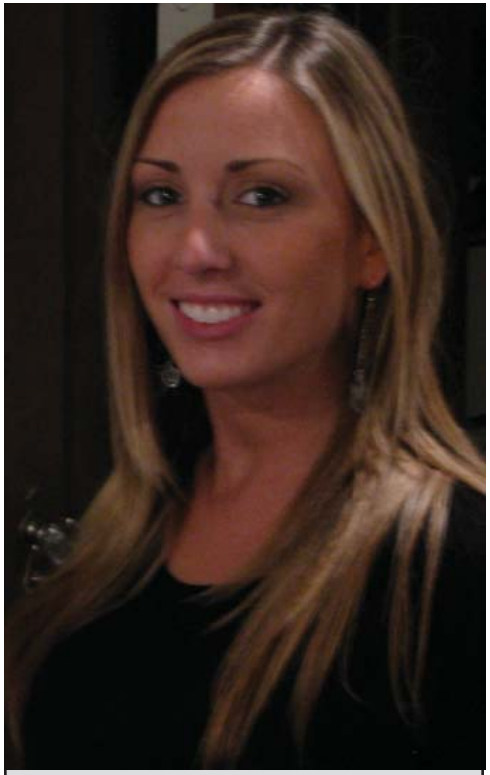
# 2011


*Thanks to the graduate students in Arch 510 who wrote, peer edited, rewrote, peer edited, rewrote, … these editorials.*

# ARCH 510 GRADUATE SEMINAR
# DESIGNING FOR SUSTAINABILITY

**STUDENT EDITORIALS** **FALL 2011**



## WHAT'S MISSING IN SUBURBIA?

Growing up in suburban areas I always felt like something was missing, but I never knew exactly what it was. However, when I came to college I began to realize what it was: a sense of place. Most college campuses and towns tend to have a sense of place embedded in them because they were built prior to World War II. During this time period, American planning was based around a few simple ideas: creating communities that were attractive, walkable, interesting, and well connected to a variety of people and places. Unfortunately, following the war and continuing today, government policies have turned their back on people and place making, instead catering to cars and causing suburban sprawl throughout every city in the nation. Recently, however, suburban development is beginning to be criticized as current economic and sustainability issues threaten our country's society and future. As the authors of *Suburban Nation* put it, "It is in the nation's interest to grow healthily, if for no other reason than to maintain its competitive advantage in the global marketplace." These issues are beginning to make us look at more efficient, functional ways of living that are less dependent on the consumption of fossil fuels. This approach includes a return to our older urban areas, which, simply put, work better in terms of sustainability, and which we can learn many things from. It is now common knowledge that suburban development is the exact opposite of healthy growth. However, what do we do with the suburban places we are left with now that we know they are counterproductive?

As our country begins to reverse development patterns, many suburban places are being left out of redevelopment schemes just as our downtowns were when people first started moving to the suburbs. Downtowns are now being re-populated and re-energized as people have realized the economic, social, and overall convenience benefits of being within walking distance of most things they need: work, entertainment, food, home, and other people. However in the suburbs, people and retailers are beginning to leave strip malls, big box stores, and regional malls either because they are going out of business, or they are choosing to re-locate to better developed areas that are more accessible to a larger amount of people (such as downtowns). This leaves many struggling suburban areas with no future plans for any type of healthy redevelopment.

NorthTown Mall is one of these places in Spokane, Washington. Currently, NorthTown Mall has over 150 retail stores, however it also has a large number of unoccupied spaces including an empty anchor department store. The mall is becoming less attractive to users as it is completely surrounded by parking lots including three multi-story parking structures that only fill up at Christmas. Once outside of your car, an exterior public realm does not exist beyond a few benches. Long blank walls border the parking lot with only one entrance to the mall on each of its four sides. You are eventually forced inside, where the same chain retail stores seen in most other malls face you from every direction. Overall, the mall is entirely inwardly focused with no connection or acknowledgement of pedestrians, the rest of the community and its neighborhoods.

Many suburban malls are struggling with the same identity problem today. Though they may have once been the jewels of their communities, they are now extremely outdated. However, there are ways to make them into the successful town centers that they originally were intended to be. Some communities have already began rebuilding their struggling malls as thriving town centers. These new places follow traditional urban planning strategies such as community and place making through more walkable and pedestrian friendly exterior spaces, which involves not only making them more attractive to users, but also more accessible for the surrounding community and neighborhoods.

I believe sustainability begins with people's ability to walk to places in their communities. Suburban sprawl is among one of the biggest threats to sustainability with its complete dependence on cars for almost every trip people make from their homes. However, with the right redevelopment plans, suburbs too can become more sustainable places and have actual successful public places like older urban areas. Nowhere in the suburbs will you find roads that are truly enjoyable to walk down, and even if you choose to walk there are no meaningful destinations. You won't find trees to shade you during the summer, people to talk to, or interesting things to look at. This banality is what is causing suburbanites to drive everywhere.

It is time to address these issues with the suburban developments we are left with and to explore future sustainable redevelopment plans for them. Suburban malls have the potential to be great public places that actually exemplify a sense of place. Malls will continue to be used.

However, how they adapt to future issues will affect how long people and retailers will stay. Possible improvements can include redeveloping the mall's exterior facades and entrances, introducing new program that is more community oriented, and reconfiguring parking lots into healthy public places that promote and attract walking. It doesn't take an architect or planner to understand how stark the contrast is between current places in the suburbs and vibrant, traditional, main streets in downtowns. Suburban redevelopment of the future must and can contribute to a more walkable and sustainable nation.

*—Christie Bell*

# THE SUBDIVISION OF AMERICA

*Subdivisions: something produced by subdividing: as*
*b : a tract of land surveyed and divided into lots for purposes of sale; especially : one with houses built on it. (Merriam-Webster Online Dictionary)*

We think of subdivisions as neighborhoods that are located within city's limits, but not close to the city center and amenities offered by that proximity. Typical subdivisions offer a single housing type, with minimum lot sizes and all land designated for private use. They provide a singular use: living. Planned Unit Developments are a type of subdivision that include mixed use buildings, a mix of housing types and usually have 15–20% of the land for shared or common areas. Cluster or Conservation Subdivisions have a single use and single housing style with an emphasis on open space and natural area preservation, with up to 50% of land set aside for these purposes. Traditional neighborhoods offer a mix of uses including civic and neighborhood centers. There is a mix of housing types, built with walkability and human scale in mind. There is an architectural layering that indicates a higher level of quality than is usually seen in newer developments. As subdivisions continue to be built, they are further from the city center and continue to encroach upon open space. In many instances this means the residents have to rely on their own personal vehicles instead of public transportation to reach the city center and its amenities. When we build subdivisions without providing amenities such as public transit, and diverse retail options, we encourage unhealthy lifestyles, use valuable rural spaces, and increase our dependence on non-renewable natural resources.

Cities are realizing the negative effects of subdivisions on city center growth and sustainability, and are taking steps to reverse them. Although subdivisions are less than desirable, they are a large part of our built environment; finding a way to minimize their negative impacts will be a benefit now and later. Razing these sites and restoring them to farmland, or open space isn't an eco-friendly or viable solution. We must find solutions that address the existing conditions while improving the quality of living in typical subdivisions.

Typical subdivisions promote sprawl, and emphasize vehicles rather than people. Adapting these subdivisions using positive aspects from the other types of development can enhance the lives of their current residents. Providing public transit and mixed-use spaces that support work, school, shopping, and other aspects of everyday life can offer a model for repairing existing subdivisions. This strategy would promote healthier lifestyles, encourage ownership in neighborhoods and sustain local business while decreasing our dependence on natural resources.

Knowing the detriments of subdivisions, we would be irresponsible to continue creating, developing, and promoting them as sustainable alternatives for American families. We all have to take responsibility for making choices that are better for the environment and future generations. Waiting for someone else to come up with a practical solution is not an option, we must be proactive as designers and repurpose existing subdivisions and design more sustainable options now.

*—Holly Colvin*

# BREAKING HABITS

**Do you turn the lights on when the sun is shining in? Do you leave the water running while you brush your teeth? These unconscious living habits have been developing in people for their entire lives. These habits are hard to break! To break unconscious habits and develop new ones, people need to be re-educated in a repetitive way throughout their daily lives. People often behave unconsciously as a result of external stimuli and the natural environment they inhabit. If we, as designers, create sustainable environments with which people unconsciously interact, they will be more sustainably aware, perhaps without realizing it.**

**Furthermore, there are people that are aware of the resources and energy they are using but are too lazy to conserve—for instance, if they see a light on in the other room and are "too comfortable" to go turn it off, or if they are running a half load of laundry because there is a shirt that they have to wear when they have dozens of clean ones. Let's be realistic, Americans have been spoiled with resources and technology that have helped develope some inefficient behavioral habits. There is technology that can be strategically used to make it easier to be sustainable and hopefully develop more positive habits.**

**Ideally, everyone would be aware of their carbon footprint, however, this is not the case. Many people think that our natural resources are unlimited, or believe that it is unlikely for them to expire during their lifetime; this behavior is ignorant. As kids, we are taught to be respectful to others throughout our life. Thus, we need to not only be respectful to others around us, but also to the natural environment. This attitude is important because we need to manage the dividend of our resources while alternatives are being researched. This way, the generations to follow will be able to live equally well or better.**

**There will need to be technology used to achieve a satisfying living environment for all types of people. These technologies will conserve resources while providing for the residents in a sustainable environment. However, it is important to make sure that the technology used will be worth the energy it takes to operate. Another tactic is to encourage passive design strategies to save energy. This objective can be achieved by educating the residents on natural ventilation, on how to take advantage of natural lighting, and to show the positive outcomes of using these natural strategies. Understanding different human behavioral habits will make it easier to design a sustainably functioning residential facility, which will accommodate all its inhabitants.**

*—Emily Eixenberger*

# DIGITAL VS. TACTILE

**Somewhere between the sleepless nights and the drudgery of assigned readings, it is easy to forget that, as architects, we will deal in the substance of materials and experiences. In studio, much of our learning experience becomes sterilized and streamlined by the digital tools that support our very existence. The traditional tools of the architect—pen and paper—have been replaced with the glow of an LCD screen; the ergonomic plastic computer mouse.**

**While architecture deals fundamentally with the synthesis of raw materials into a formal and physical experience, studio seems to be more about producing a set of printed boards. This distance from the literal material of architecture is disturbing. It is tiresome working toward the end goal of digital, intangible files from which no building will ever be produced.**

**This is not to say that digital tools are not valuable to the architectural profession. Indeed, they become invaluable in the process of creating and managing form, structure, systems integration, and even materiality of a final finished product. The main difference is that a studio project is never translated into built form. In studio, the focus becomes the digital production itself.**

**I want to change that focus. How can these valuable digital tools help us create something physical? I want to return to the idea that architecture is fundamentally a series of formal explorations. At its core, the architectural course of study should teach us to deal with these tangible and physical ideas. Is there a place for digital tools in this education? Absolutely. Are these tools a substitute for the tactile, sensual experience of a built structure? Absolutely not.**

*—Laura Gradenr*

# LEMONADE FROM SHIPPING CONTAINERS

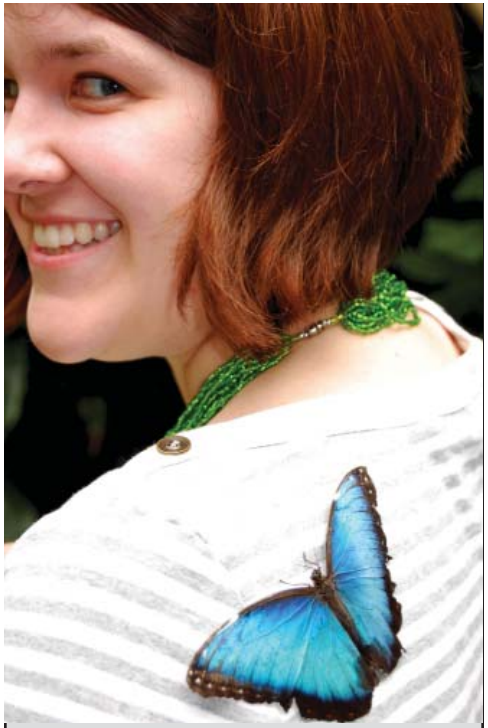
Driving along the I-5 corridor from Portland to Seattle, there are countless landscapes and buildings to admire. There is also something that is not pleasing to look at: shipping containers. There are large amounts of shipping containers at docks and shipping yards all along the West Coast and its inland rivers. It is wasteful that so many containers just sit, when they could serve many alternative purposes, rather than dust collecting.

Many of the containers used in the United States are shipped in from China and other Asian countries. Plenty of containers are shipped from Europe and Africa and end up on the East Coast however; my focus is on the West Coast. It is much cheaper at the moment to ship a new container full of goods from China than send an empty one back to be used again. This one-way trip results in containers being stored in the shipping yards to await their next use. However, there are not a lot of secondary uses for the shipping containers, and this situation creates more problems. One solution is to utilize these shipping containers as habitable spaces through green building design.

There can be a lot of work that must happen in order to make the shipping containers habitable. To make the long journey from China across the Pacific Ocean, the containers are treated to withstand the harsh weather and other problems that come with sea travel. They must be coated with a lead-based paint, the wood floors must be chemically treated to resist rot and bugs, and the containers are often filled with harmful chemicals themselves. Due to these harmful chemicals and paints, the containers have to undergo an intense cleaning. After all the cleaning and preparation, the containers are ready to be filled with materials and insulation to make them a comfortable places to live.


In order to combat the onetime use of the containers there must be a change in how we consider their secondary purposes. Some of the many uses include homes, offices, apartments, schools, dormitories, studios, or emergency shelters. These all use one component of the shipping container, its modularity. It is the modular design of the container that allows for repetitive design in many of these uses. This does not mean that the design will lack uniqueness, but rather will still allow for the clients and architects to collaborate in the design. The simple rectangle and square forms can inform the client and the architect can create many forms from the containers. Green building design will start by re-using the shipping containers, taking advantage of the modularity while still exploring and expressing the unique versatility in design that they allow. It is easy to see that with all the uses that the shipping containers can provide for architecture, many architects should begin to incorporate them into design.

*—Jeremiah Long*



# DESIGN FOR INTERACTION

**Ultimately, we are a social species. We crave interaction with all things. Person-to-person interaction is the most basic type of interaction. However, we also interact with our surroundings as well as create buildings that interact with the surrounding environment. Design plays a key role in how successfully this interaction occurs. Understanding how we interact with others, and how the designs we create interact with their environment, is an important compentency. While poor design can hinder this interaction to the point of nonexistence, good design will allow for simplicity and ease of interaction.**

**Interaction within an interior space is vastly different from interaction that occurs outside. Inside we are protected from the elements, we feel more comfortable and more prone to person-to-person interaction. With less background noise to compete with, we keep our voices lower; we stand closer together, feeling contained within the interior space. We also interact with the interior space itself, sitting on the furniture, examining paintings or photographs, feeling the texture of a pillow or blanket, and appreciating the space as a whole. For these reasons, a poorly functioning interior space can leave us feeling dissatisfied and ill at ease.**

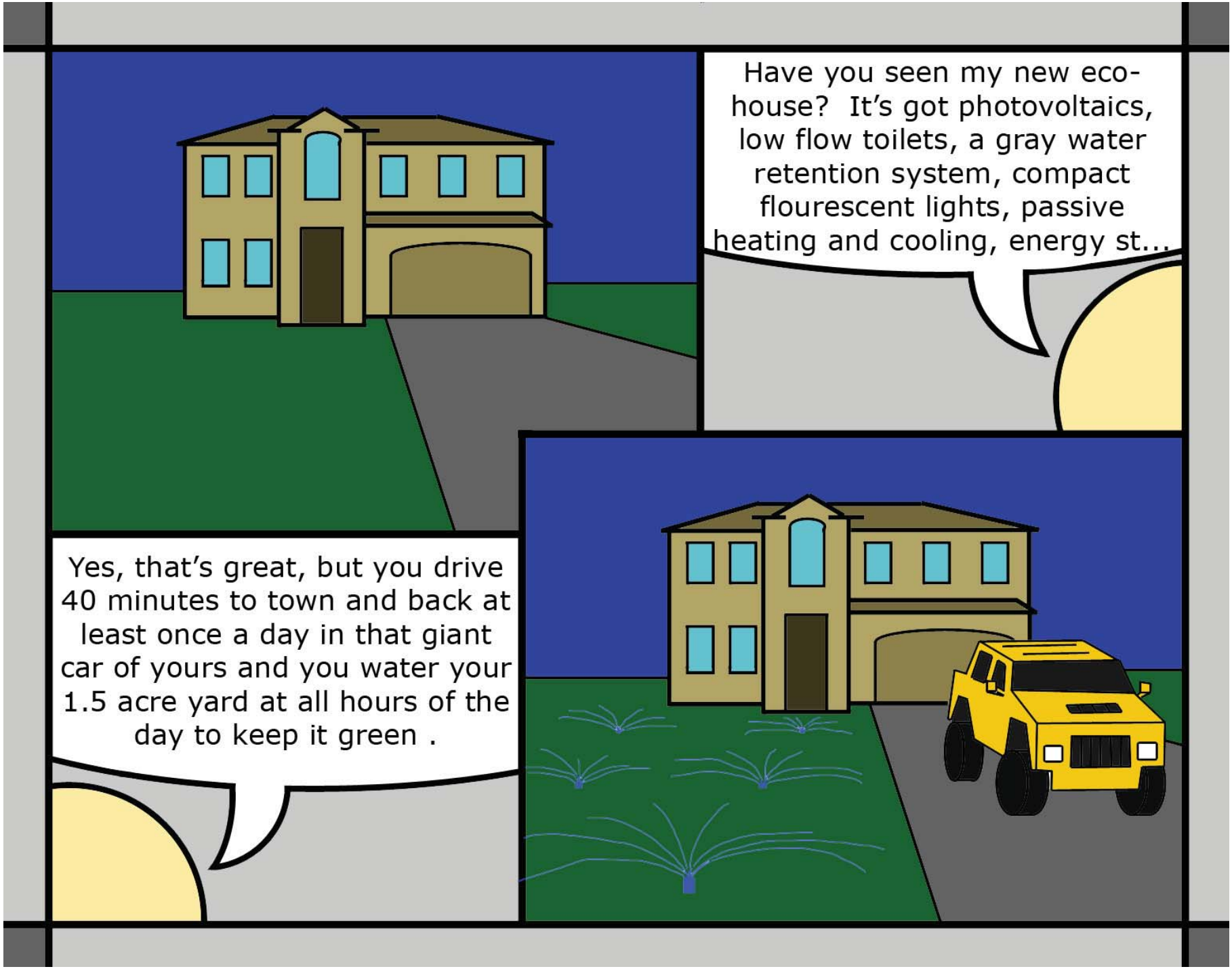
**We interact with the building as a whole. If we flip a switch, the building responds by turning on a light; if we open a door, the building responds by granting us access to a new space. We have many expectations of the buildings we use; if we turn the heat on, we expect the system to work and provide us with warmth. However, if we turn the heat on and the space does not heat up, perhaps due to a poorly designed system or lack of insulation to contain the heat, we feel that the building has failed us and may choose to no longer make use of that building or space.**

**The exterior space created by the accumulation of multiple buildings can produce incredible interactive spaces if designed well, but can be ill-fated if designed poorly. When designed well, these spaces can become active public gathering centers and destinations where numerous interactions can occur. If designed poorly, these spaces begin to serve as a transition spaces rather than social gathering spaces.**

**We are finally beginning to appreciate how the buildings we create interact with their existing site. The care that we express for our interactions with others has translated to the buildings we create and how they interact with the environment. We care that a building treats the environment well, because we not only interact with that building, but also with the surrounding environments, and want to be satisfied with both.**

**Comprehending how we interact with others, as well as the spaces around us, will give a greater understanding of how to facilitate these interactions in a way that is satisfying. Through this understanding we will be able to design spaces that are appreciated by the users due to how they function, how they ease human interactions, and how the space itself interacts with its surroundings.**

*—Monika Kuhnau*

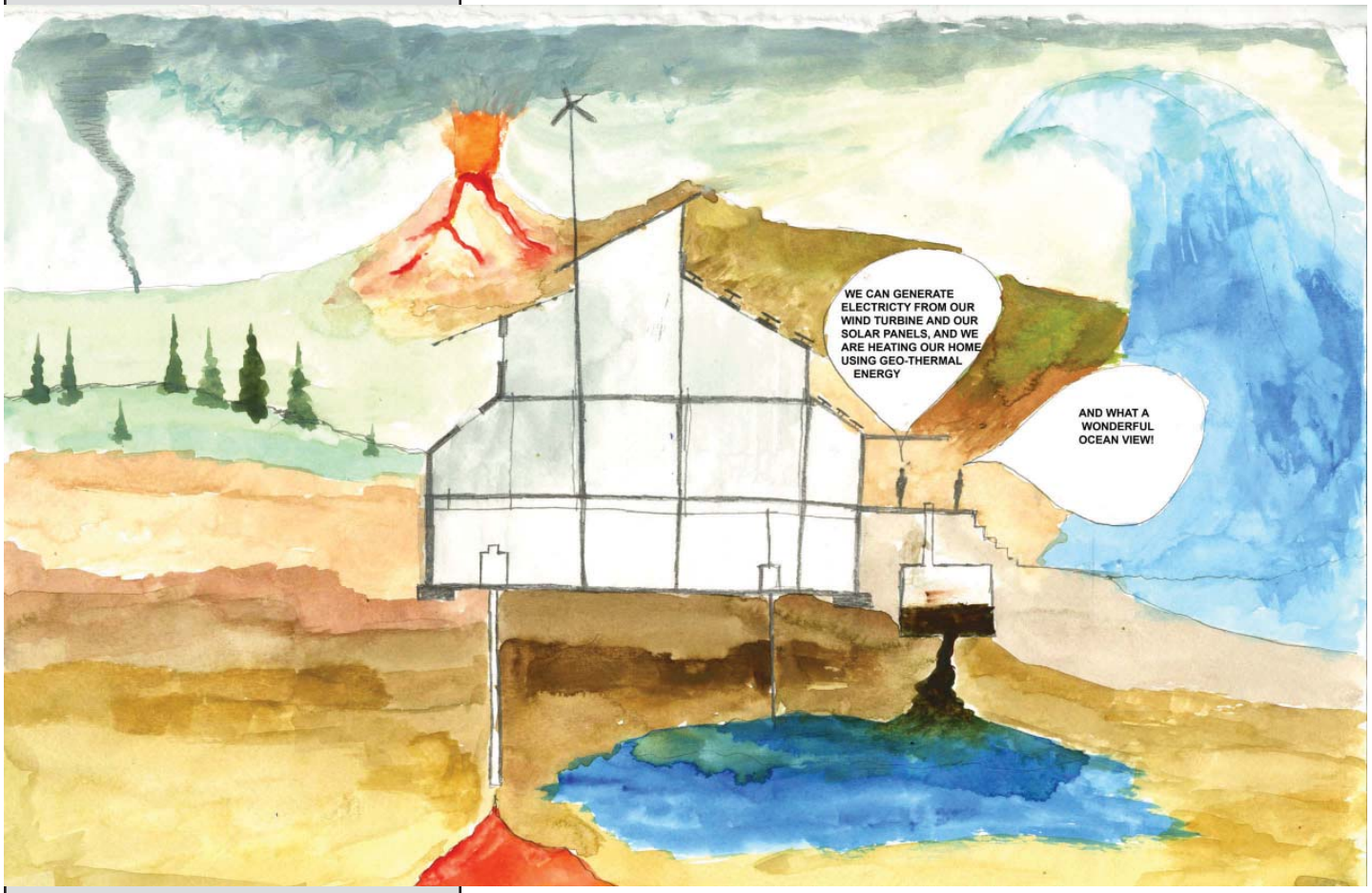

Have you seen my new eco-house? It's got photovoltaics, low flow toilets, a gray water retention system, compact flourescent lights, passive heating and cooling, energy st...
Yes, that's great, but you drive 40 minutes to town and back at least once a day in that giant car of yours and you water your 1.5 acre yard at all hours of the day to keep it green .

# MIXED-USE ECO-TOWERS

## TRANSFORMING CITIES FROM ASPHALT JUNGLES INTO THRIVING ECOSYSTEMS

The world's population is expected to reach 9 billion by the year 2050, with 5 billion people living in major cities. Traditionally, cities have been frenetic, noisy, unsafe, and clogged with traffic. These asphalt jungles prompted many people to relocate to the greener suburbs. The resulting suburban sprawl impoverished city cores and condemned ecosystems and agricultural land. It also created massive infrastructure requirements and automobile dependency. Suburban sprawl increased carbon emissions and created places without a sense of place or community.

Since traditional buildings consume about 50% of the world's energy and generate about 50% of the waste ending up in landfills, it is imperative that new self-sufficient buildings be designed, and that growth will occur within existing city limits. Mixed-use eco-towers provide a solution to suburban sprawl. Mixed use eliminates the need for commuting, allowing people to work where they live. Eco-towers can indeed become Le Corbusier's "towers in a park," as their verticality and small floor plates free up land for public green spaces. In addition, vegetated eco-towers offer private green spaces as alternatives to suburban lawns.




Eco-towers seek to lower carbon emissions by generating some of the energy they consume, using green technologies like solar panels and wind turbines. By providing green spaces in an urban context, eco-towers also reduce the urban heat island effect, purify the air, filter rain water runoff, provide spaces for urban agriculture, and absorb city noise. If cities build eco-towers, promote mixed-use zoning, create efficient mass transit and public green spaces, they can become successful places where people live, work, shop, and move around in a greener, quieter, and cleaner environment. People would consume food that is produced locally and would not feel the need to escape the city in order to reconnect with nature.

*—Andy Siluri*

# EVERY DESIGN IS AN OPPORTUNITY

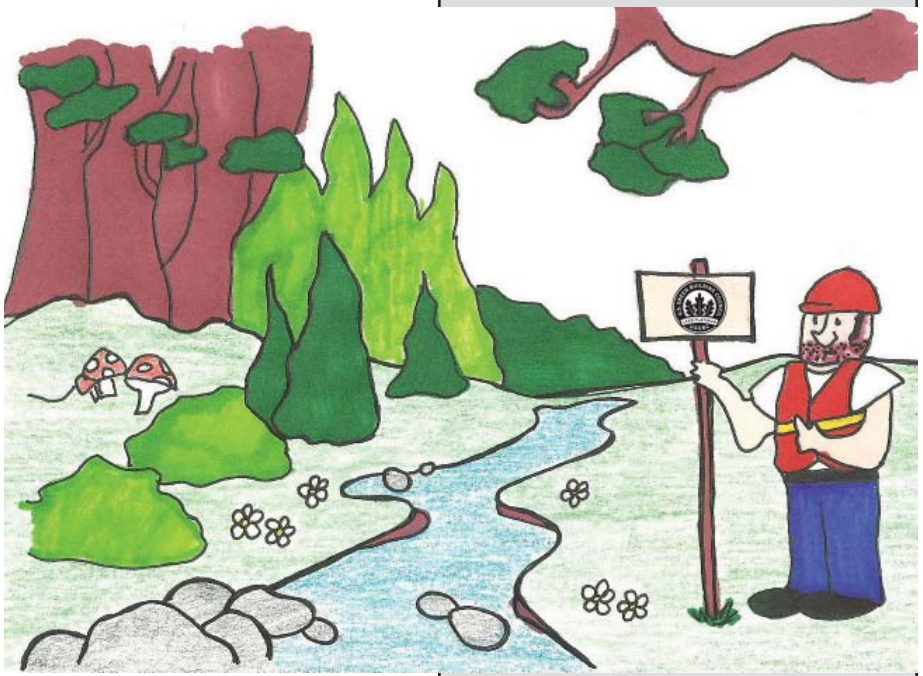
Sustainability is an architecture buzzword. Especially in recent years, architects and other designers are learning more about what they can do to help our environment through what they design. Even though a lot of us are learning what we can do, new buildings and remodels of existing building are still disregarding green practices. They are compromising the sustainable features for cheaper and lazier designs. A common misconception is that it costs a lot more money to fabricate a new building that exceeds the basic requirements. In all honesty, more research by the designer could really pay off and end up with a happy medium between the design, budget, and sustainability. What design professionals need to realize is that with their projects, they can influence other projects around the area, the way the building is being used, and the way people view their built environment. As an architecture student, it has become more apparent to me that a lot of designs are not implementing sustainability practices where they could.

While on an outing to see a movie with my husband, Andrew, I began to see how environmentally destructive and wasteful even a basic movie theater could be. I asked for two tickets and handed over my debit card. Four pieces of paper printed. There was a ticket for me, a ticket for Andrew, one receipt, and one piece I had to sign. The man at the register handed me the tickets and the receipt after he tore them all in half. Then the concession stand really got me to notice how inefficient the whole process was. We wanted popcorn, candy, and a drink. Of course, the man working there convinced Andrew to upgrade at a reasonable price. I knew that we couldn't consume all of that food during a movie, yet we took it all, anyway.

After the movie, as I suspected, we didn't finish it all. We used the popcorn tub, which was about half full, to carry leftovers, and it was like carrying around our own little waste basket. We took the leftovers home with the intention to finish them, but all we ate was the candy and the rest was thrown out the next day. All I kept thinking about was that the experience at the theater was inefficient and wasteful. I've learned a lot of things that people can do to make the world more sustainable, so it's frustrating to see something as simple as a movie outing become such a careless experience.

What is the solution to problems such as these? The answer is research and incorporating what we know into every design. Instead of looking at buildings the way they have been done in the past, we need to look toward the future and figure out how we can make them better. When we are presented with a design problem for a new project, we need to look at it as more than just a list of demands to include and look more at it as an opportunity to better future concepts. In taking these steps, we start to educate the public on what they can do to implement sustainable practices in their lives. Everyone can do something to better the environment and, with good design, it should not be hard nor inconvenient.

*—Andrea Smith*



"This site is perfect for the new Solar Panel Factory... It's going to be LEED PLATINUM!"

## ARCHITECTURE THAT INSPIRES

The ultimate action, through which clarity of intention and mastery of expression can be seen and felt, is design. My great love of architecture comes from the very rare ability in life to make a lasting impression on the world around me. The possibility of architecture to help renew the environment, livelihood, and well being of the generations after me is a constant inspiration for me. The future of responsible architecture has a ripple effect on the world around it. Good architecture will help generate new ideas, while bad architecture will create a stagnant view of the world.

I grew up in the city of Anchorage where the extreme lack of sunlight and cold climate in the winter causes residents to generate high-energy usage to heat and to light their homes. Traveling by bicycle or foot becomes difficult for most people during the winter months due to the size of the city and the icy conditions. I believe that Alaska could be more of a socially-oriented and energy-efficient environment if mixed-use community housing, passive methods, and energy generating methods such as solar power were implemented.

One thing that I would like to see change in the professional world is the lack of willingness to contribute to the greater good. What I'd like to see is a change from the belief that none of us can make a difference to all of us should make a difference. Architecture has the power to inspire and get people excited about a new, more beneficial, way of life. Those who have the ability to make the changes the world needs can be convinced of these advantages of healthy design, if it is done well. People should have access to the space and social environment they need without having to venture far from home. The impact this practice has on the world should be nonexistent. Someday, when I become a professional architect, I hope to help in this way.

*—Troy Phillips*


After Captain Planet lost his super powers, he had to learn to use the power of persuasion

# SUSTAINABLE WAY OF LIFE

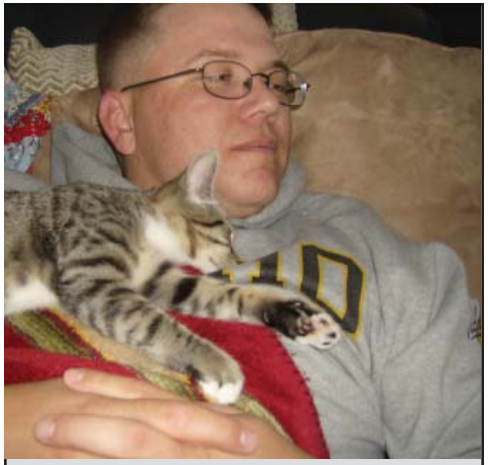
The idea of sustainability has been getting more attention in the past couple of years. Living sustainably has become a necessity; a necessity that has become an important aspect in the design of any building. When it comes to design it is important that the architect understands the functions and potential of possible sustainable systems. These include solar panels, wind generators, rain water retention and passive heating and cooling. Systems utilized will vary depending on location and on the method of implementation. If the systems perform optimally it will reduce energy consumption or possibly even generate enough energy to eliminate the need for electricity from the city grid.

It is important that these systems be employed in all new designs; this will ensure the future of our natural resources and our own existence. Most of us have heard about the effects that Chlorofluorocarbons (CFCs) are causing to our ozone layer; these CFCs are depleting our ozone layer and if nothing is done to stop the damage more problems would result. Once tests were preformed and the public was made aware of the problem, many countries pledged to reduce and even eliminate the use of CFCs. With their commitment the Ozone layer was able to regenerate itself to normal levels and now the danger is not as immanent

If we increase awareness and encourage the passage of codes to make buildings more sustainable, we will all benefit from a healthier environment, just as it was done to prevent CFCs from damaging out ozone. Many reasons exist for not implementing such policies. One might be due to the high initial costs of employing sustainable practices. By raising awareness of the payback there will be an increase in demand for sustainable systems. In order to educate the public and increase awareness on sustainability, being able to showcase a structure that has put into practice sustainable systems is important. By doing so, people will actually see the benefits and most importantly see the savings in energy costs.


In order to reverse the damage that has already been done to our environment, encouraging sustainability is a vital step, and it is not only up to designers but it is up to everyone specifically politicians. The change will not happen overnight but if everyone is informed, it will take less time to see the benefits. Sustainability must be part of our daily lives in order to better understand its advantages.

*—Alonso Torres*



# TEACH A MAN TO FISH...

Education in itself is a novel concept. The future belongs to our children, and it is our responsibility to raise them so that they may one day take our place. Our hope is that with the proper education, our children will learn from our mistakes and bring forth a greater tomorrow. This hope is founded upon the belief that not only will our children help to create a brighter future, but also that the world will become more enlightened. The key to this belief is education—through a better education.

During the latter half of the 20th Century, the United States emerged as a world leader in economics, technology, lifestyle, and so much more. Of those achievements which the United States was most proud, education was perhaps the greatest. An education in the United States equated to freedom. This was the American Dream: go to school, receive an education, and live a healthy, wealthy, happy life.

While pursuing the American dream, somewhere along the way our educational paradigms began to shift. Arguably, some paradigm shifts were for the best while others were not quite. The most evident of these paradigm shifts evolved through the method of testing.

Testing is a traditional pedagogical approach to evaluating the knowledge retained by a student. In its honest form, testing is an effective pedagogy. What a child has learned and what a child has not is reflected in the results of their exams. The great American education thrived upon this pedagogy: teach a child, examine a child, and reinforce where necessary. If failing a child is necessary, so be it. Recognizing that this pedagogical method is centuries old and not native to America, it still remains an effective tool—an evaluative tool which is clung to very tightly.

As the 20th Century closed, the United States began its descent from prominence. Regardless of whatever those reasons may be that the United States fell, education became the scapegoat. However it was viewed, education wasn't doing its job correctly. Thus the paradigm shifted once again, and increased testing became the answer.

As an effort to compete on the world stage and regain prestige, our national leaders found it more important to study numbers than to evaluate results. To improve learning, our leaders told us to eliminate playtime, kill the arts, cripple athletics, and implement more standardized testing. As a result, we rustle our children like cattle through factory-like schools, teach them to pass a test (rather than teaching knowledge from which they can actually benefit), and then proceed to test our children like crazy only to cap it off with the proclamation that "you haven't quite made the grade, but we're going to pass you anyway." The result is that we have a large population of illiterate, lazy, disaffected, uneducated, welfare-dependent Americans who feel self-entitled, yet cannot focus on anything for longer than ten minutes.

We became so focused on worrying about things that really don't matter in the long run that we stopped focusing on the things which do matter—the things which matter in the here and now. We stopped teaching our children how to read, how to write, and how to speak. We stopped teaching our children how to think for themselves, and how to become independent and self-sufficient. It may be observed that in the name of education, the teaching of knowledge has been substituted with the ability to pass a test. To compete on the world stage, our leaders have placed a greater emphasis upon the ability of schools to provide high test scoring students rather than well-educated students.

There is a difference between knowledge and wisdom, so how is education defined? How does one quantify and evaluate a better education? Is education defined through statistical numbers, or is it defined through the success of one's life?

The American educational system's paradigm shift towards the dependence upon exam scores happened in the blink of an eye. This paradigm will not so easily be undone. It is understood very well that there is more to this issue than just the current educational paradigm; however, solving this issue begins by revising the current paradigm and pedagogical method. Standardized testing cannot remain our sole method of evaluating a child's education, because what is important to Olympia is not what is important to Boise; what is occurring in New Hampshire is not what is occurring in Oklahoma; and that which works for the West Coast doesn't necessarily work for the East Coast.

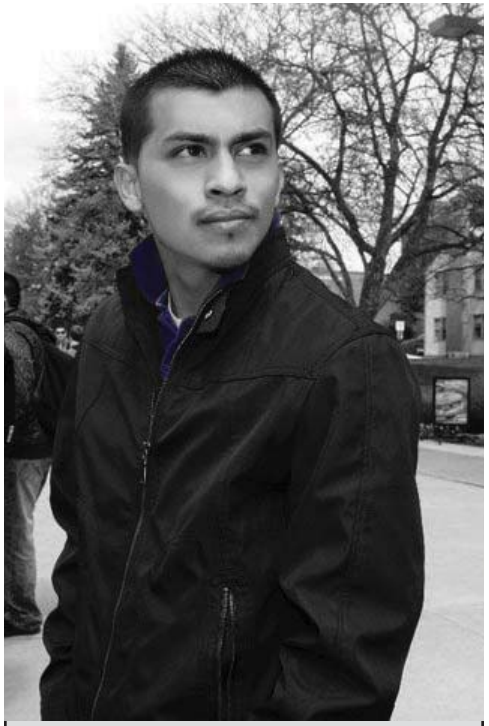
There is a difference between knowledge and wisdom. As life takes over, we forget that fact during our adolescence and maturity, yet a child radiates this fact so eagerly in their willingness to learn. It is only during our twilight when we acknowledge this difference. Our nation's

educational system can be prosperous again, and America can reclaim its title as a world leader. A better education can be reborn and once again fulfill that dream for a brighter, more enlightened future created by our children.

Our children's brighter tomorrow begins by rethinking our educational paradigm. It is time to dissolve our dependence upon standardized testing. While we should not ignore the world stage, we cannot afford to ignore our American home. It is time to regain our focus on what is important: our children. Let us rethink—remember—our children and how they are taught. Let our children play, explore, and inquire. Allow our children to speak while we simply listen. More importantly, though, let them learn, let them grow, and let them experience. Let them be children. An education is lived and cultivated. That's how knowledge—wisdom and understanding—is gained. As the author Jacques Barzun once wrote, "Teaching is not a lost art, but the regard for it is a lost tradition ."[1]

*—Beau Tanner*

1 Taken from <http://www.quoteland.com/topic/Teaching-Quotes/140/>, 10 October 2011



## BEYOND NET-ZERO

Ts a young child, my father would take my family and I with him on trips to his workplace. His area of work was, and still is on the same private golf course in the City of Bend, Oregon. The opportunities to join him were rare, since they only happened when the golf course was hosting a closed tournament on a weekend, perhaps twice a year. We were always excited to go; however, it wasn't just the mere fact of going that made me happy, but this trip also presented opportunities for me to drive golf carts and explore the course. Given the first opportunity, I would not hesitate to take it, because, aside from the scenery, I would always be in awe of the private residences I encountered. No two were ever the same. Some were still under construction, and those which were complete always sparked my imagination with thoughts of how they looked on the inside.

Reflecting on those thoughts more than ten years later, I can confront a couple major issues which conflict with the concerns that my graduate proposal is addressing. The awe of those childhood memories are now pointing out what is wrong with the housing trend. Although the market for housing is beginning a slow shift towards more energy-efficient homes, we still encounter developments that propagate sprawl and neglect the larger problem at hand. For example, the developer may label a neighborhood sustainable simply because the homes may have increased insulation values and/or energy efficient appliances, yet it may be on the outskirts of the city. Other examples include situations where architects designing LEED-certified homes for sustainability, but the habits of the user remain unchanged. The user may drive large SUV vehicles, own another 5,000 sq ft home some where else, not recycle, or water a half-acre lawn, etc.

Efforts while designing must also include ways to alert the user's of their habits, or at least make an attempt to make in impact the user's habits. Among the more important ways to make a change, is to design with the site in mind. Too often, designing without being site-conscious leaves the project missing opportunities for daylighting or natural ventilation; furthermore, incorrect site location will leave a project too far from public utilities and public transportation. A NetZero home must go beyond the consideration of a home as a single system meeting its own energy demands, but must also try to make an impact on the user's habits.

*—Marco Urieta*

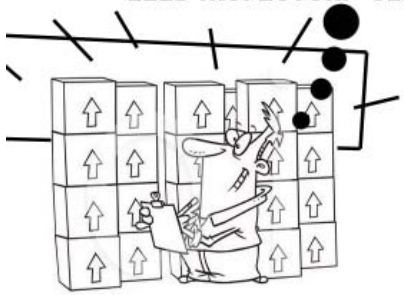
VERTICAL FARM

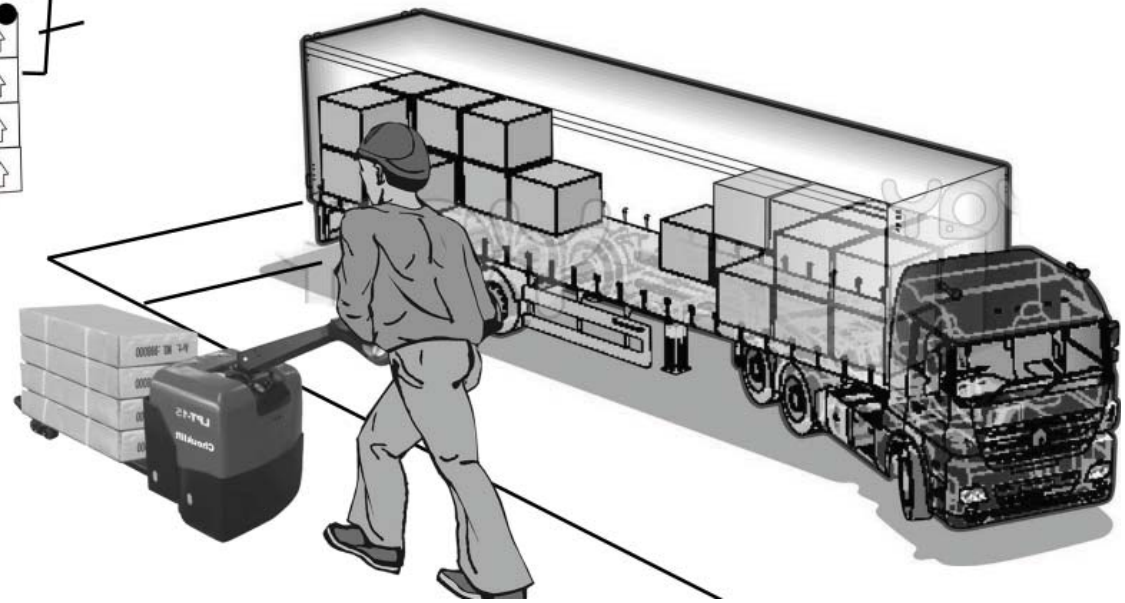
not so distant future....

AT THE LOADING DOCKS

INNOVATIVE DESIGN USING OLD TECHNOLOGY

LEED INSPECTOR: "CLERESTORY WINDOW, CHECK"





# ARCHITECTURAL DIGITALIZATION

BIM—building information modeling—is a new buzzword in the architectural profession. Several short years ago, around the time I was beginning to study for my bachelor's degree, AutoCAD was the standard architectural software. Autodesk's AutoCAD saved draftsmen time, supplies and frustrations by creating a digital environment in which your pen never runs dry, mistakes are reversible, and drawings can be sent around the globe at the speed of light. Yet this was only the beginning. Architectural techies had already begun three-dimensional modeling in the 1980s, but it was a slow process with a steep learning curve, requiring patience and specialization. Programs like Autodesk's Revit and AutoCAD 3D began to emerge, and each year they evolved, rapidly.

The initial idea behind Revit was to provide a computer program that allows the architect to "revise instantly," hence the name. This is to say that the designer can make a change in one drawing, floor plans for example, and have this change reflected in the elevation, perspective, axonometric, and every other conceivable architectural graphic.

This coordination requires all of the components of the digital model to be parametrically interactive. Relationships between building parts are established, a fundamental idea behind BIM as a design and construction tool. Going along with this concept, Revit and other digital modeling software now allow architects to virtually construct every single piece of a building before it is built. This is extremely powerful for several reasons. Obviously, being able to visualize and digitally construct all of the structural members, interior finishes, envelope conditions, mechanical systems and site considerations is an opportunity that provides deep insight into design projects. This insight is not the most exciting part of building information modeling, however.

The evolutionary process of digital modeling, particularly BIM software, has provided unforeseen, powerful benefits to designers just within the past 5 years. Extensive real world testing can be applied to digital models, in order to get an idea of how the building will perform once constructed. Physics plug-ins can predict how the building's structure will distribute loads, for example. Light levels, natural and artificial, can be predicted with reasonable accuracy. Thermal properties of buildings can be evaluated, allowing for more efficient technologies and passive design strategies to be tested and dismissed or accepted. Photorealistic renderings can be produced by visualization software, allowing designers and clients to get a glimpse of what the experiential qualities of spaces are, while still in the design phase.

BIM allows designers to test ideas related to structure, thermal properties, electric usage, and so many other things, while still in the design process. Allowing facts derived from hypotheses and testing to drive design decisions in terms of form, position and material leads to a purer and more rational architecture.

*—Eric Newton*