

Bamboo Buildings (A Working Paper)

The proliferation of office buildings in the cityscape

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***Abstract:** Cities appear to abound with office buildings which, if seen as a ‘species’, (of building) could be considered the dominant and most prolific compared to others (like apartments, hotels, hospitals and malls). Given that office buildings are the reason why a great majority of the working population are required to move across the planet twice every day, causing significant economic and environmental impacts, their continued proliferation and domination is worthy of further questioning.*

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Introduction

Cities appear to abound with office buildings which, if seen as a 'species', (of building) could be considered the dominant and most prolific compared to others (like apartments, hotels, hospitals and malls).

Given that office buildings are the reason why a great majority of the working population are required to move across the planet twice every day, causing significant economic and environmental impacts, their continued proliferation and domination is worthy of further questioning.

This dominance appears to occur in many ways; including height, mass, m2 area, population, density and proliferation rates.

Office buildings have grown considerably in average height as a species only in the last century, due to structural technology which allows for them to soar from their previous height of a few levels, to over a hundred levels. A building of this height can house the equivalent of a country town. One tower can now hover above a block of land that would normally be allocated to the local post office.

As office buildings get higher, their average footprint (the area of the tower as it intersect the earth) grows as well, to allow for structural integrity. Due to this and their great height, their mass is considerable compared to other species.

When office buildings 'sprout' in the cityscape, they do so in 'clusters' that are restrained in number by available space (which is determined by regulation). They do however (and particularly when they are 'in season'), crop up in other places across the city, as if connected by a common thread.

Office buildings seem to be a prolific species as well, populating their environment over relatively short periods when they are 'in season'.

If the cityscape was to be likened to a natural habitat with a species of trees, a savanna perhaps, then office buildings appear to be the 'tall bamboo cluster' invading a landscape that was normally marked by low grasses, bushes, scrubs and the spasmodic tree.

Since office buildings call the working population from their homes at the same time every day, along transport routes that are designed for the purpose, they hold a significant place in our way of life, impacting on our living costs, movements, environment and lifestyle.

They in effect form the second home which people go to each day, which at the end of a day's work, cause us to move back to our first homes at virtually the same time every day.

The ability to draw larger numbers of people into a specific city area where office buildings are located, has been greatly magnified due to the increase in their height, scale and number. This is a phenomenon that was not as prevalent in their earlier form, as the accommodation capacity of low level buildings were constrained by height and available land.

In 'office building creation season' in recent times, demand for office space is often oversupplied, due partly to the inefficiencies of the property development process. As a result, this new species leaves little

resistance to the ability for organizations in general to be able to accommodate their people in the cityscape, and perpetuate and grow the 'second home for the day' culture of our society.

Office buildings also have a considerable ecological footprint, large amounts of energy are consumed in their construction, embodied within their frames and facades and needed in their operation.

Residential towers hold greenhouse efficiencies related to co-location of people in a confined area. Office buildings appear to do this also, but with the efficiency of their soaring structures and the resultant scale of these buildings, they increase the capacity to draw the workforce out of their homes each day and perpetuate the daily 'dance to work'.

Background To Study

The writer is a thirty year veteran of commercial building and property development projects, and has been involved in the creation of landmark office towers and other buildings in the Asia Pacific region.

This paper is a subset of a larger study titled 'Ranking of Dynamic Cities' (www.jondrane.net/research) and seeks to address a concern the writer has, for the apparent unbridled trend to use tall office buildings for the primary purpose of accommodating humans during the day for commercial purposes.

The concern is seen to stem from many other corporate factors as well, including accommodation of corporate growth, transport efficiencies, status, control and expediency.

The writer holds a view that it is not necessary to move the working populace each day at the same time, and that as time goes by, and the planet continues to warm, this human habit will come under increased scrutiny.

Seen from a satellite, as the dawn light from the sun cuts the earth's sphere and crawls across the planet, every working day it brings the population to life, and then almost robotically they move across its surface to their second home for the day. This phenomena happens usually all at relatively the same time. When the sun goes down they all take the same strange pilgrimage in reverse. What has happened to our people, what is happening to our planet?

-from 'Earth Acne', The Planet and The City, A Working Paper by Jonathan Drane 2009 (www.jondrane.net/research)

The writer also holds the belief that corporate growth 'for the sake of growth' is at the heart of the issue. Since growth requires accommodation, it is seen as compelling that the seed should be questioned through the resultant offspring.

Research Ideas & Questions

Given the apparent dominance and proliferation of ‘office buildings’ in the cityscape, this study seeks to answer the following questions:

- Are office buildings, seen as a species, (compared to other buildings) the most dominant measured by height, mass, area, population, population density and proliferation rates.
- What is their likely future proliferation rate based on past trends, and assuming no regulation?
- How does this proliferation rate place them compared to other building species, in terms of ecological footprint.
- How does this proliferation rate place them compared to other planetary threats, in terms of ecological footprint.

Research Propositions

That office buildings are the most dominant and prolific species, compared to other building species.

That future proliferation of office buildings has a higher significant impact on global warming than the proliferation of other building types.

That future proliferation of office buildings has a high impact on global warming relative to other threats.

Research Methodology

The research seeks firstly to measure the dominance of the species ‘office building’ compared to other species using the measures of height, area, mass, population, population density and proliferation rates.

It then seeks to measure historical proliferation rates of office buildings, and likely future rates, given there are no changes in regulation.

Given the results of the above, the significance of future proliferation rates of office buildings on global warming will be measured and commented on relative to other building species and other threats in general.

Data Gathering

The study reviews to the ‘office building’ in its environment which is the ‘cityscape’. To make the study achievable as a dissertation for operational purposes, the cityscape will be limited to the central business district or ‘cbd’ of the city which encompasses office buildings, (government and commercial) city residential buildings, city hospitality and hotel buildings and city retail malls and strips. Outlying metropolitan areas will be excluded from data gathering for calculation purposes.

Cities that have large residential and office populations and dynamic activity in both, are seen to be of more relevance, because they provide a more dynamic indicator of relativity between the competing species of residential towers and office towers. Large cities are seen of more interest than small cities, due to the historical perspective they bring to the analysis of both city residential and office species.

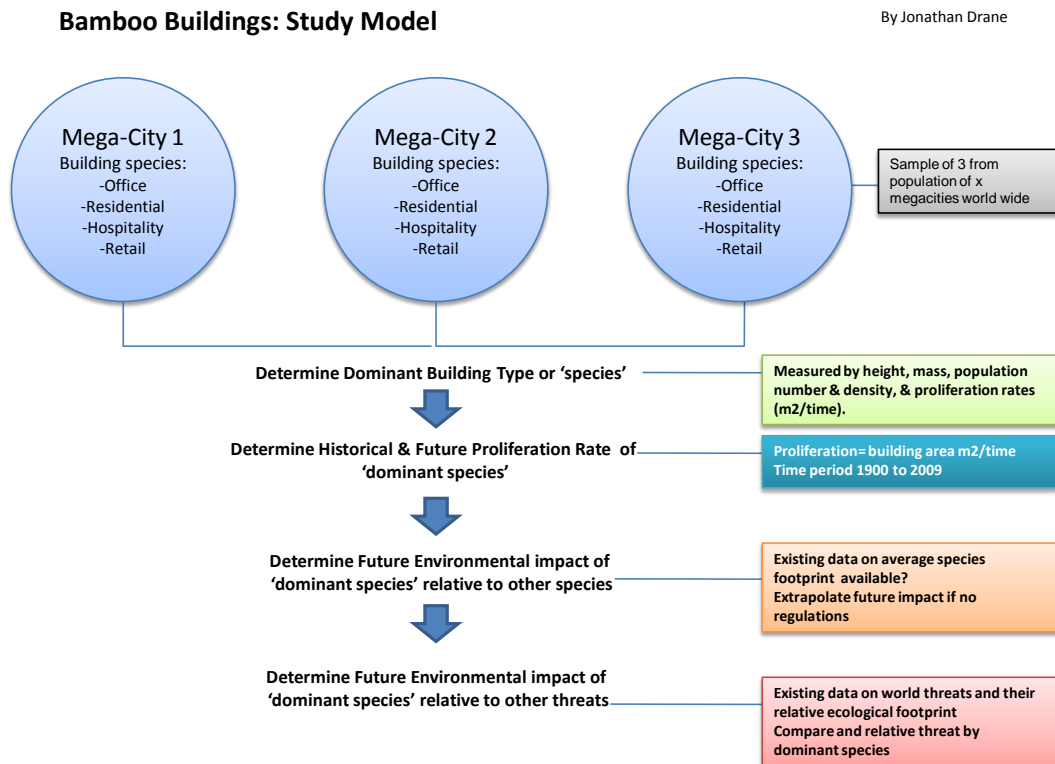
Within the chosen cities only four species of building type will be compared: Office, hotel, residential and retail. Existing data on height, mass, area, population and population density for each species is embodied in existing research data from business research sources.

Proliferation rates are expected to be less evidenced and will form the basis for primary analysis in this thesis. Relative average impact of office buildings compared to other building species is expected to be available in the current available research data. The study will use ‘ecological footprint’ as a typical measure of impact.

Ongoing impact of office buildings based on past and future proliferation rates, will be established through analysis in this study using extrapolation.

Study Model

The following table shows the model for determining the end results



This is a working paper which forms part of a larger study ‘The Ranking of Dynamic Cities’ by the author on the growth of cities. See www.jondrane.net /research for further updates.