In the past couple of years, I have traveled to enough states and countries to have earned elite status on 4 different airlines.

That view from 30,000 feet is an amazingly privileged one.

What I’m here to do today, is to share a little about what I’m seeing and hearing as I come down from 30,000 feet, and tell you why these experiences are convincing me that this is THE century for the environmental design professions to step up to the plate and make a real difference.
What do we need to know?  
How do we need to practice?  
With whom do we need to connect?  

What does it mean to you?

What do we need to know, how do we need to practice, and with whom do we need to connect in order to achieve our potential and make the world a better place in this 21st century and beyond?
Before I get into it, however, I need to set the stage, provide the context. For quite a few years, I have been thinking and talking a lot about the need for the profession of architecture to complete its transformation from a 19th century institution to a model of 21st century vibrancy, value, and vision. As we all know, in the 19th century, professions were established as social institutions, with the public granting status, title, rights and responsibilities to individuals who have demonstrated special knowledge that they will use for the public good. Our profession has had remarkable success as this 19th century institution.
In the beginning of this century, thanks to our patterns of consumption and the success of the design professions, The products of design, buildings, homes, consumer products, cars, ....Are getting more popular press than ever. Design sells. Design seems to matter in ways it often has not.
But, there are many early 21\textsuperscript{st} century “vibes” out there seeming to call for some accelerated change: The denigration of all professions in our consumer-focused, litigious society; Client demands for increasingly specialized expertise; Globetrotting stars and multi-national firms; Outsourcing and offshoring. How do architects and planners run successful practices in this environment?
And then there are today’s more challenging headlines – diminishing and degraded natural resources, the widening gulf between the haves and have-nots, sick buildings indoors and poor water quality outdoors, rising public obesity and declining public health,
and of course, securing a nation and terrorizing a generation, (9/11 photos).
These headlines lead to the big question: How do the design professions use the process of design to serve their public purpose in this 21st century?
Until fairly recently, based on these observations and questions, I described architects and our industry as standing on the edge of change. I now know I was wrong.

We’re not standing on the edge. Depending on your point of view, we’ve either dived or tumbled into a major realignment of the global paradigm. We’re in the thick of it. The choice is no longer whether to step back or go forward: it’s how to navigate. We have two options: Either we are terrified passengers tightening our seatbelts or bold navigators charting a clear path through changes that are already profoundly transforming the world in which we practice and the communities in which we live. It’s the difference between and 8-track and the IPod.
The World is Flat

Why? Because the world is flat and spiky.

“The World is Flat”, the book by New York Times columnist and best-selling author Thomas Friedman has been bringing some clarity to these vibes I’ve been sensing. If you haven’t read it, I would strongly recommend that you do. He asserts that the world has entered its third great era of globalization. Gutenberg and the invention of movable type was the first, The Industrial Revolution, was the second. In this third era, the one we are now living, ubiquitous telecommunications have flattened the world so that all countries and economies can compete on fairly equal terms. The digitizable routine-portions of the service sector, architecture included, will continue to be outsourced abroad. (As an example, in 2004, 100,000 U.S. tax returns were outsourced to India.) The world is moving from a “primarily vertical (command and control) value-creation model to an increasingly horizontal (connect and collaborate) creation model”.

As Friedman says, when he was growing up, his parents used to say to him, “Tom, finish your dinner – people in China and India are starving.” A generation later, his advice to his children is: “Girls, finish your homework – people in China are starving for your jobs.”
Richard Florida develops the flat argument with his own spiky one. He disagrees with Friedman’s assertion of emerging economic parity regardless of geography, and charts significant and growing disparity in our increasingly interconnected globe. “Surprisingly few regions truly matter in today’s global economy”, and the distance between the haves and the have-nots is growing, as a few growing cities continue to be the world’s most robust economic engines. “Concentrations of creative and talented people are particularly important for innovation.”
Regardless of whether you agree more with Friedman or Florida, there is not doubt that we are more interconnected and interdependent than we have ever been. The more I travel around this curved world, the more I understand its flatness and spikiness, and the more transformational the change I see coming for our professions.
India

There are 7-11’s on every block in Tokyo, and Starbucks in Istanbul, and McDonalds in India and everywhere. I can pick up my email on my Palm Treo on the tarmac at any airport in the world.
Japan

There are 7-11’s on every block in Tokyo, and Starbucks in Istanbul, and McDonalds in India and everywhere. I can pick up my email on my Palm Treo on the tarmac at any airport in the world.
Germany

There are 7-11’s on every block in Tokyo, and Starbucks in Istanbul, and McDonalds in India and everywhere. I can pick up my email on my Palm Treo on the tarmac at any airport in the world.
Italy

There are 7-11’s on every block in Tokyo, and Starbucks in Istanbul, and McDonalds in India and everywhere. I can pick up my email on my Palm Treo on the tarmac at any airport in the world.
The practice of architecture has to change if it is to survive in this digitized interconnected world. To **survive**, we need to focus beyond the digital on the things that cannot be digitized and commodified: the “touchy-feely service stuff”. But to **thrive**, we need to create value through more specialized knowledge, especially science and technology knowledge, more innovation, more collaboration and more advocacy. We need to change the who, how and what of architectural practice. We know the where and when in a flattened world: it’s everywhere and it’s 24-7. But the **who** needs to become more inclusive, the **how** needs to become simultaneously more personal and more digitized, and the **what** needs to become more innovative and knowledge-based.
To better explain what we need to know and do to sustain our profession in this flattened world, I’m first going to briefly back up again, to look at the what/how/who of architecture in previous eras. Looking back is useful, because as we all know too well, “Those who fail to understand the mistakes of the past are condemned to repeat them.”

Let’s go back to pre-Gutenburg. Up until 15th century Italy, design and construction were not split. Architects were hands-on. There was no formal education. Knowledge was handed down from one master builder to the next. This knowledge was based on tradition and geometry. Little new knowledge was developed or needed. Theory and practice were united. Let’s face it, brick was a brick.
Then came the age of enlightenment, the Renaissance. Gutenberg started printing bibles. Alberti started drawing perspectives. Science reigned. New knowledge led to increased specialization, led to more new knowledge. Design and construction split. Theory and practice separated.
1860’s

American city undergoing massive changes:
• Industrialization, immigration urbanization
• After Civil War: Large-scale public works
Public need for guarantees of competence and expertise
• Someone looking out for the public good, to balance private interests
• Led to era of professionalization
American architects
• Needed to improve quality of new structures
• Needed to raise status of profession

This remained the pattern until the second era of globalization and knowledge generation, the Industrial Revolution. The mid-nineteenth century saw unprecedented industrialization, (what we’d now call tech. Transfer), immigration, and urbanization. These challenges required the creation of significant new knowledge and technology, and led to the professionalization of all contemporary professions. Design and construction were further split and specialized.
The Profession of Architecture in the US: Some Milestones

1850 there were  
591 Architects in U.S.,  
0 Students,  
0 Schools

AIA was founded almost 150 years ago in great part to help architects respond to changes unleashed by the Industrial Revolution, and to protect the public's health, safety and welfare in a much more complicated and messy world.
Richard Morris Hunt finishes at the Ecole
Hunt starts his atelier, and with others, organizes the AIA in New York City
First school of architecture, MIT
HH Richardson returns from the Ecole and starts his atelier
Chicago Fire
First Edition of AIA standard documents
Columbian World Fair, Chicago
First registration law: Illinois

1897

10,600 Architects, 400 students
11 schools

The AIA passed has passed that test with flying colors and the profession, not to mention the world, is better for it. Today we’re at a similarly defining moment. This much is clear. It’s also clear that we, as leaders, can do no less than those who came before us.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1912</td>
<td>ACSA established</td>
</tr>
<tr>
<td>1919</td>
<td>NCARB established</td>
</tr>
<tr>
<td>1940</td>
<td>NAAB established</td>
</tr>
<tr>
<td>1950</td>
<td>19,000 Architects, 10,150 students</td>
</tr>
<tr>
<td>1957</td>
<td>AIAS established</td>
</tr>
<tr>
<td>2000</td>
<td>103,000 Architects, 33,600 students, 110+ schools</td>
</tr>
</tbody>
</table>

If we believe that the world is flat and spiky, and I do, then we have to set a path for a new, preferred destination for the environmental design professions. This preferred destination will require us to be more knowledgable, more technologically advanced, and more collaborative.
What do we need to know?

Need to know more than ever. There are more and more things to know more and more about: New materials, new technologies, new construction methods, new evidence-based design. With Americans spending 85-95% of their time indoors, building design is of utmost importance not only to economic ROI, but to personal and public health.
Materials and technology.

*This isn’t your father’s profession......*

Recent disasters have raised safety and security concerns.
Changes in building codes.
Public Health: Livability

Public Opinion Polls

- 82% agreed with the statement, “Federal, state and local governments should focus on revitalizing existing communities as a top priority, instead of extending public services to new communities that have not yet been built.”
- 68% said that “Cleaning up contaminated areas caused by pollution so they can be used for environmentally safe new development” was, among many projects that government could spend tax dollars on, a “very important” priority.

Public Health

Dr. Richard Jackson insists that architects and planners are public health experts.

Relationship between the design of the built environment and obesity, etc.
Public Support for Smart Growth

57% favor control over sprawl 1999 Time/CNN Poll
88% favor preserving open space from new development 2001 Nat’l Association of Realtors Poll

Boston Globe editorial: Time to take a second look at density February 16 2004

Public Opinion polls show increasing support for smart growth.
And we’re understanding that smart growth and livable community design can have real economic impact.

Recently, the U.S. Federal highway Administration has awarded the AIA a $2 million contract to study the benefits that well-designed transportation projects bring to American communities. Has to do with livability, economic development, protecting the environment, designing more attractive, healthy, and livable communities. AIA as vital interface between policy makers and the profession.
Smart Growth is NOT “dumb” growth, not Sprawl

Sprawl defined:
• Land gluttony,
• Lost time: In the last three decades, total vehicle use in the U.S. has more than tripled, as people commute longer to work, and have to drive everywhere for everything.
• Social isolation
• Resource depletion

What is smart growth? It’s many things, but it’s not sprawl.
• Sedentary lifestyle, leading to obesity and diabetes
• Single use and income neighborhoods, leading to little social diversity

Our unsmart development patterns affect quality of life.
Our unsmart development patterns have environmental impact.
Sprawl kills people, making them fat, tired, depressed, stressed, more likely to die in auto accidents
Sprawl kills rural America, small towns, small business, small schools, and our natural environment.

Hirschhorn, Joel, Sprawl Kills.

Some, such as Delores Hayden and Joel Hirschhorn, see a conspiracy of the beneficiaries of sprawl, the developers, realtors, big-box retailers, fast-food companies, and maybe even the pharmaceutical companies who now market lifestyle drugs to overcome the effects of sprawls unhealthy consequences.
Although many buy houses far-outside of urban areas because of lower initial housing costs, there is a false economics of sprawl:
• High health care costs
• High food costs
• High property and vehicle maintenance costs
• Higher taxes for public infrastructure

For developers, it’s much easier to make a “fake City” than it is to work on real downtowns with their patchwork landholdings and planning restrictions.
Not all Suburban Development is Sprawl

The vast majority of the U.S. population lives in suburbs and exurbs. The world’s population is rapidly following our suburban example. Architects and planners late 20th century dismissal of all that is suburban has not been constructive. 

But we have to figure out how to do it better.....

But, architects and planners late 20th century dismissal of all that is suburban has not been constructive, as we must engage in constructive change if we’re going to do it better.
A critical area tightly related to smart growth is sustainable design. We need to know much more about how to design more smartly and sustainably. Sustainable design is slowly becoming a market mandate. Some states are adopting minimum sustainable design standards. Some states are asking our professional organizations for assistance in drafting this legislation.
The popular press is touting “green”. Many owners are looking for LEED AP after their design professionals’ names. Building owners are seeing predictions for a 60% increase in heating bills this winter and are wondering who to turn to for help in cutting their costs. We need to make sure that they know to turn to architects and planners for knowledgeable advice.
We’re starting to have credibility on this issue. In June of this year, the U.S. Conference of Mayors approved the “2030 Challenge” for city buildings, citing a similar sustainable design resolution passed by the AIA. The ultimate goal will be for all new city buildings to use zero fossil fuel energy by 2030. We are now planning for the Mayors October Green Building Summit.
Sustainability is a three-dimensional opportunity. Sustainable design is not about command and control.
In fact, we could say our society’s unsustainable practices and habits are the result of a failed command and control paradigm, promulgated by big business and government. And just like in the 1850’s when professions were created partly to balance the “evils” of business in support of the public good, we once again need to speak for the good.
<table>
<thead>
<tr>
<th>SUSTAINABILITY PRINCIPLES</th>
<th>SUSTAINABILITY BEST PRACTICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ecological model illustrates that we are</td>
<td>Advocacy</td>
</tr>
<tr>
<td>nature and that all communities of all things are</td>
<td>Advocate design and planning that result in a</td>
</tr>
<tr>
<td>connected.</td>
<td>50% reduction of fossil fuels in building and</td>
</tr>
<tr>
<td>A sustainable society designs and builds</td>
<td>communities by 2010 and a complete</td>
</tr>
<tr>
<td>sustainable structures and communities.</td>
<td>elimination of fossil fuel consumption in</td>
</tr>
<tr>
<td>The efficient use of renewable energy and natural resources</td>
<td>building operation by 2030.</td>
</tr>
<tr>
<td>is as important as the efficient use of non-renewables.</td>
<td>Develop a communication plan for the AIA</td>
</tr>
<tr>
<td>Design and retrofit buildings and communities to</td>
<td>Sustainability Agenda</td>
</tr>
<tr>
<td>transition out of fossil fuel dependency ... to</td>
<td>Promote and advocate sustainable design</td>
</tr>
<tr>
<td>function unplugged.</td>
<td>and planning in the development of the</td>
</tr>
<tr>
<td>Build well and out of harm’s way.</td>
<td>Greening of the Schools and their curricula -</td>
</tr>
<tr>
<td>This is not a “business as usual” period in</td>
<td>from Headstart to continuing education for</td>
</tr>
<tr>
<td>professional design practice and the</td>
<td>adults.</td>
</tr>
<tr>
<td>opportunities that present themselves will define</td>
<td>Promote legislation, codes, appropriations,</td>
</tr>
<tr>
<td>the profession for the next century.</td>
<td>research and initiatives that support</td>
</tr>
<tr>
<td></td>
<td>sustainable buildings and communities.</td>
</tr>
</tbody>
</table>

Sustainable design must be an ethical mandate for our professions. This means that all work done by all architects and planners should support sustainability, and that architects and planners should be vocal advocates for sustainable practices and standards.
How do we need to practice?

Our contemporary context and these areas of knowledge require us to practice differently.

25 years ago this August, IBM introduced the personal computer. I wonder how many architects at the time had any inkling how this innovation was going to affect the practice of architecture, everything from voice-over-internet calling to peer-to-peer file-sharing. Cheap, fast global communication, online commerce, the Web... it’s a different, flatter, and faster world.
Integrated practice is the 21st century horizontal method of project delivery. It is all about connection and collaboration. The new tools of Building Information Modeling and new methods of flattened project delivery provide us with the opportunity to gain significantly greater influence in design and construction. BIM is equivalent to Gutenberg’s moveable type, and Alberti’s perspective. In a workshop immediately following this one, you can hear more about Integrated Practice from Glenn Fellows and Markku Allison. For those of you attending that workshop, I’ll give you a little preview. For those of you attending other workshops, I’ll give you a basic primer.
We know and have known for a long time that our project delivery methods are not working. There is too much room for error, too much antagonism, too much time lost, too much litigation, and too much difficulty to achieve quality design and construction in our current methods. Integrated practice has the real potential of reconnecting the increasingly specialized expertise of design and construction.
We need to learn how to make important design decisions even earlier in the design and delivery process.
The three-legged stool has lost stability. We need more legs. In order to maximize the potential of integrated practice for the profession and its clients, we need to participate in the design and development of the process and the tools.
Why is BIM happening?

1/3 waste?!!

2000 Economist Article
Inefficiencies, Mistakes And Delays Account For $200 Billion Of The $650 Billion spent annually in US construction industry

(New Wiring, The Economist, January 13, 2000)

There is far too much time, materials, and resources wasted in our current project delivery methods.
2004

**NIST Study**

$15.8$ billion / year lost in construction industry due to lack of interoperability

NIST

Interoperability of software adds even more waste.
Our ability to think synthetically, 3-dimensionally, will become ever more important. We need to increase our knowledge about advancing construction materials and methods, and ever-changing codes and regulations.
We need to redefine risk allocation, contractual rights and responsibilities and intellectual property laws, to more appropriately share authority and accountability. Integrated practice is not about the architect as commander and controller.
Outcomes of Integrated Practice

Better communication on the critical issues facing practice
A better process for working with clients, consultants, & builders
Value-based compensation models
Appropriate sharing of risk & reward
A more relevant profession that exceeds expectations
Frees architects to be designers again

It’s about the architect and planner as integrater and synthetic thinker. The architect and planner as information central. The architect and planner as designer. This is our time.
With whom do we need to connect?

In order to practice in an integrated way, we need connect many dots.

The complex, messy problems and predicaments of this century demand multi-disciplinary and cross-disciplinary thinking. Not only across our design and engineering disciplines, but engaged with social and physical scientists.
We can’t stay in disciplinary silos. Today’s problems are too complex for any single discipline to fix.
The 21st-century connect and collaborate model cannot be achieved without increased diversity of all kinds in our profession. **Diversity** is critical to our profession’s relevancy and success, and has presented a real challenge for us. While we are gaining ground, we still have far to go.
Diversity is here, for almost every other occupation but ours. Only 12% of our architect members are female, even though almost 1/2 of architecture students are female. Fewer than 9,000 of our 58,000 architect members, less than 16%, are 40 or younger. These statistics are sobering.
Why? And why is diversity so critical to our industry’s future success? On a cold, pragmatic level it comes down to this: If our industry does not have access to a complete and inclusive labor pool, we cannot possibly know enough or be innovative enough. Without access to every ounce of the rich cultural, genetic, creative, and spiritual energy that is a unique blessing and a precious resource of our multicultural society, we will be drinking from a too limited collaborative pool. Success in achieving a diverse and inclusive industry that mirrors the society we serve will not only improve our marketing and technical edge, it will also, I believe, inevitably lead us to be stronger advocates for the public good, stronger advocates to “pass it on”.
What this means to You

First, it means that you will have opportunities to practice in this 21st century that you couldn't have imagined only a short time ago. And when you're engaging in that practice, you are advocating. Architects and planners are advocates whether they want to be or not. In each design and development decision we make, we are advocating something. The ways in which we practice and educate and work have intended and unintended consequences and results, and it is through the application of our talents and knowledge through our work that we are the most powerful advocates. We impact the lives of every man, woman and child. Our profession in the U.S. employs more than 281,000 people. Architects drive the design/construction sector of our nation’s gross domestic product, which represents over 8 percent of the economy. Our most powerful advocacy comes through the products of our practices, the built environment that is designed in our offices and cities.

But Architects and planners also need to assert their voices and minds in the political process, assert advocacy outside of our routine, knowledge-driven practices. We can – and must – apply our skills and knowledge to the political and government policy process.
I am hopeful. I started this talk by speaking of the privileged position of being at 30,000 feet. As architects and designers, whether at 30,000 feet or not, we all hold privileged positions. I started this talk by speaking about the privilege of serving as AIA president. It is a real privilege to meet architects all over the world trying to do good, believing they can change the world. Well, we need to change it, and it is our time to do so.

In this flattened world, we are all responsible for the future of our profession and of our planet. We have the skills and knowledge and purpose and vision. The impact of what we design and build, and what we stand by and allow to be designed and built by others, is mighty. In this flat and spiky world of the 21st century we cannot be content to simply be passengers in the crowded seats at 30,000 feet. We need to think about our grandchildren’s grandchildren as we design and we build. It is for them that we must advocate. It is them we must serve.
Thank you again for allowing me the opportunity to spend a little time with the profession’s future.