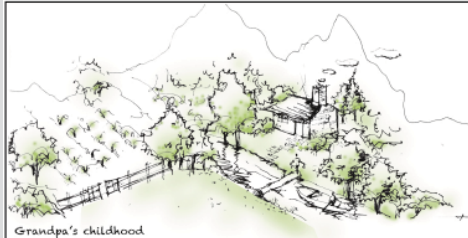


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ARCH 510 GRADUATE SEMINAR DESIGNING FOR SUSTAINABILITY

STUDENT EDITORIALS

FALL 2012



Actually, green building
is not that much green.

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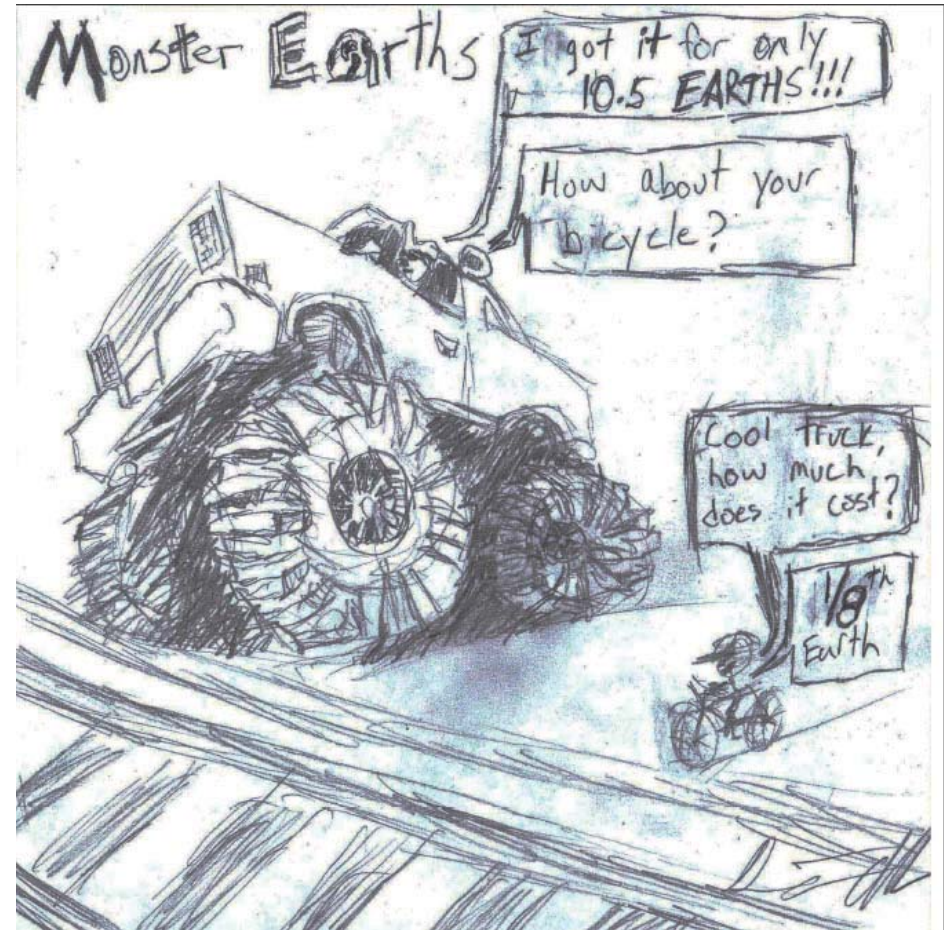
RE-VISITING THE PAST TO REVIVE THE FUTURE

Generation after generation, history is passed down from parent to child, teacher to student in the attempt to create self recognition. Most people have a broad sense of their global and national history, but how many really know what directly impacting their daily lives. Every building, home, street, and person around you is physically present due to a past event. Why are these past events important to your everyday livelihood? History creates culture and culture creates a distinct identity that helps connect a community. This relation is what establishes communities and social interaction. From this the real question arises; how to present the historical information in a manner that engages the community in self learning.

Formal classes requiring students to learn from reading a textbook to pass a test seems to be a less self engaging process, where as an informal institution such as a museum lets one guide their own learning process of established knowledge and material within the exhibits. The idea of having a history museum for a community, located in an important historical area, is important for one to recognize their own identity and identity of others around them. Strong cultural identity is key to creating successful communities and interaction. Understanding how shared knowledge of history relates to the strength of a community and social activity is critical for the development of a cities/towns public landscape.

History can only impact a community's strength and social activity to a certain point. Other aspects of the community must come into play as well, such as an uninterrupted social fabric. Gaps within community spaces create dividing lines within the area rather than connections. Many cities are hindered by Brownfield sites from past industrial zones that become holes in the landscape. Reclaiming a Brownfield site not only to repair the social and community fabric of a city but to strength it can further build upon community strength. Understanding not only the sustainable benefits of reclaiming a Brownfield site but the social and cultural benefits as well will be very pertinent to this project.

—Derrick Allen



APING — DO IT THE RIGHT WAY

There is no doubt about the fact that there is some sensitive and thought provoking architecture emerging from India, but the majority architecture you see in the urban environment has been put up by developers and sadly in their case, whether residential or commercial projects it's really about building an image and selling an aspirational dream. As a beginner in Architecture I always assumed that Architecture was all about designing the building. But only later did I realize the effects it has on the environment and vice versa. Every place portrays a different style of architecture whether in India or USA.

Architecture in India seems to be very diverse from the USA. I experienced this diversity academically as well as practically. I saw this difference when I came to USA. In USA there is a lot of importance given to the pre study of a building and the same is taken into consideration while the construction. Hence there is a correlation seen between the surrounding and the building. I believe buildings should be designed on the basis of their location and climate. In India there are many buildings designed which do not match with the surrounding area. There are a number of glass structures, especially in metro cities, it is a matter of great concern as they consume more energy and increase carbon in the environment. During my visit to a cooperate firm I observed that the building was an oval shaped structure with a glass envelope. People on the upper floor were overheated and had no direct protection from sun making it not viable to work in, as that place fell in a moderate climate. There is a lot of usage of AC for cooling, which is not sustainable. In the race to ape a particular building culture that building lost its sense of being in that place. Architecture in India till the eighties was highly economical. Buildings were mass-produced and followed the popular western style. They were mostly of white concrete, very functional without any frills. Ideas from distant parts of the world were transported and replicated in a cut and paste way into urban fabric with absolutely no sense of context. India is a rich and varied culture from which contemporary architects have much to be inspired by, yet it's sad to see that majority of architecture we see is blindly aping the west, being slapped down with curtain walls and glass. The present 'Dubaisation' of Indian cities will soon have its impact on the country. India can afford to have an open-to-sky kind of architecture instead of aping the west and building glass houses blindly. Since we get enough sunlight, there is no point turning to glass houses. They consume 50 percent more energy.

What could be the solution of the above problem?

Emphasis should be on cost-effective, environment-friendly structures. Structures that will do more human-good and yield long term benefit. Buildings should be designed moreover keeping in mind the location, climate and material usage to make it sustainable. And also it should camouflage with the environment.

Architecture should speak of its time and place, but yearn for timelessness. —Frank Gehry

—Chaitali Gandhi



BRINGING BUILDINGS BACK TO EARTH

The desire to show-off is older than the pyramids, and architecture has long been one of the most enduring media on which this human obsession has been inscribed. With technologies that have enabled alien or crystalline forms (to mention just two examples), this is true now more than ever. Where once buildings were conceived in lines scratched in the dirt and then sculpted meticulously by hammer and chisel, their gestation now happens entirely within computers. It is no secret that material and structural technologies have brought about a revolution in architectural possibility. Yet is it possible that we are overlooking something more primal?

My answer, unsurprisingly, is yes. Architecture that is meant to inspire should not merely impress people through stunning forms, but should inspire people toward an understanding of our reliance on the natural environment and how we might improve that relationship. We can do more than create awe; we can create understanding.

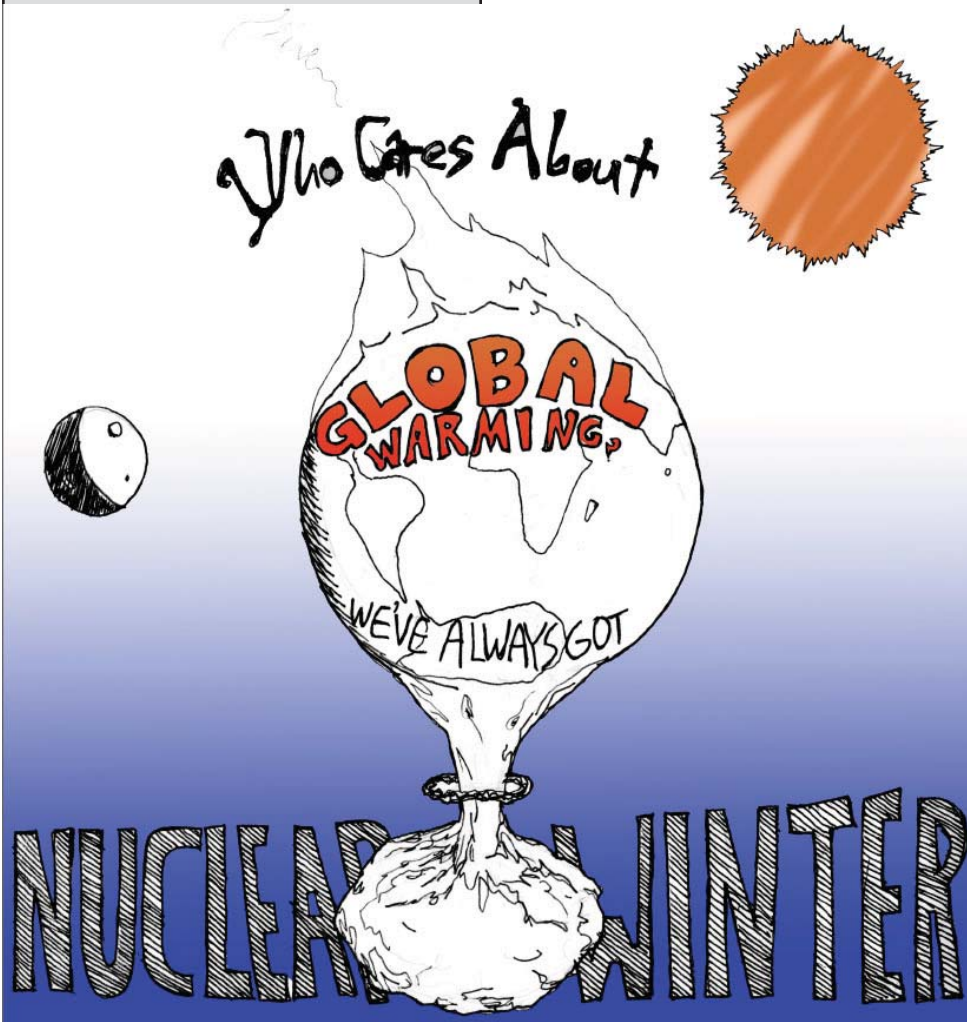
Big civic architecture is often what receives the budget to realize the sort of grand ambition I mentioned above. It is used as a tool by cities to say they have “arrived” and to announce their prestige. Yet for all the technical and aesthetic sophistication one finds by just briefly browsing an architectural journal, the leap toward functional and aesthetic sustainability remains un-leapt. Moreover, certain buildings often times have all the warmth of a lunar colony. One might approach the building over a barren concrete-scape (alongside of which a generous landscape architect may have installed some grass if we’re lucky) to be sucked into an interior composed solely of glass, steel and concrete, albeit artistically composed. Buildings like these (the Guangzhou Opera House springs to mind) are designed by some of the world’s premier architecture firms, and are the result of cooperative effort from many designers. Many of them are beautiful. How is it possible, then, that integration of the natural environment can be so consistently ignored?

We can no longer afford to do so. Architecture can do much more than announce the strength of a city’s tax base. It can even go further than inspiring the public by means of technology and form alone. Each project must incorporate values of sustainability, presenting the natural environment as a system on which even the most complex human technologies depend for success.

It would be easy in this context to reduce “sustainability” to its lowest common denominator, with some sort of green catalogue approach, but that is not what I am proposing. It is not just higher R-ratings and waterless urinals that we need; we need better places.

The concept is that natural places, not only built places, are what resonate with humans. By incorporating nature- even a highly planned and cultivated version of it- into our buildings and urban fabrics we build better places. By using plants, trees and water as materials in architecture we create buildings that are luminous rather than lunar. Each well-designed place such as this serves as a small reminder of what sustains us and what we have to lose.

—Will Haberman



MISCONCEPTIONS

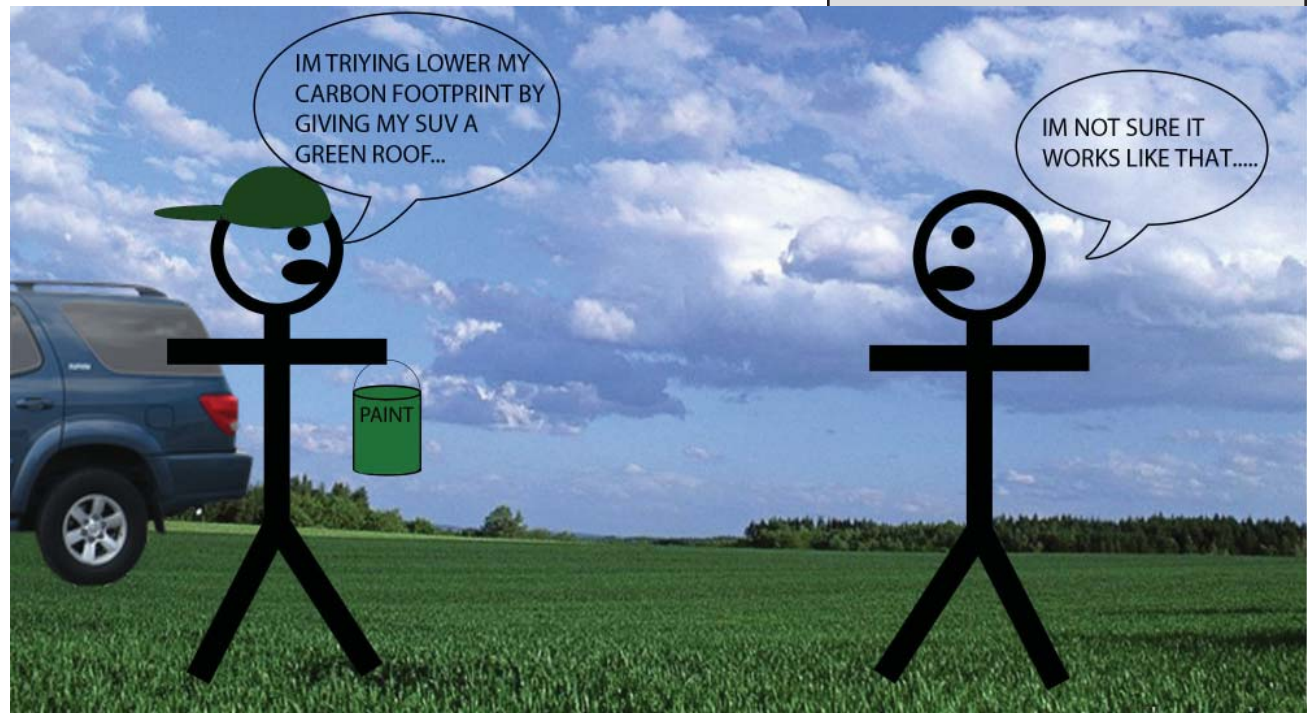
The urgency to build sustainably, and save the world of tomorrow from the mistakes of the past, we see many misconceptions in design. More often than not we see an increase in Green-washing and the use of active sustainable systems that may not provide much benefit to the sustainable operation of a building. These buildings or designs tend to obscure sustainability's true potential by using a boutique accessorizing approach rather than a holistic approach.

Sustainable Design should not be a catalogue of add-ons, from which an architect can choose what to use in a building's design but rather looking at the building as a whole system. "Sustainable" architecture is more a label or advertising strategy than deeper exploration of reducing our energy consumption. Thinking about the footprint and consolidation of spaces, and using simple design notions in pre-design and schematic design are more often overlooked. With the age of sustainability the designs that get noticed are the most technologically advanced the high rise "green" towers for example but the main objective is to design buildings for future energy consumption needs.

Well-crafted designs with a focus on passive system integration are the way to a sustainable future. Technologies can fail; systems need upgrading, in a quickly changing world need solid foundations in design before even thinking about active systems that can be additive to a design. Passive heating and cooling, orientation, thermal mass: strategies such as these should be the foundation that technologically advanced systems should be married with to create a solid design foundation, with the ability to integrate active systems that improve performance, but are not themselves the foundation in a design.

The biggest misconception in thinking about sustainability is that technology yet-to-be-discovered will be the wave of the future in design, when it actually starts with a solid foundation in passive systems that will require no technological updating. While technologies change it is the systems of the past that will bring us into the future.

—Ricky Kennedy





CULTURAL DESIGN

Physical environment and particularly architecture is shaped by larger cultural and social factors. These factors play more fundamental role in countries which have a long history of civilization with a rich culture and tradition mostly located in the Middle East and nowadays so called developing countries.

The problem arose from the industrial revolution in the west and the modernity that came along with it. Western products reached these countries quickly and brought their own culture which changed the lifestyle in those societies. Since these imported cultures were not based on their destination's culture and traditions, it created chaos in every part of these societies, built environment and architecture included.

To solve this problem, these countries naturally adapted two solutions: Some of them disconnected entirely from all of their traditions and converted to western culture. And some of them stuck to their tradition which did not respond to the needs of modern life.

Both of these solutions have a big gap in solving this problem. Despite disconnecting from history and culture which means disconnecting from the identity of a nation, it causes these countries to face another problem in the form of an identity crisis. Another solution is not also the response of modern life needs.

Here is where we need another solution to approach this challenge which is transferring the tradition and culture into a modern appearance, in other words representing them with a modern appearance while it has the soul of that culture. Studying the culture of these societies and particularly the traditions of them come into the spotlight and it becomes the fundamental need to create and improve the physical environment of them. In this way not only the problem of these countries will be solve, but also developed countries can learn from the experience of developing countries in this area.

—Farshad Khalighinejad



CITIES OF TOMORROW

Currently our planet is not able to sustain the people living on it indefinitely. If we continue to demand the Earth's natural resources in such a destructive and depleting way, we will surely run out. As we continue to burn coal, natural gas and fuel as our main energy sources we will raise CO2 levels and further global climate change. Energy use in the world only continues to increase as our population increases and currently buildings make up 48% of energy used in the U.S., while Transportation and Industry make up the other 52%. If we know the problem, then what kind of solution is there to their for stopping climate change? And is it possible to address large amounts of people and educate them on how we are consuming too much energy and come up with a way to change before it is too late?

It was Frank Lloyd Wright who said, "Architecture is that great living creative spirit which from generation to generation, from age to age, proceeds, persists, creates, according to the nature of man, and his circumstances as they change. That is really architecture." As Frank Lloyd Wright, writes architecture is always evolving and adapting to circumstances as they are presented. Today's architecture needs to address the depletion of the environments resources and excess of finite energy consumption, as well as spread the ideas of environmental design and sustainability.

Cities lend themselves as great ways to spread ideas through its concentrated population of people, making them a great spot to plant an idea and let it grow. Cities are also where most of world's population lives and consumes, addressing the heart of the problem.

Cities of today are places where a large concentration of people live and interact, making them fun and exciting places to be. On the other hand, cities can be very dirty and polluted. They can introduce microclimates where a city could be up to ten degrees

hotter than the surrounding area, due to the heat island effect. Poor air quality is often another characteristic of the city, and more people continue to get asthma every year.

If it were possible to fix the city of today and create cities of the future, what would they look like, and what would they address? Imagine a city that is energy independent where buildings produce food and the electricity needed to sustain the people living there. Cities would be designed for people and not cars, where streets once were are now parks and walking paths and public green space to minimize the heat island effect. Most transportation is public and low ground and energy efficient and easy to use. The city of the future is simply based around the environment and protecting it for future generations. As humans we have two options, we can start developing cities and buildings that protect the environment and in doing so save what we currently have or we can wait until there is nothing left of the environment and build energy efficient buildings and cities as our last resort. There is one solution; it is up to the people to decide just how long we wait and what the outcome is.

—Colin McCabe



GOD – Human's I have put the world in your hands...
Why do you try to cover it in cities? Its not like I didn't try
and warn you with that movie WATER WORLD!!





SUSTAINABLE SCHOOLS

It is a “requirement” that every child receive an education. This seems like an innocent enough idea—the idea to educate our young—but is it ethical that in order to provide an education for the betterment of their future that these children are putting their health at serious risk? There are some 55 million students that spend their days inside schools that are not considered healthy, and this is causing in the short term an increase in illness and therefore absenteeism bringing down their test scores, which is ironically hindering the education that they are there to receive in the first place. Obviously this is a problem, but what about the long term health side effects?

Children are still growing and developing physically, and are therefore more susceptible to suffer serious health issues from their surroundings. One example of this health risk is through poor indoor air quality. Children breathe more air relative to their body size than adults, and when we place children in an unhealthy building, it results in a high number of breathing problems due to the toxins and pollutants frequently found inside schools. Arguably, the most common health issue is asthma and can be directly linked to school designs with poor indoor air quality. A recent study found that it is possible for an average reduction of 38.5% in asthma cases in the student population by simply improving the air quality in schools through more sustainable and occupant friendly designs. Furthermore, through thoughtful and sustainable designs, occupants can expect to not only have increased health benefits, but they feel happier and be more productive. Needless to say, with students and faculty spending 85%-90% of their time inside these unhealthy facilities, and as a student myself, I find this disconcerting to say the least. However I am heartened that designers have taken notice of this and seem to be making an attempt to design schools with the specific intent to provide a safe and comfortable learning environment through creating green, high performance schools.

Despite designer’s recent attempts, the problem is that green design has a bad reputation as being exorbitantly more expensive than traditional designs. This is not the case! There are many examples and studies that prove this is not always the case. From a study entitled “Greening America’s Schools: Costs and Benefits”, shows that green schools cost only about 2% more than conventional schools—or about \$3/sf—but provide financial benefits that are 20 times as large. Green design may cost a little more up front, but by lowering the operational costs of the building by an average of 33% through sustainable designs would save the average conventional school enough money to pay for an additional full-time teacher! As if these benefits of green, high performance schools were not enough, there are huge environmental benefits as well. The study also continues to estimate that one green school could lead to the following annual emission reductions equaling:

- 1,200lbs of nitrogen oxides (a principal component of smog)
- 1,300lbs of sulfur dioxide (a principal cause of acid rain)
- 585,000lbs of carbon dioxide (the principal greenhouse gas)
- 150lbs of coarse particulate matter (a principal cause of respiratory illness and an important contributor to smog)

Obviously sustainable designs can have a huge impact on student/faculty health, on operational savings, and on the environment—so why can’t we take this one step further in working to create a more sustainable school, and think about how sustainable the facility is within the surrounding context? School facilities are frequently seen around the world and they tend to have the same development footprint size (relative to its student population of course) whether it is located in an urban or suburban setting. This is clearly not sustainable with the ever increasing human population and our limited available space for development on Earth. Society cannot continue our current trend of designing buildings and developments that sprawl because we live on a finite amount of land, with a finite amount of resources. What this means for architects is that it is our responsibility to take every opportunity available to create sustainable, or even regenerative buildings whenever possible.

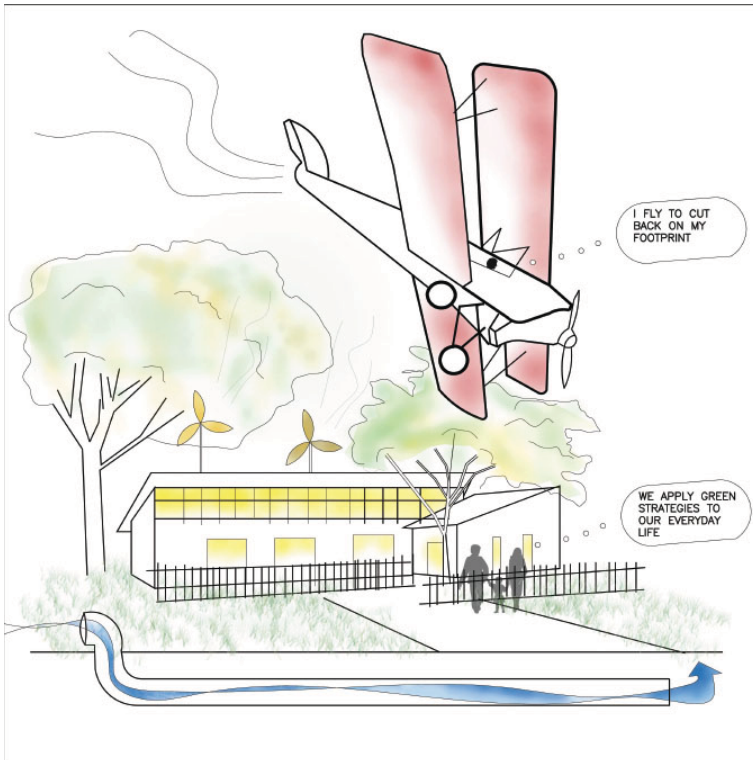
—Jen Mueller

MINORITIES & ENVIRONMENTAL CONSCIOUSNESS

While the world has become more aware of the current environmental issues we face globally, the level of urban minority awareness compared to the general U.S population is relatively low. Besides the lack of knowledge about these issues, the main problem is rooted in their inability to meet some of the basic requirements of life including health, housing, food and safety. A quote by Senator Lisa Gladden of Maryland that sheds light on the lost of environmental awareness in minority based schools and neighborhoods states: “If we educate the children and expose them to the environment starting from the third or fourth grade, we will have them for life.” The truth behind that quote is minorities are often times under-represented in the public, specifically in areas that deals with environmental wellness. Growing up in several underprivileged areas including North Miami and Kingston, Jamaica, I have witnessed this epidemic first hand and was unaware it was even going on due to the lack of resources and availability to meaningful work, information, or solutions to different environmental issues.

In an attempt to break this stigma, minorities must be exposed to these issues and what it means to be environmentally conscious. Three emerging strategies that can positively affect minorities in the environmental communities are better strategically designed environments for social gathering, community involvement programs and better career opportunities.

I believe sustainability and environmental awareness begins when policy makers and planners provide neighborhoods that make people enjoy where they are from. A well designed community creates a staple for its inhabitants, one that is free and accessible on a day to day basis. Within this community staple (museums or sustainable living quarters), one can start to make connections to issues that resonate in many minority communities including the effects of littering, blighted neighborhoods, and polluted waterways. The establishment of community involvement programs will help communicate messages that can more easily show a person impact on their surroundings, such as their environment is close to home and their environment is in the neighborhood.



Comprehending how we can make ourselves small again or live more sustainable will result in an enhanced career path for minorities and everyone alike. A national transition towards large-scale use of clean energy technology would provide under served communities a pathway out of poverty while placing minorities on equal footing with conservation issues. Therefore, to fully comprehend the environmental crises, awareness must reach every cultural, ethnic, and socioeconomic level in order to maintain future vitality.

—Doran Myrie





A USED HOME

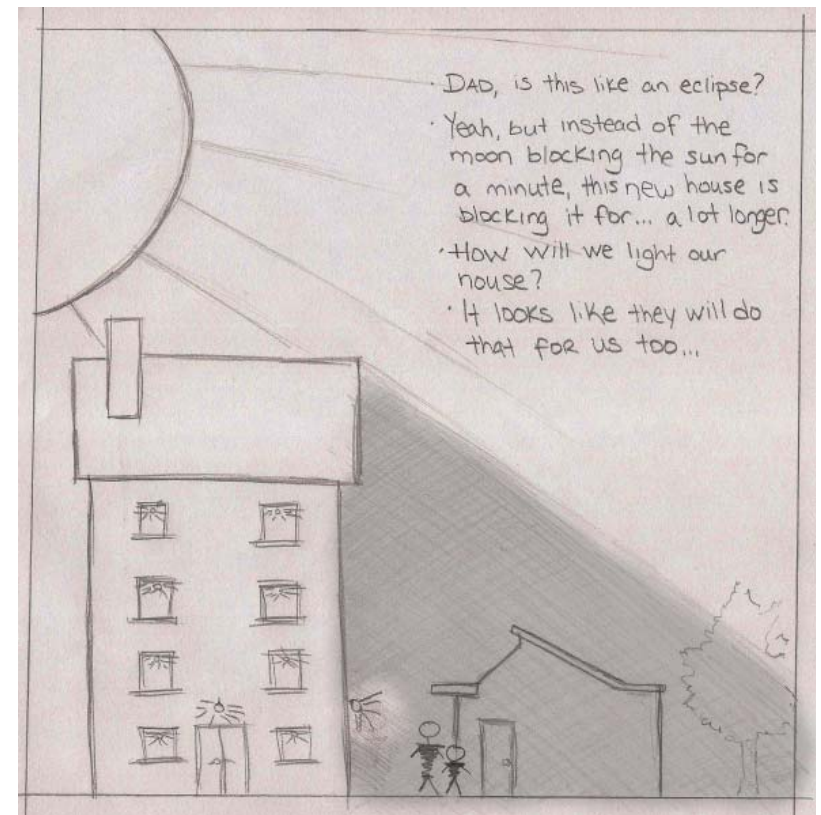
American society today believes that more is better: more stuff is better stuff, more space is better space, etc. This mentality of quantity is better than quality, is becoming the demise of our world. This materialistic idea reflected in many American characteristics today, including their homes. Houses are being built with “large” in mind. American homes are getting larger footprints, ceiling heights, landscape spaces, garages, and much more. Is it what they need? Is it comfortable space? Could they have done more with less?

It takes a lot of resources to create all this space that American’s believe they need: materials for materialistic lifestyles. Once people realize the value of resources, then they might reconsider quality of housing. Creating comfortable quality spaces to last with minimal resources possible is the right thing to do economically, environmentally, and socially. Sustainable living.

Houses today have a lot of wasted space and lost space, in other words, missed opportunities for living. Multi-functional spaces offer the ability for a variety of activities to occur in one space; therefore, making that space more justifiable and usable. By studying spaces, functions, and layouts many spaces can be combined. Hallways can act as reading nooks, bathrooms can double as a laundry rooms, built in seating can double as storage, etc. The possibilities are endless.

By designing homes that combine such functions into one space, more compact, affordable, and usable homes can be created. So while used does not always sound appealing, a used home should!

—Amanda Ryan



US VS. IT: A PLEA FOR A UNIFIED DEFENSE AGAINST THE FUTURE

It seems there is nothing we can agree on. As a society, a nation and a world, we seem to be reaching an ever greater level of disintegration. Whether one looks at political parties, social structure or ideological ‘common ground,’ the divide between us seems to be increasing. Even if this is the case, it would be prudent for us to agree right now on one simple fact: we may live in an expanding universe but we do not live on a planet of expanding resources. I state this truth in its bareness and its integrity in the hope that such a simple statement will be a place to start from. If we can at least agree that, in fact, there is no infinite quality to the earth—that something once consumed will no longer be available – then we can begin to reason from that point forward as to what our path should be.

Of course, part of the problem with promoting ‘sustainability’ is that the word itself has become tarnished. So have the words such as ‘green,’ ‘eco-friendly,’ and ‘natural.’ They have become marketing ploys in companies who have no real intention to create something that is any better for the environment or any worse. Profit drives most companies and many of them have found out that people were becoming interested in ‘greening the environment.’ Words mean less when they are redefined at the convenience of an advertising department. This makes the case for promoting reasonable reduction, reuse and recycling habits a bit more difficult. Aside from the vagueness and clichéd nature of some of these phrases, this has become a political battle as well. Each side points to horror stories from too much or too little environmental regulation and the whole point that we live on a planet of finite resources is lost in the political babble and rhetoric.

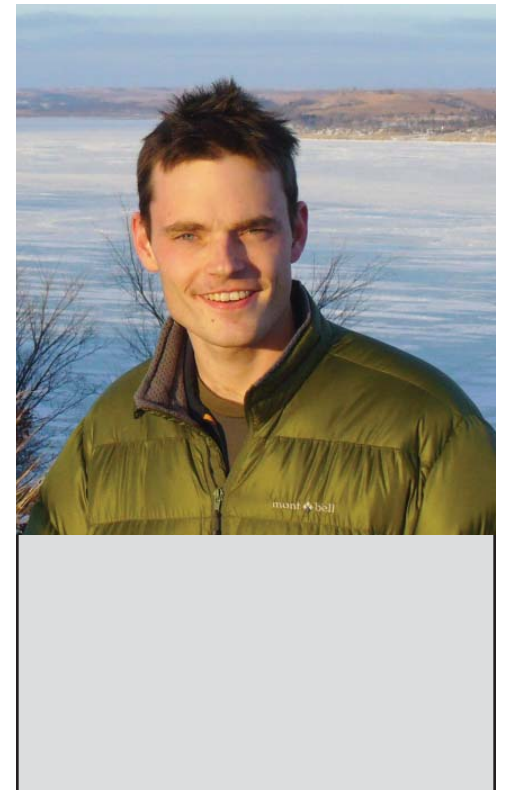
Aside from the political element of things, there is also something fundamentally counter-sustainable in our culture right now. Bigger is better and more is what we need! If a product doesn’t fail due to shoddy design, its death is still built into it because, chances are, there is a new version out and we want it. This is true with cars, electronics, even, to a certain extent, architecture.

At this point perhaps an analogy is in order: If half a dozen shipwrecked survivors were floating on a lifeboat, one would hope they would all agree that their resources are limited. They can hope to reach shore in a month or so, but on a small boat and with limited provisions the situation could be either dire or just uncomfortable depending on how they ration themselves. With uncontrolled consumption on the part of even one or two of the survivors, the whole group could easily run out of provisions long before the month is over and they would never reach safety. On the other hand they could carefully ration themselves, eating what they need to stay alive while planning and hoping for a better future. It need hardly be stated that if

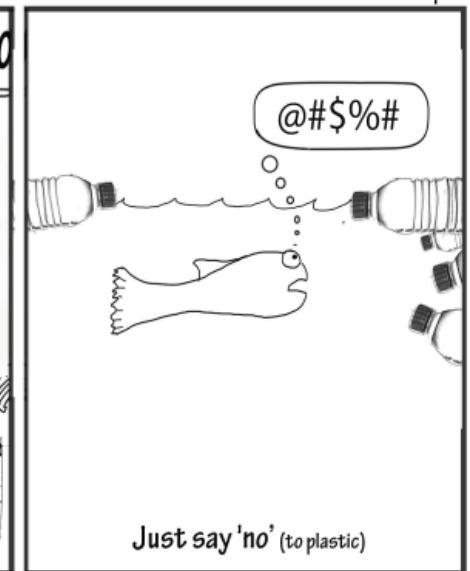
the world is finite so are its resources: we are no more protected on this earth than we are on a lifeboat. And if we are ever to reach a point of sustainability and tip the balance the other way we need to ration ourselves and control our appetites. In a sense an argument for sustainability is merely a plea for a return to common sense and moderation. Just because you have something now doesn’t mean you should use it up—we’re all in this lifeboat together and the shore is not yet in sight.

—Dan Temple

Pecksniffery



Dan Temple





ON THE ROAD

I was born and grew up in Qingdao—a medium sized city in eastern China. Despite the undeveloped situation during my childhood, it was definitely much more greener than it is nowadays. After high school I chose architecture due to my individual interest in design. I learned different skills in this field and at the same time came into contact with a new concept --- sustainable design. It awoke my memory of the good old days and made me feel like it was time to study abroad to explore the world of green buildings.

After one year of study and visiting famous green buildings (e.g. California Academy of Science), I began to doubt the deep value of green design. Even though most of these building looked brilliant and some of them worked efficiently, they were either extremely costly or superficially green. And as for the environmental education aspect, the building tour guide only talked about how complex and virtuous a high technique green roof was, but rarely referred to the appropriate habits of an energy-saving user or how difficult and expensive it is to support such a unique-shape green roof.

However, seeing the Seattle Island Wood School and the NY High-line Project revitalized my previous convictions. I realized some fragments of how a real green designer should start his/her consideration and design.

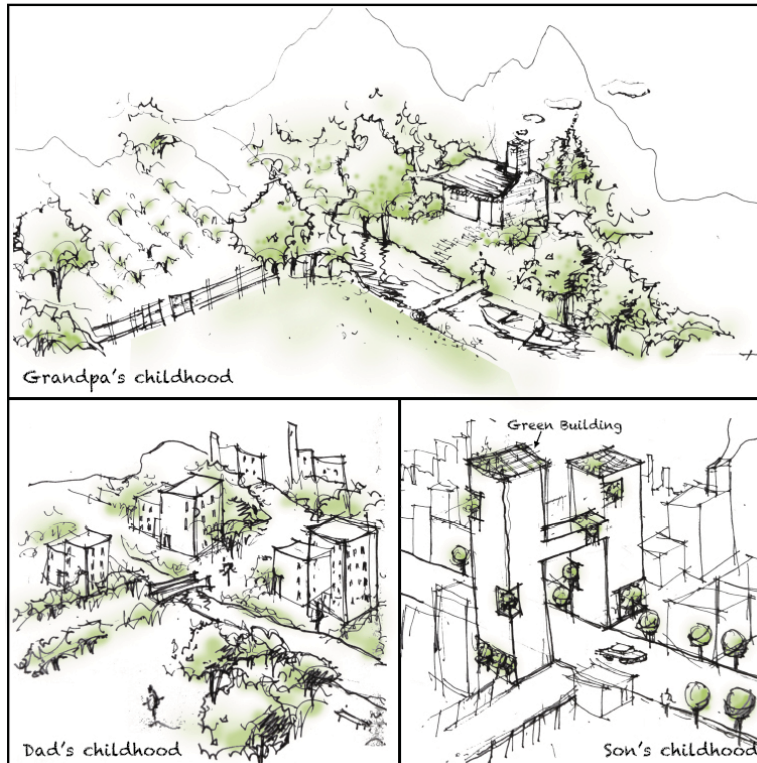
First, from a big picture, most countries are composed of rural areas and cities. Architects should clearly understand different plans for different areas or situations. Using the two examples above, the Island Wood School is located in a rural forest area, where it is better to spread various spaces around the site in order to make the users experience the charms of wild nature. While for the NY High-line project, because of limited space, it is smarter to reuse old structures to satisfy current needs and create emphasis on cozy green space.

Second, on the micro level, architects should make sure every adopted green strategy is suitable for the specified project and perfectly integrates with other strategies as a whole. In this part, details always make sense. Still looking at the High-line example, the bench is made of common wood strips, allowing the rainwater to go through spaces between adjacent strips. It surprised me when I found out that these benches were just above the drainage trench.

Third, there is an old saying in China, “attitude means everything”. Sustainable design is not just a slogan, it should be a process where the designer found problems and addressed them in a sustainable way. If only designers believe what they do could make the world a little better than before, then the masses could be moved and educated. Until then, they are just businessmen with the mask of green designers.

Finally, I quoted Jean-Jacques Rousseau’s words to express individual attitude towards sustainable design, “rather than love, than money, than faith, than fame, than fairness, give me truth.”

—Nan Wang



Actually, green building is not that much green.