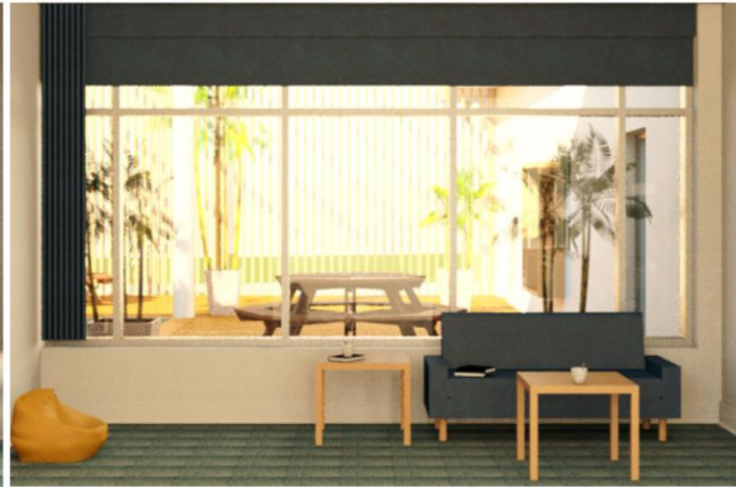
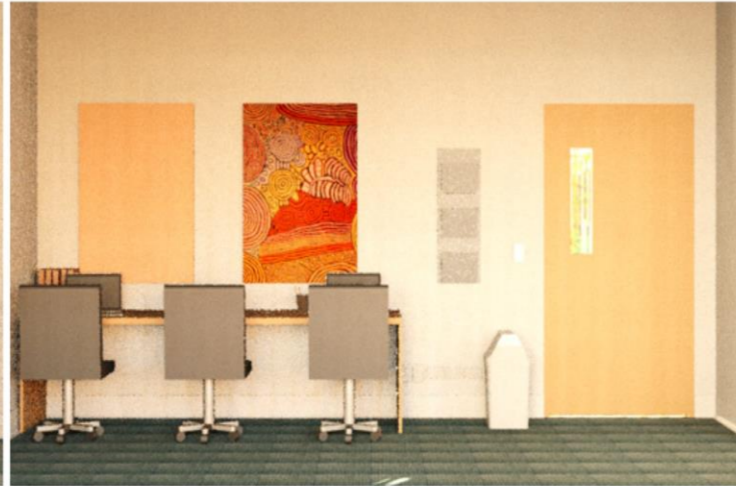
### Co Design Workshop 2 – 21<sup>st</sup> Nov- Design workshop

- “Day in life” scenarios: patient, staff, educator, support. emergency
- Testing of Patient cohorts
- Testing of treatment period/cycle
- Operational modes –day-night-weekend-evenings

### Co Design Workshop 3 - 5<sup>th</sup> Dec–Review and Evaluation workshop

- Review design versus “Day in Life”
- Review patient cohorts
- Review treatment period/cycle
- Review operational modes –day-night-weekend-evenings













# Adolescent Extended Treatment & Rehabilitation Centre

## Co-Design Process

### - Understand

Design team explained the intended design of the space to create an understanding of the use of the room. The main focus was to reflect on the following questions.

- What would you want in this room?
- Would you change anything to make it better?
- How would you use this room?

### - Observe

Participants observe the space and reflect on intended design. Questions were asked at the Design Team.

### - Reflect

Participants share reflections, exchange findings with each other and project team.

### - Capture

Participants captured their feedback on worksheets that were handed to them at the beginning of the workshop. Each room had a separate worksheet with the set questions.



The worksheet is titled "CO-DESIGN WORKSHEET 1. BEDROOM" and features a floor plan of a residential unit. The floor plan includes a "QUIET GARDEN" area, an "activity / media" room, a "lounge", "dining", "kitchen", "chat Dirty Utility", and several bedrooms and ensuite rooms. One bedroom is highlighted with a red box and labeled "1.". The worksheet contains three sections of questions, each followed by red dotted lines for writing:

- What would you want in this room?**
- Would you change anything to make it better?**
- How would you use this room?**

At the bottom right, there is a lightbulb icon and the text "thank you for your ideas!".

# Conclusion 5



Helping participants feel supported



Acknowledge this is a complex process and tough issues can challenge participants



Matching consultation to different stakeholders



Develop a shared language



Acknowledge expertise



Demonstrate how your input will contribute to the end result

## Takeaway conclusion

The current approach to healthcare is not sustainable, both ethically and financially

# Takeaway conclusion

1. To demand that **architects** practice and apply the **Science of healthy design**
2. To develop a **Design Science that allows health** outcomes **to be** calculated and **measured**, thus enabling a healthy build environment index
3. To articulate/demonstrate the **commercial value** of healthy environments that **score high** on the build environment **index**
4. **Leverage** the commercial value **as a catalyst for** healthy (urban) **renewal**
5. Consider non-healthy as non compliance and **unethical**

# International Academy for Design and Health

## Vision statement

To foster Salutogenic design to promote health and wellbeing by creating physical environments that support health promotion and thereby healthy societies.



Ghent, Belgium 14-18<sup>th</sup> April, 2020

# Design & Health

13<sup>th</sup> WORLD CONGRESS & EXHIBITION

FIRST ANNOUNCEMENT  
**Call For Papers**

International Academy for Design and Health

[www.designandhealth.org](http://www.designandhealth.org)  
[editor@designandhealth.org](mailto:editor@designandhealth.org)

## Congress Theme – Less is more

### Day 1 – Healthy City

**Streams: Healthcare in the Community, Acute Care, Mental Health and Clinical Research.**

Day 1 will consider how we design a healthy city? How would this impact community care, acute care, mental health and clinic research? What would be the outcomes of reducing the burden of disease at different levels? How could the design of a health city prevent a reliance on health care?

The healthy city can be strongly researched, however, we will feature case studies and practitioners talking about their work and the outcomes in practice.

### Day 2 Theme – Global Perspectives

**Streams: Europe, South America, South Pacific, North America, Asia, South East Asia and Africa & Middle East.**

Day 2 looks to our Global Chapter regions regarding their localised health issues. Representatives will be called on to provide regional perspectives and regional health innovations, addressing local issues.

The content will include research, case study and practical points of view to demonstrate how regions have responded in individualised ways.

### Day 3 – Digital Industries

**Streams: Digital Innovation, Digital Success, Digital Industry and Digital Benefit Realisation**

Day 3 will assess how the impact of digital technology has created a huge transformation in healthcare including:

- a change in various models of care - community care, acute care, mental health and clinical research
- how patients access care
- assistance in the prevention and treatment of disease

This theme is aimed at anticipating and focusing on clinical innovation and the effects of built environment so that we can be prepared for it, as we look to other industries for inspiration.

For example, the airline industry has changed dramatically due to advances in technology. This has resulted in new airport designs. We will assess who and what are the digital innovators, digital success stories from industry operators, digital benefit realisations for technology providers – or other upcoming or emerging technology providers, as well as links between technology and government.



## TIMETABLE

### 15<sup>th</sup> July, 2019

First Announcement & Call for papers

### 15th September 2019

Deadline for Abstract of papers

### 11th October, 2019

Authors notified of decision of papers

### 11th October, 2019

Preliminary Programme and Registration opens

### 21st October 2019

International Academy Awards open for entry

### 1st December, 2019

Deadline for Early Bird, Speaker Registration and Final Manuscript

### February, 2020

Final Programme

### 14-18 April, 2020

13<sup>th</sup> World Congress

### May, 2020

Selected papers to be published on Resource Library

## You're Invited – WC2020 Design Competition

**The competition encourages applicants to not only consider the influence of design on health and wellness (salutogenis); but also to apply the research and advance the cause through your personal work and through this project.**

In inviting you to join our design competition, the International Academy for Design and Health encourages you to become empowered about creating change through designing healthy spaces and improving wellness, despite any formal requirement or legislation for you to do so.

### The Topic for the Design Competition is:

**How to design a healthy city that doesn't require a hospital because it is founded on wellness and preventative principles**

**In addressing this topic, please consider:**

- We do not want you to design the entire city, just one building block or component.
- You can design individual building blocks that impact or help the people of the city.
- Your building block can be as small as an individual healthy room, all the way through to a healthy community through urban planning.

**Find out more & register on our website – submissions close 31 October 2019**

Submissions can be under a single name, a formal organization, or an informal group.

Submissions can be multi-disciplinary or may take a single focus.

Thank you