The Industrial Era Re-Considered: Re-Claiming Rail Yards

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INTRODUCTION AND CONTEXT

This paper represents an attempt to explore an apparent contradiction in the design professions in general and architectural education specifically. On one hand, the architecture design profession is in great decline. Many of the largest firms are failing and those that are surviving, and prospering, are offering very different kinds of services. On the other hand, design schools, particularly architecture, are experiencing growth.

In the past, much of this educational phenomenon was described as a natural cycle of economic downturn and the desire of individuals to re-train and change occupations in a recession.

However, some are argue that the basic economic structures that support the design professions is changing fundamentally. A series of investigations and writings attempting to characterize this economic structural change began with and includes Malcolm Gladwell, Thomas Friedman, James Cramer and Daniel Pink, among others. This article is an attempt to postulate on the nature of a future practice that includes architecture as an element and some key questions concerned with training our increasing student population.

PROFESSIONAL STRUCTURAL CHANGES

Having been in the profession of architecture for 40 years as a practitioner and an educator, it has been remarkable to observe the change in the manner of practicing; the relationship with clients; the rigid hierarchy of the AIA (as well as NCARB and NCARB), and the slow response of architectural education. The forces of change in the world have seemed chaotic and powerful, yet did not seem to affect the architectural professional structure to a significant degree, until recently. The traditional architectural "firm" seemed, in 40 years, to be hierarchical with a bias for a strong central leader (and glorified designer) with architectural worker bees buzzing around the glorified designer so hailed like Corbusier. But the firms have been evolving and been further pushed by the economic re-structuring of the country and the evolving perception of the professions in the eyes of the public.

Design Intelligence, a research and publication group, edited by James Cramer, has chronicled the remarkable adaptation of architecture activities into such areas as sustainability, design-build, materials development, virtual technologies, teaming collaborations, management behavior, real estate development, managers of built environments, and even specialized research areas such as hospital healing environment studies. Without a doubt, some of these specialty services were offered in an economic recession where firms needed to survive. While regulatory agencies such as NAAB, NCARB and state licensure offices remained faithful to the core competencies of the practice architecture (in legal terms, quality of care) they often had a ring of protectionism around the formal profession. Protectionism included, among other things, limiting those entering the profession similar to admittance to the Bar and medical board ratification.

Prior to the economic recession, the profession in general and the educational institutions in particu-

lar remained dedicated to visually inventive "iconic design," including composition and precedent design work. Architectural publications, such as *Architecture,* highlighted star designers to other architectural professionals. While it seemed visual creativity was valued over relevance in education, the profession made little headway into the communities of need, economic, cultural, social, and political, until recently.

Interesting, in a recent article by and industrial designer, Paul Backett Industrial Design Director of Ziba, in a publication called Code 77, the acknowledgment of relevant skills is lamented as a surrender to technology, not integration of learned skills sets.

> *"A lot of recent discussion about design education argues for expanding the design student's skill set. Many of today's Industrial Design programs ask their students to be social scientists, technologists, business analysts and brand strategists—just about everything. The reality is, most of these skills are best learned through experience on the job, and the traditional ID skill set still makes for the best foundation: framing the problem, exploring ideas, making prototypes and storytelling.*
>
> *What's far more important, and more neglected, is that students learn to properly integrate the skills that they do learn."*

This debate in the area of industrial design education has a familiar ring with architectural education. While I disagree with the conclusion to exclude skills other than design, the quote serves to emphasize the current trend and lack of time in deep design development alone.

The very definition of the profession has changed radically as well. Many "architecture" firms today provide financial analysis, development services, construction services, research services, pre-design services, as well as acting as there own client. Much of this kind of new activity was widely and actively discouraged and even banned in favor of a gentleman's profession that provided design services for the infrastructure to the core of the central society, schools, government, quasi-governments and large estates. While the profession gravitated to the high monuments of society, much its influence was regulated away from the profession, engineering, construction, finance and labor management, and a far cry form the days of the Renaissance.

Demographic changes of the profession of architecture alone have been remarkable, such as the inclusion of women and minorities in the past 40 years. The culture of the profession from 40 years ago has made some remarkable transformations, along with the changing world.

ECONOMIC STRUCTURAL CHANGES

Of primary importance to understanding economic structural changes occurring was the subject of a series of books by Thomas Friedman. He published several books addressing economic changes including The World is Flat and the more recent book, Hot, Flat and Crowded. The central theme was the universally available virtual technological tools that allowed mechanical work to be outsourced to other parts of the world, particularly those where income levels are low and educational achievement is high. Many US architecture firms began the practice of outsourcing CAD documents produced in other countries since it is cheap, the technology was readily available and there are many educated operators. It can be argued that this trend alone has greatly changed the old hierarchical architectural firm, as the base of workers in the firm pyramid is no longer as broad as traditional models.

The world is indeed flat. Technology has leveled the economic playing field. Further, this seems to be a trend that will not revert to previous models when the economic cycle changes. In many areas, open source and open platforms with operational wiki sites have become the norm for survival.

Additionally, many emerging economies are rapidly moving toward an economic life style replicating the United States, which is creating enormous environmental global issues. The world is hot due to energy demands. Also the world is becoming overcrowded since we all aspire to live the same life style requiring more material goods. While many expected that the USA would always have a prosperous lifestyle, the prospect of the largest populations of the world achieving the same level of resource expenditure is a great challenge to the USA. This condition is reminiscent of a powerful ancient Rome in which slaves outnumber citizens by a ratio of 3:1 in the City. Is it any wonder this country is in a panic politically with calls for protectionism? However, there is still great infrastructure, educational advantages, motivation, and broad technical knowledge base that make the USA formidable.

The USA has undergone a transition from industrial manufacturing as a basis of our collective society. Much of the world has bypassed the industrial revolution and proceeded straight to information technologies. Information, easily available, is inherent in the globalization of knowledge and work. Our country, along with much of the "developed world" is left with an enormous, remarkable, and polluted, manufacturing infrastructure such as steel mills, rail yards, manufacturing plants, salvage yards and dump sites.

What role can architecture and architectural education play in a scenario of enormous world economic, political, social and economic structural change?

CENTRAL QUESTIONS FOR EDUCATION

Schools of architecture and architecture education in general seems to continue to provide almost exclusive study of the high monuments of culture, museums, schools, churches, private residence and government centers. Occasionally, design education addresses fringe ideas such as material research and development, disaster planning, new strategies for environmental remediation and adaptations of valued buildings. Few architecture programs include the related design disciplines of landscape architecture, industrial design, material development, business and job opportunities, or even societal requirements in team collaborations as a basis for an entire curriculum. *Design Intelligence* has chronicled the professional evolution into new collaborators for the sake of survival. Team environments have become the norm within the profession but seem to be frequently disdained within architectural education. Most professionals and educators in schools are not trained in management and collaboration issues, as are MBA graduates. Hence, the hesitation is completely understandable.

While the profession, and architectural education, remains faithful to central core values such as design quality, composition, form articulation, and representation, the profession is also under pressure to provide insight and redefined context in human, economic and industrial processes. The world is becoming simultaneously more fluid with a desire for qualities of design significant value for more than the wealthy few.

Researchers of the profession such as *Design Intelligence* (not academics) are pointing to a radically different profession with differing skill types required for survival of the profession. The current study of architecture requires creative invention while understanding crucial context. However, the next generation of designers must take a role in defining processes and establish new contextual understanding of design by engaging culture, material, and economics or risk not playing a role in the evolving world.

ACADEMIC EXPERIMENT

In the spring semester of 2011, an advanced architectural studio was used as an experiment to test the introduction of redefining context within a design "problem." The basis for the educational experiment was a book by an attorney about the crucial need for design thinking and the emerging needs in this nation. Daniel Pink has written a book entitled *A Whole New Brain*. Mr. Pink, an attorney, has taken the economic changes chronicled by others and considered the role of design with a focus on the design professions. While architectural and construction technologies have become wide spread, the culture of the architectural firm has stayed static for some time. So, the exploration attempted in this work was to ask the question, what is an appropriate architectural education in response to this changing economic world?

The basis of the Pink book is that professions with left brain dominant methodical and orderly thinking, the province of engineering and accounting, will require more right brain thinking, design, symphonic skills for the survival of future professions. In one sense, it is integration of a developed skill; design, with other lateral skills attributed to something like engineering or accounting. For instance, told in story format, meaning and play has to become the central element for leading business, political cultural and financial leaders to innovate ways of achieving national agendas. He argued that we could no longer return to the left-brain economy based on production because of foreign competition through cheaper labor, virtual automation, and a consumer society deluged with physical goods. Daniel Pink is an outsider that critiques the role of design as a required means of thinking to lead business and uses a Philadelphia Design High School as a case study. Mr. Pink was the featured speaker at the AIA Miami conference in 2009. His writing is beginning to influence the link between design education, imagining the future, as well as business and development skills required for survival such as story telling.

It was time to test the hypothesized linkages.

The specific questions for me from my experience and Thomas Friedman, for this studio experiment became, how could a traditional upper division architecture design studio become more responsive to issues in which design creates context by orchestrating and re-envisioning purpose for a client community of need? Is it possible to further create another chapter to a community story by both understanding and reinventing meaning? Could we use "play" as a way of re-thinking design to address new required skill sets for a changing profession in a changing world?

The goal was to explore the potential for architecture and landscape architecture, as design professions, to define the development of an industrial large-scale reclamation by exploring the "site inherent" industrial process and exploring the re-purposing of grounds, buildings, and cultural/ economic activities in association with adjacent neighborhoods. With dirt and rust, the site and building problem did not provide a ready possibility for iconic post modernism in the eyes of students.

This experiment explored, thru related research, the potentials of a large-scale industrial era rail yard site in Albuquerque New Mexico. The educational objectives of this studio were to develop critical process and design skills in the assessment, and re-interpretation, of an industrial era material and cultural context.

The exploration considered economic and community consequences, both historical and current. The questions of appropriate material re-utilization and re-interpretation were a central theme. Of equal importance was the community perception of gentrification and acceptance of re-purposed activities. The project was intended to be both macro and micro scale in its investigations with undertones of community organizing.

THE ALBUQUERQUE RAIL YARDS

This studio explored a 27-acre industrial era rail yard site on large scale in Albuquerque New Mexico. The site, to be developed by the City, exudes local economic and community history. An Urban Land Institute report was recently by the City and became the basis for the development of a "landscape master plan." The studio investigation also included a consideration of the materials of the industrial era, steel and masonry. The question of appropriate material re-utilization and re-interpretation was to be a central theme. The studio was intended to be both macro and micro scale in its investigations.

The objective of the studio was to develop student's design skills in the assessment, and re-interpretation, of an industrial era material and cultural context. Students were also required to develop an ability to engage in specific architectural and technical components (brick and steel), as well as consideration of symbiotic programmatic proposals. It was an experiment in the integration of material technology, cultural re-interpretations and business opportunities.

With such a large-scale industrial plant, consideration of adjacent communities required the formulation of economic vocabulary; understanding proposed re-purposing the site uses; and inventive programming. The final goal was to develop a vocabulary and understanding of design work, at two scales: that responding to economic, cultural and community interests and that trying to achieve an appropriate material and quality visual response. Globalization of information mandated a need to access information and postulate on neighborhood responses electronically. Virtual exploration during the research phase was mandatory for groups.

RESULTS

The potential evidence in this studio can be catalogued as:

1. Masonry Materials
2. Steel Materials
3. Plant Materials
4. Group Site Analysis
5. Daniel Pink Reflection
6. Individual Design Problem

While it is temping to show all the work, the work most illustrative of student experimentation and exploration are in the plants research and two individual design projects.

While bio-remediating plant materials are typically the domains of landscape architecture, the exercise proved that group work could elevate their knowledge base very quickly to understand phyto-

remdiation strategies. Therefore, the class both taught eachother with their research and collected an amazing collection of possible materials for the design project. The result was a library of plants for this site.

Plant Materials

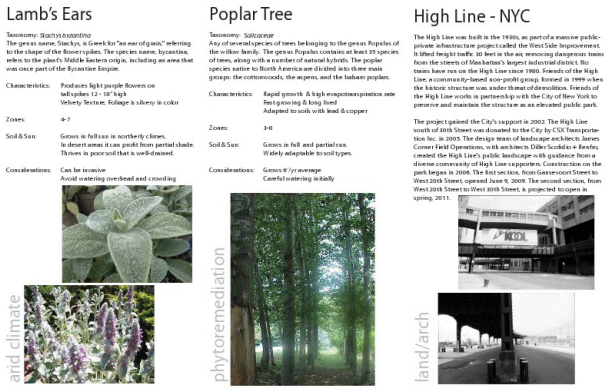

Figure 1. Shuli Steele Plant Research

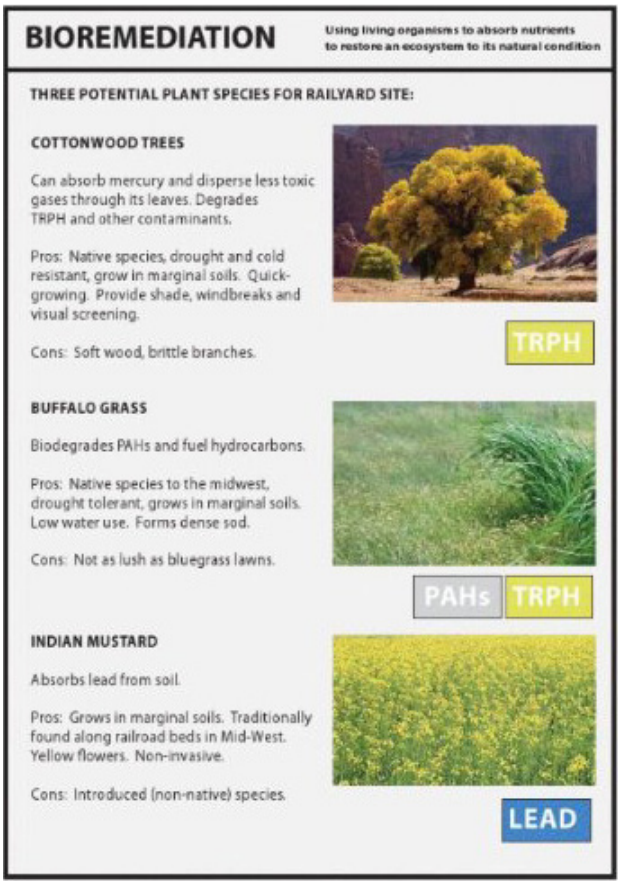

Figure 2. Mike Stephens Plant Research

Individual Projects

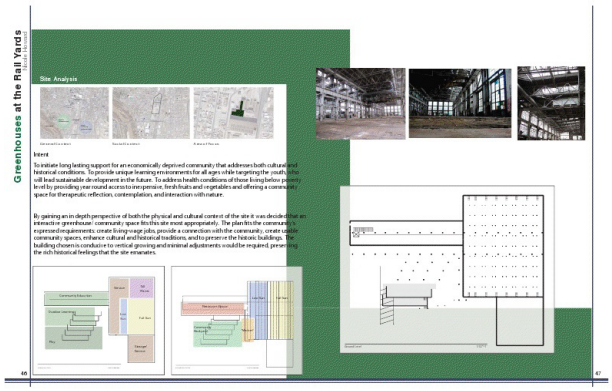

Figure 3. Greenhouse at the Rail Yards by Nicole Howard

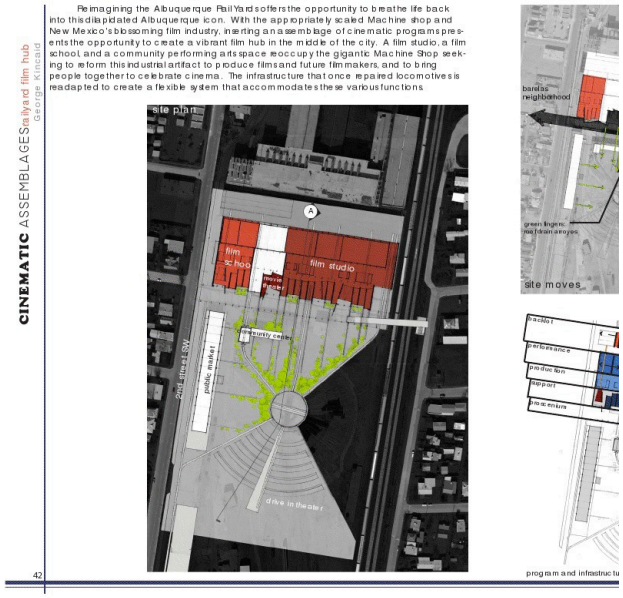

Figure 4. Cinematic Assemblages by George Kincaid

CONCLUSIONS

The ultimate aim of this exploration was to question the traditional role of the design professions and the potential for reframing social and economic change with a different reference. This paper asserts that architecture, as with fine arts, can become a new de-facto MBA, using the Pink formula, to rethink the creation of future activities and meaning in existing spaces. This kind of work cannot be easily outsourced to designers abroad.

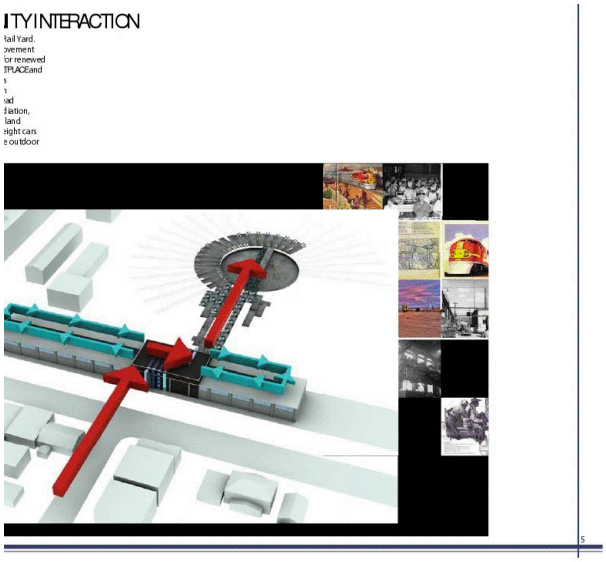

Figure 5. Storehouse + Turntable by Krista Klancke and Matthew Hoey

Since the inspiration of this studio was the book by Daniel Pink with his recommendations, conclusions are based upon the parallel studio goals.

The conclusions drawn from this experiment range from being obvious to highly personal and opinionated.

Materials Skills: Research
With the phyto-remediation plant research required, it was important to see if architecture students could use their design understanding to go beyond the traditional areas of architectural material expertise. The results of the group of students were outstanding. Not only did the students understand the design and material implications, but their work also served to teach each other about the range of material plant possibilities and requirements in an area not considered strictly "Architecture." While architecture educators intrinsically understand the power of material-design research skills, it is not always presented in an educational setting as forcefully as in the design firms struggling for survival. It seems this experiment result provides evidence that students, and architects, can carve out a specific expertise niche and move to a high level of expertise in short time. In a transforming economic environment, this is an important skill for adaptation.

Conceptual Understandings
Daniel Pink's book provided an outline of right brain dominated thinking, for business and cultural leaders. If innovation can be measured in these terms, then the results of the student work, in my personal opinion, can be abbreviated as following:

Design
Asking students to think of design as re-organizing existing spaces and images for a new purpose as opposed to new inventive, theoretical design was definitely a challenge. While most students were open to this different ways of thinking about design, some resisted aggressively. Their focus was on "When do we design?" On the other hand, there were those that expressed a desperate desire to do something different from the iconic design studios but the skills to reframe a new meaning in an existing space was limited.

Symphony
Dealing with multiple contexts, which were so strong in this case was also a challenge. In this regard, students gravitated to that part of the site or building they felt most comfortable. I believe that was a useful strategy for studio and professional workers as long as there remains an openness to other potential conceptual sources.

Empathy
While working with this and other studios, my impression of student middle class suburban values were reinforced. Even though students were coached to think about the community of users, comments similar to, "I wanted to design a …." Was often heard. The students consistently rejected consideration of questions related to the point of view of the users or neighbors. The context of this experiment did not seem to lend itself to the development of empathy on the part of students. However, a few did understand that the projects would not live in a world isolated from neighbors.

Story
Although the book portrayed a very strong sense of story telling and its importance in dealing with the world, the students quickly reverted to the default "archi-speak" so prevalent in education. The goals of the studio, in this regard, were beyond the reach of the exercise.

Meaning
Of all the goals attempted, this was the most difficult. Students in a late stage of their education

spent much time developing an abstract theoretical notion of purpose that was not always connected to this industrial place or the community. Students made valiant attempts to provide a bridge meaning from an abstract concept to redefining the meaning of materials and seeking community acceptance. Those projects that created an abstraction from historical and cultural adjacencies were outstanding in their exploration. It seems other readings from the discipline of anthropology or business would have been more appropriate for basic understanding of the human conceptual meaning. However, the industrial nature of the place served to indicate to the students that they had to rethink their use of abstract conceptual framing. The results were definitely a mixed bag of excellent thinking and confusion but very encouraging.

Play

Of all the qualities Pink recommends, the idea of "work" as play is most apparent in architecture students. The ability to explore, rethink, experiment to create a new future is what the schools teach. While there were those that thought of the studio as designing a "building" most were excited about the new research and conceptual reframing, the material sketches, the required rapid response, and exploration (play) of a different kinds of future activities they had not previously envisioned in existing spaces.

Student Data

It seems the most obvious conclusion is to note the lack of uniform understanding of student aspirations, explorations in advanced studies, and the type of work students engage after graduation. For instance, with detailed questions, educators need to know the answer to the question, "Did your design education help you in a specific way for the work you currently engage?"

Personal Explorations:

During the course of this studio experiment, two students revealed that their passion for architecture had been stifled by the program and were only completing the course because they had gone so far it was too late to turn back. For them, this studio proved to be a means for establishing a new relationship with the profession. This was very encouraging to me.

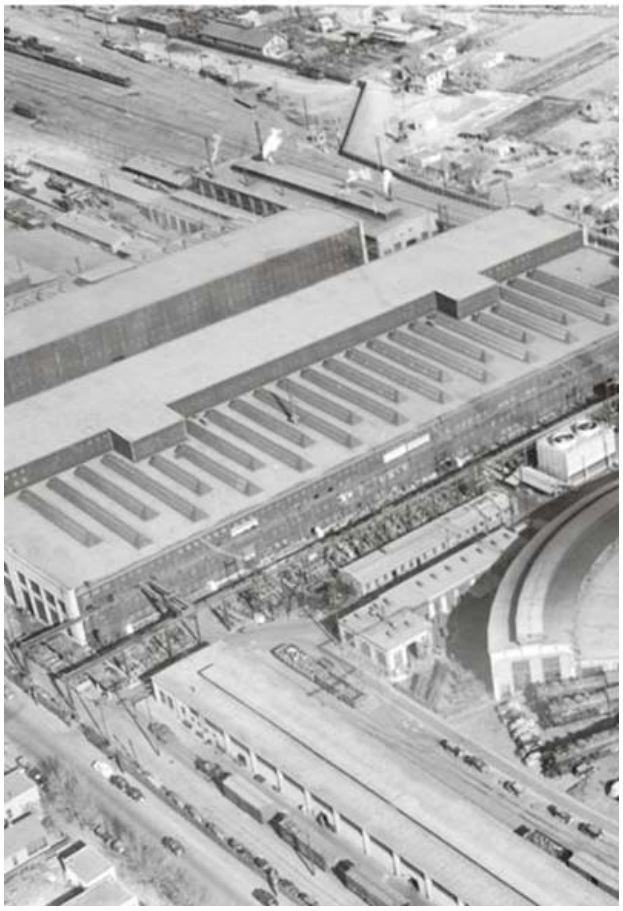

Figure 6. ABQ Rail Yards

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