Urbanisation: The End or the Beginning

Can architecture be used to overcome environmental challenges followed by the rapid urbanisation of cities?

With a focus on Dubai.

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Abstract

The overall topic of this dissertation will explore how architecture and urbanisation can be used to overcome environmental challenges followed by the rapid urbanisation of cities, with a focus on the UAE in particular the city of Dubai.

In this dissertation, I will examine in depth the background of Dubai and the way in which it has developed into the city we know it as today, as well as the population surge of Dubai.

Furthermore, I will examine the consequences that come with rapid urbanisation and how that is a challenge for Dubai to overcome.

Finally, I will show how certain measures have been taken to overcome said challenges, with the creation of the Masdar City master plan as a resolution strategy for Dubai. I will critically analyse whether they have been successful or not.

The main points of the argument within this essay will be the concept of urbanisation vs. architecture and how the idea of the artificial use of architecture and the surge of new buildings is resulting in the death of urbanism, and the consequences of this for the future of our cities.

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Introduction

Coming from a middle eastern background, I have had the opportunity of travelling to Dubai once every few years since 2005, and each time, I had the impression that the rapid urbanisation, their choice of material, and constructing many buildings in such a short amount of time must have had consequences on the environment. I often wondered whether there is a dark side to a city seemingly as perfect as Dubai, full of excessively clean air-conditioned malls with polished, shiny, marble flooring and the intense but pleasant smell of oud everywhere you walk. What is the reality behind a city that has everything anyone could ask for?

The modern world is currently witnessing an unprecedented rate of growth, with rapid urbanisation of cities, extreme environmental challenges are raised which demand our attention.
Urbanisation emerging as a "global mega trend"[1] has intertwined with the existing challenges that the world has been going through over the last five decades. The accelerated urbanism in certain cities like Dubai is like no other place, making it stand as a great case study for the face of urbanism.
It is essential for us as potential future designers of cities to further develop our knowledge on the matter, and gain a better understanding of what urbanism means in today's world, and ultimately, where it's going.
This dissertation will explore the theme of rapid urbanisation in the world with a focus on Dubai as a case study, with the aim to examine their rapid growth and development, delve into the challenges they face, and provide an overview of approaches taken by the UAE to secure growth and development through use of renewable energy sources. The goal is to determine whether or not Dubai's experiences and approaches can be used as an example for other urban areas and cities and explore the potentials of sustainable architecture in addressing environmental issues and perhaps come to a conclusion as to where the urban world is going.

In the early years that I explore in this essay, Dubai was a less developed country and information gathering was not as advanced as it is today. Consequently, information on the subject in regards to its development and history was fairly challenging to come across, with various sources differing on the timeline of the country's history.

[1] UN-Habitat, “World Cities Report 2020,” unhabitat.org, 2022, https://unhabitat.org/wcr/.

1.0 Background: Dubai: From 1 to 100

From my experience, often when the UAE is mentioned, people from Western countries struggle to pinpoint its location. However, the moment Dubai is mentioned, something clicks and they recognise it.

Given Dubai's popularity, one might assume it is the capital city of the UAE, but surprisingly, it is not. How did a city that is not even the capital manage to outshine not only the capital itself, but the whole country?

To better understand how Dubai's global recognition was possible, it is important to dig deeper into the history of Dubai and understand where it all started.

Unlike major Western countries, where it took two centuries to transition from pre-industrial, to industrial, to post-industrial phases, Dubai experienced a similar transition in just fifty years[2], making the city an exceptional case in history, and a case study of value.

As seen in figure 1, only three decades ago, the UAE was not the prominent country we know it as today. It was simply a desert, and nothing more than a small fishing village with no electricity and no access to running water.[3]

Figure 1: Sheikh Zayed Road, Dubai, 1990[4]

Figure 2: Dubai, now[5]

[2] Michael Pacione, "City Profile-Dubai," *Cities* 22, no. 3 (May 23, 2005): 255–65, https://doi.org/10.1016/j.cities.2005.02.001.

[3] Lauren Stead, "Dubai: A Leader in Sustainable Building Trends," MIPIM World Blog (MIPIM World Blog, February 2019), https://blog.mipimworld.com/development/dubai-a-leader-in-sustainable-building-trends/.

[4] *Sheikh Zayed Road in 1990*, n.d., n.d., https://en.wikipedia.org/wiki/File:Sheikh_Zayed_Road_in_1990.jpg.

[5] Shutterstock, *Dubai Covers a Huge Area, and Getting around the City Requires Transport*, n.d., n.d., https://www.lonelyplanet.com/articles/getting-around-dubai.

1.1 Rising from the Sands: Dubai's Urban Development

To gain a better understanding of how Dubai has been developed over the years, it is useful to put its development stages in groups. Michael Pacione in his study of Dubai's urbanisation divides the city's urban development in four periods: from 1900 to 1955, 1956 to 1970, 1971 to 1980, and 1981 to 2005.[6]

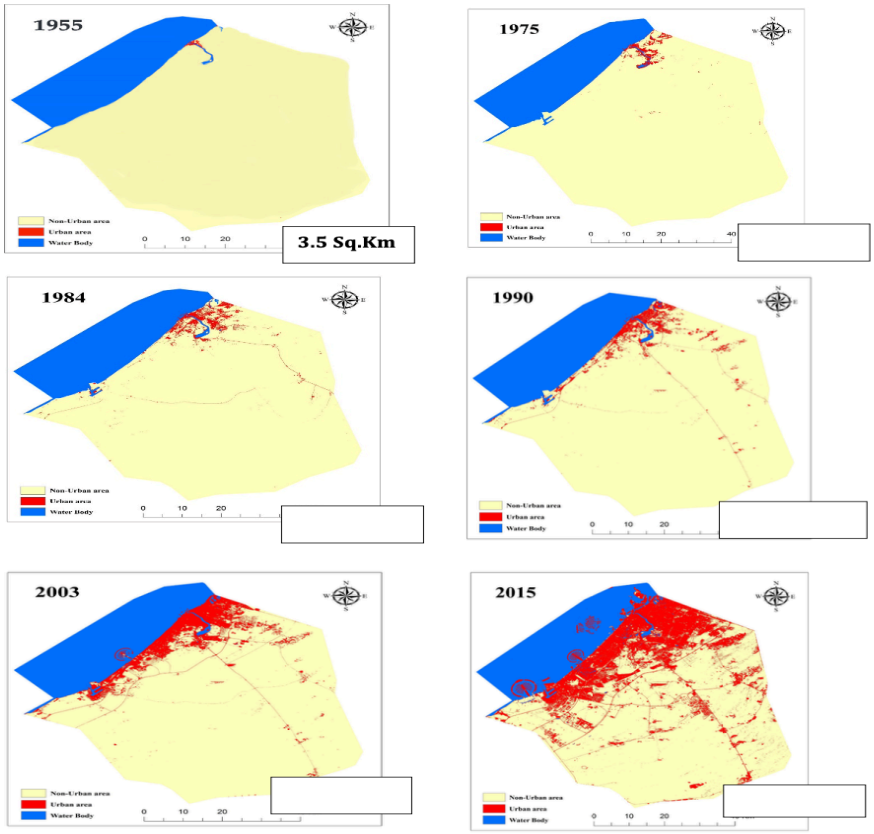

Figure 3: Urban area development of Dubai from 1955-2015[7]

1900-1955: Slow growing economy and limited expansion:

During the very first phase of Dubai's urban development, a total population of 10,000 residents lived in houses built out of palm fronds, with limited availability of only four public wells providing drinking water, absence of roads, and existence of narrow streets primarily used for transporting domestic animals and pedestrians due to slow economic growth and access to limited resources.[8]

[6] Michael Pacione, "City Profile-Dubai," *Cities* 22, no. 3 (May 23, 2005): 255–65, https://doi.org/10.1016/j.cities.2005.02.001.
[7] Fayez M. Elessawy, "The Boom: Population and Urban Growth of Dubai City," *Horizons in Humanities and Social Sciences: An International Refereed Journal* 2, no. 2 (2017), https://www.academia.edu/33464748/The_Boom_Population_and_Urban_Growth_of_Dubai_City?uc-g-sw=46905625.
[8] Michael Pacione, "City Profile-Dubai," *Cities* 22, no. 3 (May 23, 2005): 255–65, https://doi.org/10.1016/j.cities.2005.02.001.

1956-1970: Master plan and compact growth:

In 1958, when Sheikh Rashid Il Bin Saeed Al Maktoum took on the position of leadership of the UAE, he began initiating numerous plans towards the country's development.[9]

In 1959, John Harris, a successful British architect, was introduced to the ruler and soon became his main advisor in regards to Dubai's development plan. He began creating a masterplan for the city, which was a simple yet daunting task, as the city lacked not only urban planning but a basic level of infrastructures and facilities such as roads, utility networks, and water.[10]

The second phase was defined as a period of focused development following the master plan.

The initial Master Plan (figure 4) was introduced in 1960 by Harris, aiming to deliver basic fundamental infrastructure, in particular the road system, and to set up a zoning system, in which a number of master lines were to be created to reasonably extend the city from the old centre to the desert based on an estimation of the city's potential for expansion. The zoning system plan was then diminished to a number of recommendations for land use and density.[9]

Figure 4: 1960 Master Plan[11]

[9] Ruben Garcia Rubio, "Building Dubai, the Legacy of John Harris," *ANANKE*, January 1, 2019, https://www.academia.edu/46905625/Building_Dubai_the_legacy_of_John_Harris.
[10] "John Harris - Dubai's Master Planner 1960s-70s," www.dubaiasitusedtobe.net, n.d., https://www.dubaiasitusedtobe.net/JohnHarrisMasterPlanner.shtml.
[11] Courtesy John R. Harris Library, *The Dubai 1960 Town Plan, Drawn by John Harris after His November 1959 Visit to the City.*, n.d., n.d., https://www.platformspace.net/home/john-harris-comes-to-dubai.

1971-1980: Planned suburban growth:

Following the discovery of oil in 1966, Harris' previous outline was no longer sufficient to manage the unpredicted accelerated growth of Dubai. Therefore, Sheikh Rashid requested an upgrade on the master plan. The second and final master plan of Dubai was subsequently introduced in 1970 (figure 5), with the adjustment of making an extension to the road network and the land zoning lines, which resulted in a period of planned suburban growth driven by urban expansion.[12]

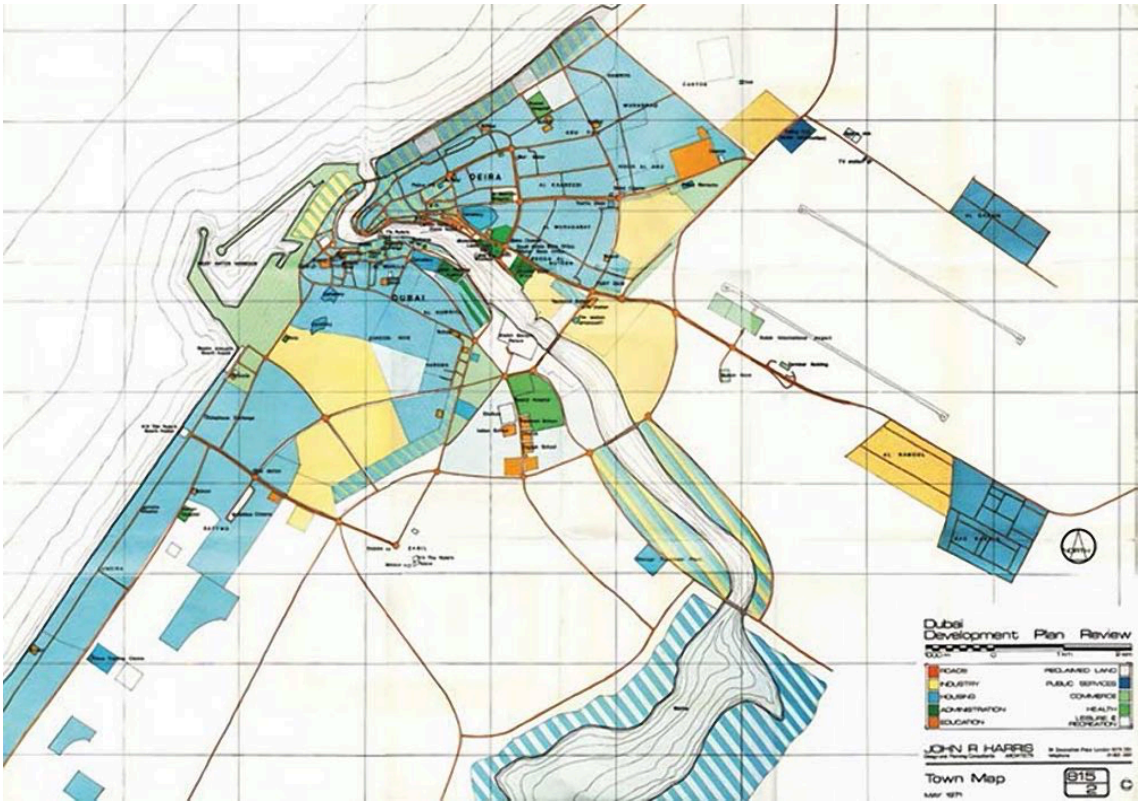

Figure 5: 1970 Master Plan [13]

[12] Michael Pacione, "City Profile-Dubai," *Cities* 22, no. 3 (May 23, 2005): 255–65, https://doi.org/10.1016/j.cities.2005.02.001.
[13] Courtesy John R Harris Library, *John Harris's Dubai Master Plan 1971*, n.d., n.d., https://www.dubaiasitusedtobe.net/JohnHarrisMasterPlanner.shtml.

During the 1970's, John Harris began designing the very first skyscraper of Dubai, the Dubai world trade centre.[14] The world trade centre was initially criticised as it was built "out of town"[14], due to a shortage of available land within the boundaries of the town and the high cost of buying land. Ironically, its very existence on an empty road outside the town resulted in significant development in the area as shown in figure 6 and 7, making the world trade centre a key aspect in shaping Dubai's modern development.[14]

Figure 6: The world trade centre, 1981[15]

Figure 7: The world trade centre, 2016[16]

1981- Present: Rapid expansion:

From 1981 to the present, Dubai entered a phase of rapid urban expansion, in terms of expansion of the city and newly developed projects.[17]

While John Harris' master plan set the groundwork for the road network, and other essential services, it could not have anticipated an expansion of this scale.

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[14] "John Harris - Dubai's Master Planner 1960s-70s," www.dubaiasitusedtobe.net, n.d., https://www.dubaiasitusedtobe.net/JohnHarrisMasterPlanner.shtml.

[15] Gulf News Archives, *The Dubai World Trade Centre, Pictured Here in 1981*, 2018, 2018, https://gulfnews.com/friday/art-people/dubai-world-trade-centre-the-making-of-an-icon-1.2299588.

[16] Sophie James, *Dubai, UAE as Seen from Dubai Frame at Sunset Showing World Trade Centre*, February 18, 2016, February 18, 2016, https://www.shutterstock.com/image-photo/dubai-uae-feb-18-beautiful-skyline-535339189.

[17] Michael Pacione, "City Profile-Dubai," *Cities* 22, no. 3 (May 23, 2005): 255–65, https://doi.org/10.1016/j.cities.2005.02.001.

In order to better comprehend the rapid growth of Dubai's population from 1950 to 2020, the chart below illustrates the development stages of Dubai. As this was accompanied by the city's discovery of oil in 1966, it is clear to see the driving factors behind the population surge within Dubai, as the population in 1970 jumped from 73,000 residents to 254,000 in 1980.

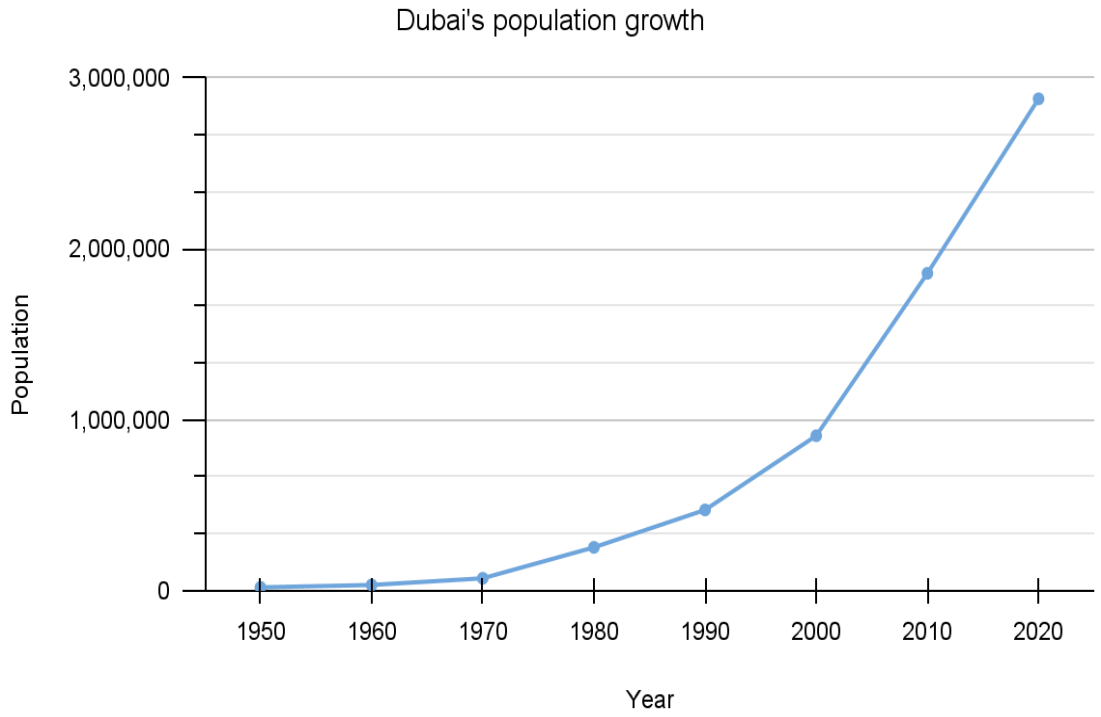

Figure 8: population growth of Dubai (1950-2020)[18]

It is evident from the data that the last three decades witnessed the greatest population surge, as a result of the economic growth, a thriving tourism industry and an increase of immigrant workers - making Dubai's population one of the fastest growing in the world.

Michele Acuto in his article "Dubai in the Middle"[19] examines Dubai's evolution as a global city. He expresses that in the 2000s, Dubai was praised and recognised as a symbol of the ideals of globalists, and "harshly criticised as a representation of the dangers of contemporary urbanism, it was under the spotlight. Then, like the concept of the 'global city' itself, it disappeared from the headlines."[16]

[18] "Dubai, UAE Metro Area Population 1950-2022," www.macrotrends.net, n.d., https://www.macrotrends.net/cities/22635/dubai/population#:~:text=The%20metro%20area%20population%20of.

[19] Michele Acuto, "Dubai in the 'Middle' ," Global and ordinary urbanism in Dubai. Int J Urban Reg Res (Vol. 38(5), pages 1732-1748, August 21, 2014), https://doi-org.ezproxy.brighton.ac.uk/10.1111/1468-2427.12190.

After a period of capturing the spotlight and attracting attention, from the early 2000s, until 2013, Dubai went relatively unnoticed. In 2013, the city regained attention by announcing its hosting of the 2020 Expo exhibition, with the ruler's renewed promise of "astonishing the world."[20]

One important aspect in this period of anonymity, was that Dubai was not "crushed under its entrepreneurial ambitions"[20], They never stopped building, urbanism in Dubai never stopped. Remaining to be shaped by stereotypes, Dubai's reappearance to the headlines was once again due to leveraging its ambitious urbanisation.

From building the world's tallest building of 830 metres, Burj Khalifa and the world's deepest swimming pool in 2008 to the world's tallest hotel, Gevora hotel and the world's biggest picture frame in 2018.[21] Dubai's motive for choosing such striking, photogenic and attention-seeking architecture lies in its desire of attracting tourism by creating a controlled spatial experience for its visitors. Dubai has become a sterile landscape where anything goes and everything is new, showcasing accelerated urbanism like none before.

Figure 9: The world's tallest building, Burj Khalifa[22]

Figure 10: The world's tallest hotel, Gevora hotel[23]

[20] Michele Acuto, "Dubai in the 'Middle' ," Global and ordinary urbanism in Dubai. Int J Urban Reg Res (Vol. 38(5), pages 1732-1748, August 21, 2014), https://doi-org.ezproxy.brighton.ac.uk/10.1111/1468-2427.12190.
[21] Fact Team, "19 of the UAE's Most Impressive World Records," Fact Magazine, October 2, 2023, https://www.factmagazines.com/uae/dubai/things-to-do-dubai/20-uae-world-records-the-biggest-and-best.
[22] *The World's Tallest Building* , n.d., n.d., https://www.factmagazines.com/uae/dubai/things-to-do-dubai/20-uae-world-records-the-biggest-and-best.
[23] *The World's Tallest Hotel* , n.d., n.d., https://www.factmagazines.com/uae/dubai/things-to-do-dubai/20-uae-world-records-the-biggest-and-best.

Figure 11: The world's deepest swimming pool[24]

Figure 12: The world's biggest picture frame[25]

Similarly, Johann Hari in his article "The dark side of Dubai"[26] voices his belief that when the "manic burst of building"[26] in Dubai settles and the storm slows down, its secrets will slowly come out.
He calls Dubai "an adult Disneyland"[26] and in a very critical tone states that the intense growth followed by the discovery of oil, left the ruler of Dubai facing the challenge of what to do with their newfound wealth. Despite having less oil than their neighbouring city, Abu Dhabi, Sheikh Maktoum decided to use the oil to transform Dubai into "something that would last."[26]
He decided to make Dubai a centre for financial services and tourism, using the strategy of becoming a tax-free country, attracting millionaires who only make up 5% of Dubai's population now.[26]
Dubai in its rapid expansion period, entered a highly competitive era of constructing endless skyscrapers and buildings, all competing to stand out from the other by height, material, shape or form, detached from their geographic and physical location, to attract attention and gain popularity.

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[24] *The World's Deepest Swimming Pool* , n.d., n.d., https://www.factmagazines.com/uae/dubai/things-to-do-dubai/20-uae-world-records-the-biggest-and-best.
[25] *The World's Biggest Picture Frame* , n.d., n.d., https://www.factmagazines.com/uae/dubai/things-to-do-dubai/20-uae-world-records-the-biggest-and-best.
[26] Johann Hari, "The Dark Side of Dubai," *The Independent*, April 6, 2009, https://www.independent.co.uk/voices/commentators/johann-hari/the-dark-side-of-dubai-1664368.html.

1.2 Beneath The Mirage: The Ugly Truth About Dubai

Around 91% of Dubai's expansion was a result of immigrants and guest workers coming from all around the world but mostly from Asia and other Arab countries. Among these immigrants, Indians contribute to making up 70% of the total population.[27]

Having one of the fastest growing economies in the world, Dubai offers many job opportunities and is rated as "one of the best places to live."[27] But does living in Dubai live up to its glamorous image or is it mainly a vacation destination and a home for the wealthy? Such rankings often fail to take into consideration the experience of all residents with average incomes, and key factors such as a high cost of living, cultural differences, social inclusivity.

In a chapter of the book A History of Future Cities[28], Daniel Brook sheds light on the lives of the guest workers in Dubai, and describes that the limitations placed on social mobility of the workers is unlike any other wealthy country. Limitations such as minimum wage and lack of freedom to take better job offers unless their employer has no objection to it and allows them to. Not only are the workers not treated fairly, but their Dubai-born children don't earn the right to become a naturalised citizen and will forever remain guests.[28] The same guest workers that form the majority of the population and are the ones responsible for the making of the famous city, don't have basic rights, and Dubai seems to be the best place to live, only if you are local or wealthy.

Similarly, Michele Acuto believes that precisely because Dubai has a "secondary city position"[29] It could teach us a lot about the reality of urbanism in globalising cities. He refers to Dubai as one of the "cities in the middle"[29], in the middle of artificial global city rankings.

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[27] Fayez M. Elessawy, "The Boom: Population and Urban Growth of Dubai City," *Horizons in Humanities and Social Sciences: An International Refereed Journal* 2, no. 2 (2017), https://www.academia.edu/33464748/The_Boom_Population_and_Urban_Growth_of_Dubai_City?uc-g-sw=46905625.

[28] Daniel Brook, *A History of Future Cities* (New York: W. W. Norton & Company, 2014), 532–33.

[29] Michele Acuto, "Dubai in the 'Middle' ," Global and ordinary urbanism in Dubai. Int J Urban Reg Res (Vol. 38(5), pages 1732-1748, August 21, 2014), https://doi-org.ezproxy.brighton.ac.uk/10.1111/1468-2427.12190.

Chapter 2: Rapid urbanisation and its consequences

When reflecting Dubai's development, an important question arises: at what point did a carefully planned city like Dubai lose control of its growth?

While John Harris' master plans made a lasting impact on the development of the city, and resolved many issues in the initial stages by establishing the foundations for urban growth, it seemed to have failed in incorporating many key factors resulting in losing control of the city's growth.

As one might question John Harris' master plan, it is important to question whether or not the issue is rooted in the initial plan of Dubai, and faults in his designs or if there is a bigger picture.

Ruben Garcia Rubio in his research "Building Dubai, the legacy of John Harris"[30] states that the ruler of the UAE, Sheikh Rashid, overlooked and disregarded certain aspects of John Harris's master plan due to political and economic issues.[30]

Overall, John Harris is responsible for developing Dubai beyond imagination, and his strategic plans for the future of the city played a great role in evolving from a desert towards modernism resulting in the creation of one of the world's most known cities, in only three decades. Nonetheless, the rulers of the UAE, driven by political motives, have chosen to overlook certain key aspects of developing a city and used architecture as a tool to shape Dubai into what it is today, by developing unnecessary structures and skyscrapers over the past 40 years, with a thirst for recognition.

Following the global network of trends rather than their local needs and functionality, Dubai has created a city-wide theme park running on tourism and consumption, an approach effective in gaining global attention, but followed by consequences.

Dubai's excessive skyscraper construction era resulted in a surge of buildings with repetitive designs using curtain wall systems, which is an unsuitable system for the specific weather and heat conditions in the UAE, to achieve a sleek structure aesthetic, making the buildings utterly reliant on air-conditioning.[31] One issue created by disregarding the specific needs of the environment before constructing said buildings was the dust in the outside air sticking to the glass exteriors reaching their dew point as a result of the temperature difference between the outside and the inside of buildings with air conditioning.[31]

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[30] Ruben Garcia Rubio, "Building Dubai, the Legacy of John Harris," *ANANKE*, January 1, 2019, https://www.academia.edu/46905625/Building_Dubai_the_legacy_of_John_Harris.

[31] George Katodrytis and Kevin Mitchell, *UAE and the Gulf : Architecture and Urbanism Now* (London: Wiley, 2015), 60–61.

Furthermore, the cooling demand per person of Dubai during summer with nearly 3 million residents, is three times more than Spain, with 47 million residents.[32] With the majority of the 3 million population leaving their air conditioner running 24/7, as turning it off when leaving the house would result in having to use more energy afterwards to cool down the house again.[32] Other than household demand, the UAE's high ambition of building a country where everything is possible, with gigantic malls and indoor ski centres, caused the country's carbon emissions and energy consumption to rise tremendously.[32]

To critically evaluate the situation, other than the country striving for success and going overboard to achieve everything in such a limited amount of time, a reason why many buildings with faulty designs were made could be the fact that it was only the beginning of the development of skyscrapers in the world. There were no tall buildings made anywhere with similar weather conditions such as extreme heat and limited access to water for them to mimic and use as precedent.
There were no limitations for them to construct more and more buildings, energy was cheap, so why would they stop?

2.2 A crisis: The end or the beginning?

The worst or best thing that could happen to the UAE?
In 2006, the UAE was announced as "the country with the largest ecological footprint, per capita, by the World Wildlife Fund (WWF)"[33], mainly because of its energy use and carbon emissions.[33]
The government and the ruler of the UAE recognised that they cannot continue building more without understanding the reason behind those numbers and beginning to find a solution.
The founder of the Emirates Environmental Group, Habiba al Marashi, understands the economic crisis as "the best thing that happened"[34] to them, calling it "a blessing in disguise"[34] as it was a wake up call and pushed them to start a change.

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[32] Humeyra Pamuk, "UAE's Mission Impossible: Cooling the Desert," Reuters, July 13, 2011, https://www.reuters.com/article/idUSTRE76C1QI/.
[33] Lauren Stead, "Dubai: A Leader in Sustainable Building Trends," MIPIM World Blog (MIPIM World Blog, February 2019), https://blog.mipimworld.com/development/dubai-a-leader-in-sustainable-building-trends/.
[34] "The World's Most Improbable Green City," National Geographic, April 4, 2017, https://www.nationalgeographic.com/environment/article/dubai-ecological-footprint-sustainable-urban-city#:~:text=.

Chapter 3: Addressing The Crisis: Resolution Strategies

While urbanism has an exceptional precedent in the Arab world and urbanising large areas with a new aesthetic was fundamental in the creation of modern Arab cities, excessive resource consumption in the UAE resulting in the crisis called for all building designs to adapt to the new reality.

Sustainable architecture and master planning were proposed as a potential strategy, with the aim of designing buildings in a way that minimises negative environmental impacts while improving the overall wellbeing and quality of life of the occupants.[35]

Master planning cities provides a long-term perspective from the city's current to future needs.[36]

It is crucial because "it works with the natural process of urban growth, rather than seeking to replace the process of natural growth with an imposed plan, the masterplan becomes a frame into which the city can grow."[36]

While the interpretations of the concept of sustainability differ and often face controversy, in this context, it is focused and framed as a key concept for planning future cities by taking into account energy efficiency, use of renewable sources, waste reduction, and water conservation.[35]

Additionally, specific implications of facade screens became a standard, an example of this was wrapping the building in large repetitive precast concrete panels to provide sun and heat protection for its interiors in the world trade centre by John Harris[37], previously discussed in chapter 1.1.

Once again, Harris' designs were way ahead of his time and incorporated many important aspects in his designs that designers after him failed to do so.

[35] Shawn Sauve, "Sustainable Growth in UAE Construction: Overcoming Climate Challenges," Dynamicsmartz -, August 3, 2023, https://www.dynamicssmartz.com/blog/uae-construction-response-to-climate-changes/.
[36] David Rudlin and Shruti Hemani, *Climax City* (Routledge, 2019), 81.
[37] George Katodrytis and Kevin Mitchell, *UAE and the Gulf : Architecture and Urbanism Now* (London: Wiley, 2015), 123.

3.1 Renewable energy

In the context of the UAE, where specific climate conditions such as the intensity of sun imposes many challenges for its habitants, and increases the need for nonstop and extreme use of air conditioners, there is a great opportunity to leverage said weather conditions to create renewable energy.

The UAE experiences abundant sunlight throughout the year, allowing them to produce solar power as a primary energy saving strategy.

A showcase of this is the Mohammed bin Rashid Al Maktoum Solar Park[38], which is "the largest single-site solar park in the world."[38] By the time the project is completed, it is anticipated to save up to 6.5 million tons of carbon emissions annually.[38]

Figure 13: Mohammed bin Rashid Al Maktoum Solar Park[33]

With rooftop solar panels becoming more common, households will also generate their own electricity. In addition to this, many other energy efficiency products and programmes such as cooling modifications, lighting modifications, building placement, water conservation were initiated in an attempt to reduce carbon emissions.[39] As a collective outcome of this, Dubai successfully achieved a 21% reduction in its carbon emissions in 2021.[40]

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[38] "Innovation Centre | Mohammed Bin Rashid al Maktoum Solar Park," mbrsic.ae, n.d., https://mbrsic.ae/en/about/mohammed-bin-rashid-al-maktoum-solar-park/.

[39] Shawn Sauve, "Sustainable Growth in UAE Construction: Overcoming Climate Challenges," Dynamicsmartz -, August 3, 2023, https://www.dynamicssmartz.com/blog/uae-construction-response-to-climate-changes/.

[40] SME News Service, "Dubai Reduced Carbon Emissions by 21% in 2021," Sustainability Middle East News, September 20, 2022, https://www.sustainabilitymenews.com/energy/dubai-reduced-carbon-emissions-by-21-in-2021.

3.2 Masdar City's Master Plan: A Case Study

Over the last couple of years, many projects have been developed all around the world with the hope of finding a way to continue building while supporting the environment, eco-cities are one of them.[41] Eco-cities are communities designed with a clearly articulated focus of enhancing quality of life while working with, and not against the environment.[42]

Eco-cities have been either called a "trend"[41], and subject to criticism in the view of sustainable urbanism advocates, or presumed to be "the future of the built environment"[42] by its believers.

One of the most recognised projects started by the UAE as an attempt to create a perfectly planned city was Masdar city. This was planned as "the world's first zero carbon city"[41], a 640 hectare project located in between Dubai and Abu Dhabi, established by the government of Abu Dhabi. It was designed by Foster And Partners, with the aim of creating a desert community carbon neutral and waste free to enhance the development of clean-technology solutions and renewable energy for a life beyond oil."[43]

To address the challenges posed by the local climate and high temperature in the UAE, "the city is raised on a 23 foot-high concrete base to maximise its exposure to cooling winds."[41]

This was a strategic decision to take advantage of natural climate elements and thoughtful urban planning to create a more comfortable environment without solely relying on air conditioning and promoting sustainability and energy efficiency. Masdar was an innovative approach to overcome weather challenges while minimising ecological footprint.

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[41] Arthur Lau, "Masdar City: A Model of Urban Environmental Sustainability," n.d., https://ugc.futurelearn.com/uploads/files/a5/9f/a59f7a08-d066-4090-93b2-17d80312d5f2/Masdar_City.pdf.
[42] Andrew Craig, "Eco Cities – the Future of the Built Environment," Inspired PLC, November 11, 2021, https://inspiredplc.co.uk/insights/industry-news/energy/eco-cities-the-future-of-the-built-environment/.
[43] "Foster + Partners," www.fosterandpartners.com, n.d., https://www.fosterandpartners.com/projects/masdar-city.

Figure 14: Masdar City[44]

Unlike any other city in the UAE, Masdar city was made specially for walking, with narrow streets and implemented shading throughout the city to reduce the sun intensity for the pedestrians. Additionally, the buildings were designed to maximise the use of sunlight, with mounted solar panels on rooftops.[45] As well as being strictly required to use insulation, energy-efficient appliances, and low-energy lighting.[45]

As seen in figure 14, extended roof canopies are used to provide shading for the pedestrians, as well as use of woven panels to provide further sun protection inside the houses.[45]

Is Masdar city what it promises to be or just a scheme to attract more media attention and follow more trends? Suzanne Goldenberg argues that Masdar city could be the world's first green ghost house and a total failure. She states that Masdar City is so far "nowhere even close to zeroing out its greenhouse gas emissions, or at a fraction of its planned carbon footprint goal."[46] The authorities admitted that even if the project is fully developed, achieving that goal seems unlikely.[46]

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[44] *Flaneur in the Desert*, n.d., n.d., https://www.urbanslate.com/viii.

[45] Arthur Lau, "Masdar City: A Model of Urban Environmental Sustainability," n.d., https://ugc.futurelearn.com/uploads/files/a5/9f/a59f7a08-d066-4090-93b2-17d80312d5f2/Masdar_City.pdf.

[46] Suzanne Goldenberg, "Masdar's Zero-Carbon Dream Could Become World's First Green Ghost Town," *The Guardian*, February 16, 2016, sec. Environment, https://www.theguardian.com/environment/2016/feb/16/masdars-zero-carbon-dream-could-become-worlds-first-green-ghost-town#:~:text=Greenhouse%20gas%20emissions-.

Goldenberg argues that projects like Masdar city are only an opportunity for developing countries to attract attention from the world and recreate their identity. She believes the eco-cities promising a prosperous future is not the only truth and that there is a dark side to them, a gap between the declared rationale and the reality of the project.[47]

Similarly, Mariane Sibaud questions why some countries are building their cities from scratch. She is critical of master-planning a brand new city on a blank canvas, and states that it is a dream for any urban planner to build a city from scratch, and luckily, some people are experiencing the dream.[48]

In support of my argument on how people in power often sacrifice and overlook certain needs of the city for politics, Arthur Lau identifies the disadvantage of the government controlling the planning process to serve their own needs, rather than the needs of the local community.[49]

However, in spite of Masdar City's apparent failure from critics' views, it is undeniable that it offered a key breakthrough in sustainable urban design, as sustainability is not a final product, but a process.

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[47] Suzanne Goldenberg, "Masdar's Zero-Carbon Dream Could Become World's First Green Ghost Town," *The Guardian*, February 16, 2016, sec. Environment, https://www.theguardian.com/environment/2016/feb/16/masdars-zero-carbon-dream-could-become-worlds-first-green-ghost-town#:~:text=Greenhouse%20gas%20emissions-.

[48] Marianne Sibaud , "Why Are Countries Building Their Cities from Scratch?," ArchDaily, January 25, 2021, https://www.archdaily.com/955203/why-are-countries-building-their-cities-from-scratch?ad_medium=gallery.

[49] Arthur Lau, "Masdar City: A Model of Urban Environmental Sustainability," n.d., https://ugc.futurelearn.com/uploads/files/a5/9f/a59f7a08-d066-4090-93b2-17d80312d5f2/Masdar_City.pdf.

Chapter 4: Urbanisation vs. Architecture

How is it that every attempt at making a new beginning has only undermined the concept of a new beginning? Dubai created a new beginning, but do we have the opportunity and the resources to be able to just start over and rebuild cities from scratch?

Rem Koolhaas in his article "Last Chance"[50] argues that the world no longer has the liberty of starting over, we can't just make a new beginning, instead we have to look for a way to complete what we have.

"We live in an era of completions, not new beginnings. The world is running out of places where it can start over. The recent development of the Gulf, particularly Dubai, has been met with derision."[50]

The development of the new global city from scratch, is a dream of any architect, it gives the freedom to start fresh, a blank canvas to draw anything on. A downside of this is, the buildings made have created a market for architecture, seeing architecture buying the architecture you can afford, like a product. Building a city like Dubai from scratch, has the disadvantage of lacking the layering and density of cities developed over time, with modern buildings isolated and detached. However, the same isolation gives the advantage of exclusivity for upper class buyers.

In "A history of the future cities"[51] book, Daniel Brook talks about how cities like Dubai, Mumbai, Shanghai, and St.Petersburg which he calls sister cities have been intentionally built to look Western, to make you feel like they are not where they are: in the Arab world, India, China, or Russia.

He states that each town "conjures the same captivating yet discomfiting sense of disorientation."[51]

Urbanism and architecture are known to be the two main professions in making cities. The beauty of architecture is in its creativity, its attempt at being limitless, separating from the rest, but the same beauty is resulting in chaos. The lack of history and historical buildings creates an imbalance in the city.

Drawing from my previous essay on how modern architecture is everywhere but belongs nowhere, I suggested that an imbalance existed which mainly referred to new modern buildings being imposed on towns with a history, and historical buildings being replaced by the modern ones.

However, in a case like Dubai, where the whole city is made of newly structured and modern buildings, a sense of coldness and lack of life is seen everywhere.

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[50] Koolhaas, Rem . “Last Chance?” Archis, February 1, 2007. https://archis.org/volume/last-chance/ .

[51] Daniel Brook, *A History of Future Cities* (New York: W. W. Norton & Company, 2014), 19–20.

4.1 Death of urbanism

Accelerated urbanism was argued to be the central issue faced throughout the world in need of our immediate attention, but what if the said chaos we're in is not a result of urbanism, but a result of an absence of urbanism?

Rem Koolhaas in his chapter of "Whatever happened to urbanism?"[52] states that our generation is caught in a “collective narcissism of a demographic bubble"[52], resulting in the death of urbanism, leaving us in a world without urbanism, but more architecture than ever.[52] Koolhaas' provocative statement suggests a shift in our understanding and approach to urban development.

In the case of Dubai, where rapid urbanisation has played a great role in the shaping of the city and the country, the term "urbanism is dead"[52] underscores a paradox, it presents a new approach from the linear and systematic urban planning to a more adaptive form of development.

It may imply that the traditional ideologies and frameworks of urbanisation are no longer applicable. Dubai's accelerated urbanism challenges the traditional concepts of urbanism, similarly, later in his article he suggests that we can enter a new realm of urbanism, an urbanism not based on order, but uncertainty. It will not only exist as a profession, but as an ideology, a new way of thinking.[52]

To accept what already exists, as we can't ban new buildings, but we can create a way to accommodate the inevitable growth. A strategy, a necessary paradigm shift, to be able to survive the crisis, the new urbanism will have to destroy traditions.

[52] Rem Koolhaas, Bruce Mau, and Office For Metropolitan Architecture, *Small, Medium, Large, Extra-Large : Office for Metropolitan Architecture, Rem Koolhaas, and Bruce Mau* (New York, N.Y.: Monacelli Press, 1995), 961/971.

4.2 The new beginning

In opposition to my ongoing criticism towards modern architecture, Koolhaas, in "Bigness or the problem of the large"[53] examines how certain technological breakthroughs have triggered "an architectural big bang"[53], producing a new form of architecture, characterised by artificialised interiors, overboard use of steel, air conditioners, and elevators.

The new architecture is seen everywhere in developing countries, and especially in this case, in Dubai. Buildings that are bigger, deeper, and taller than ever before, created through an acceleration in construction, expanded spaces and a reduction in mass.[53]

Koolhaas challenges us to think critically about how architecture, on a larger scale, shapes our world. To reconsider traditional views of architecture, arguing that bigness is not just about larger scale buildings, but about rethinking how structures impact our society.[53]

While he understands the downsides of bigness and how it destroys architecture, because the art of architecture is useless in bigness, he also acknowledges the fact that we should accept it as it is, because "it exists, at most, it coexists."[53]

Bigness, as the new form of architecture seen everywhere "destroys, but it is also a new beginning."[53] It is the only form of architecture that can engineer the unpredictable.

“What if we simply declare that there is no crisis, redefine our relationship with the city not as its makers but as its mere subjects, as its supporters?”[53]

Similarly, Michael Benedikt's essay "Environmental Stoicism and Place Machismo: A Polemic,"[54] explores two fundamental concepts of Environmental Stoicism and Place Machismo.

Place Machismo which seems to be what the city Dubai is currently experiencing is characterised by prioritising the physical form of structures over their cultural and social context, resulting in structures with little connection to their environment or location. On the other hand, Environmental Stoicism acts as a shift in how we think, and encourages us to accept the downsides of modern architecture on the natural environment, and consider adaptation.

To overlook Dubai, is to overlook the world as it is and it might be.

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[53] Rem Koolhaas, “Bigness or the Problem of Large Rem Koolhaas,” n.d., https://politicshyperwall.files.wordpress.com/2017/10/koolhaas-rem-bigness-1994.pdf.

[54] Michael Benedikt, “Environmental Stoicism and Place Machismo a Polemic, by Michael Benedikt”

Conclusion

Delving into the consequences of rapid urbanisation and the opposition of urbanism and architecture through the lens of different experts perspectives including Rem Koolhaas and Benedict has helped me deepen my understanding of the challenges caused by rapid urbanisation, in particular in cities like Dubai, where the rapid development often sacrifices a sense of history, belonging, and memory. Through this research my understanding of the topic has evolved, from initially viewing Dubai as a failure of a city, to understanding its development and attempts at improvement through a critical lens of the consequences of politics. This journey has shifted my perspective from being critical of cities having more architecture than ever and the absence of urbanism, to questioning the very realm of urbanism.

In conclusion, it is indisputable that rapid urbanisation of cities has an impact on both the environment and the very fundamental concepts of architecture and urbanism.

While this rapid transformation seemingly destructs the traditional notion of urbanism, it challenges us to accept the new reality, rather than starting anew. The shift from the old urbanism to the emergence of a new urbanism gives us a way out.

To accept the inevitable. This does not imply us overlooking the city's needs, but rather recognising the existence of a crisis, comprehending its implications, and focusing on adaptation as a way forward, after all, the city is all we have, and its future depends on the choices we make.

As a potential future designer, I am now more inclined to recognise the importance of an approach that balances the growth and development of cities while preserving them.

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Figure 14: *Flaneur in the Desert*. n.d. https://www.urbanslate.com/viii.

Appendix

My engagement with the final dissertation of my Interior Architecture Bachelor's program has been a journey of both challenges and growth.

As I began my research journey, I dedicated a great amount of time to researching relevant sources. I began reading books and articles to further develop my knowledge and understanding of the topic by carefully reading each source, analysing, summarising, and evaluating them.

Despite the independent nature of the module, I often felt a significant lack of guidance in tutorial sessions, especially when it came to refining my sources. I felt disoriented as there were a lot of sources to choose from and no insights provided to feel less lost in an overwhelming sea of information and ensure I am on the right track.

However, the tutorial sessions were beneficial in learning about structuring requirements and helped me with planning and developing a solid foundation for my essay.

Additionally, the review sessions on the presentation with my tutor and students reassured me of the very first requirements of a good dissertation, which were choosing a topical, original, not too broad, and interesting topic.

Overall, despite the initial challenges, the journey of this module has helped me gain valuable knowledge on my chosen topic, and develop an independent and critical state of mind.