To try to figure out which of these issues will have the larger effect on building design it is wise to first consider what their predicted effects will be in the long term. UHI is a relatively well understood phenomenon. Its consequences are apparent, and with proposed mitigation concepts being researched by many different researchers it is possible to lessen the effects in the future through smarter city planning and implementation of different strategies that have been discussed at length in literature. (Mohajerani et al., 2017; Onishi et al., 2010) Examples of these strategies are use of highly reflective materials to lower radiative heat absorption, cool pavements and roofs and inclusion of far more urban greenery. (Akbari, 2015) This means that future effects of UHI are mainly dependent on the choices made by city planners and building designers, and as a result it should be possible to plan for the future.

Research on UHI in London by Kolokotroni et al. from 2006 and 2007 showed that annual urban cooling loads are up to 25% higher than the rural load, and annual heating load is reduced by 22%. Their research from 2006 investigated the effects of UHI on ventilative cooling in London specifically. Their findings state that a properly optimised rural office building, making use of ventilative cooling and night ventilation strategies, would not need any artificial cooling and need 42% of the cooling required for an urban optimised office. This shows a large difference in ventilative cooing effectiveness between urban and rural environments, attributable to UHI, which means building design should also change drastically to account for these effects.

The effects of climate change are a less well defined topic. The global mean temperature will increase, but this does not mean that it will simply be warmer by this amount all over the world. Chances of extreme weather events occurring will become far higher, especially the global average chance of heatwaves. (Arnell, 2019) Planning for this would mean requiring far more cooling headroom, with minimized ventilative cooling since the outside air would be far too hot during these periods. PV panels become far less efficient when exposed to excessive heat, which means that engineering these for extreme heat waves requires implementation of extra cooling capacity so they keep functioning efficiently in these times. (Popovici , 2016)

The real difficulty starts with the unpredictability of climate change. Excessive heat is not the only possible effect, with extreme weather events of all types increasing spells of extreme cold are also possible. There are also the more complicated effects like the potential collapse of the gulf stream. (Boers, 2021). This would cause warm water from other parts of the planet to no longer be transported to Europe, which could in turn cause a large drop in average temperatures in western Europe. Collapse of major ocean circulations would affect many other parts of the world, with local average cooling effects of up to 8 degrees. (Vellinga; Wood, 2002) The larger effects of the melting of polar and Greenland ice are also difficult to predict. Extreme rainfall events will be far more likely in many parts of the world as well. What makes all of this even more difficult is that it is virtually impossible to predict what type of climate change effects will effect a specific part of the world to any acceptable degree of certainty.

All of this means that implementing future proofing related to climate change in building design entails planning for both extreme heat and extreme cold, large amounts of rainfall and water saving measures in case of drought. Ventilative cooling becomes less effective at these extreme temperatures and PV panels require cooling during heat spells. To make matters worse it is virtually impossible to plan for the future use a building might serve. As a result designing a future proof building that is built to stand the test of climate change is prohibitively expensive. UHI meanwhile has far more obvious effects, and design that takes these into account and tries to mitigate them is doable and previous research shows clear actions that can be taken for this.

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