Green laboratories: University campuses as sustainability "exemplars" in the Arabian Peninsula

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Abstract. Like many universities in the West, universities across the Arabian Peninsula are increasingly home to various conspicuous sustainability initiatives. This article examines this trend at three of the region's most prominent projects: NYU-Abu Dhabi in the Emirates, Qatar Foundation's Education City, and Saudi Arabia's King Abdullah University of Science and Technology. Based on textual analysis and informed by fieldwork in these countries since 2012, this article joins interdisciplinary research in political geography, sustainability experimentation, and laboratory studies to understand their iconic campuses not as enclaves, but as "exemplars" of sustainability and renewable energy futures in the region. Tracing their effects beyond their walls, I argue that they have mostly been limited to symbolically injecting sustainability into public discourse. While more substantial shifts toward sustainable development in the region are underway, these have largely stemmed from market forces, rather than a new environmental consciousness promoted by these three iconic universities.
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Introduction

Nebulous as it may be, the concept of sustainability now has a decidedly global reach. It pervades formal and informal politics, unfolding in parliaments, corporate board rooms, local farmers' markets, and universities in democratic and nondemocratic polities alike. Yet it has been slower to permeate some contexts than others. Given their central place in supplying world oil and gas markets, the Gulf Arab monarchies of the Arabian Peninsula have long been seen as holdouts and, indeed, these countries have been relative latecomers in adopting policies to promote environmental sustainability. That situation is rapidly changing, however. State planners across the region are now investing heavily in sustainability programs and alternative energy initiatives. Sustainability is now enshrined in the region's long-term development agendas, representing a core pillar of the Qatar National Vision 2030, the Vision 2021 in the United Arab Emirates (UAE), and the most recent Saudi Vision 2030.

At the center of these ambitious new sustainability agendas are a number of equally ambitious higher education initiatives. The number of universities in the Gulf region has skyrocketed from less than a dozen in the 1970s to hundreds today. As elsewhere in the world, these institutions cater to different demographics and therefore cultivate different regional and international profiles. While all local university leaders recognize the importance of global education rankings, state-based visionaries around the region have prioritized a handful of high-profile initiatives to quickly ascend to the top of the charts and, in so doing, bolster a desired image of the Gulf states as modern, "knowledge-based" societies (Wiseman et al. 2014). Mirroring the broader regional trend of increasing engagement with sustainability,

these universities have increasingly been branded as hubs for green technology innovation and to serve as "living laboratories" of sustainability.

This article examines this shift at three of the most iconic cases: New York University-Abu Dhabi (NYUAD) in the UAE, Qatar's Education City complex, and Saudi Arabia's King Abdullah University of Science and Technology (KAUST). I illustrate how planners have positioned their physical campuses as exemplars of sustainability, effectively framing them as models for implementing green practices that regional leaders are increasingly describing as essential for future growth in the Gulf's transition to a "post-oil" knowledge economy. The greening of these universities is part of the wider trend toward reshaping development in the Arabian Peninsula around the language of sustainability, but they are also part of the more global trend of reimagining universities as living laboratories of sustainability. In both cases, however, they seem to represent a form of what Grydehøj and Kelman (2017) have recently described as "conspicuous sustainability" – symbolic gestures toward sustainable practice, but not necessarily transformative. Yet to assess their transformational potential, as I hope to do here, these three "green laboratories" must be understood as sites located within and arising from very specific political-geographic contexts.

Lavishly funded by the government, NYAUD, KAUST, and Education City all have expansive compound-style campuses set apart as exceptional zones within their environs. However, as described by local officials and administrators, they are *not* to be exceptional or isolated enclaves, sealed off from the world. They are, rather, envisioned as exemplar spaces. Scholars have written extensively about the Gulf's prolific enclave spaces, manifested in the region's lavish residences, malls, hotels, free trade zones, and labor camps (e.g. Acuto 2010; Gardner 2014; Sidaway 2007). This work reflects the wider academic interest in the enclave-style development patterns that are said to characterize the contemporary era of neoliberalism (Ferguson 2005), but I argue that the university cases point to a crucial distinction between the planning logic of *enclaves* and *exemplars*. An enclave space is most fundamentally a space of closure (Koch 2013), sealed off visually or conceptually, but definitively framed around excluding the forces that prevail outside. Exemplar spaces, by contrast, are more akin to laboratories: they are predicated on the logic of experimentation, specifically designed to communicate results beyond their social and material boundaries. Whether this goal is fulfilled or not, exemplars are unlike enclaves in their conceptual positioning as sites that can and should transform the "outside," however imagined or defined.

In focusing on the spatial aspects of the Arabian Peninsula's new university projects, I am interested in what sort of alternative order they are imagined to promote beyond their walls, if at all. Extending current scholarship on society and natural resources into illiberal settings, I analyze cases from three nondemocratic monarchies in the Arabian Peninsula. Yet because the three Gulf universities are, to varying degrees, conceptualized as socially and spatially anomalous within their host countries, they raise interesting questions about whether the context outside the exemplar space matters and, if so, how? Informed by the field of political geography, this article seeks to address these questions through a targeted case study of campus greening initiatives at NYUAD, KAUST, and Education City.

Methodologically, I draw primarily from textual analysis of how these campuses are described as "sustainable," covering approximately 150 media articles and press releases, reports, and government publications per country. Some observers might dismiss many of these texts as mere public relations (PR), but they offer important insights into how sustainability gets narrated in and through the built environment of the Gulf university projects. As I have argued elsewhere, officially-sanctioned texts that Western observers might deem "propaganda" can actually illuminate the contextual and shifting nature of "discursive regimes and, as such, can provide a useful window onto elite identity projects" (Koch 2016,

2). Critically interrogating these texts does not entail unmasking their false claims, but rather approaching them as situated performances that result from competing narratives or agendas. This kind of analysis is therefore necessarily informed by grounded, ethnographic research, which contextualizes their place in the broader semiosphere or public discourse on a given issue. Indeed, this article is part of a larger and ongoing project about the relationship between the region's new higher education institutions and national development agendas in Qatar, the UAE, and Saudi Arabia. This has included interviews, focus groups, and participant observation conducted from 2012 to 2017, though given space restrictions, this ethnographic material serves more as the interpretive context for the textual data (but see Koch 2014a, 2014b).

Campuses as Sustainability Exemplars

Universities have long been places of experimentation. This is not just because they house scientific laboratories and are otherwise designed to foster creative exploration in the pursuit of knowledge and innovation. In liberal democratic contexts, university campuses also have a long history of being planned as spaces to experiment with alternative social orderings – microcosms whose very spatial configuration is said to promote the progressive thinking of students as they engage intellectually and practically with their surroundings (Turner 1984). The idea of the university campus as a spatial microcosm is, in many ways, a vision of social engineering. In the recent explosion of higher education in the Gulf states, then, it is notable that the most prestigious new universities have been explicitly modeled on American liberal higher education, both spatially and in terms of curricula, mission statements, and student programming. Government planners have also initiated a wide range of partnerships with US and European universities and, in some cases, heavily subsidized the opening and operation of local branch campuses that employ a large number of American and other Western-educated faculty (Gray et al. 2017; Koch 2014b, 2016; Vora 2015; Tetrault 2011).

Existing research on universities in the Arabian Peninsula has emphasized their social and political dimensions, while their built form has received little dedicated attention (but see Ewers 2017). As I argue here, the political and social aspects of the Gulf's recently-transformed higher education landscape are inseparable from their spatial dimensions. This is an important insight from research on higher education and urban development agendas in many other parts of the world (e.g. Addie et al. 2014; Goddard et al. 2011; Olds 2007) and it is especially apparent when considering how state, city, and education leaders position the material configuration of NYUAD, KAUST, and Education City within broader ideological and geopolitical trends. Working within a global context where "being green" is increasingly seen as a mark of progressive thinking, some nationalistically-minded planners have begun to harness the image and ideals of sustainability to index their (aspirations to) global leadership and narrate their ambitious development agendas as ultra-modern. For this reason, the campuses of the Gulf's most iconic university projects take on special significance. To approach these cases, then, I draw on the nascent literature on sustainability experimentationas well as laboratory studies, to examine the social, political, and environmental implications of narrating these new universities as exemplars of sustainability.

One of the perennial questions associated with all experiments is whether they work in the "real world," i.e. beyond their narrowly-defined social, spatial, and/or temporal conditions. This is an important theme running through multiple strands of research on utopias, laboratory spacesas well as sustainability experimentation. These varied approaches to sites of experimentation, or what I refer to as "exemplar spaces," shed light on how borders are drawn between the exceptional and the normal. The idea of a

model or an exemplar is defined around its ability to provide an alternative to the prevailing order. Built into the idea of an exemplar is an assumption that the prevailing order is somehow flawed: alterations are needed to fix some social, political, or ecological status quo. The issue identified as problematic differs depending on context, but the motivating logic of an exemplar is its *potential* to transform the prevailing order toward a broadly-defined goal, like sustainability, social justice, or technical efficiency. When the goal defined is social in nature, it invariably becomes a site of extensive political contest, implicating exemplar spaces in a dense web of competing values and affinities rooted in particular places.

Whatever the goal, though, microcosms can be appealing to leaders and innovators challenged by the complexity of implementing change in a more spatially- or socially-extensive manner. In his discussion of high-modernist city planning, James Scott (1998, 258) shows that when planners are working within a self-contained or miniaturized scale, the "constriction of focus makes possible a far higher degree of social control and discipline." The utopian closure of a miniature has long appealed to many environmental groups and advocates of environmental sustainability are not strangers to its power (de Geus 1999; Pepper 2005). For example, in their study of "eco-islands," Grydehøj and Kelman (2017, 108) emphasize how the confined spatiality of islands makes them "more manageable and makes eco-status more achievable." Similarly, cities now play a central role in climate change and sustainability politics, in part because of the redelegation of authority in an era of entrepreneurial urbanism (While et al. 2004), but also because the environmental policy community has often found it easier to mobilize popular and elite support around smaller-scale urban greening programs (Bulkeley 2013). Using the diminished scale of the city to bypass many of the debates within their countries about whether sustainability should be a social priority, urban planners, activists, and other policymakers are increasingly treating cities as "living laboratories" of sustainability (Evans and Karvonen 2014). Indeed, cities have a long history of being seen as laboratories or sites of social experimentation – a key point that scholars working on sustainability experimentation have drawn from the rich literature in science and technology studies (STS) on laboratories and lab spaces (e.g. Doing 2008; Galison and Thompson 1999; Gieryn 2008; Henke and Gieryn 2008).

Laboratory studies explore how certain spaces come to be defined as sites where science is "legitimately" undertaken, stressing the fact that experimenting is a highly political practice: it matters "who gets to experiment, and how" (Evans 2011, 233). Bulkeley and Castán Broto (2013, 367) also call our attention to the importance of interrogating "the political economies of experimentation, by whom and on whose behalf they are enacted, through which modes of governance, and to what ends." They point to the paradoxical fact that climate change mediation experiments have proliferated all over the world, but almost none of them go beyond an initial test phase. Rather than treating such experiments as "failures," they argue that these pilot programs should be understood as "a means through which policies diffuse, as symptomatic of changing structures of political authority and opportunity, as a means for effecting socio-technical transformations, and of knowing and managing cities" (Bulkeley and Castán Broto 2013, 367). Experimentation, they show, is increasingly implicated in how power and authority are produced and contested in the realm of environmental policy today.

Among the very real impacts of sustainability experimentation is how greening efforts, successful or otherwise, factor into economies of prestige and are used to "commodify virtue" (Brown 2010). "Greenwashing" is a practice usually applied to corporations, which use pro-environment rhetoric to divert attention from a broader record of harmful environmental practices. This kind of rhetoric is not confined to corporate marketing, however—actors from the non-profit sector, government, the arts, and beyond regularly use the language of sustainability to craft a positive image of their particular political or

social agenda. In his critique of the LEED (Leadership in Energy and Environmental Design) certification process in higher education, anthropologist Michael Brown is clear that it is not inherently problematic, but rather that the "certification of virtue" can threaten "the moralizing process that it is designed to advance," as pressures to "game the system" increase and lead to "a form of moral involution that breeds cynicism and, inevitably, a degree of hypocrisy" (Brown 2010, 748). More than just breeding cynicism, many argue that greenwash can actually be used to justify or divert attention from injustice and further entrench forms of structural violence.

Grydehøj and Kelman (2017, 107) advance a similar critique of what they describe as "conspicuous sustainability," i.e. when a community or organization "undertakes an initiative that gains much of its value from its visibility, iconicity and symbolism (rather than from the environmental benefits it produces)." They see such initiatives as detrimental insofar as they tend to "distract from more pressing social and environmental concerns, contribute to a dangerous marketisation of environmental responsibility, and provide green cover behind which communities elsewhere can maintain unsustainable practices" (Grydehøj and Kelman 2017, 107). Moran and Jewkes (2014) also examine these challenges in analyzing how the US Department of Justice has applied sustainability rhetoric to the country's prison system. The authors argue that in the Department's push to rhetorically green its correctional facilities, the narrative of caring for the environment is used just as much to sustain the prison system as it is to address the challenges of environmental sustainability. Conspicuous sustainability in the US prison system thus works to justify a status quo that, in their view, does not need Band-Aids, but major surgery (Moran and Jewkes 2014, 352). Like corporations selling "eco-friendly" products on the basis of dubious credentials, actors promoting conspicuous sustainability strategically employ this discourse as part of broader imaging campaigns. What happens, then, when universities are treated as conspicuous exemplars of sustainability? Are their greening efforts a diversionary marketing strategy or might they be something more? And to what extent does their geographic context matter?

Green Laboratories of the Arabian Peninsula

The Arabian Peninsula is well known for its vast hydrocarbon resources. Indeed, the three countries considered here have some of the largest proven reserves of oil in the world: Saudi Arabia ranks second, the UAE sixth, and Qatar is fourteenth. What Qatar lacks in oil, it makes up for in natural gas, holding third place in the world for gas reserves, while Saudi Arabia and the UAE are sixth and sixteenth respectively. Like many other resource-rich states, these countries have prioritized large-scale infrastructure and construction projects in investing oil and gas rents – with the multi-billion-dollar campus compounds of NYAUD, KAUST, and Education City representing just a handful of such projects. High hydrocarbon prices throughout much of the 2000s translated into deep coffers for the states backing these developments as well as those of para-statal investment bodies, such as the Qatar Foundation that funds Education City. Though declining oil and gas prices after 2015 have challenged the financial sustainability of these projects, NYAUD, KAUST, and Education City continue to operate in a financial environment that is almost completely unprecedented in higher education thanks to continued support from local royal families. In Saudi Arabia, for example, the late King Abdullah personally donated KAUST's U.S. $10-billion initial endowment (that figure has since doubled, putting it at fifth in the world for individual university endowments after Harvard, $32.7 billion; Yale, $23.9 billion; Stanford, $21.4 billion; and Princeton, $20.7; TBS 2016).

KAUST opened in September 2009 in King Abdullah Economic City, a greenfield city 80 km north of Jeddah (see Moser et al. 2015). The 3500-acre site was primarily designed and developed by the

American architecture, engineering and urban planning firm HOK, with Jeddah-based Fayez Zuhair Architectural & Engineering serving as local consultants. The university's initial development cost around $3.5 billion and it is owned by the Saudi central government, Aramco, and Dhahran, one of Saudi Arabia's major oil cities on its east coast (KAUST is on the west coast, so this is likely because of the Aramco connection) (CWO 2009b). KAUST is Saudi Arabia's first mixed-gender university and offers only engineering degrees around its four research themes – energy, food, water, and the environment. The green features advertised include the LEED Platinum certified central campus that has a compact design, waste and water recycling (including for the university golf course irrigation!), siting to maximize airflow, electric bus transportation, Segways for security guards, and the use of solar power.

Education City is a project of the Qatar Foundation for Education, Science and Community Development (QF), which is a massive private- and state-funded non-profit organization that serves as Qatar's development engine. Education City consists of numerous Western branch campuses, including those of Virginia Commonwealth University, Northwestern, Texas A&M, Georgetown, among others. The first university to join the project was Virginia Commonwealth in 1997. Once the Education City campus on the northwestern outskirts of Doha was officially inaugurated in 2003, others followed suit in more rapid succession from the early to late 2000s. A sprawling, 3400-acre compound, Education City's universities each have their own detached buildings, which are interspersed with various other educational facilities, dormitories, a student center, etc. Major international and local firms were involved in development, but the master planning and facilities were primarily undertaken by ASTAD Project Management, one of Qatar Foundation's many subsidiaries and originally a development branch of Qatar Petroleum. It is not clear how much QF has invested in developing the Education City campus, but estimates put that figure at $8.25 billion in 2009 (CWO 2009a) – though it is much higher now, given the extensive new facilities already completed and underway since then. To position this massive compound as green, QF has recently initiated various projects, including an electric tram system and e-bike network, solar paneling, campus recycling, and several iconic sustainable buildings.

New York University-Abu Dhabi first opened in the UAE capital in 2008 at a temporary location downtown. A 40-acre, purpose-built campus was opened in 2014 on one of the city's peripheral islands, Saadiyat. The entire project has been underwritten by the UAE government – and generously so. Students are completely funded: admission guarantees free tuition, food, lodging, and travel. The terms of NYU's contract with the government are not public, but on the basis of what is known about other branch campus-government contracts in Qatar, NYU presumably makes tens of millions of dollars annually from the relationship (see Anderson 2016). The NYUAD project has been shrouded in secrecy, not only financially but also with respect to its relationship to the UAE government. Although little known, the entire university undertaking is supervised by Tamkeen, which is part of the UAE Executive Affairs Authority. The Saadiyat campus master plan and design work was completed by Rafael Viñoly Architects, while Dubai-based Al Futtaim Carillion was responsible for the construction and supervised by Mubadala Development Company, an investment vehicle of the Government of Abu Dhabi. The first phase of development reportedly cost around $1 billion, with much more to come in additional phases (Fahy 2014). NYUAD's green features are said to include rooftop solar panels, waste and water recycling, and a compact, interconnected design to improve energy efficiency of the buildings and increase shaded areas.

Branding the Green Gulf University

Beyond their campuses, the images that NYAUD, KAUST, and Education City are designed to project have much in common. As Gulf studies scholars have recently documented, the region has seen an explosion of initiatives to promote sustainability, renewable energy, and the "green economy" more generally (Ewers 2014; Günel 2016; Koch 2014a; Luomi 2012; Luomi et al. 2013; Reiche 2010a, Sillitoe 2014). Hertog and Luciani (2012, 248) argue that this appropriation of the sustainability discourse must be understood as part of the regimes' effort to "rebrand" themselves as "global leaders in new technology sectors and, more broadly, as responsible members of the international community." This aligns well with the region's wider higher education reform narratives about promoting "knowledge economies" as the way to escape the "resource curse" and to ensure development and prosperity after fossil fuel reserves have dried up. The idea of promoting green technology sectors is particularly trendy at present and its cutting edge nature makes it a convenient justification for new facilities development at the region's iconic universities, where impressive R&D labs and green tech start-up incubators figure prominently.

Flush with petro-resource wealth, the Arab Gulf states have long been stigmatized in popular narratives and the news media in the West as "backward" through the characteristically Orientalist tropesas well as being "*nouveau riche* upstarts" (Smith 2015). Struggling to shake the pernicious effects of these stereotypes and promote local growth, Gulf leaders have sought to claim their modernity on the global stage through high-profile projects like the new universitiesas well as a number of other place-branding initiatives in the past decade (Davidson 2009; Kamrava 2013). Gulf elites are also well aware that their role as the world's leading fossil-fuel exporters has sullied their international reputation and that their near-exclusive economic dependence on resource rents makes them suspect in the eyes of global financial elites (Luomi 2012; Smith 2015). Conspicuous sustainability can be useful in this regard, as it may deflect attention from a problematic, harmful, or at least contentious practice or industry. Its diversionary potential rests on the ability to guide the conversation in one direction, while potential problems or criticisms go unnamed. Sustainability rhetoric is also especially flexible because it allows speakers to reference vague, global issues, and position ecological challenges as those facing all of humanity and having uncertain origins.

In the Gulf region, the elephant in the room is the entire region's deeply entrenched financial and political networks defined by petroleum-based resource extraction, energy-intensive development policies, and heavy domestic subsidies for utilities, land, and more (Davidson 2009; Jones 2010; Kamrava 2013; Koch 2014a; Luomi 2012). Still very much the case today, political leaders have historically not been keen to shake up these prevailing resource-based political economies. In fact, for many years, renewables were largely seen as threatening by those in the state-dominated fossil fuels-based energy sector. For example, the Saudi regulator Nasser Qahtani explained that the country's official position had long been opposed to renewable energy sources, fearing "that if renewables were successful, we would not find customers for our commodity" (quoted in Ball 2015). This attitude began to shift with plummeting oil prices in around 2009, and renewable industry experts were increasingly successful in convincing state leaders of the high opportunity cost of using their petroleum resources at home rather than exporting them (Hertog and Luciani 2012; Lahn and Stevens 2011; Reiche 2010b; Sillitoe 2014).

As wind and solar prices have droppedas well as those of storage, alternative fuel sources appear to have established something of a foothold in the Gulf. Political leaders are also more accepting today – seen not just in the elimination of various regulatory barriers, but also iconic developments like Dubai's 13-megawatt Mohammed bin Rashid Al Maktoum Solar Park commissioned in 2013. Notably, however, this shift has been effected by cost rather than a new environmental consciousness. As one of my interlocutors, the COO of a major renewables firm in the UAE noted in 2017, "I stopped talking about

sustainability five years ago: renewables are simply cheaper now." He and others in the solar industry also emphasized that state-led investments in renewables and conspicuous sustainability initiatives are extremely limited in their ability to reconfigure what Luomi (2012, 3) describes as the "natural unsustainability [that] is a built-in feature of the [Gulf] states' contemporary societies." However, my respondents argued that, while the universities have not yet produced any significant scientific innovations in green technology at their labs and research institutes, the demonstration effect of their high-profile and iconic nature has been effective at inserting the topic into wider conversations among Gulf residents and elites alike.

Perhaps more significant than the actual science, then, the campuses are themselves treated as an effective "demo" of how green technology and renewables might be incorporated into future development. The KAUST campus, for example, is routinely described as being "a living laboratory of environmentally responsible methods of energy use, materials management, and water consumption for buildings in the Middle East and across the globe" (Design/curial 2009). By building it into the physical infrastructure, the university's effort to brand itself as green and modern gets picked up and re-narrated by observers well beyond the university's own PR team. This is especially apparent in the way that the project planners submit for various awards and accoladesas well as seeking internationally-recognized certifications. In 2011, for instance, *R&D Magazine* gave KAUST its "Laboratory of the Year" award, citing its exceptional status as the largest LEED Platinum building in the world (at 5.5 million square feet), and praising HOK's ability "to meet a demanding time frame and fulfill the client's mission to create a magnet laboratory and university facility, and do so while meeting sustainability goals" (Livingston 2011).

On its "Green Campus" page, the KAUST (2016) website describes the many features that helped the university achieve this LEED certification, including sustainable site planning, materials sourcing and recycling, water conservation, alternative transportation, energy efficiency and the use of renewables, like the roof outfitted for 12,000 square meters of solar thermal and PV arrays. The first LEED building in Saudi Arabia and the largest Platinum building in the world, the facilities are framed as an "unprecedented" example for future development, exemplifying "new ways to build in the region, and new ways to live that promote responsible stewardship of energy resources" (KAUST 2016). This official narrative belies the fact that *any* greenfield development in this arid region could arguably contradict an ethos of environmental stewardship. Celebrating the university's solar panels also overlooks the fact that maintaining PV cells in the humid and dusty Arabian Desert environment is tremendously inefficient – they are, after all, cleaned with desalinated seawater. As one of the KAUST researchers working on a waterless cleaning system explained: "The idea of using water that's desalinated using oil is just a big green wash" (quoted in Ball 2015). Like Saudi Arabia, Qatar and the UAE rely almost exclusively on desalinated seawater, being located in one of the most arid places in the world (Al Hashemi et al. 2014). Some solar firms, such as FirstSolar, have developed waterless cleaning techniques (a manual brushing system), but assuming that PV cells are necessarily "green" can often be problematic in this context.

Follow KAUST's early example, Qatar began seeking superlative recognition for Education City's green buildings several years ago. Qatar Foundation's much-touted student dormitory project, which opened in 2013, is said to be the largest grouping of LEED Platinum buildings in the world (QF 2013). In addition to the usual repertoire of sustainable features required for LEED certification, the dorms are described as having important instructional purposes in demonstrating the practicality of green living and showcasing its appeal. QF's Sustainability Education Coordinator, Chris Silva, explains: "The wind turbines were specifically placed next to the entrance so that you can't miss them. [...] Instead of

hiding away, these eco-friendly aspects, which are typical in most buildings, are presented for all to see. The HBKU Student Housing will therefore play a significant role in educating individuals around QF" (quoted in QF 2013). The educational dimension of the project is probably more impactful from the standpoint of QF's public relations coordinators, who consistently point to this single project as the shining example of how much the organization values introducing sustainable building to Qatar. As with any iconic project, the LEED-certified dorms help QF build its green credentials, in the face of loud critiques that its vast, energy-intensive development agenda in Education is anything but "sustainable" or "eco-friendly." So while these examples may represent a modest shift toward a more sustainable form of development, they are less indicative of a growing environmental consciousness, but examples of what alternative energy industry insiders now refer to as "frills" or a "nice-to-have" for image-conscious companies and organizations.

Nativizing Conspicuous Sustainability

At NYUAD, the image of the green campus has not figured as prominently in its branding. However, the architect and other planners have drawn heavily on sustainability tropes in justifying the massive greenfield development on Saadiyat Island. This has tended to take on a more nationalist flavor, which is most evident in the fact that no LEED certifications were sought. Instead, the NYUAD campus development was evaluated and certified through the Abu Dhabi Urban Planning Council's own sustainability ranking system, Estidama. The Council asserts that this system goes well beyond other rating systems in that it is tied to "the values and ideals of our nation" and defines sustainability as being not just environmental, but also economic, social, and cultural (ADUPC 2016). NYUAD's Saadiyat campus was given a status of "2 Pearls" (out of a maximum of 5), which is the minimum standard for any government-funded projects. Furthermore, it is framed as being inspired by local architectural traditions, which NYUAD Deputy Vice Chancellor and urban studies professor Hilary Ballon explains:

> At a time when architects have in general turned to high-tech solutions to green design, I think it's notable that Rafael [Viñoly] relied on low-tech, vernacular solutions well-tested by Islamic building traditions. […] A covered colonnade runs the full length of the campus. The plazas are scaled in size and landscaped with shade-producing trees so the open space is not overly exposed to the blazing heat. We selected local plants that thrive in this climate without excessive water consumption, and the use of water on the ground level will have a cooling effect. Meanwhile, out of sight on the rooftops is a touch of modern technology: solar panels will capture energy used to heat water. (NYUAD 2016)

This instance of downplaying "high-tech solutions to green design" is somewhat different from the other cases, but the "neotraditional" environmental rhetoric is common in many of the Gulf countries, whose leaders often draw on "an imagined pre-modern, Bedouin-inspired environmentalism" (Luomi 2012, 196). For example, KAUST's sustainable design is also said to be inspired by "the close-knit model of the traditional Arabian village" (Livingston 2011) and in Doha, Qatar Foundation's Green Building Council consistently emphasizes the fact that "Qatar has a history of green building practices that grew out of necessity among local communities dealing with the hot climate" (Peninsula 2013). By underscoring these local identity narratives, designers work to deflect potential criticisms that their projects are top-down impositions of Western environmental norms and foreign architectural icons out of touch with local values. In many respects, such cultural narratives are more salient in political discourse about the environment in the UAE (see Ouis 2002), which is also why they feature more centrally in the NYUAD project.

NYUAD also stands apart from the other two cases in the degree of environmental activism on campus. The university has been actively involved in the Abu Dhabi Environment Agency's "Sustainable Campus Initiative," which began in 2014, according to the Agency's Secretary General, "to reach university students who can act as powerful leaders of positive environmental change in society, and who can empower those around them to find creative ways to reduce the ecological footprint of the campus" (quoted in CWO 2013). As part of the initiative, universities are required to establish environmental clubs, such as NYUAD's "Ecoherence" group (see https://www.facebook.com/Ecoherence.NYUAD). Funded by a range of government ministries and oil firms like British Petroleum and a subsidiary of the Abu Dhabi National Oil Company, Borouge (CWO 2013), the initiative seems to co-opt public discourse through about environmental issues through licensing, funding mechanisms, and widespread media (self-)censorship. Individuals and environmental groups are never actively prevented from critiquing state policies, but they are quietly guided away from "building agendas that address 'serious issues' like environmental damage caused by industries and construction activities" (Luomi 2012, 74). Instead, environmental activism in the region ends up revolving around a series of "low-impact-high-visibility themes like beach clean-ups, tree-planting, recycling and periodical awareness-raising events and lectures" (Luomi 2012, 72).

This is also seen in Qatar, where residents of the LEED-certified dormitory are to be "engaged in environmentally conscious activities, such as monthly showings of 'green' films in communal areas, site visits to water bottling plants, and competitions between the different accommodation blocks to encourage better use of resources" (QF 2013). Removed from the realm of debate are any sensitive topics, like the massive scale of greenfield development across the Arabian Peninsula, and the fact that energy and water efficiency is a rhetorical foil that preempts conversations about whether such developments should be happening at all. As with any diversionary discourse, conspicuous sustainability can be useful in diverting attention away from precisely those topics. It is important to note that this dynamic is pervasive in more liberal political settings, as well, where the neoliberal mantra of "growth first" often seems to "seems to conflict ideologically and materially with the principles and practices of urban sustainability" (While et al. 2004, 550), which are increasingly being promoted in the West. Although some observers are more optimistic about the potential benefits of conspicuous sustainability initiatives greening development that is going to happen anyway, the important difference between more democratic contexts and the Gulf monarchies is that the very act of *questioning* large-scale development is politically risky. Due to the absence of press freedom, it is systematically excluded from public debate – whether in the form of student group activities or reporting in the media.

Conclusion and Discussion

The government leaders backing NYAUD, KAUST, and Education City all understand the value of iconic developments in promoting a positive and modern image of their countries on the global stageas well as their own "visionary" leadership at home. As these three cases illustrate, the idea of sustainability is increasingly central to this simultaneously inward and outward legitimacy-building agenda. Planners responsible for bringing these projects to life – many of whom are Western-educated administrators and consultants – have used various forms of conspicuous sustainability to showcase the local governments' ostensible commitment to ecologically-sound development and prioritizing sustainability in the Gulf. This brings us back to the question of what we can learn from these three universities as sustainability "exemplars." If they have been conceptualized as places to communicate with the world "outside," rather

than excluding it as in the case of enclaves, what kind of alternative narratives and ideas have they actually worked to promote in the Gulf?

Many of the effects of campus greening efforts at NYUAD, KAUST, and Education City remain to be seen, but they have certainly worked to raise the profile of sustainability and, for some observers, to showcase the viability of renewable energy sources to skeptics in the region. Their conspicuous sustainability initiatives are no doubt impressive in their scope and the funds dedicated to bringing them to life are indeed tremendous. However, exemplars are, by definition, exceptional because they represent something *other* than what is found in the prevailing order, whether ideologically or materially. In the region, inefficient and unsustainable design remains the norm – something that my interviews and other ethnographic observations consistently emphasize. The region's new universities may be iconic, but the investments made in them pale in comparison to the tens of billions of dollars that continue to be spent and procured by officials, construction companies, and many others in the traditional energy economies of the Gulf states. The multi-billion dollar campuses of NYAUD, KAUST, and Education City deviate little from these established networks of redistributing state wealth from the natural resource sector to traditional construction and infrastructure industries.

Yet in their framing as green laboratories, these three Gulf universities do deviate from earlier ways to design and define large-scale construction project. Despite the largely positive reception of this agenda in the region, the three universities' continued viability remains in question. This is primarily because dramatic changes in the global energy markets hit state budgets and their sovereign wealth funds hard in recent years (Bershidsky 2015), and these universities all remain heavily subsidized by local governments. To their citizens, local governments justify these subsidies on the basis of promoting a knowledge economy and diversifying Gulf economies for a post-oil future and the higher education bubble has not yet burst (in large part because of long-term contractual obligations; Khatri 2017). However, this expense may become increasingly difficult to defend without the deep coffers afforded by high conventional energy prices. For now, governments in the region have instead begun to roll out new tax schemes and, most significantly, beginning to require citizen-nationals to pay for utilities (where before only non-citizen residents had to pay). As with those in the renewable energy sector, sustainability advocates in the region see this change as more likely to precipitate conservation and efficiency measures than any of their pro-environment public awareness campaigns. Likewise, new sustainability programs are also popping up all across the region's less iconic higher education institutions: as one official explained to me in 2017 regarding his own university in the UAE, not because of any sort of environmentally-conscious shift, but because the government was no longer providing free water and electricity to the campus.

The Gulf university cases also raise important questions about whether the "illiberal" context outside the exemplar space matters and, if so, how. To be sure, the highly centralized states are the precondition for their very existence, as all three university projects were initiated by key individuals in the royal families and sponsored by state-controlled resource wealth. More than this, though, part of the challenge specific to the illiberal states of the Arabian Peninsula is the exclusion of open debate about development itself. Certain topics related to sustainability are actively encouraged in the region, such as the technologically and visually impressive "green" campuses described here. As appealing and welcome as their solar panels and electric tram systems may be, they work to exclude discussions about the ethics of building on undeveloped greenfield sites in the scorching Arabian Desert – discussions that are completely off the table. Large-scale development is a foregone conclusion in the region (Koch 2014a), and censorship in the media and at universities ensures this. Conspicuous sustainability is a potent

diversionary discourse because it shifts attention away from these more oppressive forms of control and quietly allowing certain actors seek to monopolize environmental policy discussions around a politically-palatable set of issues.

In closing, it is important to note that in rhetorically greening their campuses, autocratic state planners usually just set the agenda. The rest falls to a wide range of accomplices. These include the numerous Western construction companies, architecture firms and critics, universities, and academics who lend credibility to their claims, issue "eco-friendly" certificates and awards, and celebrate their advances in green tech – all for mind-boggling sprawling greenfield developments that on the basis of their location on the Arabian Peninsula alone make any claims of sustainability inherently suspect. Whatever normative judgments observers may make about these green laboratories, though, it is clear that the border between "illiberal" and "liberal" polities is extremely porous once we start to examine these connections (Koch 2014b, 2016). Understanding society and natural resources in an "illiberal world" may require a mirror just as much as serious engagement with environmental politics in less democratic contexts.

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