**Masdar City and the politics of utopian
eco-development in the United Arab Emirates**

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Abstract

Since the early 2000s, plans for dozens of multibillion dollar eco-city projects have sprung up across the globe. These cities, planned and built from the ground up, are often hailed as "green-prints" for a sustainable, urban future. But, what do they really do to address the environmental, social and economic difficulties the world is facing? This thesis situates the eco-city concept within a longer history of utopian urban planning, as well as dominant discourses on sustainability and green capitalism. Through a focused case study of Masdar City, I come to the following critique of eco-cities: (1) Social equity is largely ignored in their tripartite formulation of sustainability; (2) Under the guise of environmental protection, they reproduce neoliberal economic dynamics and exclusive socio-spatial organizations; (3) They aid in the construction of a post-political approach to sustainability, which is centered around the presumed inevitability of (green) capitalism as a solution to our collective environmental troubles. To conclude, I offer a few suggestions for a more utopian and repoliticized vision of sustainability.

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1. Introduction

Whether seen as the epicenters of civilization and enlightenment, or sources of moral decay and degeneration, cities have perpetually held strong and contested meanings in the popular imagination. In this way, they have long been caught in the tension between utopia and dystopia. Beginning around the turn of the 20th century, modern city planning emerged as a means to dispel the more dystopian qualities of urban centers and try to construct an ideal society. Many of these earlier visions of the Good City—those of Ebenezer Howard, Daniel Burnham and Le Corbusier—pursued such goals as rationalizing land use, improving public health, increasing labor productivity and quelling social unrest (Freestone 2000; Boyer 1986; Hall 2002). However, it seems that in the 21st century *sustainability* has emerged as a principal concern in urban planning (Flint and Raco 2005; Freestone 2000; Gunder 2006; Hall 2002).

While "sustainability" is a famously vague concept, most contemporary usages of the term invoke a tripartite mission of care for the environment, society and the economy. Whether articulated as the triple bottom line of "people, planet, and profit," or the three E's of "environment, economy, and equity," this three-pronged approach to sustainability is standard practice. In seeking to apply this model to the urban environment, at least two distinct trends can be observed: the retrofitting and renovation of existing cities to lessen their environmental impact, and the construction of brand-new ecological cities from the ground up (Cugurullo 2013a; Joss et al. 2013). Although this first approach may be more widespread, the number of so-called "new-build eco-city projects" has skyrocketed across the globe since the early 2000s (Joss et al. 2013). These multi-billion dollar projects are often privately financed, and make claims to both environmental sustainability and economic profitability. Many are also designed as discrete communities, with some literally walled off from their surrounding urban

environments. Showing up in countries as diverse as the United Arab Emirates, Nigeria, China, Singapore, Kenya and Ghana, these sparkling cities are often hailed as "green-prints" for a sustainable, urban future. But, what do they really do to address the

Figure 1: Artistic rendition of Masdar City. *Foster + Partners.*

environmental, social and economic difficulties the world is facing? This thesis aims to explore this question through a case study of Masdar City — an eco-city project that has been consistently labeled, by both its proponents and detractors, as a utopian endeavor.

Masdar City is a 6km2 master-planned eco-city located approximately 22 miles southeast of central Abu Dhabi in the United Arab Emirates (UAE). Designed by the British architectural

Figure 2: Current state of construction. *Google Maps 2015.*

firm Foster + Partners in 2006, the project was originally set to be completed just 10 years later. However, during the global financial crisis, this completion date was pushed back to 2025. Upon completion, it is expected to host 40,000 residents, plus an additional 50,000 daily commuters. Thus far, the city has been able to achieve carbon neutrality

through "best-practice" architecture and design, a 10MW solar farm, and the implementation of other energy efficient technologies. Ultimately, it aims to cut total energy and water usage by 40% of Abu Dhabi's standard. In addition to a reduced carbon footprint, Masdar's developers have indicated a commitment to ensuring "commercial opportunity" and "a high quality lifestyle" in their articulation of sustainability.

This thesis aims to critically analyze the utopian vision expressed by these eco-city projects, by situating the development of Masdar City within a longer history of utopian urban planning and politics. I begin with an overview of some of the major perspectives on utopia and utopianism, as well as their relation to critical urban theory. Section 3 provides a brief overview of major trends in 20th century utopian urban planning, paying particular attention to their relationship to changing political-economic contexts. In section 4, I trace the history of the concept of "sustainability" and look at how it relates to current eco-city development. I undertake a case study of Masdar City in section 5, as well as a discussion of sustainability in the context of the Persian Gulf. Section 6 introduces the concept of "postpolitics," as elaborated by Slavoj Zizek, Erik Swyngedouw and others. I tie this into a discussion of the rejection of urban utopianism and the depoliticization of sustainability. Finally, I conclude with some suggestions for a more utopian approach to sustainable urban development.

2. Definitions and theoretical framework

Before launching into a discussion of utopian urbanism, it seems necessary to more precisely define both "urbanism" and "utopianism." Wikipedia offers a very straightforward definition of "urbanism," describing it as the "interaction of inhabitants of towns and cities (urban areas) with the built environment" ("Urbanism" 2015). This definition echoes what

geographer Edward Soja has termed the "socio-spatial dialectic." According to Soja, this dialectic is based upon the idea that, "the spatiality of whatever subject you are looking at is viewed as shaping social relations and societal development just as much as social processes configure and give meaning to the human geographies or spatialities in which we live" (Soja 2010, 4). What Soja highlights here is an ongoing reciprocity between spatial and social organization, physical form and social processes, wherein each constantly forms and reforms the development of the other. When I refer to "urbanism" I seek to connote this socio-spatial dialectic itself, as well as intentional efforts to understand or influence it through city planning.

Utopianism, for its part, is a bit more difficult to define. The Miriam Webster Dictionary states that something is utopian if it is "modeled on or aiming for a state in which everything is perfect; idealistic." However, even a quick survey of the literature on utopianism reveals that it is a concept fraught with contradiction and disagreement. Some thinkers condemn it as naïve or totalitarian, while others laud its emancipatory potential (Pinder 2002; Zizek 2011; Pepper 2005; Jameson 2005). Some claim it has "died out" (Jacoby 2000; Harvey 2000) while others proclaim that it is omnipresent and inherent to human nature (Bloch 1918). Some discuss it as a political program, others as a literary genre, a type of city plan, or simply the "desire for a better way of living" (Levitas 2010). Perhaps the one detail scholars of utopia do agree on is the origin of the term: Thomas More's Utopia, published in 1516. More's pithy play on the Greek words "eu-topos" and "ou-topos" mean that utopia is, by definition, both a Good Place and a No Place: an unattainable ideal. This paradox—present at the root of the word itself— is perhaps the source of some of the widespread disagreement regarding the nature and value of utopianism.

For the purposes of this paper, I use the term "utopian urbanism" to describe efforts to build an idyllic urban society through the design of the built environment. One question raised by

this definition might be, when do urban planning projects enter the realm of utopianism? That is, when do they start being more than ordinary or run-of-the mill? The potential answers to this question are as numerous as the different intellectual perspectives on utopianism itself. In trying to navigate these competing perspectives, David Harvey (2000) offers a useful distinction between utopias of spatial form and utopias of social process. The former are the kind of blueprint utopias that offer detailed plans for the physical organization of an ideal society. Here, proper social function is presumed to follow proper architectural form. On the other hand, temporal utopias, or utopias of social process, are those which articulate grand plans for a new socio-political order, but are often "literally bound to no place whatsoever and are typically specified outside of the constraints of spatiality altogether" (Harvey 2000, 174). Because city planning inherently involves the reorganization of space, it would seem to fall naturally into the first of these two categories. In this way, we might consider an urban planning project to be utopian if it offers a detailed plan and clear path to a "better society" (however defined), rather than simply a vague or abstract vision.

It is worth noting that, particularly since the mid-20th century, many serious criticisms have been levied against this kind of blueprint utopianism. Well-known anti-utopian intellectuals of this era include Karl Popper, Isaiah Berlin and Hannah Arendt (Jacoby 2005). These thinkers, witnessing the atrocities committed by the regimes of Stalin, Hitler and Lenin, came to see utopianism as closely bound up with totalitarianism. For these liberal critics, even when it does not include outright genocide and repression, the pursuit of utopia is still intrinsically authoritarian, as it requires the imposition of a singular, totalizing vision upon individual wills and desires (Sargisson 2012). Jacoby affirms the tragic consequences of these perfection-seeking regimes, but also argues that it is unfair to conflate them with utopianism, as opposed to racism,

nationalism or megalomaniacal impulses. Other forms of utopianism that are more open, process-oriented and even emancipatory may still be possible. Thus to reject all utopianism on Popper's grounds is to throw out the baby with the totalitarian bathwater. Lyman Tower Sargent (2006) offers further reasons to salvage utopianism, arguing that,

> Even though utopias are potentially dangerous, we nonetheless need utopian
> visions. Loss of hope and utopia means loss of humanity. But how can we stop
> utopia turning into dystopia? Utopia thought of in terms of perfection, purity and
> exclusivity imposes its version of a better life as the only possible one. On the
> other hand, the utopianism of opposition does not seek perfection, or removal of
> opportunities for evolution. Its goal is progress and not repression of human
> beings. It is not utopianism that is at fault, the problem arises rather from the
> conviction that a particular utopia can bring about the only correct way to live
> (Sargent 2006, 11; cited in Sargisson 2012, 15)

What Sargent is ultimately concerned about is the loss of "social dreaming" that comes with a rejection of utopianism—that is, the ability to envision alternative futures that lie outside the constraints of the present. Ernst Bloch refers to this as "anticipatory consciousness." Krishan Kumar affirms the anticipatory quality of utopia, saying that, "utopia's value lies not in its relation to present practice but in its relation to a possible future. Its 'practical' use is to overstep the immediate reality….Here the visionary and impracticable quality of utopia is its strength" (Kumar 1991, 3). This line of thought reveals a second way that an urban planning project might be considered utopian: if it expresses radically new possibilities or genuine alternatives to our current state of affairs. This might be considered a "stronger" form of utopianism than the blueprint model, but it is also much more subjective and difficult to pin down. For this reason,

most discussions of utopian urbanism in this paper will focus on utopias of spatial form —

projects that offer a clear and concrete vision of the good life. However, I will return to this

notion of "anticipatory" utopian urbanism in later sections as a counterpoint to my critique of

eco-cities and the shortcomings of the utopian visions that they embody.

3. A brief history of utopian urbanism

Frederico Caprotti (2014b), as well as John Flint and Mike Raco (2008) have noted that

many contemporary sustainable urban development projects build upon older forms of utopian

urban planning. Flint and Raco point specifically to three traditions that have influenced the form

of current approaches to sustainable urbanism: the order and "moral uplift" of Daniel Burnham's

City Beautiful movement; the closed loops and ecological integration of Ebenezer Howard's and

Lewis Mumford's visions; and the technological efficiency of Le Corbusier's modernist plans

(32). In the section that follows, I seek to trace and expand upon this history, in order to provide

a more detailed account of the genealogical roots of master-planned eco-cities. I divide my

discussion of utopian urbanism into four rough chapters: City Beautiful & The Garden City, The

Functional City, The Entrepreneurial City, and The Spectacular City & Degenerate Utopias.

Admittedly, this task could itself be the subject of entire volumes (see Hall 2002), and so this

account is partial at best. However, it covers what I see as the traditions and figures most

relevant to a discussion of new-build eco-cities.

3.1 Progressive utopias: City Beautiful & the Garden City

Modern urban planning emerged at the end of the 19th century as a response to fears that

the increasing chaos, congestion and unsanitary nature of rapidly industrializing cities would

lead to inefficiency, moral depravity and civic decay. One response to these fears was the City

Figure 3: The White City

Beautiful movement, which sought to create civilized, orderly cities that would uplift the public and inspire civic virtue. These plans featured monumental architecture, axial boulevards, neoclassical motifs and a focus on constructing edifying public buildings, such as museums, parks, libraries, train stations and city halls. At the forefront of this movement was Daniel Burnham, an American architect educated at the *École des Beaux Arts* in Paris. Indeed, Burnham's White City exhibit at the 1893 Chicago World's Fair is widely cited as the impetus for the City Beautiful movement. In contrast to the haphazard, irregular layout of many cities of the era, the White City was premised around order, formalism and efficiency. To Burnham and others, the White City was seen as a utopian model for future urban centers, and illuminated to visitors, "possibilities of social beauty, utility, and harmony of which they had not been able even to dream" (Hines 2008, 121). This notion was premised on a belief that environmental reform would lead to cultural reform—a hallmark of spatial or blueprint utopianism.

Figure 4: Diagram of Howard's Garden City

Another key visionary was Ebenezer Howard, whose 1898 book , *Garden Cities of To-morrow,* is widely regarded as an iconic work of utopian urban design. The garden city was meant to provide the benefits of both town and
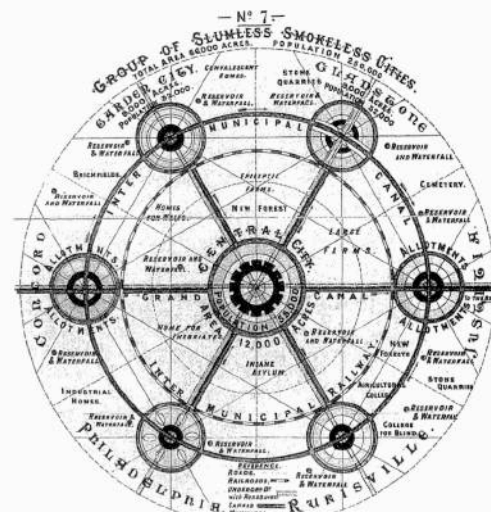
country, by developing small clusters of homes and businesses, surrounded by ample open space and agricultural areas. In this way, it was thought that residents could have access to both the conveniences of urban life, as well as the positive moral influence of the natural world. In the book, Howard offers precise prescriptions for the designs of new cities, providing estimates of ideal acreages, population sizes, street layout, etc. This physical design is also accompanied by a strong social vision, and a hope that better forms of sociospatial organization could facilitate the development of a less selfish, more communitarian citizenry (Hall 2002).

However, it must be noted that these planning efforts were not solely based on the good intentions of architects and designers. According to Boyer, the vision of social harmony and civic uplift proffered by these planners was no more than "ceremonial" (Boyer 1986, 6). Rather than genuinely responding to the "embedded motives of capital accumulation, status acquisition…and imperialistic power" which had produced the congestion and inequities of late 19th century cities, City Beautiful initiatives tended to improve the city's façade as a means of quelling social unrest (Boyer 1986, 5). In this way, the ostensibly altruistic principles of early planning efforts—"contact with the moral elite, public contemplation of nature, of civic orientation, of classical architecture"— were expected to contribute to a new disciplinary order, which would help preserve the social status quo, as well as lubricate the engines of capital accumulation (Boyer 1986, 6). This critique is important to keep in mind during discussions of current utopian planning efforts.

3.2 Modernist utopianism and the Functional City

Boyer writes that between the 1890s and the 1920s, a "radical shift" took place in planning discourse, shifting the focus from ideals of "upliftance [and] harmony" to "organic unity, expertise [and] control" (Boyer 1986, 3). This shift corresponds with the rise of high

modernist aesthetic and approach to planning in the built environment. As a "project of the

Enlightenment," modernist planning had at its core a claim that the, "sustained application of

Figure 5: LeCorbusier's Ville Radiuse

reason would lead to truth, knowledge, freedom and happiness" (Turner 2014, 3). While this approach shared many of the aesthetic and moral values of City Beautiful (order, rationality,

social harmony, etc), their physical articulation in the urban landscape took a very different form.

In contrast to the neoclassicism and ornamentation of the *Beaux Arts* style, modernist

architecture took advantage of steel, glass and concrete to create rationalized,

compartmentalized, and often austere landscapes.

The modernist utopian vision was typified by Le Corbusier's 1933 *Ville Radieuse*, which

featured dense high-rise complexes surrounded by linear parks and street grids. The Radiant city

featured a Tayloristic devotion to efficiency and the rationalization of space, while expressing

profound technological optimism—a belief in better living through innovation and technology.

Le Corbusier himself made the connection between modernist city planning and utopianism,

insisting that,

> …only architecture and city planning can provide the exact prescription for [society's]
>
> ills…The house that can be built for the modern man (and the city too), a magnificently
>
> disciplined machine, can bring back the liberty of the individual — at present crushed out
>
> of existence —to each and every member of society. (Le Corbusier 1967, cited in Holston
>
> 1989, 56)

This quotation shows that Le Corbusier's blueprint-style utopia links modernist design with progress, material abundance, ease of living, freedom, and social harmony. Moreover, it reflects his belief that "society should be highly regulated and controlled and this was to be achieved through and ideal city form, which was neat, ordered and efficient" (Watson, 2009, 166). This vision was promulgated across the world through organizations such as the *Congrès internationaux d'architecture moderne* (CIAM). Founded in 1928 by a group of 28 European architects, including Le Corbusier, CIAM was highly influential in solidifying the principles of the Modern Movement. Central to this movement was the idea of the Functional City—an urban environment rationally planned according to function-based zones. Achieving the Functional City entailed strict zoning laws, which sorted the city into specific areas for dwelling, recreation, work and transportation.

Many critics have asserted that these plans gave form to an oppressive totalitarianism, by imposing technocratic values upon a mosaic of varying concerns, struggles and interests within the city. Moreover, many endeavors of modernist urbanism were accompanied by physical brutality—namely, slum clearance, segregation and displacement of "blighted" communities to make way for city planners' grand utopian landscapes. By the 1960s, citizens alongside urbanists like Jane Jacobs were fiercely protesting these urban renewal policies, which were all too frequently carried out discriminatorily along the lines of race and class. All of this contributed to a "loss of faith in planning expertise and the perceived effectiveness of instrumental rationality to deal with emerging social concerns, particularly those relating to race, gender and the environment" (Gunder 2006, 208).

3.3 Free market utopianism and the Entrepreneurial City

While these changing ideological factors are crucial to understanding the rejection urban utopianism, David Pinder raises the critical point that "the stalling of early modernist ambitions in planning and architecture…has to be understood not merely at the level of ideas but in relation to… economic and political conditions" (Pinder 2002, 234). In important ways, modernist master planning was closely associated with the Keynesian welfare state of the first half of the 20th century. It is no coincidence that many of the most iconic modernist urban projects were public housing projects, such as the Pruitt-Igoe complex. These endeavors required large-scale state intervention on behalf of the public good (however defined), as well as substantial government funding to get off the ground. Pinder points to the economic crisis and recession of the early 1970s as a turning point in utopian urbanism, which prompted a loss of faith in state-centric planning efforts (Pinder 2002). As Freestone notes, during this period, "the notion of the centralized, benevolent state was crumbling [and] economic policy was forced to look beyond the industrial Fordism which had been the touchstone of social progress in the first half of the twentieth century" (Freestone 2000, 3). Rapid advances in telecommunications allowed for the outsourcing of production to less costly locales, eviscerating the economic bases from many cities in the U.S. and Western Europe (Sassen 2000). These concurrent processes of globalization and deindustrialization forced metropolitan areas to turn to new sources of revenue, particularly in the service, finance, tourism and real estate sectors.

In many instances, accomplishing this economic restructuring has required putting the city "up for sale" (Boyer 1992). To attract businesses, tourists, consumers, real estate speculation, etc., cities have had to market themselves as desirable locales, worthy of capital and human investment. Relying on fickle corporate interests (rather than industrial production) for

their economic survival, many cities have been put in strong competition with one another to attract capital from a limited pool of investors. Globalization has put additional pressures on cities to compete with one another, not only at the regional or national level, but at the international level as well (Sassen 2000).

At a political-economic level, this has ushered in the ideal of the Entrepreneurial City—an urban space "in which the economy can perform optimally with minimal government interference" (Bach 2011, 107; Cited in Caprotti 2014). This ideal has largely been pursued through the adoption of "good governance" measures, which, as Hackworth notes, have "become code for the ability of state to assist, collaborate with or function like the corporate community (e.g., through deregulation, labor 'flexibilization,' and tax incentives)" (Hackworth 2008, 10). The Entrepreneurial City is thus the ultimate pro-business city, with concrete policies in place to facilitate the unobstructed flow of capital. Freestone argues that in this pursuit of this ideal, planning has become little more than a "handmaiden to capitalism," working to achieve "economic growth, employment creation, profitability, and global capital-friendliness" (Freestone 2000, 9-10). One particularly strong manifestation of the Entrepreneurial City ideal can be seen in the proliferation of Special Economic Zones (SEZs) since the 1970s. These zones are delimited geographic areas in which there is a different set of laws governing business, taxation and trade than exists in the rest of the country. Free Trade Zones (FTZs) Export Processing Zones (EPZs) and Free Economic Zones (FEZ) are all explicitly recognized as testing grounds for trade liberalization and economic deregulation programs, as well as lures for foreign direct investment. In this way, they are some of the most extreme displays of the Entrepreneurial City ideal.

The shift described above—from the Functional City to the Entrepreneurial City— could be broadly characterized a "neoliberal" turn in urban planning and economics. Neoliberalism,[1] with its dedication to individualism, free-market forces, and an ostensibly[2] non-interventionist state, has been declared by some to be "the most successful ideology in world history" (Hackworth 2008: 2). By this, Hackworth is suggesting the depth to which neoliberal thinking has permeated global thought and reorganized sociospatial relations in its own image. Theorists like Frederic Jameson are keen to point out that this neoliberal order, while perhaps unpalatable to leftists, is equally as utopian as socialism ever was, in its promulgation of a totalizing vision for humanity (Jameson 2005). In this way, neoliberal urbanism can be seen as a manifestation of a radical free market utopianism.

3.4 "Degenerate" utopias and the City of Spectacle

From an aesthetic point of view, "selling the city" has been tied to the construction of iconic, ultramodern, or otherwise spectacular landscapes. The world "spectacular" here refers to Guy Debord's idea of "capital accumulated to such a degree that it becomes an image" (Boyer 1992, 185). Las Vegas may be the classic example of this strategy, with its pastiche of dazzling architecture, luxury hotels, shopping malls, and consumptive entertainment. While many of these places may exhibit a "utopian" (i.e.: fanciful) aesthetic, their utopianism in the social realm might be considered escapist at best. David Harvey, drawing on the work of Louis Marin, writes that these examples of conspicuous urbanism are "degenerate utopias" — that is, urban

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[1] As many have noted, the term "neoliberalism" may be quite problematic. It is often thrown around

[2] In spite of the "small-government" rhetoric surrounding neoliberalism, it is important to note that enacting and maintaining this paradigm has required strong acts of state intervention. In this way, it may be more useful to think of neoliberalization as as a "rolling out" of pro-market policies and corporate incentives, as much as it is a "rolling back" of welfare benefits and certain government regulations (Ong 2006).

spectacles "disconnected from wider transformative projects, turned in on themselves, no longer intent on radiating outwards in that transformative move that was central to utopian conceptions of the modernist urban structure" (Harvey 2000). In the words of Susan Buck-Morss, these degenerate utopias "reproduce the dream image but reject the dream" (Sargisson 2012).

A serious concern with these disneyfied utopias is that, much like Disneyland itself, they are dependent upon a sanitized public, and the exclusion of those who many not fit into their vision of consumptive social harmony. In this way, the economic restructuring of the late twentieth century is also tied to the "fortressing" of the urban built environment to facilitate upper-class insulation from urban ills (Soja 2010, 42; Pinder 2002, 231). According to Mike Davis, this new urban landscape is devoted to the "architectural policing of social boundaries," the privatization of public space and the proliferation of physical surveillance systems. Likewise, Soja (2010) confirms that, "public space has been rapidly eroding in contemporary cities, as neoliberal policies of deregulation remove the microspatial structures that maintained our 'civil liberties' in place, literally and figuratively" (45). For these thinkers, the erosion of public space and the "retreat from the street" mark a failure of progressive planning, and are linked to the rising inequities of urban centers. In *Spaces of Hope,* David Harvey expresses a deep concern about the naturalization of these degenerate utopias since the late 1980s. He writes that,

> The multiple degenerate utopias that now surround us — the shopping malls and the
> 'bourgeois' commercialized utopias of the suburbs being paradigmatic — do as much to
> signal the end of history as the collapse of the Berlin Wall ever did. They instantiate
> rather than critique the idea that 'there is no alternative', save those given by the
> conjoining of technological fantasies, commodity culture, and endless capital
> accumulation (Harvey 2000, 168).

What Harvey, along with Davis and Soja seem to be lamenting here is not the loss of grand city planning since the mid-20th century, but rather the lost avenue for substantive critique and social dreaming that utopianism offers.

4. Eco-cities: sustainable utopias of the 21st century?

Eco-city projects like Masdar City, which at least ostensibly seek to ameliorate social and ecological problems through urban design, would seem to complicate this notion that constructive utopian thought has completely died out. Indeed, the centrality of "sustainability" to virtually all new developments marks a potential resurgence of utopianism in the urban built environment. Whether articulated as the triple bottom line of "people, planet, and profit," or the three E's of "environment, economy, and equity," a three-pronged approach to sustainability seems to be standard practice in contemporary usages. What exactly constitutes each of these elements is much less clear. Indeed, "sustainability" remains a term notorious for its fuzziness and ambiguity: no one knows quite how to define it, but everyone seems to agree it is a good thing. In order to better understand how developers of Masdar City are employing the term, I offer a short history of the idea of sustainability in the section that follows.

4.1 A brief history of sustainability

The earliest uses of the term "sustainability" are often traced back to 17th and 18th century forestry practices in Western Europe. Of particular importance here is Hans Carl von Carlowitz's 1713 treatise *Sylvicultura oeconomica*, which explicitly recognized the interconnectedness of the local mining industry with natural timber stands, and established an economic argument for the "sustainable use" of natural resources (Caradonna 2014). This point of view was later reiterated in American conservation movements, where leaders like Gifford Pinchot advocated for the

"wise use" and "sustainable harvest" of resources. According to some, von Carlowitz "not only invents the word [sustainability]; he sketches out the entire structure of the modern sustainability discourse" (Caradonna 2014, 36). Given this, it is important to keep in mind that from its very earliest uses, the term sustainability has been deeply connected to economic, as well as political interests. In addition to metallurgy and mining industries, old growth forests were also critical to maintaining strong naval forces, thus giving states strong military and geopolitical incentives to ensure the sustained integrity of their timber stands. It is this idea that prompted historian Jeremy Caradonna to remark that, "as odd and unsavory as it may seem, sustainability traces its roots primarily to imperialists…who cared very little about nature or social justice and very much about state power, industrialization and profit" (Caradonna 2014, 45-46).

In the 1960s, the explosion of the environmental movement added new dimensions to the concept of sustainability. Scholar-activists like Rachel Carson highlighted the unintended ecological consequences of industrialization, while economists like Herman Daly warned that economic goals must be pursued within ecological limits. This perspective was epitomized in the Club of Rome's 1972 report, *Limits to Growth,* which underscored the idea that society would face collapse if it did not significantly alter its patterns of industrial modernization and slow its economic and population growth.

The publication of *Our Common Future* by the United Nations World Commission on Environment and Development in 1987 marks an important shift in popular discourse on sustainability. The so-called Brundtland Report introduced the notion of "sustainable development," which was then quickly taken up in a variety of other international forums. For example, in 1992, the Rio Earth Summit affirmed sustainable development as a human right, and initiated Agenda 21 as a non-binding framework for localities to work toward sustainable

development. The distinction between "sustainability" and "sustainable development" may appear petty or purely semantic, but many scholars have argued that it is of critical importance. As defined by the Brundtland report, sustainable development requires,

> ...the ability to... ensure that [humanity] meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development does imply limits — not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities. But technology and social organization can be both managed and improved make way for a new era of economic growth... (Brundtland 1987, 8).

As opposed to earlier conceptualizations of sustainability, which explicitly called for a steady state economy bounded by ecological limits, sustainable development has at its core a presumption of continued growth and expansion. In this respect, Caradonna remarks that the idea of sustainable development turned sustainability into a "Hydra-like concept," that is contingent upon the "question of growth" (Caradonna 2014, 1520). Moreover, sustainable development takes problems of ecological degradation and resource scarcity to be technical and/or social in nature, rather than absolute (Rapoport 2014). This allows for the view that environmental protection can be achieved through engineering and technological progress, rather than fundamental lifestyle and structural changes— a core claim of ecological modernization.

Ultimately, optimism and possibilities of "win-win-win" solutions promised by proponents of sustainable development have "contributed to the marginalization of the more pessimistic environmental discourses" of the *Limits to Growth* era (Rapoport 2014; 140). More contemporary notions of *green capitalism* or *natural capitalism* may epitomize this optimism. Popularized by economists like Paul Hawkens, and Amory Lovins and Hunter Lovins, green

capitalist discourses assert that the transition to a more ecologically sensitive society can be not only economically feasible, but even highly profitable. This argument rests upon the idea that more efficient use of resources not only benefits the environment, but saves money (and therefore boosts profits) for businesses as well. Thus Hawken et al. (1999) believe that "the private sector [will take] its proper place as the main implementer of sustainable practices, simply because they work better and cost less" (320).

More recently, Al Gore and David Blood (2011) have argued for a similar version of "sustainable capitalism," writing that "companies and investors that integrate sustainability into their business practices are finding that it enhances profitability over the longer term" due to brand enhancement, better risk management, waste reduction and efficiency gains. These statements present sustainability as the inevitable next step in the logical evolution of capitalism, while sidestepping normative questions about how we ought to structure our political economic systems to promote a more equitable and ecologically-sensitive society. I will return to this critique of green capitalism in section 6 of this paper.

4.2 An overview of eco-urbanism

In terms of the built environment, earlier *Limits to Growth*-styles of sustainability were often manifested as bottom-up, communitarian, village-style developments, with residents dedicated to living simply and close to the land (Rapoport 2014). In 1987, Richard Register coined the term, "eco-city" with his book *Eco-City Berkeley,* a text meant to provide solutions to local urban problems of sprawl, inner-city disinvestment and pollution (Joss et al. 2013; Rapoport 2014;). By the mid-1990s, sustainable development had emerged as a central concern in professional planning literature, and since then eco-urbanism become increasingly mainstreamed (Freestone 2000; Gunder 2006; Joss et al. 2013; Rapoport 2014;). Gunder (2006)

argues that in many ways it has become a "transcendent ideal"—an unquestioned and unquestionable Good—in the planning arena. Within this context, "sustainability" is intimately linked to the triple-bottom line. In many important ways, building the Ecological City has become the central focus of professional urban planning, with the field considered "more and more as a component of integrated environmental management" (Freestone 2000).

While there is a great deal of variation amongst approaches to urban sustainability, most include a common set of features: compact, mixed-use spaces; efficient public transportation systems; pedestrian-friendly infrastructure; low-energy technologies, etc. Importantly, many of these elements are indistinguishable from New Urbanist and Smart Growth paradigms, suggesting a great degree of convergence between these concepts. Part and parcel with the environmental turn in urbanism is the development of green-building certifications like Leadership in Energy and Environmental Design (LEED), which have now become international benchmarks for urban sustainability. Cities like Curitiba, Brazil and Portland, OR that undertook significant retrofit efforts emerged as icons of urban sustainability and prototype eco-cities in the late 1990s.

Beginning in the early 2000s, the number of urban sustainability experiments across the world began to grow exponentially. This is due in part to the efforts of international development agencies like the World Bank, which launched its Eco2 Cities program in 2010 to inspire new rounds of sustainable development. In their 2013 global census, Joss et. al identify 178 distinct eco-city projects worldwide. These are not limited to projects that explicitly bear the "Eco-city" label, but include related concepts such as Smart Cities, Techno Cities, Eco Islands and Eco Villages. Joss's survey reveals eco-city development to be a distinctly global phenomenon, albeit

an uneven one. Regionally, Europe and Asia lead the pack, with 73 and 70 eco-city projects

respectively. The Americas show 25 eco-cities, while Africa and the Middle East show only 10.

While most of these projects are retrofits
and expansions of existing urban centers, an
increasing number of greenfield, or new-build,
developments have been identified. These
projects, master-planned and built from the
ground up, are the focus of this thesis. Joss
identifies 24 of these new-build projects in
countries as diverse as China, Korea, the United

Figure 6: Plans for Tianjin Eco City, China

Arab Emirates, Nigeria, Malaysia, Kenya, Ghana, Spain, Taiwan and Portugal. However, this is

clearly an underestimate; projects like KACARE in Saudi Arabia and Zira Island in Azerbaijan

are noticeably absent. Table 1 offers a more complete, though by no means exhaustive list of

new-build eco-city developments.

Figure 7: Rendition of Kona Techno City, Kenya

These new-build
eco-cities are often multi-
billion dollar megaprojects,
commissioned and
developed by international
coalitions of architects,
planners and politicians.
Funding for these

megaprojects typically comes from a mix of public and private sources, though there are

exceptions. Eko Atlantic City in Nigeria, for example, boldly boasts that it is financed, "solely by private investors," primarily local and international banking conglomerates. Other projects, like Tianjin Eco City, represent a partnership between national governments, in this case China and Singapore. These development projects, based around a triple bottom line model of sustainability, have at their core a claim that through smart design and advanced engineering, the cities of the future can "continue to grow economically while quite literally transcending environmental constraints, obviating the need for wider societal change" (Hodson and Marvin 2010, 308). These projects all employ a triple bottom line model of sustainability, most typically touting economic profitability, a reduced carbon footprint, and a high quality of life. Many are also designed as discrete communities, with some literally walled off from their surrounding urban environments.

Although, quantitatively, new-build eco-city projects may be outnumbered by more conventional approaches to urban sustainability, they are both materially and symbolically significant in other respects. First, the vast sums of capital being channeled into this type of project indicate strong political and economic interests in them. Secondly, new-build eco-cities are unique in that that they are not constrained by existing infrastructure, and so offer a concrete representation of a certain strain of urban sustainability discourse in its most idealized form. In this way, they are an exemplary point of departure for an analysis of new forms of urban utopianism. The following section seeks to do just this, through a focused case study of Masdar City, UAE.

Name of Project	Country		
Zira Island	Azerbaijan	Amanora Park Town (Pune)	India
Black Sea Gardens	Bulgaria	Fujisawa Sustainable Smart Town	Japan
Changxing Ecological City	China	Konza Techno City	Kenya
Chongming Eco-Island	China	Tatu City (Nairobi)	Kenya
Dongton	China	KL Eco-City	Malaysia
Guangming (Shenzhen)	China	Eko Atlantic City (Lagos)	Nigeria
Hongqiao Low Carbon Business Community (Shanghai)	China	Blue City	Oman
Langfang Eco-Smart City	China	Rawabi	Palestine
Meixi Lake (Changsha)	China	Mata de Sesimbra	Portugal
Nanjing Eco High-Tech Island	China	PlanIT Valley	Portugal
Western Ecological City (Suzhou)	China	Urjuan	Qatar
Tangshan Caofeidian	China	Energy City	Qatar
Tianjin Eco-City	China	Eco-City 2020 (Mirny)	Russia
Wanzhuang Eco-City	China	King Abdullah City for Atomic and Renewable Energy (KACARE)	Saudi Arabia
Xinjin Water City	China	Punggol	Singapore
Neapolis Smart EcoCity (Paphos)	Cyprus	Gwanggyo Ekonhill	South Korea
Home Office People Environment (HOPE) City	Ghana	Incheon Eco-city	South Korea
Changodar Eco-City	India	Sejong	South Korea
Dahej Eco-City	India	Eco-City Montecorvo	Spain
Manesar Bawal Eco-City	India	Masdar City (Abu Dhabi)	UAE
Shendra Eco-City	India	Ziggurat (Dubai)	UAE
Godrej Garden City	India	Xertitown (Dubai)	UAE
Gujarat International Finance Tec-City (Ahmedabad)	India	Sseesamirembe Eco-City	Uganda
Mahindra World City (Jaipur)	India	Destiny, Florida	USA
		Treasure Island (San Francisco)	USA

Figure 8: List of master planned, new-build eco-city initiatives known to author at time of writing.

5. Case Study: Masdar City

5.1 Methodological Approach

This thesis seeks to address how Masdar City is linked to dominant discourses on sustainability, as well as how it builds on historic trends in utopian urban planning. In doing so, I rely primarily on twentieth century planning theory and practice from the United States and Western Europe. This cultural and geographic disconnect is justified insofar as "planning in may parts of the global South has been strongly informed by planning traditions which emerged in other parts of the world (specifically in Western Europe and the USA) in response to urban conditions very particular to an earlier time and context" (Watson 2009, 154; See also Rapoport 2014). Moreover, I maintain that as a globalized project, designed and executed by the British architectural firm Foster + Partners, this Eurocentric framework is both relevant and appropriate to an analysis of Masdar City.

Following the work of Natalie Koch, who has studied urban environmentalism in Qatar, I analyze sustainability specifically as a *strategic discourse.* Koch defines this approach as one that

> emphasizes the political effects of rhetorical and material practices conducted in the
>
> name of sustainability… [It is] not interested in the alleged validity of how actors deploy
>
> sustainability (i.e. whether or not practices they seek to justify are truly green), but more
>
> in how it operates as a 'regime of veridcition' (Foucault 2008) in the country's rapidly
>
> changing political economic relations." (Koch 2014, 1120-1121)

I take this approach for a variety of reasons. First, objective evaluations of a city's level of sustainability have proven extremely difficult and quite unreliable. Furthermore, the sustainability of any new-build development is questionable, given the vast amount of resources

they require to construct and maintain. As Koch puts it, there is no way around the fact that places like Masdar City are essentially "glass refrigerators in the desert." Second, and more importantly, the power and influence of sustainability as a discourse is not necessarily linked to the empirical greenness of practices conducted in its name. There are other factors at work, which I will explore in later sections. What I am ultimately interested in is the political work done by sustainability; that is, how mobilizing this discourse may legitimate particular approaches to urban development, while foreclosing other alternatives and obscuring potentially unsustainable consequences. Moreover, I am interested in how sustainable development interfaces with and builds upon previous trends in utopian urban planning (e.g., City Beautiful, modernist, neoliberal, etc.). All of this is conducive to studying sustainability not as an objective benchmark of resource consumption or carbon sequestration, but as a discourse that can be strategically employed as a political tactic.

My research is based on a discourse analysis of Masdar City's official website and other promotional materials, as well as field reconnaissance done in January of 2015. This latter component is quite limited in scope (I spent approximately one week in Masdar City), but nonetheless it allowed me an important phenomenological experience of the city, as well as opportunities for informal interviews with current students and administrators at Masdar Institute. I took a loose, qualitative approach to discourse analysis. Rather than formally coding for specific words and phrases, I tried to look at texts holistically to determine the overall story developers' sought to construct about Masdar City and sustainability. This analysis was informed by a theoretical grounding in the work of critical geographers, such as David Harvey, Erik Swyngedouw and Edward Soja.

What this kind of single case-study approach lacks in generalizability, it makes up for in depth and detail of analysis. I opted for this latter goal, seeking to analyze how Masdar City fits into Abu Dhabi's development strategy, as well as the broader context of sustainability in the Gulf countries. This is in line with Rapoport's assertion that there is a "need to analyse eco-cities not in isolation…but within the political and economic contexts in which they are developed" (Rapoport 2014). I selected Masdar City for a number of reasons. First, unlike projects such as HOPE City in Ghana, which exists only in planning documents, the early stages of construction in Masdar have actually been completed. Though currently only about $1/8^{th}$ the size of its projected total area, Masdar offers a physical infrastructure, replete with people who live and work in the city. Second, relative to projects like Konza Techno City in Kenya or KL Eco City in Malaysia, whose ecological commitments are fairly superficial and easy to dismiss as greenwashing, Masdar City seems to take sustainability quite seriously, thus setting a more conservative benchmark for my critique of eco-cities.
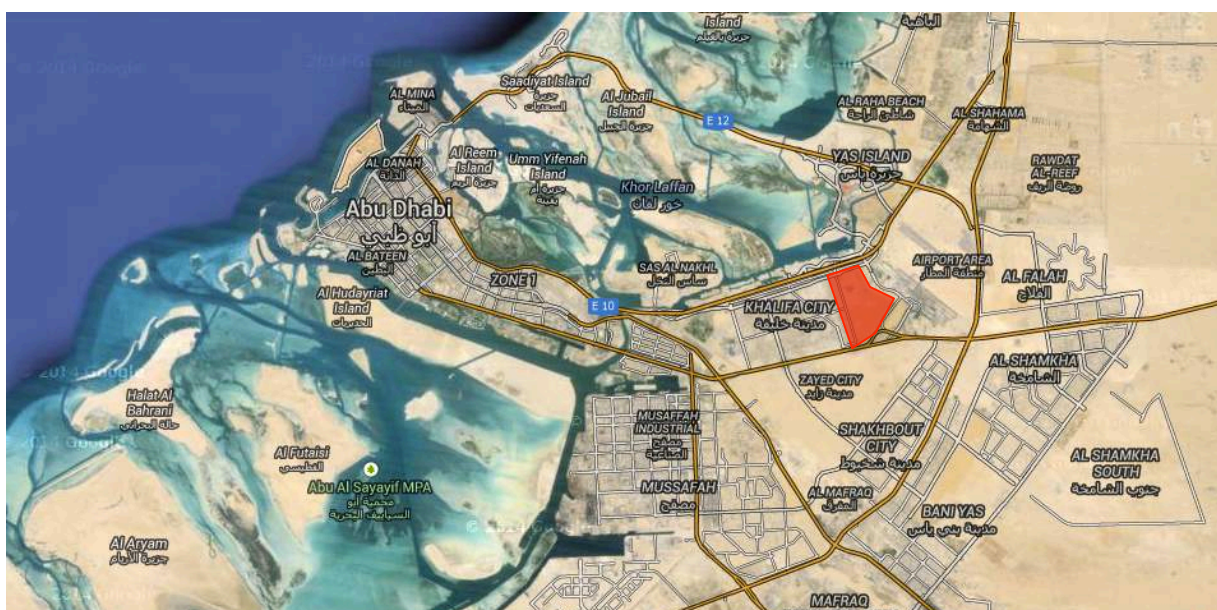
5.2 Geographic Context

Figure 9: Map of Abu Dhabi. Masdar City is outlined in red. *Google Maps 2015.*

With one-twelfth the world's proven oil reserves and citizens with an average worth of $17 million, Abu Dhabi is widely regarded as one of the wealthiest (and most consumptive) cities in the world. However, this has not always been the case. A city that "owes its very existence to oil," Abu Dhabi was little more than a "provincial backwater, a collection of mud huts" just 50 years ago (Elsheshtawy 2008). Contrast this with the present, where virtually every street corner is home to a sleek, modern skyscraper or a luxury hotel, and where a suite of spectacular megaprojects dots the city's skyline.

Referencing this explosive growth and development in the last half-century, Elsheshtawy dubs Abu Dhabi a "sudden city" or "instant city." One consequence of this rapid development, he writes, is that "the necessary city ingredients are there—streets, high-rise buildings, landmarks—but there is a certain detachment between these urban symbols and the city's citizens as well as its surrounding barren, desert landscape, imparting a strong sense of artificiality" (Elsheshtawy 2008, 259). However, Elsheshtawy also emphasizes that in spite of this degree of artificiality, instant cities like Abu Dhabi are indeed "real cities as significant to their inhabitants as are New York, Boston, Los Angeles or London to theirs" (Elsheshtawy 2008). The idea that cities like Abu Dhabi, Dubai and Doha are artificial no-places, lacking history and culture, is both pervasive and clearly untrue. I attempt to trace some of this history, paying particular attention to the city's infrastructural development, before returning to my discussion of Masdar.

The earliest residential developments in Abu Dhabi date back to 1761, when Bedouins from the Bani Yas tribe migrated into the area in search of better living conditions. Through the 1950s, Abu Dhabi remained a small collection of *barasti* (palm frond huts) housing a population of approximately 1,500. Local life was anchored in traditional Bedouin culture, as well as a

rudimentary pearling industry, which required locals to free dive from wooden boats in search of oysters. One traveler of this era described the place as a "…small dilapidated town which stretched along the shore. There were a few palms, and near them was a well where we watered our camels… the ground around us was dirty, covered with the refuse of sedentary humanity" (Elsheshtawy 2008, 264). It wasn't until the discovery of oil in 1962 that Abu Dhabi began to began its transformation from "a collection of mud huts" into a "recognizable urban entity" (Elsheshtawy 2008, 265). This transformation progressed relatively slowly until the formation of the United Arab Emirates (UAE) in 1971.[3] From there, Sheikh Zayed instituted an intensive modernization program focused on the construction of highways, skyscrapers, hospitals, schools and apartment buildings, as well as the provision of generous welfare benefits to Emirati citizens. This process intensified in the late 1980s, as a new master plan was implemented that expanded opportunities and incentives for development in the tourism and business sectors. Significantly, these policies changed property laws, allowing foreign ownership of land in special investment zones for a period of 99-years (Elsheshtawy 2008, 276).

The death of Sheikh Zayed in 2004 and the transfer of power to his son Sheikh Khalifa prompted a number of shifts in Abu Dhabi's urban development plans (Luomi 2009). While Zayed had always remained somewhat tied to conservative values, the younger Sheikh Khalifa has proven more amenable to global influences (Cugurullo 2013b). In many ways, Sheikh Khalifa's rule also has been characterized by a desire to position Abu Dhabi as a global city, both

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[3] The UAE is a federation of seven emirates (city-states): Abu Dhabi, Ajman, Dubai, Fujairah, Ras al-Khaimah, Sharjah, and Umm al-Quwain. Each of these seven emirates has its own capital city, which, somewhat confusingly, takes the name of its emirate (e.g. Abu Dhabi city is the capital of Abu Dhabi emirate, as well as the federation; Dubai city is the capital of Dubai emirate, etc). Each emirate is ruled by an absolute, heredity monarch, who is part of Federal Supreme Council. The ruler of Abu Dhabi (currently Sheikh Khalifa bin Zayed Al Nahyan) always serves, de facto, as the President of the Supreme Council, while the ruler of Dubai (currently Sheikh Mohammed bin Rashid Al Maktoum) serves as Prime Minister.

to gain international recognition as well as to emerge from the shadow of neighboring Dubai and other cities in the region. As Andrew Gardner (2014) notes, urban development in the region has taken on a "fetishistic quality" since the early 2000s, which "pits...the neighboring Gulf states in a competition for superlative standing" (349). Cities like Dubai and Doha had become known worldwide for their ventures in conspicuous urbanism—funneling billions of dollars into the construction of new museums, malls, skyscrapers, hotels, theme parks, offshore islands and, increasingly, eco-cities. Seeking to compete with these sites, Abu Dhabi has begun to develop its own set of spectacular megaprojects, including Saadiyat Island, Ferrari World, Yas Waterworld, Sheikh Zayed Grand Mosque and Zayed Sports City. Saadiyat, in particular, is a striking example of conspicuous urbanism. The multi-billion dollar development project entails the construction of a new "cultural center" for Abu Dhabi. Once an empty swath of desert, by 2020 the island will be host to branches of the Guggeinheim, the Louvre, New York University, as well as a suite of five-star hotels.

Figure 10: Examples of spectacular urbanism Palm Jumeirah, Dubai and Ferrari World, Abu Dhabi.

Yasser Elsheshtawy, a leading expert in Middle Eastern urban planning, compellingly argues that the focus on spectacular urbanism in the Gulf countries has resulted in the development of "dual cities" in the region. On the one hand, there is the city of iconic

skyscrapers and luxury enclaves for citizens, Western expatriates, and tourists. On the other,

there are the peripheral shantytowns and work camps that house masses of poorly-paid migrant

laborers, contracted largely from South Asia, who build, maintain and service the city's

cosmopolitan façade. These migrant laborers are absolutely "central to the day-to-day operation

of the Gulf city," in spite of the fact that they are largely housed "behind the curtain" and away

from the city's public stage (Gardner 2014, 361). In many ways, these dual cities represent

fortress urbanism and privatopias taken to the extreme.

Mike Davis, speaking particularly to the situation in Dubai, asserts that in order to

balance these emerging dualisms, as well as the competing demands of Islamic law and Western

business practices, the government has developed "a regime of…'modular liberties' based on the

rigorous spatial segregation of economic functions and ethnically circumscribed social classes"

(Davis 2011, 62). For example, citizens work almost exclusively in the (highly lucrative) public

sector and can informally influence politics through familial connections, while South Asian

migrant laborers are systematically marginalized through the *kafala* system of contract labor.

Western expatriates and professionals, for their part, find themselves somewhere in the middle,

able to live and work in a variety of Free Economic Zones that offer generous economic benefits

and relaxed government controls. Given that citizens make up only about 20% of the population

in Abu Dhabi, these strategies of "graduated sovereignty" take on a huge importance in

maintaining their cultural power and presence (Ong 2006; Gardner 2014). Gardner elaborates on

this idea, writing that the spatial patterns of urban development in the Gulf cities serve to

"compartmentalize foreign matter, to segregate that foreign matter, and to thereby assert the

predominance of indigenous culture and its sovereignty over the vast flows of people and culture

hosted by the Gulf states" (Gardner 2014, 359). In the sections that follow, I will explore how

these notions of graduated sovereignty may play out within sustainable development projects such as Masdar City.

5.2.1 Sustainability in the Gulf

The construction of an eco-city like Masdar in the midst of this wildly unsustainable urban landscape may strike one as anomalous. But projects similar to Masdar have emerged in other Gulf Cooperative Council (GCC) states, including Saudi Arabia, Qatar and Oman (see Fig. 9). Beyond these delimited eco-city projects, it would appear that cities in the Gulf have undertaken more widespread efforts to incorporate sustainability into their national agendas. Even Dubai, that global beacon of conspicuous consumption, has added a "sustainability" tab to its official website, while Saudi Arabia has committed to pursing atomic and renewable energy development. Abu Dhabi, for its part, has laid out a new master plan for a transition to a "sustainable knowledge-based economy" by the year 2030 (Plan Abu Dhabi 2030). Part of this can be explained by a desire on the part of these nations to transition away from wholly oil-dependent economies in the wake of volatile prices and debates about peak oil. Eco-cities, and other endeavors in sustainability, can thus be seen as instruments of economic diversification, and fulcrums away from the oil industry (Caprotti 2014a).

This is certainly the case with Masdar City, which emerged in 2006 as part of Sheikh Khalifa's plans to diversify the Emirate. The city itself is just one branch of Masdar Corporate,[4] whose stated mission is to "invest, incubate and advance the establishment of a clean energy industry in Abu Dhabi and around the world." Masdar Corporate, in turn, is essentially the renewable energy arm of the Mubadala Development Company, a wholly government-owned entity that serves as one of the major engines of the Sheikh's diversification plan. In addition to

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[4] The other major branches are Masdar Energy, Masdar Capital and Masdar Institute.

renewable energy, Mubadala also funds initiatives in the aerospace, tourism, finance, real estate, internet and communication technologies sectors (See Appendix A). These linkages reveal that Masdar City cannot be meaningfully separated from Abu Dhabi's broader development goals and political-economic aspirations.

Beyond these material rationales, sustainability may also play a more symbolic role in gulf countries' development strategies. With the explosion of interest in sustainability since the 1990s, and especially in the 2000s, strong ties have been forged between "green" and "globally recognized" images (Gunder 2006, 216). Thus pursuing sustainability is one way for urban centers to present themselves as "world cities," deserving of global investment and attention. Especially in the Gulf, where cities "synecdochically [represent] the country as a whole," green initiatives have emerged as powerful "urban boosterism schemes" to bolster countries' international repute (Koch 2014, 1120). Unlike green initiatives in democratic countries, eco-cities in countries like Qatar and the UAE are deployed as part of the national leadership's "efforts to secure both domestic and foreign approval of the country's nondemocratic political configuration" (Koch 2014, 1122). As Gardner (2014) puts it, the Gulf states "recognize sustainable development as an emergent and symbolically important attribute of the cosmopolitan modernity purveyed by other wealthy, urban and developed nations in the world" (349). Mobilizing the rhetoric of sustainability can thus serve as an important tool for promoting a positive and progressive image of these countries on the global stage. Therefore what Caprotti (2014a) has termed "conspicuous eco-urbanism" carries great salience in the Gulf region.

Often appearing alongside "discursive apparatuses of nationalism and developmentalism," sustainability in GCC countries may also serve an important nation-building function within the countries themselves (Koch 2014, 1122). Scholars have suggested that

citizens in the Gulf states have "begrudgingly yielded their political rights in exchange for the astonishing benefits of welfare systems that convey wealth from state to citizen" (Gardner 2014, 348). Maintaining this welfare system is therefore critical to the political legitimacy of the ruling families in the Gulf. Gardner (2014) argues that urban development has become one of the major mechanisms for achieving this transfer of wealth from state to citizen. Beyond just "mopping up" surplus oil wealth, as David Harvey (2000) has so bluntly put it, these spectacular urban developments garner political legitimacy by providing citizens with amenities, opportunities for investment, and lucrative income from renting property to foreign workers. Eco-cities projects like Masdar, "interlock with [this] political economy of urban development," insofar as they provide another conduit for the transfer of oil wealth away from the state, and are dependent on the same transnational labor flows that are responsible for physically constructing these new urban spaces (Gardner 2014, 360).

Pernilla Ouis has identified further ways that sustainable development is tied to state legitimation, particularly in the UAE. In the Emirates, she writes, the "greening project is closely linked to the legitimization of power for the ruling sheikhs and the political system of paternalism that has come to be termed 'Zayedism,' given the later Sheikh Zayed's professed love of nature and personal devotion to the greening of the desert" (Ouis 2002, 338). Here Ouis is referencing various initiatives to literally green the desert (e.g., through tree planting and agricultural development), but broader moves toward sustainability can equally be seen as acts of political legitimization. I will further explore this concept, as well as other political work done by the concept of sustainability through a case study of Masdar City.

5.3 Sustainability in Masdar City

Figure 12: Student housing in Masdar City. *Gabby Henrie 2015.*

Masdar City's commitment to environmental sustainability is manifested in six core areas: energy generation and management; water generation and management; waste management; planning, engineering and architecture; sustainable building materials; and transportation planning. At the forefront of Masdar City's renewable energy initiatives is its onsite 10MW solar photovoltaic power plant. Currently, the city uses about only 4-5MW throughout the day and feeds the excess power back into the grid.

At night, Masdar City draws energy from the grid, but is able to remain "carbon-neutral" due to the surpluses generated during daylight hours. Through a partnership with Rekjavic Geothermal, Masdar developers are also working to construct the first geothermal-powered air conditioning system in the Middle East. In addition to these local projects, Masdar Corporate has also become increasingly involved in a number of high-profile renewable energy initiatives at the national and international level. The Shams 1 concentrated solar power (CSP) plant is a 2.5 km2 array, located in Madinat Zayed. With a total installed capacity of 100 MW, it is the first CSP plant of its kind in the Middle East (Luomi 2009). Masdar Corporate also has a 20% share in the London Array, a 1000MW offshore wind farm being developed off the coast of England. When completed, this plant will generate enough energy to power approximately 750,000 homes, or a quarter of the greater London Area. Masdar has also just announced its 35% stake in the

Dudgeon Offshore Wind Farm, a 402MW project off the coast of North Norfolk. Another

important joint venture is the Torresol Energy project in Spain. This series of three CSP plants

will have a total capacity of 120MW when completed. Masdar has also instituted a special

projects unit, tasked with implementing renewable energy projects in "challenging contexts,"

such as Afghanistan, Seychelles, Samoa, Oman and Tonga (see Appendix B for more details).

Located in the middle of the desert, reduced water use is a crucial environmental goal for

Masdar City. Masdar has set a target for potable water consumption at 105 liters per person per

day, well below Abu Dhabi's average of 390. Largely through efficiency gains, greywater

recycling and smart metering, the Masdar Institute has already reduced its consumption to 179

liters per person per day. Research at the Masdar Institute is also focusing on how to create more

efficient desalinization processes. Masdar City had initially set a goal of becoming a "zero-

waste" environment, a goal that has since been scaled back significantly (Cugurullo 2013a). At

this point, separate recycling bins for paper, plastic, and food waste are widely available across

the city, although it does not appear that waste is being effectively sorted into the correct bins.

This suggests the need for better education and incentives to change the behavior of city users.

Masdar's approach to urban planning is characterized by seven overriding themes:

"energy-efficient orientation; integration of districts and neighborhoods; low-rise, high-density

buildings; vibrant public realm; [and] pedestrian friendliness." One might notice that despite

Masdar's claims of being the "city of the future," these are essentially the same basic principles

that have been guiding sustainable urban development for 30 years (see section 3). Developers at

Masdar also proudly draw upon the architectural heritage of the region, by implementing narrow

alleyways and wind towers that help keep the development up to 10 degrees cooler than the rest

of Abu Dhabi in the summer months. Other clever architectural features help keep buildings

cooler while providing natural light in order to cut down on electricity usage. Masdar's hallmark endeavor in transportation planning was the Personal Rapid Transport (PRT) system, an underground network of driverless vehicles that were planned to run the length of the city. However, due to their high cost, the PRT system has been scaled back, and now runs just from the parking lot to the center of the city. A fleet of electric vehicles is being also operated and tested in the city by Mitsubishi. In terms of connections to central Abu Dhabi, two public bus lines run from downtown to Masdar City, a ride that takes approximately two hours. Due to this lengthy commute as well as infrequent service most city users still arrive by car. A new city-wide light rail system, planned to open in 2025, may help to ameliorate some of these issues.

5.3.1 Ecological utopia or technological fix?

Significantly, all of these endeavors indicate strong ties between environmental protection and scientific progress. In its mission statement, the Siemens Centre of Excellence in Masdar displays a striking example of this modernist faith in better living through science in technology, saying it seeks to "drive quantum leaps in achieve carbon neutrality" through research and development. Likewise, Masdar Institute is a graduate university dedicated wholly to sustainable engineering and clean technology. While the city does mandate some minor changes in daily norms and behaviors (e.g., air conditioners are set to 77 degrees rather than Abu Dhabi's usual 60), the city's sustainability strategy centers on engineering our way out of the climate crisis. In this way, it functions as a purely spatial utopia, rather than a utopia of social process.

In fact, Masdar's developers seem quite opposed to demanding social and behavioral changes. They are adamant that, "environmental responsibility need not be a hardship" and have committed to ensuring that environmental protections do not mean "constrained lifestyles" (2).

These claims strike at the core of ecological modernization discourses, which promise that human societies can substantially reduce their carbon footprints, and comfortably maintain their consumptive, high-technology lifestyles too. Although developers espouse a commitment to a triple bottom line model of sustainability, Masdar's attention to the social is limited to providing this "high quality of life" for its residents. This is indicative of Gunder's argument that in triple bottom line sustainability, "the social, at best, is addressed with intangible platitudes" (Gunder 2006, 215). In addition to the eye-catching architecture and walkable, mixed-use spaces, Masdar's high-quality lifestyle is achieved by "maximiz[ing] convenience," so that residents can "find everything they need close at hand." Some examples of these "needs" can be found in the numerous food and retail shops occupying Masdar's lower floors, as well as the "extensive leisure and entertainment facilities," such as Ferrari World, Yas Waterpark and Yas Mall, available in Abu Dhabi at large. This high quality lifestyle is meant to be one of constant entertainment and conspicuous consumption— a hallmark of Harvey's "degenerate utopianism." Cugurullo underscores the centrality of business and consumerism to Masdar's vision, saying that, "attention toward the customer's needs is the key driver of Masdar's concept of 'social'" (Cugurullo 2013a, 32)

To their credit, the outreach team at Masdar has been working to increase the general public's presence in Masdar. They are working on opening up roads into the development, and have implemented a *Fridays at Masdar* program—essentially a small, weekly festival catered to families and children. In spite of these efforts, it is unclear whether residents of Masdar City are finding the lifestyle it offers desirable. One student described the eco-city as "prison-like," referencing the fact that Masdar's geographic isolation means that he lives, studies, works and

socializes in a confined area with a limited number of people. While extreme, this statement

suggests the potentially dystopian qualities of everyday life in an eco-city.

5.3.2 The Eco-Entrepreneurial City

Frederico Caprotti, drawing on the work of Harvey, has coined the term "conspicuous

eco-urbanism" to describe projects that use the veneer of sustainable building and design to

attract international repute and acclaim. Masdar City certainly exhibits strong elements of this

logic, with developers explicit about the fact that their goal is no less than to "turn Abu Dhabi

into the preeminent source of renewable energy knowledge, development, implementation and

the world's benchmark for
sustainable development." This
language affirms Masdar City's
role in developing Abu Dhabi's
world-city status, and connotes the
increasingly strong ties between
"green" and "globally recognized"
images in the world of urban

Figure 13: The "ecomagination center" at Masdar. *Gabby Henrie 2015.*

development (Gunder 2006, 216). The involvement of the British architectural firm Foster +

Partners in the project is also typical of this objective. More and more, cities across the world are

employing the talents of an elite cadre of "starchitects" (such as Norman Foster, Frank Ghery,

Jean Nouvel, etc.) to roll out iconic landscapes that signify the cities' status as a desirable site of

business and leisure.

Masdar has also enacted concrete economic measures to ensure its perception as a pro-

business haven. This is epitomized by Masdar's status as a Free Economic Zone (FEZ), offering,

100 percent foreign ownership with no restrictions on capital movements, profits or

quotas…strong IP [intellectual property] protection framework…zero percent import

tariffs…zero percent corporate or individual tax…zero currency restrictions (Masdar

Website)

Significantly, this FEZ status means that Masdar City will be one of the few places in Abu Dhabi

where corporations can bypass local laws mandating 51% Emirati ownership, as well as where

non-citizens can own property. Commenting on this common trend of siting new-build eco-cities

within FEZs, Caprotti remarks that they, "then take on the dual role of global showcases, as well

as smooth, unobstructed spaces where capital can flow freely and materialize in factories, urban

environments, and industrial economies" (Caprotti 2014, 1293). This marks a remarkable

convergence between new-build eco-cities and the ideal of the "frictionless" or "entrepreneurial"

city.

In *Neoliberalism as Exception*, Aiwha Ong (2006) describes the logic of FEZs as a "hub

strategy that uses capital not to perform conventional city functions but to leverage their

relationships for innovative collaborations with global companies and research institutions that

become intertwined with the future of the site" (8). This is certainly the case for Masdar City,

which is explicitly meant to be a "clean tech hub" that brings together international business

interests and technological expertise from Masdar Institute. This idea of an "eco-entrepreneurial

city" can also been seen in the fact that public-private partnerships are at the very heart of

Masdar's development model. As Cugurullo describes, "without companies developing new

products in partnership with the Masdar initiative, the entire city would collapse. Capital would

simply stop circulating, and so would the funding coming from Mubadala" (Cugurullo 2013a,

31). The expansion of Masdar City is contingent upon ever-expanding partnerships with clean

tech businesses. Current business partnerships include: General Electric, Mitsubishi, Bayer

Material Science, Abengoa Solar, Vestas Wind, Schneider Electric and Armalia Parters. GE, for example, has sponsored an "Ecomagination Center" at the Masdar Institute, which aims to find innovative solutions that help solve environmental challenges while driving economic growth.

Masdar, like many similar eco-city projects, is also explicitly designed to be a "green print"— a model for sustainable development that can be duplicated across the globe. This, combined with the aforementioned corporate interest in eco-cities, has prompted Hodson and Marvin (2010) to argue that the objective of these projects "is to turn the whole development process, including the energy and infrastructure, into a single financial product that is replicable in other contexts" (309). This would seem to suggest the financialization of sustainable urban development— such that it is not an eco-city's value as a physical resource that is of importance, but rather its ability to be bought and sold on the market as an abstract commodity.

5.3.3 Degenerate Utopianism & Enclave Urbanism

Masdar City's most obvious contradiction may be that it coexists alongside developments like Sadiyaat Island, Ferrari World and "Worker's City." As previously mentioned, Abu Dhabi's modular approach to development facilitates sociospatial segregation (by class, national origin, ethnicity) and the construction of elite, insular enclaves—in Masdar City's case, an enclave of sustainability. This insularity is underscored by Masdar's construction within an FEZ. Bach (2011) characterizes the social choreography that underpins this type of FEZ as follows,

> …people are secondary to production, but they too are planned for, everyone is in their place, at the right time, and everyone is to behave according to their role. Top managers live in luxury apartments or villas, white collar employees in middle class high rise complexes, workers in dormitories, and illegal migrants are marginalize to the outskirts or unplanned remainders of the Zone (Bach 2011, 109; cited in Caprotti 2014, 1293).

These dynamics certainly hold true in Masdar City, where there is almost no such thing as a casual passer-by; anyone stepping foot in the city is an employee, a student, or a tourist. This can be attributed to the fact that it is geographically removed from Abu Dhabi's center, and there is only one road into Masdar. By constructing an environment where residents don't have to be bothered to leave, and where non-residents would have no reason to pass through, Masdar limits the amount of contact residents must have with people outside of their immediate environment or social circle. In important ways, Masdar City has abandoned the Olmstedian vision of public space, instead cultivating a neoliberal logic where centers of business and luxury are kept "pristine" and free from the presence of undesirable characters and non-consumers (Davis 2006).

Drawing upon the literature surrounding "privatopias" and upper-class insulation from urban ills, many scholars have raised concerns that places like Masdar City are simply "ecologically secure gated communities" and "ecological enclaves" (Caprotti 2014a; Hodson & Marvin 2010; Watson 2014). Watson raises particularly poignant concerns that new-build eco-city projects in Africa may result in "climatological gentrification" that actually accelerates uneven geographical development. She argues that projects like Eko Atlantic City, Konza Techno City, and HOPE City allow the rich to maintain their lifestyles through alternative energies and other sustainable technologies, while forcing the poor to bear the brunt of oil shortages, resource scarcity, and natural disasters.

A less apocalyptic, though still worrisome concern is that Masdar's insular approach to sustainability promulgates a vision of "sustainability as exception" (to borrow Ong's terminology). Just as FEZs allow pockets of neoliberalism to exist within seemingly antithetical political economic structures, insular eco-cities like Masdar create pockets of sustainability within otherwise unsustainable landscapes. As Garder (2014) puts it, "the compartmentalization

of sustainability to a master-planned development essentially consigns sustainability initiatives to the status shared by the constellation of other principles, ideas, and whims guiding the spatial articulation of the Gulf city" (361). They offer a vision of sustainability that can be applied when it is convenient or strategic, but that ultimately does not disrupt the wider socio-ecological and political economic systems at work.

6. Sustainability and the post-political condition

Between international megaprojects like the London Array and more local experiments like Shams 1, it is clear that Masdar City is making tangible progress in realm of environmental sustainability. As Koch puts it, it is clear that, "the practices that are being enacted in the name of sustainability…are not *just* rhetoric" (Koch 2014, 1135; emphasis added). These environmental achievements, no matter how limited, make it increasingly difficult to sustain any deep criticism of Masdar City. How can Masdar's style of development be a step in the wrong direction if it is also a step toward sustainability? Koch pinpoints this problematic in her discussion of Qatar, saying that, "the supposedly objective good of protecting the environment is precisely what makes [sustainability] so powerful—it is a convenient tool for deflecting criticism of a project that outside observers would otherwise easily target as retrogressive" (Koch 2014, 1130; see also Watson 2014). Ironically, this suggests that one problem may be that environmentalism at Masdar *cannot* be easily dismissed as greenwashing, but demands to be taken seriously. Were it not for Masdar's solar panels and advanced wastewater treatment plants, the project would quickly be seen in the same light as any other elite, insular enclave in Abu Dhabi, another case of conspicuous consumption and spectacle. However, it appears that these sustainability measures offer a degree of protection from criticism and public denunciation.

This insulating effect has provoked Gunder's remark that "[s]ustainability has become an important political resource, or tactic, capable of co-option 'to legitimate particular policy approaches'" (Gunder 2006, 213). The "particular policy approaches" in question here include neoliberal deregulation, privatization, entrepreneurialism, managerialism and growth. Particularly after the global financial crisis of 2008, which drew many of these strategies under increased scrutiny, sustainability offers an important mechanism to detract and distract from the more blatantly regressive impacts of these types of policies. This is perhaps one reason why it seems that today "political, planning, and economic actions have better chances of success if they are aligned with sustainability ideology" (Cugurullo 2013b, 80).

Importantly, this strategy of legitimation is contingent upon sustainability's construction as a universal and unquestionable "category of the good" (Gunder 2006, 213). Swyngedouw wryly comments on the widespread consensus that sustainability has garnered in the last 30 years, saying,

> I have not been able to find a single source that is against 'sustainability.' Greenpeace is in favor, George Bush Jr. and Sr. are, the Pope is, my son Arno is, the rubber tappers in the Brazilian Amazon forest are, Bill gates is, the labor unions are. All are presumable concerned about the long-term socioenvironmental survival of (parts of) humanity; most just keep on doing business as usual… (Swyngedouw 2006, 20).

One might expect that such widespread support for sustainability would be applauded—especially if it had Greenpeace and George W. Bush mutually recognizing the need for environmental protections. However, it is not evident that Greenpeace and George Bush truly have the same thing in mind when they invoke the notion of "sustainability." This type of fundamental miscommunication seems to be what Jacques Ranciere had in mind when he wrote that, "disagreement is not the conflict between one who says white and another who says black.

It is the conflict between one who says white and another who also says white but does not understand the same thing by it" (Ranciere 2004, x). This definition highlights an important difference between nominal and actual consensus; while there may be widespread consensus regarding the importance of "sustainability" as a general principle, the specific policies proposed by different groups to achieve this ideal may very greatly. Gunder argues that this vagueness is precisely what gives sustainability its ideological power—that "this lack of specific meaning, this emptiness, allows it to contain a conflicting range of narratives under one label of master identification we can share with others" (Gunder 2006, 211). In other words, it is the inherent malleability of sustainability that enables it to garner such widespread support. One potential problem with this is that "weak" or even socially regressive visions of sustainability can gather public approval through their nominal associations with stronger forms of sustainability.

Another problem is that, to the degree that some actual consensus has been developed around the triple bottom line model of sustainability, it seems dependent upon the evisceration of sustainability's contentious and "properly political" content. Slavoj Zizek, defines the "properly political" as,

> not simply something that works well within the framework of existing relations, but
> something that changes the very framework that determines how things work....
> [A]uthentic politics...is the art of the impossible—it changes the very parameters of what
> is considered 'possible' in the existing constellation." (Zizek 1999, 199; cited in
> Swyngedouw 2007,24).

By this definition, the properly political act is "impossible" in that it works outside of and against the status quo, toward some alternative paradigm. This kind of deep reorganization often necessitates the loss and power and privilege for some, in the name of redistributing it to others—making properly political acts highly contentious and conflictual. Thus for Zizek, any

radical-progressive politics should see "inherent antagonism as constitutive of the political"

(Zizek 1999, 29; cited in Swyngedouw 2007, 25). This explicit embrace of political discord

perhaps rattles at popular visions of "social harmony" or "political unity." However, this is not to

say it is un-democratic. As Swyngedouw emphatically exclaims, "democracy was invented out

of an understanding that we disagree!" (Swyngedouw 2007). Likewise, Ranciere (2004) argues

that "disensus" is in fact a concept much more integral to democracy than its sister-term

"consensus."

This definition of the properly political—as acts that expand current notions of what is

possible—also directly parallels the definitions of emancipatory utopianism offered by Harvey,

Pinder, Pepper and others. Zizek makes this connection explicit when he writes that "the only

criterion [of the political act proper] is the absolutely inherent one: that of an enacted utopia"

(Zizek 2005, 247; cited in Sargisson 2012, 36). In this way, we can trace a connection between

the rejection of utopianism as a legitimate mode of sociopolitical thought and the solidification

of a "post-political" condition in the last quarter century.

Swyngedouw (2007) defines the post-political condition as "one in which a consensus

has been built around the inevitability of neoliberal capitalism as an economic system,

parliamentary democracy as the political ideal, and humanitarianism and inclusive

cosmopolitanism as a moral foundation" (24). Here, it is not capitalism, liberal democracy or

humanitarianism *per se* that thinkers like Swyngedouw and Zizek are rejecting (though that may

be part of it). Fundamentally, they are concerned with the presumed *inevitability* of these systems

as the end-all be-all for humanity, and the implicit foreclosure of alternatives that it entails. On

this point, criticisms of post-politics overlap precisely with lamentations of the "end of

utopianism." Both resolutely reject the claim that "There Is No Alternative," and urge for a reinvigoration of contentious, demanding visions for the future.

Interestingly, Zizek, Swyngedouw, and others all point to environmentalism as an area that not only epitomizes the post-political condition, but has been crucial to its formation. Swyndegouw writes that environmental politics have been

> …reduced to the administration and management of processes whose parameters are defined by consensual socio-scientific knowledges. This reduction of the political to the policing of environmental change… evacuates if not forecloses the properly political and becomes part and parcel of the consolidation of a postpolitical and postdemocratic polity" (Swyngedouw 2009:602; cited in Caprotti 2014: 1287)

Here Swyndegouw echoes a long line of critique against the rise of managerialism and the diverting of political power from the public and elected officials to technical experts and managers. He argues that this process has been especially profound in the field of environmental decision making, where discourses of crisis (ie: catastrophic climate change, peak oil, species extinction, toxic bio-magnification, etc) have been leveraged to construct a common threat — a "fetishized and external foe"— facing humanity as a whole (Swyngedouw 2007, 612). A classic example of this externalized, objectified enemy is carbon dioxide, which is often framed as *the* problem in and of itself within mainstream environmental politics, rather the systems of industrial production and mass consumption that have lead to its rapid accumulation in the atmosphere over the past 150 years.

When framed this way—as simply a scientific problem of too much carbon in the atmosphere— global climate change becomes something that can be dealt with through technical solutions, such as cleaner energy sources or cap-and-trade programs. While these are certainly important and viable options to consider, many critical scholars are concerned that the market

and technology seem to have become only possible avenues to address issues of climate change (Caprotti 2014; Gunder 2006; Harvey 2000; Krueger and Gibbs 2007; Raco and Flint 2005; Rappoport 2014; Swyngedow 2007). Gunder argues that, "concerns for…social equity are *inherently* political and outside the technorational scientific approach central to and dominant within considerations of market efficiency and environmental protection" (Gunder 2006). In this way, the diminution of concerns for social justice within the triple bottom line model of sustainability may be directly related to the technocratic and post-political nature of mainstream environmental discourse.

There is a danger here of overstating the ubiquity of this depoliticized vision of sustainability, or of the post-political condition more generally. As Jesse Goldstein remarks in his critique of Swyngedouw's work, "we must avoid naturalizing the post-political as an unwavering cultural truth or unavoidable political condition" (Goldstein 2013, 6). First, it is clear that politics and politicization have not disappeared from the environmental arena. Far from it, especially in the United States where climate deniers abound, debates continue to rage over whether environmental policy making is needed and/or desirable. Heated political conflicts over carbon tax and cap-and-trade proposals, resistance to the Keystone XL Pipeline and hydraulic fracturing, and reluctance to adhere to international climate protocols, all reveal that environmental politics are far from uncontested territory. As Goldstein puts it, "to apply to the current state of climate politics the blanket label 'post-political' is, ironically, a decidedly post-political gesture" (Goldstein 2013, 31).

In spite of this intense politicization, however, both sides of these mainstream debates seem to share a remarkable number of similarities. Few people question the imperative of continued economic growth and expansion. Few seem to doubt that technological innovation will

continue the linear march of human progress. Thus it seems that in contemporary environmental politics, "disagreement is allowed, but only with respect to the choice of technologies, the mix of organisational fixes, the details of the managerial adjustments, and the urgency of the timing and implementation" (Swyngedouw 2007). This suggests a paradoxical political system in which the minutiae of environmental decision-making are hyper-politicized, while, in many cases, more fundamental normative questions of how we ought to organize our structural relationships with the natural world largely go unasked.

Perhaps a more useful way to think of the post-political condition is not as something that currently exists, but as a condition being aspired to, or actively constructed through a variety of discourses and concrete policies. In this sense, Masdar City is a clear example of a space in which this post-political condition is being actively produced. The modernist techno-optimism associated with Masdar's approach to climate change solutions is typical of ecological modernization discourses. Moreover, like other master-planned communities, Masdar sidesteps the highly political question of "how ought we to live?" and instead defers to the technical expertise of planners and ecologists. In this way, Masdar City has followed the path of earlier blueprint utopias (The White City, Garden Cities, *Ville Radieuse,* etc) by dictating the spatial form for an alternative society, while leaving little room for imaginative social dreaming. Moreover, the technocratic vision of sustainability put forth in this "city of the future" does little to break away from present socioecological relationships and political economic dynamics. By doing this, it "instantiates rather than critiques" the idea that green capitalism is the only feasible option for addressing issues of environmental degradation (Harvey 2000). Thus, as developers continue to push Masdar and similar eco-cities as a model for the future, they may be aiding in the construction of a post-political approach to sustainability.

7. Conclusion: Toward a utopian urban sustainability

Masdar City, or any master-planned eco-city for that matter, might seem like an extreme or exceptional example of sustainable urbanism. I would argue, however, that it is relevant to broader discussions of urban sustainability for a number of reasons. First, and most obviously, many eco-cities are explicitly meant to be "green prints" for sustainable development. This indicates a clear intention to expand these approaches to different types of development in different parts of the world. Second, as *icons* of "green capitalist" urbanism, eco-cities like Masdar offer a kind of measuring stick, which can help us to recognize similar patterns of development when they appear more subtly in retrofit projects. Thus, a critique of Masdar should be applied to retrofit projects with a grain of salt, but may be relevant nonetheless. To recap, my critique of master-planned eco-cities and their associated discursive strategies is three-fold: (1) Social equity is largely ignored in their tripartite formulation of sustainability; (2) Under the guise of environmental protection, they reproduce neoliberal economies and exclusive socio-spatial organizations; (3) They aid in the construction of a post-political approach to sustainability, which is centered around the presumed inevitability of (green) capitalism as a solution to our collective environmental troubles.

Eco-cities like Masdar reveal that while green capitalism may well help us to reduce our collective carbon footprint through technological innovation, it seems ill-equipped to remedy the systemic inequities and geographic disparities produced by conventional neoliberalism. As climate justice advocate Ashley Dawson writes,

> green capitalism does not seek to and will not solve the underlying ecological
> contradictions of capital's insatiable appetite for ceaselessly expanding accumulation on a
> finite environmental base. Instead, green capitalism seeks to profit from the current crisis.

In doing so, it remorselessly intensifies the contradictions, the natural destruction, and

human suffering… (Dawson 2010, 313).

Even Jerry Harris, a somewhat reluctant supporter of green capitalism, concedes that,

"movements towards monopolization, economic rationality and the exploitation of labor cannot

be resolved within the parameters of green capitalism" (Harris 2010, 56). In spite of this major

shortcoming, he does see potential in in market environmentalism's ability to bridge the gap

between the economic interests of a transnational capitalist class and the global grassroots

struggles for radical socio-ecological change. He proposes green capitalism as "an intermediate

strategy for left activists to help move society towards sustainability" — no more, no less (Harris

2010, 57).

On the one hand, Harris' pragmatism here is perhaps admirable, as is his implication that

green capitalism must be seen as a stepping-stone, not the final destination for a truly sustainable

society. On the other hand, Harris' reluctant acceptance of green capitalism also seems to suggest

a sense that "there is no alternative," and that "decarbonized iterations of capitalism [are] the

only hope of our collective future" (Caprotti 2014, 1287). The tension between these two

readings of Harris is indicative of one of the central difficulties of a pro-utopian (or at least anti-

anti-utopian) stance: at what point do we sacrifice noble ideals for incremental change? Perhaps

unsatisfyingly, this is a question that should not be answered in the abstract, but requires specific

context and vigilant reflection. This open-ended, contingent approach to utopianism is in line

with Leonie Sandercock's utopia of "dialogue, change and contestation….[which] is in contrast

to utopia's traditional inability to deal with questions of difference without collapsing them into

the same" (Pinder 2002, 238).

Michael Sorkin writes that, "utopia, properly imagined, is always obliged to explain why

it isn't a nightmare" (Sorkin 2011, 370). This conceptualization of utopia raises two important

points. One, it implies a degree of contentiousness—it demands enough that some may have reason consider it a "nightmare." Second, it requires an "obligation to explain," that is, it entails discussion and debate. Both of these qualities are currently lacking in mainstream conceptions of sustainability. By advocating for "decarbonized" business as usual, triple bottom line sustainability does not challenge our structural relationships with the natural world, nor with each other. Moreover, its construction as a universal good—a "platonic ideal"—puts its value beyond public challenge and debate. Insofar as they remain "fully within the realm of the possible, of existing socioecological relations," post-political conceptualizations of sustainability seem decisively un-utopian (Kruger and Gibbs 2007, 24).

In trying to construct a more utopian vision for our socioecological relations, it is important to remember that the "notion of sustainability is not ontologically fixed" (Kruger and Gibbs 2007, 6). It is in no way a historical inevitability that sustainability has been (re)defined as, "one of the possible routes for a neoliberal renewal of the capitalist accumulation process" (Kruger and Gibbs 2007, 46). Rather, it has the potential to be a deeply transformative project— one which bridges struggles for economic justice, social equity and ecological responsibility. In order to realize this potential, however, sustainability must be expressly political—that is, it must make demands that deeply challenge the framework in which environmental problem solving is currently taking place. One example of this may be found in the climate justice movement, which demands that we move away from the "contradictions of green capitalism…toward a more egalitarian society based on principles of social justice." Some specific principles Dawson outlines include, "the adoption of low consumption lifestyles…in the global North;…repayment of the ecological debt of the North to the South…[and] a commitment to allowing those most affected to define the solutions to climate chaos" (332). This is a path that differs greatly from

the technocratic visions offered by proponents of ecological modernization, wherein innovation

by experts and engineers will allow us to maintain current consumption patterns even while

lessening our ecological footprints.

A second criterion for utopian sustainability, particularly in the urban realm, should be

that it takes seriously both social process and material form. David Harvey argues that past

endeavors in utopianism have failed so miserably, in part, because they have not adequately

accounted for the ways that social and spatial processes are deeply intertwined. They have either

tried to reshape space without meaningful attempts to alter human behavior and relations, or,

conversely, they have sought to reshape society while leaving the physical structures of the past

paradigm intact. As he puts it,

> Utopias of spatial form get perverted from their noble objectives by having to
>
> compromise with the social processes they are meant to control…. materialized utopias
>
> of social process have to negotiate with spatiality and the geography of place and in so
>
> doing they also lose their ideal character, producing results that are in many instances
>
> exactly opposite of those intended " (Harvey 2000, 179).

In other words, neither spatial nor temporal utopianism alone is sufficient to produce far-

reaching, long-lasting change. Harvey proposes a dialectic between utopia as process (open,

malleable) and utopia as thing (enclosed, definite). The result is a spatiotemporal or dialectical

utopianism that is "rooted in our present possibilities at the same time as it points towards

different trajectories for human uneven geographical developments" (Harvey 2000).

Master planned developments like Masdar City, which assume that proper form will lead

to proper function, suffer from a degree of environmental determinism and fail to account for the

social processes that must underpin substantive change. On the other hand, we must keep in

mind that our multiple environmental crises have material roots (e.g., fossil fuel consumption,

deforestation, toxic dumping) that can only be addressed by materially reorganizing the way we use resources and move through space. In other words, ideological commitments to ecological protection are not enough — concrete action is required. In this way, applying Harvey's notion of dialectical utopianism to sustainable urbanism may prove highly valuable, as it helps to balance the desire for open-ended, imaginative possibilities with the need for temporary acts of closure and authority.

Finally, utopian sustainability projects should strive be more anticipatory — that is, to actively work toward something that lies outside of our current state of affairs. In *Archaeologies of the Future*, Frederic Jameson makes a strong case for the reinvigoration of anticipatory utopianism as an antidote to the naturalization of the status quo. He writes that, "the utopian form is the answer to the universal ideological conviction that no alternative is possible, that there is no alternative to the system. But it asserts this by forcing us…. precisely to concentrate on the break itself, a meditation on the impossible, the unrealizable in its own right" (Jameson 2011, 231-232). It is this "meditation on the impossible" that seems to be lacking in Masdar City, and which ought to reinvigorated if our "cities of the future" are to move towards anything better than business as usual.
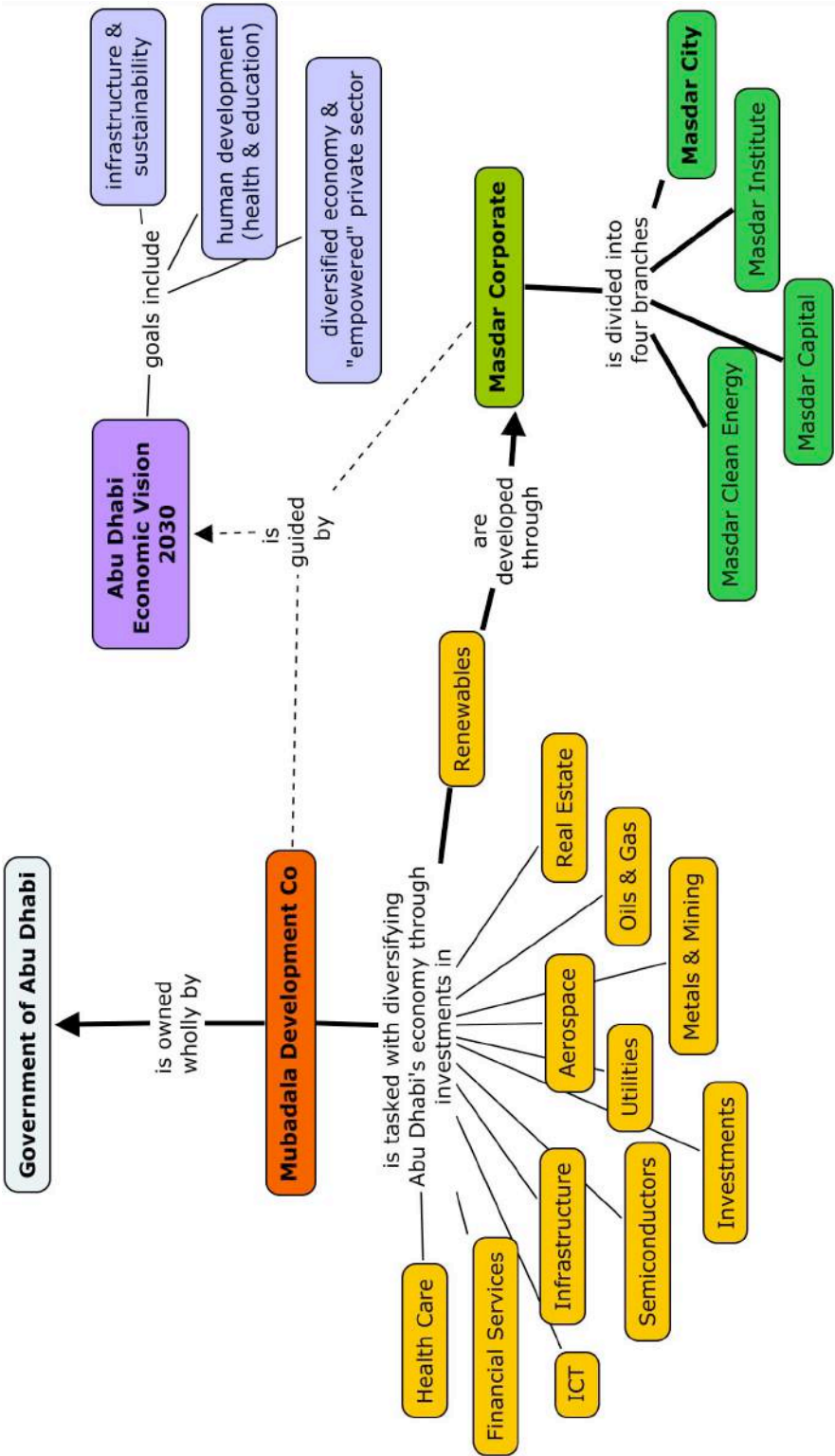
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Appendix A

Appendix B

Concept map of Masdar Corporate structure.

Masdar City — is headquarters for: Mitsubishi, IRENA, Schneider Electric, Vestas Wind, Abengoa Solar, Siemens, GE

Masdar Corporate — is divided into four branches: Masdar City, Masdar Institute, Masdar Capital, Masdar Clean Energy

Masdar Institute — is located in Masdar City; partnered with MIT; board includes Sheikh Mohammed (Crown Prince of AD)

Masdar Capital — is a multimullion dollar investment fund

Masdar Clean Energy — local projects; International projects; "special projects"

local projects: Masdar City PV Plant (10MW); Al Wathba Wind (850KW); Al Reyadah: Carbon Capture, Use and Storage; Abu Dhabi Rooftop Solar (2.3MW); Al Ain: 8 acre Sustainable Farm; Renewable Energy Water Desalinization; Shams 1 (100MW CSP); Murwah Island PV (500 kWp)

"special projects": Seychelles: Port Victoria Wind Power Project; Afghanistan: 600 off-grid home PV systems; Tonga: 500kW PV

International projects: Jordan: Tafila Wind Farm (117MW) — Joint venture (31%) with EP Global Energy (19%), Inframed (50%); Spain: Torresol Energy Project (120 MW CSP) — joint venture with Sener; UK: London Array (630 MW offshore wind) — joint venture with "Cassie" (Canada), E-ON (UK), Dong (Denmark)