

Title: **The World's First Chief Design Officer Looks To a Carbon-Neutral Future**

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The World's First Chief Design Officer Looks To a Carbon-Neutral Future



Hanna Harris

The City of Helsinki, Finland is frequently cited as one of the world's most livable cities. In an effort to maintain its livability far into the future, the city adopted a goal of becoming carbon-neutral by 2035. One of the officials at the forefront of this effort is Hanna Harris, who happens to be the city's and the world's first Chief Design Officer. Harris spoke with CTBUH Journal Editor Daniel Safarik recently.

Interviewee

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Hanna Harris was appointed Chief Design Officer (CDO) for the City of Helsinki from March 2020. She was previously director of Archinfo Finland, and prior to that, program director for Helsinki Design Week and the Finnish Institute in London. Helsinki was the world's first city to hire a chief design officer, in 2016.

The city declared a goal of becoming carbon-neutral by 2035, which would require a reduction of greenhouse gases by 80 percent from 1990 levels. This is an enormous task. What do you perceive as being the biggest challenges, and what kind of progress can you report on so far? How does design play a role in this?

In 2019, we were down 26 percent from the levels of 1990. The single largest challenge is heating; it accounts for 56 percent of all emissions, followed by transport and mobility with 24 percent. With such a large proportion of the city's emissions generated by heating, energy efficiency improvements of the building stock are a very important part of the climate target. Most apartment buildings in Helsinki are privately-owned apartment blocks; owners are limited companies in which residents hold shares. In many cases, energy renovations make economic sense and reduce costs in the long run, but the energy renovation wave is still not happening.

As a city, we are trying to tackle this problem with our Energy Renaissance support scheme. This year, we are hiring a team of experts to work with the housing companies. We want to help catalyze these much-needed renovations. This is where design crucially steps into the picture. We will be working with designers in order to develop the model of how the different stakeholders will work together, identify where the challenges are, and ultimately, to have the needed impact on people's behavior.

Interim goals for 2025 include: reducing emissions by 40 percent from 1990 levels, increasing the proportion of renewable energy to 25 percent, and halving the

use of coal. Can you comment on the current usage figures for these energy sources and emissions reduction efforts from the standpoint of early 2021?

With the downtown Hanasaari coal-fired power plant set to close in 2024, we will be able to cut coal-firing by half, and subsequently also halve the emissions of district heating. Following this, it is looking very likely that we will be able to reach the interim goals.

Many of the goals in the Carbon-Neutral Helsinki 2035 Action Plan relate to operational energy for power consumers and vehicles. Our organization, as an advocate for sustainability in the architecture / engineering / construction realm, is concerned with the massive proportion of carbon emissions that come from the construction of buildings. What kinds of initiatives or design solutions are being pursued in Helsinki pertaining to embodied energy?

The carbon-footprint of buildings is something that will be tackled with new national legislation expected to be in place in the next few years. In Helsinki, we are already testing several things. We have been investigating emissions incurred during construction, for instance by creating the design principles of the Vartiokylänlahti Bay area, and in competitions for low-carbon green urban blocks. We are also working on how to best combine climate criteria alongside design criteria in our plot competitions. Based on what we learn and find out, we will be developing more wide-scale guidelines to be taken into account in future updates of our Carbon-Neutral Action Plan.

“Helsinki was one of the first cities in the world to invest in design and architecture on a strategic level.”

Given that Finland is a Nordic country with large stands of timber and many of its neighbors have an active mass timber industry, has Helsinki considered using the carbon-sequestering properties of mass timber in high-density applications?

The new agreement of land use, housing, and transport states that Helsinki will annually be increasing the amount of timber construction. Recent examples include both urban blocks and buildings such as major corporate headquarters. The unique Jätkäsaari Wood City uses timber in the whole urban block in the Jätkäsaari residential area, located in the former harbor area close to the city center (see Figure 1).

The winning entry by Anttinen-Oiva Architects proposes a new timber, carbon-neutral headquarters building for the Katajanokka shoreline close to the city center for one of the leading pension insurance companies. As 86 percent of housing units in Helsinki are located in blocks of flats, we are also actively searching for timber housing block solutions in the context of our Re-thinking Urban Housing program.

How can the design of not only buildings, but streets and public spaces, contribute to this goal?

We are committed to making Helsinki a great cycling city, with initiatives such as the Baana cycle network, and by expanding the downtown cycle lane network. The hugely popular Baana cycle highway allows for quick access through the city center (see Figure 2). In 2020, it reached more than one million users. It is noteworthy that Baana has been built along a former harborside rail track, and thus it makes excellent use of existing infrastructure. Also, our city-bike scheme is very popular, and we are extending the reach of the scheme.

We currently also have several street developments that are reconfiguring the use of urban space to make for better public transport, cycling, and walking. Examples of these include projects such as the major Hämeentie renewal, where we will have faster tram lines, more cycle lanes, and wider pavements. We are also proud that we have



Figure 1. Jätkäsaari Wood City, Helsinki. © City of Helsinki / Antti Pulkkinen



Figure 2. Baana cycle highway. © City of Helsinki / Veikko Somerpuro

simultaneously been able to improve on the safety of transport. In 2019, we had no traffic-related deaths.

Are there provisions for increased density around transport hubs and other such strategies involved in promoting the reduction of energy consumed in transportation?

The Helsinki City Plan embodies a set of aims that enable a carbon-neutral urban structure.

One key aim is expanding the inner city while simultaneously promoting polycentric, transport-oriented development and land use stemming from it. In implementing the city plan, we are systematically fostering these aims. We are creating a path for decreasing the amount of car-dependent city structure in the entire Helsinki metropolitan region.

Infill building takes place around existing transport hubs and infrastructure. We are also making several major rail network

investments. The Raide-Jokeri crosstown light-rail system is already underway, and building of the Kruunusilta bridges is set to commence in 2021, with operations starting in 2026. Several other rail projects are also being planned.

All of the above are also supported by measures taken to enhance cycling and walking. We need to successfully combine the city structure, and how it supports reaching our carbon neutrality goals, with how people use public transport and move around the city.

What are some of the other responsibilities of the CDO when not tackling the carbon initiative?

Design is included in the Helsinki City Plan and embedded in the city's work on multiple levels from city planning to service design and innovation practice. Helsinki was one of the first cities in the world to invest in design and architecture on a strategic level.



Figure 3. Oodi Library, Helsinki. © City of Helsinki / Kuvatoimisto Kuvio Oy

The work started in the context of World Design Capital Year 2012. Our first chief design officer was hired in 2016. We now have a dedicated in-house design team, a growing network of design professionals and enthusiasts, across the city as well as long-term partnerships with numerous design businesses. Design is currently used throughout the city central administration and all four divisions. We want to use design to further develop how the city functions, to better understand the needs of our citizens and other user groups of the city and to help tackle complex phenomena and societal issues. My job is to lead this work.

What are some of the approaches to design and construction that you have advocated or implemented, which would be obvious to citizens and visitors, and which might not be?

In the coming years, our design work will include many things to do with further developing the urban experience and our public spaces. First, we need design tools and guidelines to aid in this. To this end, we are currently working on a new architectural policy for the City of Helsinki. At the same time, we are committed to working on how the people of Helsinki can be even better involved in co-creating their own city. We are working on how architecture and design learning can be part of our schools and education system, helping children and young people develop creative problem-solving skills, while developing an appreciation of and motivation to be part of creating the built and designed environment. We are also interested in developing our

placemaking practices, and will be producing a number of placemaking pilots, together with different user groups of the city.

One of my favorite examples of the above from the past couple of years is our library system. Helsinki has close to 40 libraries. The new central library Oodi, designed by ALA Architects and opened in December 2018 (see Figure 3), is the crown jewel in the network. It has won numerous architecture and other design awards, and keeps attracting attention. What is however equally interesting is how Oodi came to be in the first place, and what its relationship is to other libraries in the city. Extensive co-creation processes with all library users went into making Oodi what it is today—a true library of the future. It is a place for free learning and sharing to take place. The same design principle goes into keeping our older libraries relevant, and into designing new, smaller libraries outside of the city center, such as the Maunula House. With Oodi, library usage has gone up by 140 percent, not only in Oodi, but throughout the system. This is a great result.

Clearly the government cannot achieve these carbon goals alone, or by fiat. From the perspective of chief design officer, what kinds of partnerships have you sought with the AEC industry or other actors in the built environment in order to get to the 2035 target?

One example is the Helsinki Energy Challenge. Helsinki wants to find long-term sustainable solutions to heat the city in the future. Simultaneously, we want to act as a platform for new and innovative solutions

that other cities around the world can benefit from. For this purpose, our mayor Jan Vapaavuori launched the international Helsinki Energy Challenge competition in February 2020. The global competition sought solutions through which the city can be sustainably heated in the coming decades—without coal and with as little biomass as possible. The competition’s first prize was one million euros. We had participation from 252 teams consisting of 1,528 experts and innovators from all over the world, designing potential solutions to the challenge of decarbonizing the heating of Helsinki.

An international jury selected four winners from the 10 finalist teams, which included start-ups, large companies, research institutes, and universities, as well as international consortia made up of various companies. The four winning teams presented proposals that represented a broad range of solutions, from major infrastructure such as floating heat storage islands, to market reform that will encourage innovation and aims to open the heating network for several heat producers. Throughout the competition, we have also had strong international support from different organizations, and from several mayors around the globe.

Other similar examples include our strategizing on how to advance the circular economy. Here we are committed to working with businesses and our citizens, and to helping set up efficient circular economy clusters in the Helsinki area.

It is also noteworthy that the City of Helsinki owns a large proportion of its land, and is thus able to influence achieving carbon goals through its land-use policies, and through initiatives like design competitions.

Finally, collaboration with the state is of course, crucial. The Ministry of Education and Culture and the Ministry of Environment have just finalized a proposal for a new national architectural policy for Finland. It sets numerous targets that directly involve the active participation of cities, too. ■