

Design with impact

Signe Kongebro

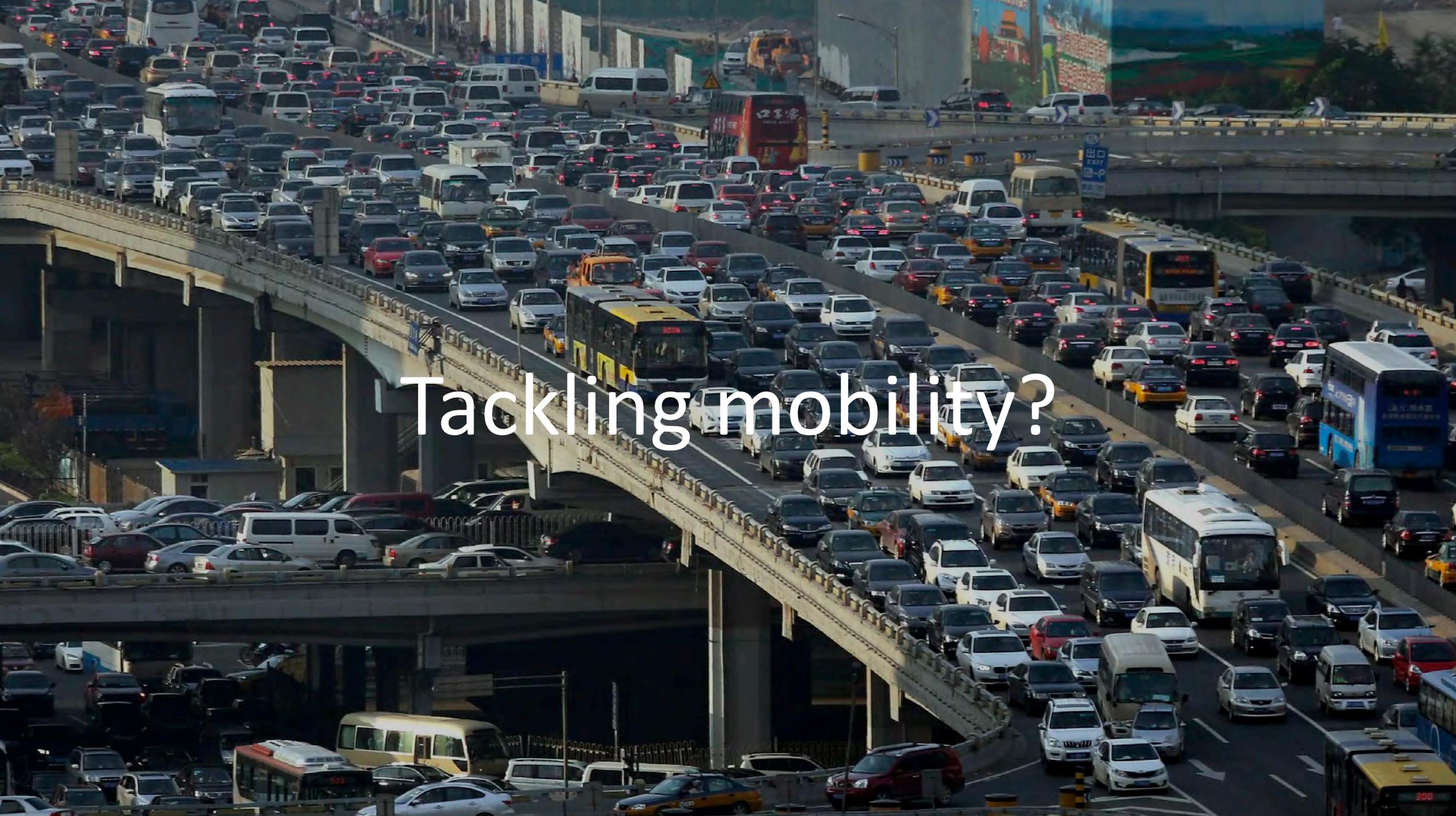
Global Design Director, Landscape and
Urbanism/Professor/Partner



What are the right priorities?

A photograph of a dense urban landscape featuring numerous tall, multi-story apartment buildings. The buildings are reflected in a calm body of water in the foreground. The sky is overcast and grey. The text "Improving urbanisation?" is overlaid in the center of the image.

Improving urbanisation?



Tackling mobility?



Preparing for extreme weather events?



Reducing inequalities?

SORRY

WE ARE

CLOSED

Taking on the next global
crisis?

COVID-19

INPUT

The questions we ask

Dreams and visions
Ethics and manifestos
Narrative and brand
Big Data and KPI
Urban Impact Scenarios

Urbanism:

Architecture
Landscape
Planning

OUTPUT

The impact we create

Culture and Socially
Nature and Water
Mobility and Landuse
Economy and value
Heritage and Identity





A social destination...



ARCHITECTS DECLARE _ GLOBAL MEETING 16 APRIL 2020



Jacqueline, AD UK admin



Martha Lewis Denmark



Catherine Sunter Norway



Andrew Waugh, UK AD



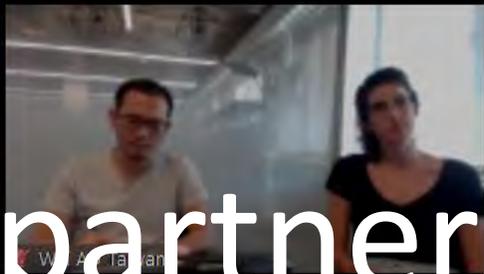
Sian Taylor NZ



Peter Clegg, AD...



Piotr Kurkiewicz Poland



Wu A (Taiwan)



Mark Stephens A (Ireland)



gosia

Other partnerships we aim for:



Julia Barfield, UK AD



Radek, Poland



Tove Wallsten Swe (Architects S...)



Laszlo Szeker Hungary



Michael Pawlyn UK AD



Jennifer's audio



Schirin Taraz, Singapore



Catriona Duggan Ireland



Mattias Gustafsson Urbio, SWE



JJP_AD Taiwan



Friederike Kluge, ...



A group of children and an adult are gathered around a dark table in a bright, modern classroom or workshop. The children are focused on their work, with some looking at papers and others using markers. The adult is leaning over the table, providing guidance. The room features large windows, pendant lights, and a glass partition in the background. The text "1. Research + Knowledge" is overlaid in white on the image.

1. Research + Knowledge



2. Prototyping

A group of people, including a man in a dark jacket and glasses in the foreground, are walking along a paved path in a courtyard. The courtyard is flanked by multi-story brick buildings with many windows. There are young trees with sparse, brown autumn leaves and some outdoor furniture like tables and chairs. The scene is overcast.

3. Facilitating



Reduce



Reuse

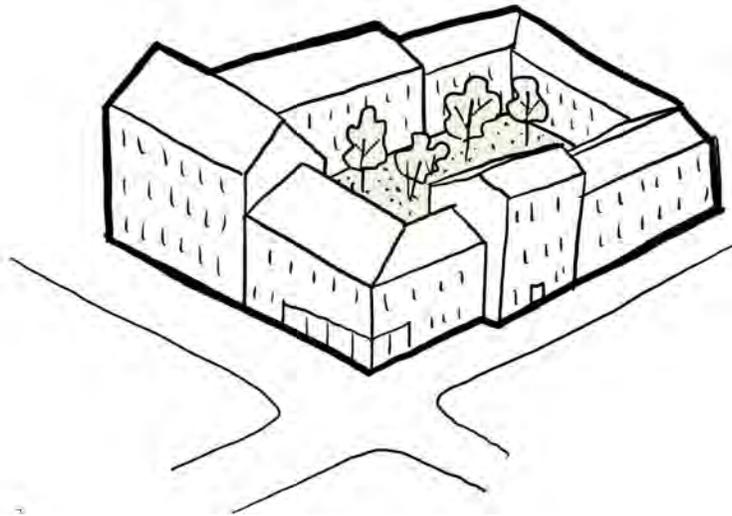


Recycle

Vejlands Kvarter

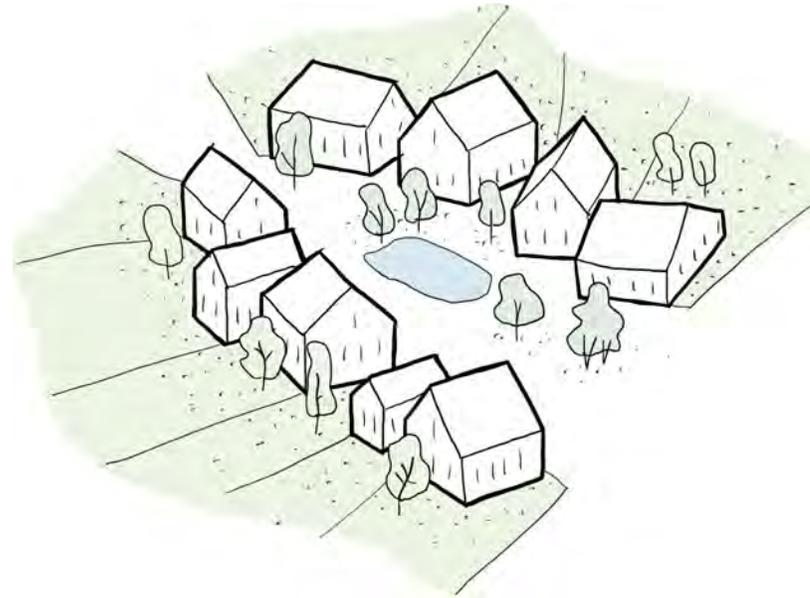


Urban Living

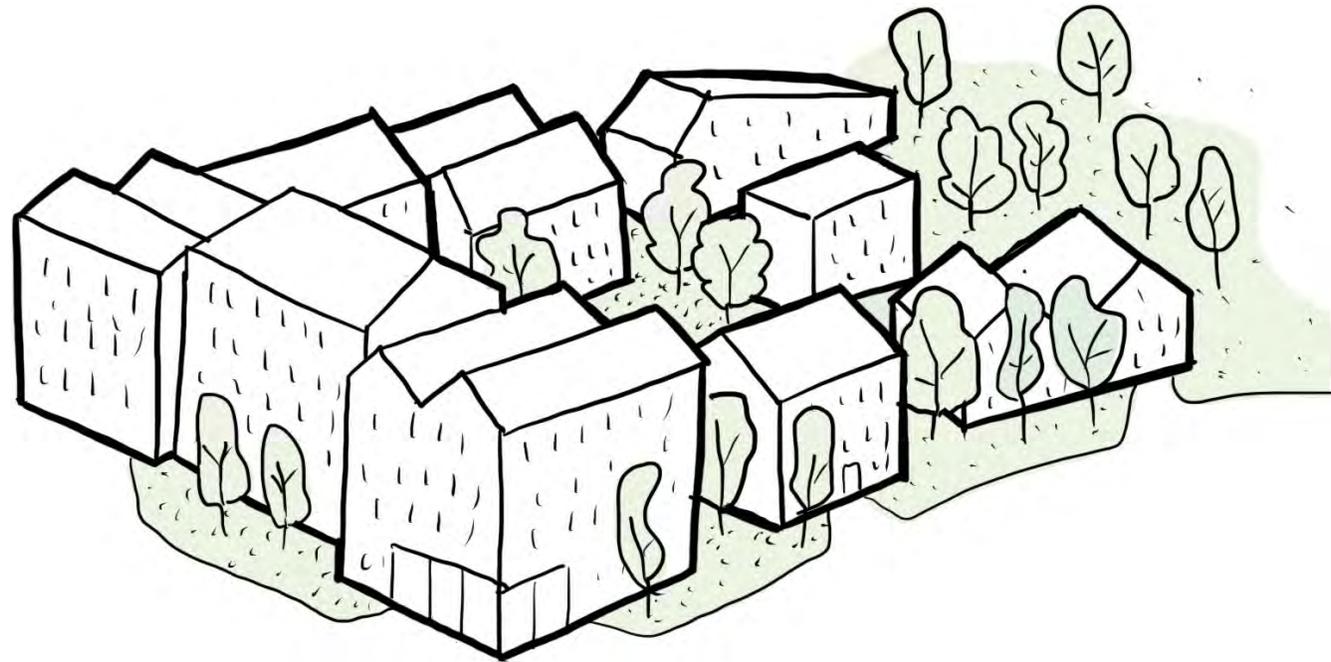


+

Rural Living

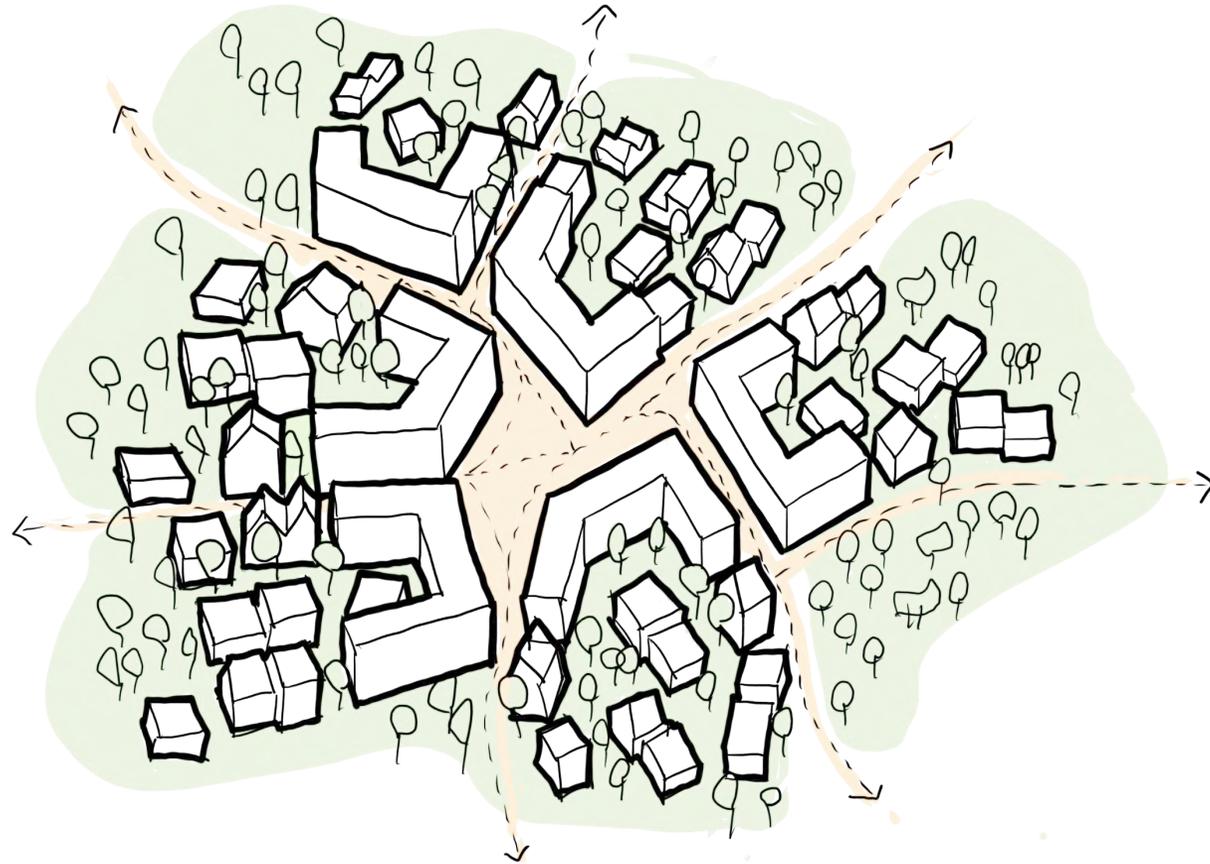


A New Typology

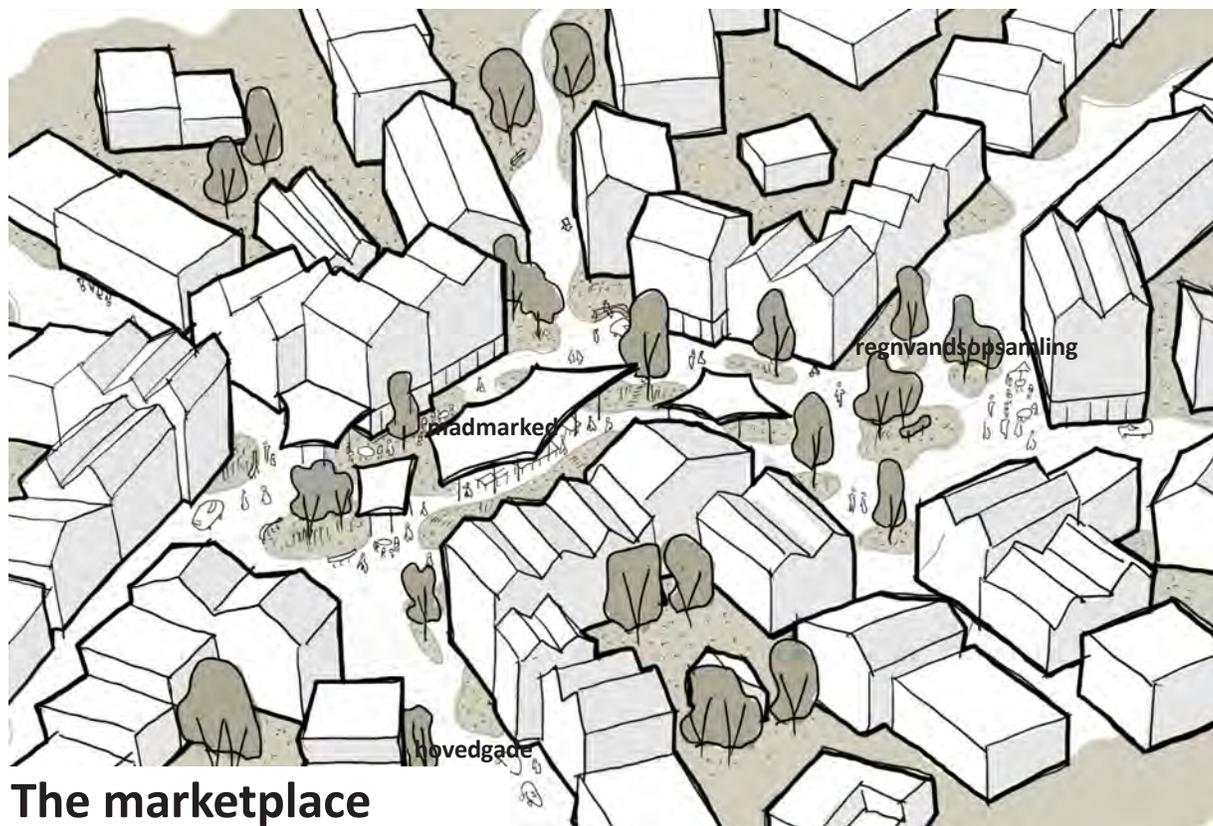




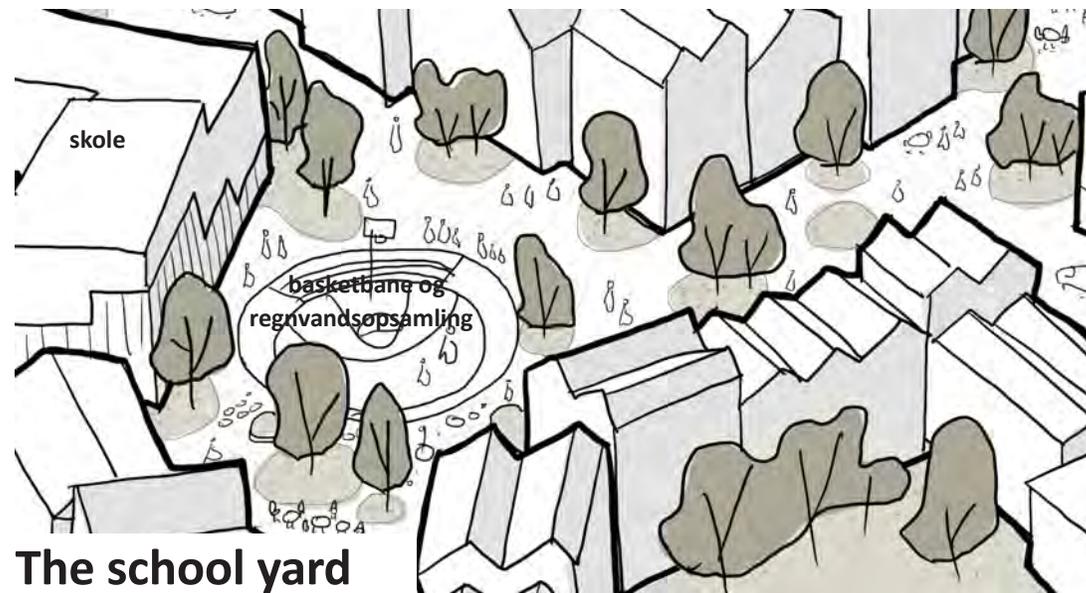
Fælledby



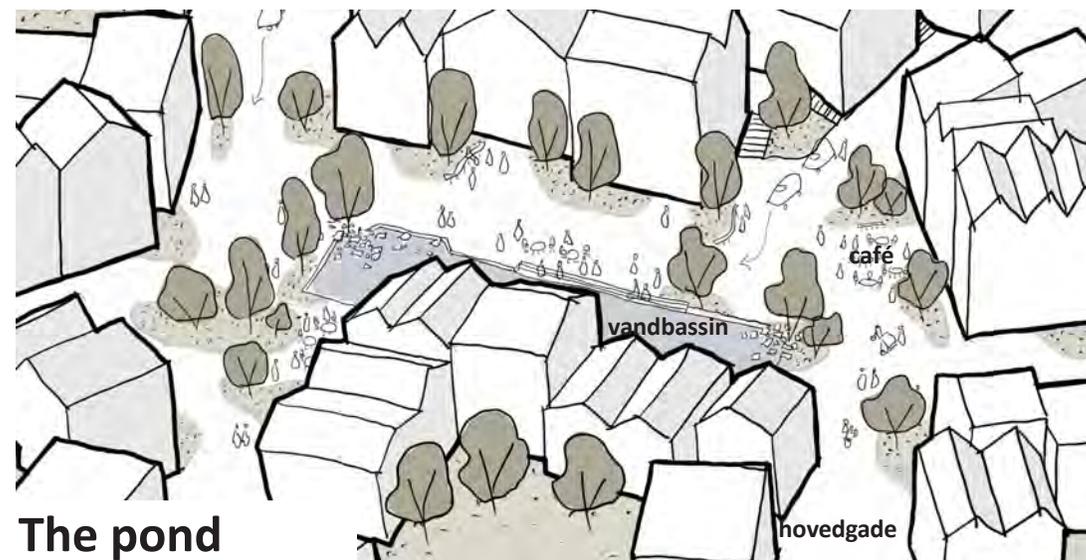
Three different urban areas



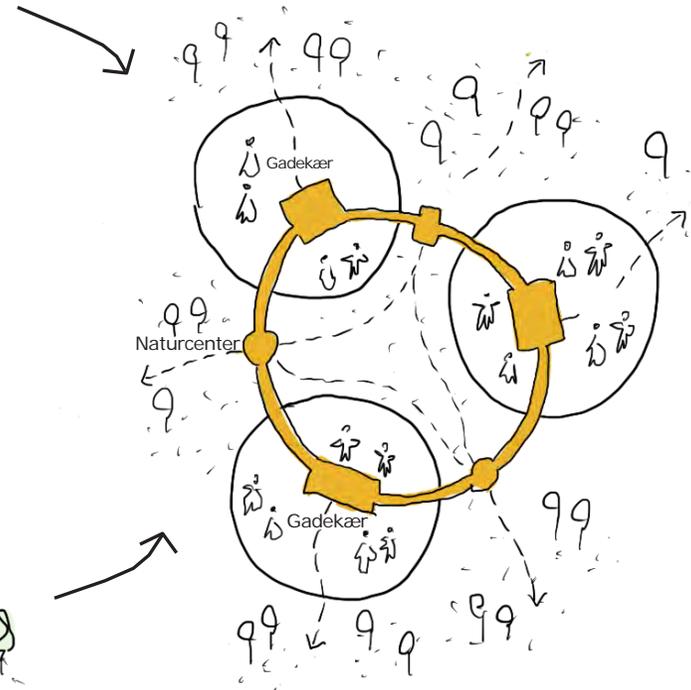
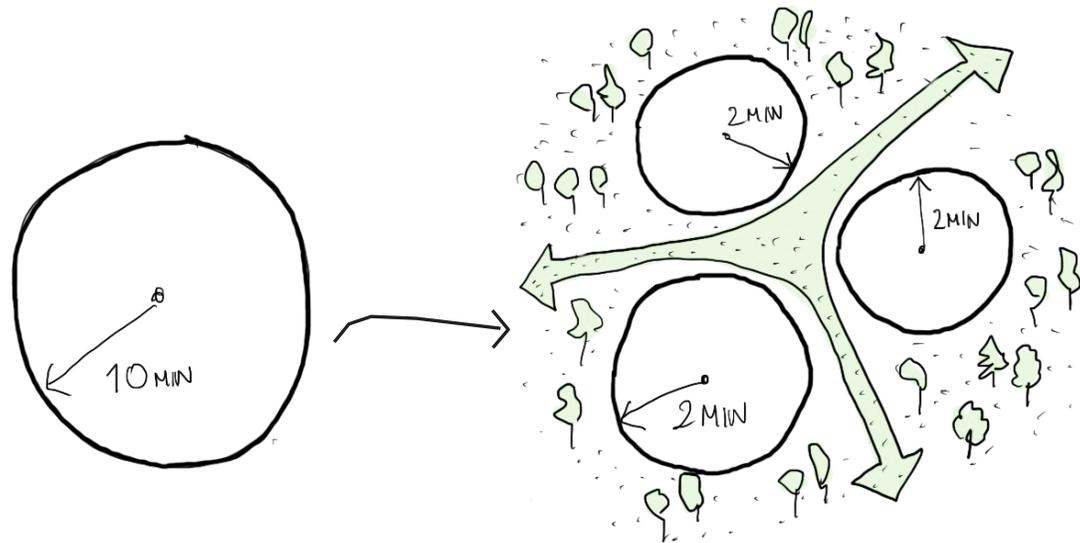
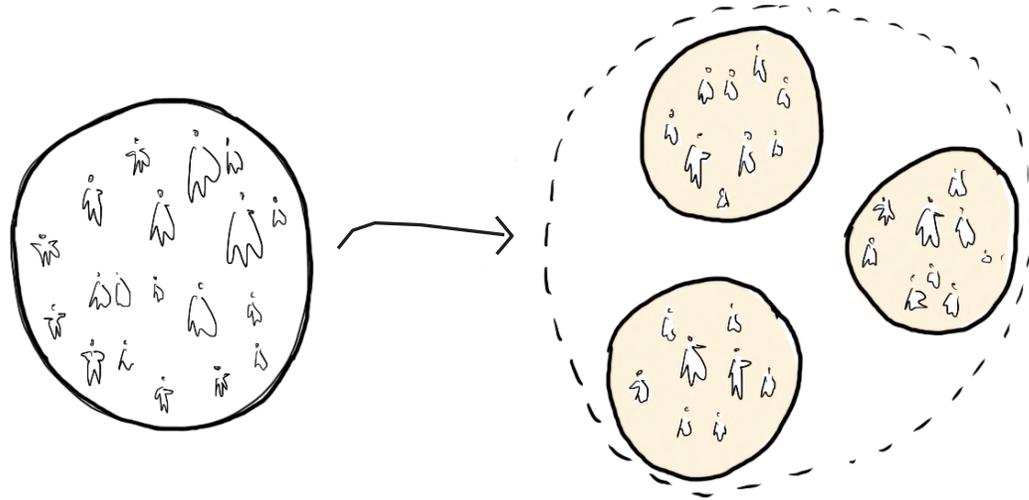
The marketplace



The school yard



The pond



A city of three neighborhoods

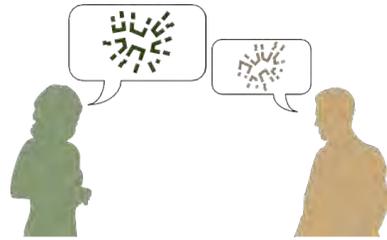




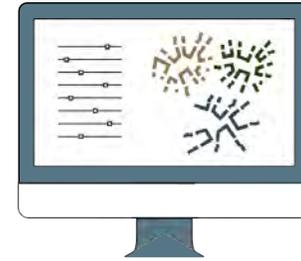
Design Process: Feedback Cycle



Submission of proposal



Development in dialogue with stakeholders

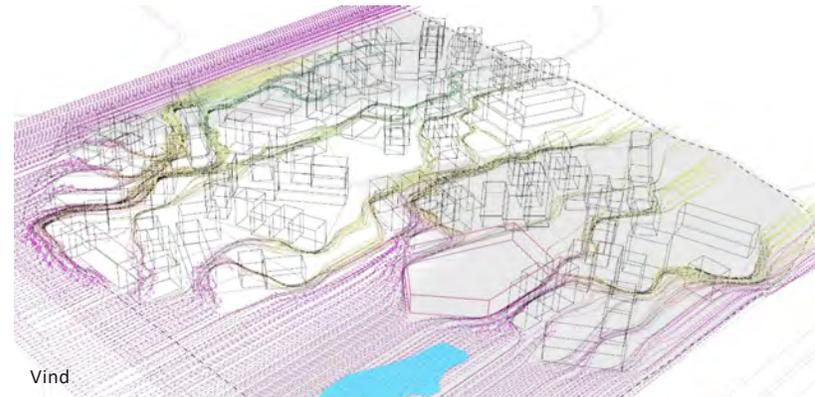
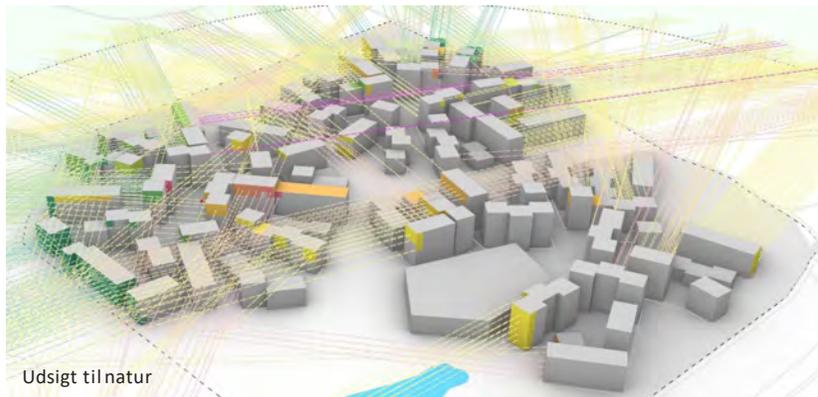
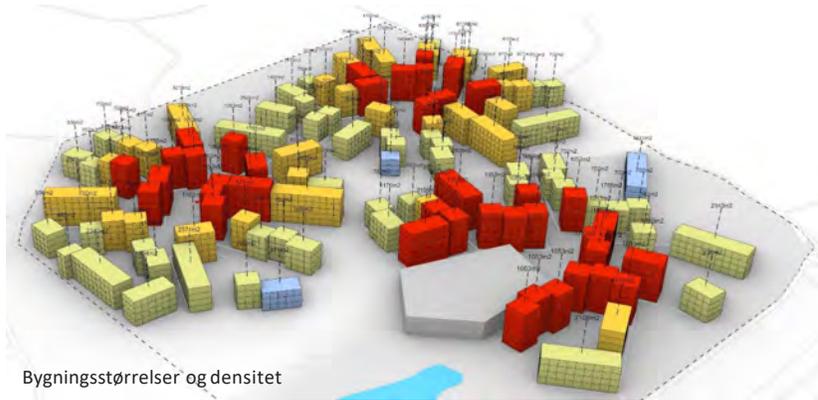


Optimise design with input from partners and stakeholders



Adapt to new knowledge, changed market conditions, and other unforeseen events

Optimisation of nature, architecture, and value





KOMMEN ALLE EERDE

DELICATESSEN

REBUS











Before



After







Gdansk









Embrace History

STOCZNIĄ GDANSKĄ im. LENINA





STOCZNIA GDANSKA









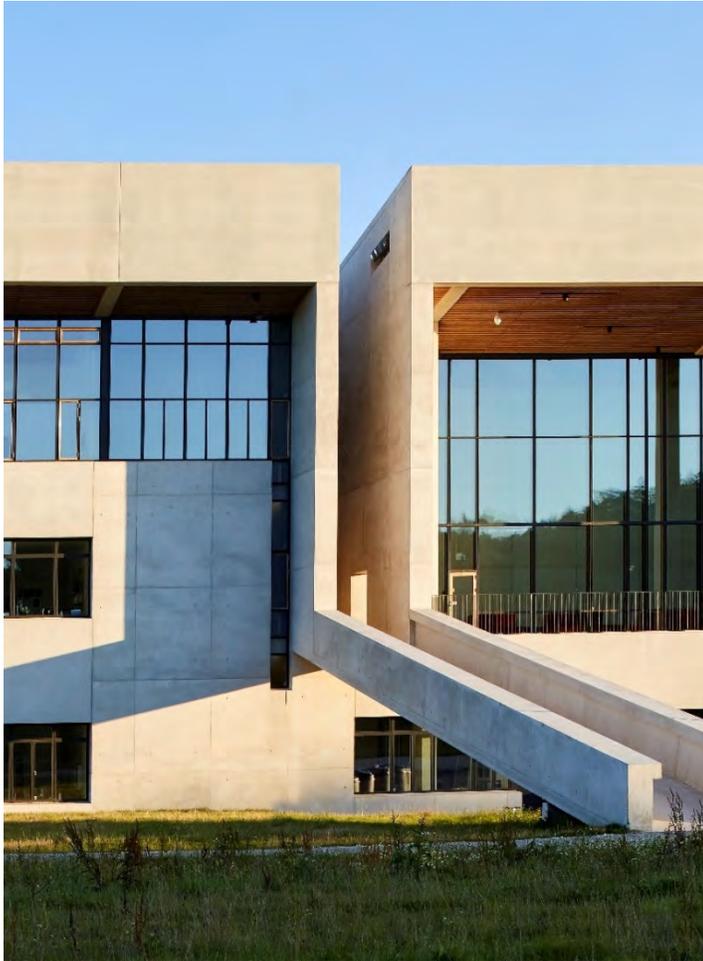


Henning Larsen R&D

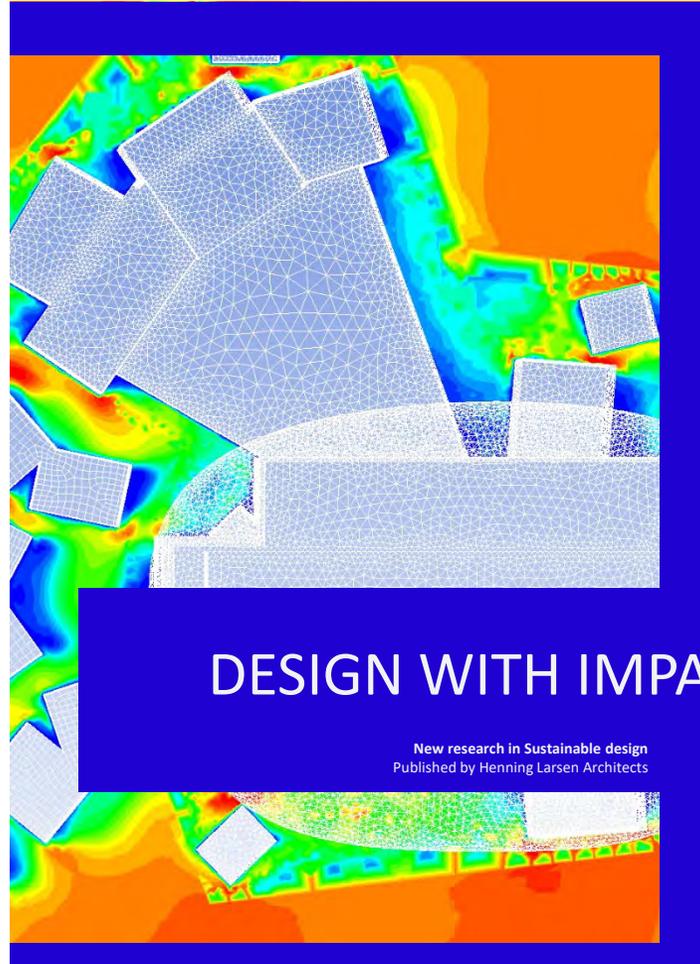
As an industry, how can we take
responsibility?

Because we seek solutions that create the best possible conditions for the users in our buildings and cities.

It's not about how buildings and cities look,
but what they can do.



Projects



Design methods

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Energy and Buildings

Journal homepage: www.elsevier.com/locate/enb

The urban canyon and building energy use: Urban density versus daylight and passive solar gains

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Wind and air flow

ABSTRACT

The link between urban density and building energy use is a complex balance between climatic factors and the spatial, structural and use patterns of urban spaces and the buildings that comprise them. This study uses the concept of the urban canyon to investigate the ways that the energy performance of low-storey buildings in a north–south aspect setting is affected by their context.

This study uses a combination of urban-based dynamic thermal and daylight simulations to describe how these primary factors in the passive energy performance of buildings are affected by urban form in urban density.

It was found that the geometry of urban canyons has a stronger impact on total energy consumption in the range of up to +20% for offices and +15% for housing, which shows that the geometry of urban canyons is a key factor in energy use in buildings. It was demonstrated that the reflectivity of urban canyon planes is important, previously under-estimated risk, which needs to be taken into account when designing low-energy buildings in dense urban energy optimization of urban and building design requires a detailed understanding of the complex interplay between the temporal and spatial fluctuations taking place, energy performance and quantitative climate data.

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1. Introduction

One of the most basic and fundamental questions in urban master planning and building regulations is how to secure common access to sun, light and fresh air, but for the owners of individual properties, it is often a question of getting the most of what is available. There is potential for repeatedly recurring conflicts between public and private interests. Solar access and the right to light remain contested territory in any society, vital arteries to health, comfort and pleasure.

Traditional urban planning has sought to control the proportions of the street, because the basic geometry of building heights and distances between buildings regulates access to light and solar heat. Zoning laws and building regulations usually establish height-to-distance ratios that limit the over-crowding that buildings may cause for public space and other buildings. A similar geometric abstraction of urban space – the urban canyon [1] – has been used in urban climatology, to describe the way that urban spaces create spatial environmental conditions. It is a spatial archetype that allows us to integrate knowledge from several different specialized fields of research.

In geometric terms, the urban canyon is described as the height/width ratio of the space between adjacent buildings. Other defining variables, and the proportions of urban canyons have long lasting impacts on the future energy consumption for the heating, cooling and lighting of the buildings that define them, and the environmental qualities of the streets, squares, courtyards or parks that comprise them. Urban development in a rational sense promises to boost industrialized societies, but the impact of its conditions on building energy use multiply over the years – more than other processes that affect building performance over its lifetime. So, considering that one of the main challenges to architects and engineers in the next decades will be how to improve the energy performance of our buildings and cities, we need to improve our knowledge of both urban and building design through research on the dynamic interplay between climate, context and building energy use. The passive properties of buildings are likely to play a much more important role in the total energy consumption, as winter heat losses are reduced with better insulation, glazing and air tightness.

Urban densification is a core strategy for sustainable development, focusing on energy savings through efficient transport systems, shared infrastructure and maximizing heat gains and losses that dominate energy budgets. It has been established that densification is a balancing act between these opportunities on the one hand, and securing fair access for low-energy buildings and urban

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1460 DESIGN WITH KNOWLEDGE | RESEARCH ARTICLES

Research

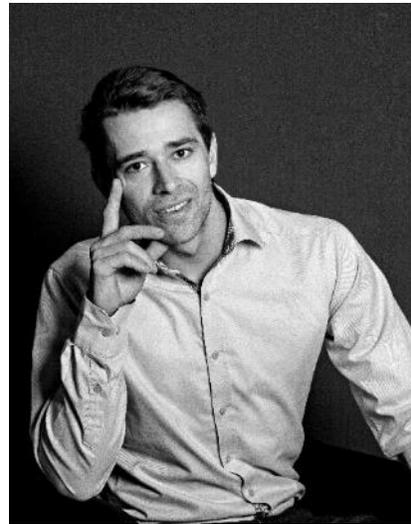
In-house Industrial PhDs Programs



Imke Wies van Mils
PhD. Stud. Artificial Lighting



Pelle Munch-Petersen
PhD. Stud. Facade Design,
Architects



Krister Jens
PhD. Stud. Big Data



Drew Thilmany
Phd. Stud. Ethnology, MA
Applied Cultural Analysis



Finnur Pind
Phd. Stud. Acoustics, MSc. Civil
Engineer



Cases

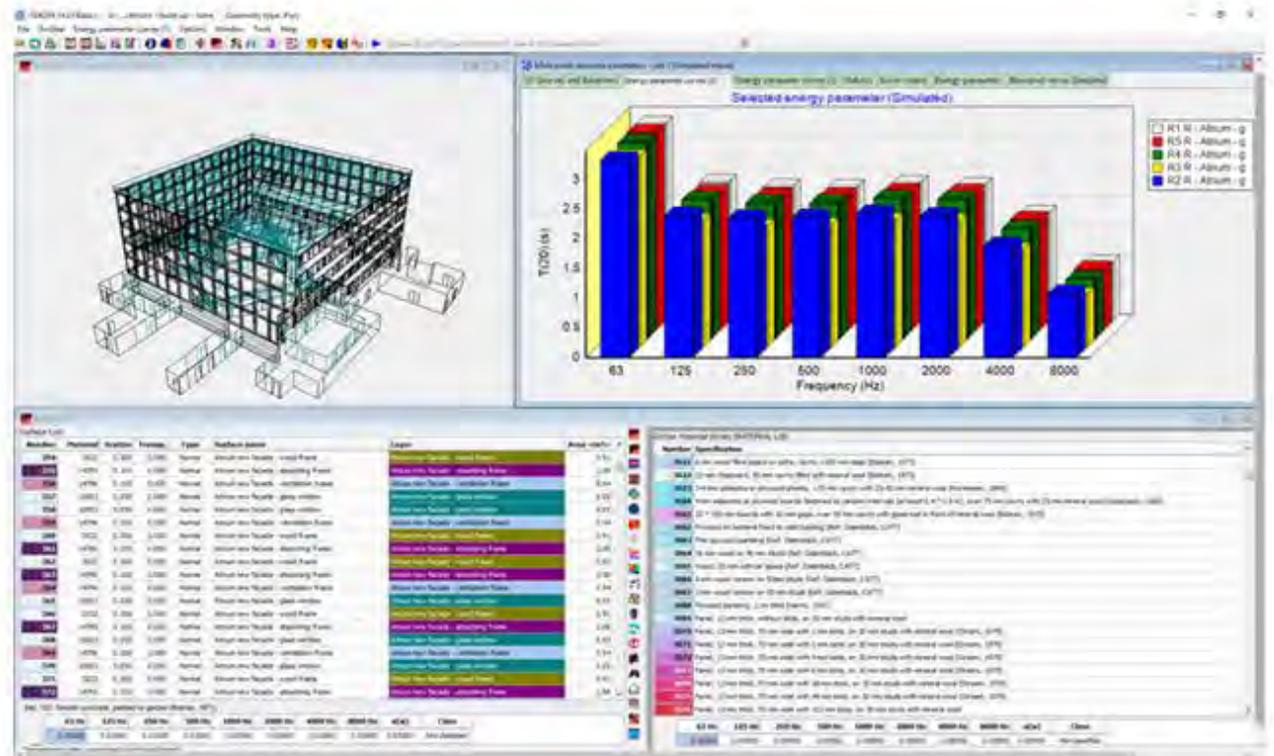
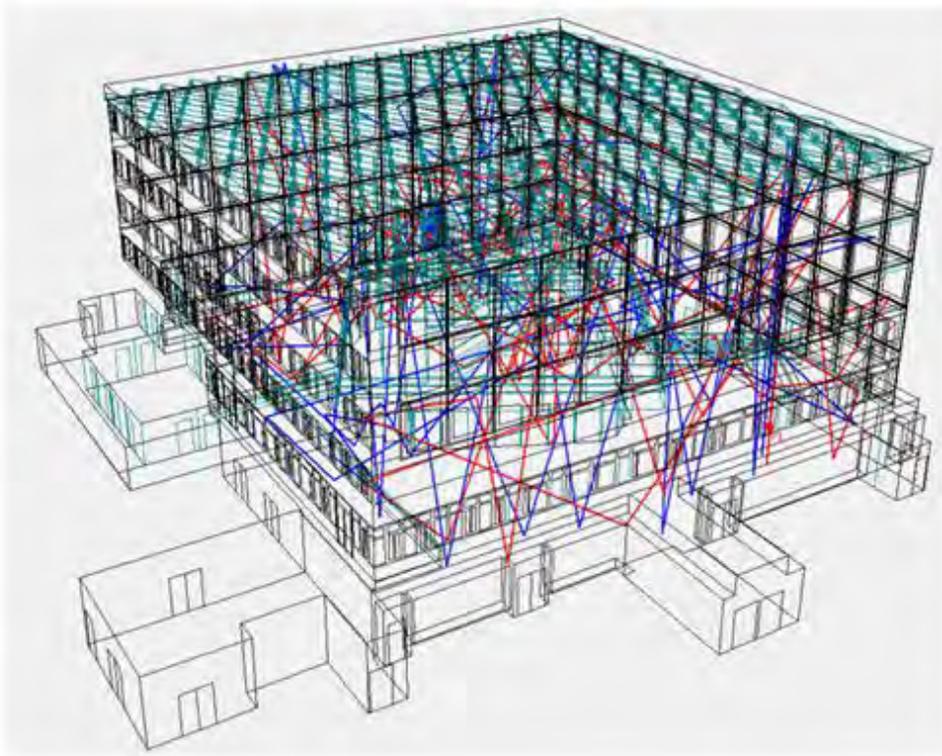
Uppsala, Sweden

Uppsala City Hall





Research virtual acoustics



Uppsala City Hall

Combining technologies



Uppsala City Hall

Virtual soundscapes and immersive audio

– new technologies to engage the user





Uppsala City Hall

```
public XYZ GetWallInfo(UIDocument uidoc, Document doc)
#endregion

#region ROOM INFO
// having the room coordinates, it is possible to find which grid point
public void GetRoomInfo(UIDocument uidoc, Document doc)
{
    Reference roomReference = uidoc.Selection.PickObject(ObjectType.Element, uidoc.ActiveView);
    Room roomElement = doc.GetElement(roomReference) as Room;
    Element roomPoint = doc.GetElement(roomReference);

    //ElementCollector sc = new ElementCollector();
    // calling collector for enscape camera
    //Element roomFilter = sc.GetCameraByNameLambda(doc, "Room1");
    //Room roomElement = roomFilter as Room;

    // get the room position
    //LocationPoint roomLocation = roomElement.Location as LocationPoint;
    //XYZ roomPoint = roomLocation.Point;
    //Debug.WriteLine("Room Coordinates" + roomPoint.X + ", " + roomPoint.Y + ", " + roomPoint.Z);

    SpatialElementBoundaryOptions options = new SpatialElementBoundaryOptions();
    options.SpatialElementBoundaryLocation = SpatialElementBoundaryLocation.Center;
    string roomElementInfo = "";

    foreach (IList<BoundarySegment> boundSegList in roomElement.GetBoundarySegments())
    {
        foreach (BoundarySegment boundSeg in boundSegList)
        {
            ElementId eID = boundSeg.ElementId;
            Element e = doc.GetElement(eID);
            Wall wall = e as Wall;
            LocationCurve locationCurve = wall.Location as LocationCurve;
            Curve curve = locationCurve.Curve;

            Parameter wallParameter = wall.get_Parameter(BuiltInParameter.WALL_THICKNESS);
            double feet2Meter = 0.3048F; // convert feet to meter ratio
            double lengthOfWall = wallParameter.AsDouble() * feet2Meter;

            roomElementInfo += e.Name + " " + curve.Length + "\n";
        }
    }

    TaskDialog.Show("Boundary Segment Elements", roomElementInfo);

    //return roomPoint;
}
#endregion

#region INTERPOLATION GRID CALCULATION
```

Autodesk Revit 2018 - A-40-V-200_LVIER - Floor Plan: AAB - Plan 2, Bottenväning, Entré - working

Enscape 2.4.1 - View: 'Enscape - FFIN'



