# CIDA Standards Revision Research Project: Summary Report

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## INTRODUCTION

The Council for Interior Design Accreditation (CIDA) is undertaking a review of its accreditation standards for interior design programs.  As part of this review, it is gathering information about trends and developments in the built environment, interior design practice, the interior design profession, the interior design industry, and higher education. This information will help inform the standards review process by identifying areas of skill and knowledge that designers will need in the future to practice successfully.

The following summary presents an overview of the findings of this research.  It seeks to present a coherent scenario of current and emerging trends that are likely to impact interior designers and interior design students in the near future.  This scenario is not a prediction of what *will* happen, but rather a narrative, based on a compilation of data, expert opinion and forecasts, of how the future *may* unfold.  Trending and forecasting are at best well-informed guesses about the future based on known behavior in the past. They rely heavily on identifying patterns and watching for where patterns may be changing. In tumultuous times — such as the present — it can be difficult to discern what is changing and what is a casualty of change.  Thus, this summary should be viewed as a "best guess," not a prognostication, of what developments will shape the industry for tomorrow's designers.

## METHODOLOGY

This report was prepared using the methodology known as environmental scanning.  It involves searching for information on trends and developments in a set of pre-defined categories.  In this case, the categories were set forth by CIDA in the Standards Review Revision Project work plan document.  They included the built environment, interior design practice, the interior design profession, the interior design industry, and higher education, as well as more general categories, such as demographics, globalization and technology.  As stipulated in the work plan, an Internet search was made of major information sources and organizations that provide data, information and forecasts in these subject areas.  A list of major sources is provided at the end of the report.  They include government sources, such as the U.S. Census Bureau and Bureau of Labor Statistics, major news sources, trade / professional associations and publications, and widely recognized trend and forecasting sources, such as the World Futures Society and leading market researchers.  In addition, a keyword search was made using Google and Google Scholar for a variety of terms used in the headings for the trends listed below.  In most cases, items reviewed were summaries or reports of others' research and data, not the original data itself.

After a preliminary search, a proposed list of trends for further research was provided to CIDA for review and comment.  Based on the feedback from CIDA, further information was collected on the trends included in this report.

As part of the research process, individual articles and reports were gathered and provided to CIDA as supporting documentation for the trends listed in this report. Altogether, some 300 supporting documents were provided to CIDA, gleaned from over 1,000 searches.

In order to be considered a "trend" and not just a fad or topic of interest, developments needed to be independently identified and substantiated by at least three or four different sources over a period of time and to be projected to continue to have a future impact for some time to come. The timeframe for most of these trends is within the past two or three years, with a projected development or impact within the next three to five years.

## GLOBAL DEVELOPMENTS: THE RISE OF RDEs

While the U.S. remains, and is likely to remain for some time, the world's largest economy, future growth will be greatest and fastest in those rapidly developing countries that are undergoing major shifts in their economies and industries, especially in the BRIC countries (Brazil, Russia, India and China) and parts of Africa, and possibly others, such as Turkey, Saudi Arabia and Mexico. Several trends are converging to make this a likely scenario.

**Shifting geopolitical and economic power.** As the U.S. and Europe continue to seek a path toward a more robust recovery, economic and political power and influence are shifting to countries with healthier economies and rapidly expanding educated and consumption-minded middle classes. These countries are sources of natural resources and cheap skilled labor that make them highly competitive globally and strategically positioned politically. According to the forecasters at Global Trends:

> Economic power is shifting to the rapidly developing economies (RDEs) of BRICS (Brazil, Russia, India, China and South Africa) plus a next tier of countries whose economic power and market attractiveness is increasing. Already some of these, including Saudi Arabia and Turkey, are members of the newly inaugurated G20. The result will be an increasingly multipolar market landscape in the next ten to twenty years – one that is already starting to develop. The triad markets of the 1980s (US, Europe, Japan) will no longer drive wealth creation and consumption alone.

These countries are abuzz with construction and infrastructure projects. As future Olympics hosts, Russia and Brazil have been investing heavily not only in Olympics-related construction and infrastructure projects but in updating and modernizing major cities to present a good face to the world and show off their economic prowess. The increase in affluent households in China and India has created a demand for better housing and more sophisticated design of public buildings, retail spaces, hotels and restaurants, and entertainment venues.

**Urbanization.** In developing countries around the world, the move toward more industrialization and technological innovation is resulting in mass migration from rural areas to cities, creating demand for affordable housing, new public spaces and better working environments. By some estimates, 70 percent of the world's population will live in cities by the year 2050. According to a recent report prepared for the construction chemicals industry, industrialization, along with green buildings, is one of the primary forces driving demand for construction throughout the developed and developing world:

The urbanization trend is more pronounced in the developing world where population movement from rural areas to urban increases at a much higher rate. Urbanization drives demand for infrastructure both in the commercial and residential sectors, ultimately creating growth opportunities for building materials and construction chemicals. As a result of mass migration of people from rural areas to developed urban economic zones, demand for housing and infrastructure is rapidly surging. A case in point is China, where such population movement was most visible especially in the recent years. Urbanization in China has reached a level of 40% and is more likely to increase to 60% in the near future, similar to many developed nations. Such population movements require improvements in infrastructure such as adequate housing, highways, roads, water and sewage facilities and commercial and retail development.

In addition, urbanization will increase demand for education and healthcare facilities, as well.  It will also introduce a new generation of urban dwellers to the benefits of good design.

**Globalization of Products and Services.** One of the trends fueling the rise of developing economies is the growth of low-cost means of production along with the increasing ease of global commerce.  Large international manufacturing companies are being upstaged by smaller, more adaptable and nimble producers using new, more affordable technologies. Billion dollar tech companies arise from the work of a small hive of collaborators.  Global communications, social networks and cloud-based technologies and file sharing, easily accessible through cheap mobile devices, are pushing distribution channels across borders and into virtual markets.  Say the forecasters at [Global Trends](#):

Complex, global value chains are being redistributed by new technologies, labor market shifts and connectivity. Small-scale manufacturing, including 3D and soon 4D printing, and shifting production economics are moving production closer to markets and enabling mass customization — not just by companies but by the tech-enabled maker movement which is going mainstream. Rising labour costs in developing markets, high unemployment in developed markets, global access to online talent and knowledge, plus advances in robotics mean reshoring of production to developed markets will increase. Mobility, flexibility and networks will define the future industrial landscape.

As discussed below, architecture and interior design are among the professional services likely to face growing global competition in the coming decade.

**Global construction forecast.**  Combined, these trends will have an impact on construction worldwide. Global Construction Perspectives, a British-based consultancy specializing in the construction industry worldwide, and Oxford Economics, a consultancy allied with the school of business at Oxford University, have prepared a [joint global construction forecast](#) for the year 2020.  They foresee a 67 percent growth in construction worldwide between 2010 and 2020.  Regionally, they project the following high growth areas:

The next decade will see a continuing shift towards Asia and other emerging markets where rising populations, rapid urbanization and strong economic growth

are drivers for construction. Meanwhile, construction in most developed countries will be constrained by large public deficits, austerity programs, muted population growth and limited economic expansion. China's rapidly growing construction market, boosted by stimulus spending, became the world's largest in 2010, overtaking the US.

By 2020, emerging markets will account for 55% of global construction, up from 46% today. Construction will make up 16.5% of GDP in emerging markets by 2020, up from 14.7% in 2010. This shift is led by China and India, with strong contributions to growth from Indonesia and Russia.

US construction will stand out from most developed countries by registering a sharp cyclical rebound. Growth in US construction will be driven by a strong upturn in residential and non-residential construction. Population growth will help drive this growth along with cyclical factors.

In other developing countries growth is expected but at lower rates.


## BUILT ENVIRONMENT TRENDS:  BUILDINGS THAT MATTER

Much has changed in the building and construction industry in the past decade as a result of the global economic downturn and the growing interest in measuring building performance. One of the consequences of the widespread adoption of green and sustainable practices has been to change the way builders and clients think about buildings.  Not so long ago, buildings had a functional purpose and a symbolic and/or aesthetic purpose.  Today, buildings also have what might be called a "performative" purpose:  In addition to fulfilling a practical function (e.g., providing employees a place to work, creating a safe and sanitary environment to treat and care for the sick, giving residents or guests somewhere to sleep, bathe and keep their things), buildings are also expected to accomplish a result or goal, such as encouraging innovation, promoting healing, creating community, enhancing socialization, or providing a unique interactive experience.  In addition, there are higher standards for the things buildings must NOT do, such as waste water and energy, contaminate the air, or prohibit access to persons with disabilities.  It is no longer enough for buildings to be and to mean; today's buildings must *matter*.  The following are some of the developments that are driving this trend.

**Smart buildings.**  Today's smart technology is about more than using sensors to operate lights or adjust temperature.  New developments are being used to monitor building performance, indoor air quality and occupant safety.  Facilities.Net, a website that provides information to facilities managers, recently reported on Microsoft's use of smart technology to centralize monitoring of its 125-building campus in Redmond, Wash.:

Through extensive use of fault detection and diagnostics and a software system that allows the different buildings and their systems to talk to each other and to the campus operations center, Microsoft is showing that it is possible to take buildings that weren't part of a collective effort and bring them under one umbrella.

Similar technologies are being used to create "smart" communities.  For the past three years, *FastCompany* magazine has published a list of the Top 10 Smartest Cities in North America.  They define smart cities as those that use mobile technology to be more efficient, deliver more services and optimize infrastructure, including building performance.  In cities like Boston, Washington and Toronto, city governments are providing apps to involve citizens in many areas of government, including reporting traffic issues, crimes and infrastructure problems. The data is then directed to the appropriate agency for action and follow-up.

Smart technologies for the home are looming on the horizon.  Renowned designer Philippe Starck had lent his talents to creating a home thermostat that operates through an app on Apple or Android smart devices.  In addition to controlling the temperature setting, it also provides analytics on the home's energy use and lets the owner know whether or not they are meeting their energy goals.  Smart technology is also being developed to track health and fitness behaviors.  The *Denver Post* recently ran a story on a model "Intelligent House" developed to demonstrate already available technologies: "The house represents big-time thinking from big-time companies like Johnson & Johnson, General Electric, Cisco, Ashton Woods Home, Canyon Ranch and others. Together, they hope to reduce not just Americans' waistlines, but also the $3 trillion a year this country spends on health care — 70 percent of which we bring on ourselves because of lousy lifestyles."  The home features a smart kitchen that tells you what to eat if you're trying to lose some weight, or will read out recipes based on the ingredients you have available in your pantry or refrigerator. It also has a smart mirror that knows your weight, blood pressure, and the last time you worked out, and can tell you if you need to lose weight.

**Conservation and sustainable construction.** More and more, clients and governments are demanding that buildings achieve higher standards of performance in regards to conserving energy and water, as well as meeting or exceeding LEED standards for sustainable design and construction.  Interest in repurpose and reuse of existing structures, as opposed to new building, has also increased, especially in cities looking to revive once-thriving neighborhoods and business centers. According to the U.S. Green Building Council, its LEED certification and credentialing programs have produced more than 184,000 LEED credentialed professionals and over 51,000 projects participating in LEED worldwide.  In November 2013, the National Building Museum hosted a panel discussion to examine current strategies in schools to guarantee access to daylight and healthy air quality, promote the use of green cleaning products, and reduce costs. A survey conducted by McGraw-Hill Construction found that between 2011 and 2013, green construction in the retail and hospitality industries more than doubled, with growth expected to reach even higher levels by 2015.  Some cities have already passed laws mandating reporting of building performance to increase accountability, and in the ICC has also recently introduced stricter conservation codes.  With government and industry goals for net-zero energy waste, net-zero water waste and even net-zero waste and trash, it's clear that green is no longer the exception but the norm.

**Climate change / natural disasters and environmental hardships.**  The devastation from unprecedented catastrophic natural disasters and the effects of climate change on health, safety and agriculture have created new challenges for building and construction, which need to anticipate and mitigate the potential damage from unpredictable impacts. This has given rise to a new category of skills and knowledge in building and construction

— resiliency. The knowledge and technology already exist to some extent, according to experts, but may be cost-prohibitive for many homeowners, depending on the probability of losing their home. As the issue continues to be explored and debated, architects and designers will need to be prepared to advise their clients on the options available and to help them weigh the cost-benefit of resiliency solutions.

**Integration of nature / natural settings.** As we spend more of our time in interior environments gazing at screens, the desire for natural views increases. Research increasingly supports the instinctive notion that people are healthier, happier and more productive when they have access to nature and natural surroundings. The concept of "biophilia" has been around since the mid-1980s when noted biologist Edward O. Wilson coined the term and has been promoted in the architectural and design field by Judith Heerwagen and others. Roger Ulrich's studies of the positive benefits of natural views in healthcare environments and Judith Heerwagen's work on habitat and the psychosocial uses of spaces pioneered the biophilic approach to architecture and design. Interest has increased with growing concerns about the impact of interior environments on occupants — and by the same token, how buildings might enhance human performance. As designers look to go beyond current green and sustainable practices like daylighting to create environments that not only perform well mechanically but also perform well for occupants, they are turning to biophilia and the integration of natural settings as a strategy for achieving both eco-friendly and healthy solutions.

**Wellness and healthy buildings.** It is well documented that buildings can make people sick. But can buildings make people well, or at least healthier? Aside from natural resource conservation, the greatest focus on building performance currently is on health and wellness. In the past decade, there has been a significant increase in the incidence of obesity, diabetes, asthma, autism, Alzheimer's and environmentally-related chronic health problems. Architecture and design are among the disciplines exploring how they can contribute to reducing and/or ameliorating these conditions. An article for *AIArchitect* reports, "issues of public and personal health are making a broader institutional impact [in architecture schools]. There are a growing number of academic degree programs, courses, and affiliated organizations that explain how design affects public health at both the building scale and the city scale."

The healthy building paradigm is being applied in projects across all sectors of the industry, from healthcare and office to education, hospitality and residential. On the heels of LEED's success, a new WELL Building Standard is now being promoted as the next step in building certification. According to Paul Sciallia, a founder of Delos and the WELL Building Standard, "Our intention was to push the sustainability notion in real estate beyond the environmental considerations and into human or biological considerations in the built environment, combining elements of health, well-being, and preventative medicine into architecture, design, and construction."

**Privacy and security.** The recent scandals regarding governments spying on their citizens and each other have heightened concerns about digital privacy, but privacy and security have become issues in almost all areas of life. Procedures for airport security have been widely criticized. More and more cities are using traffic cameras to issue citations. The growing popularity of DNA testing has raised concerns about genome privacy. The more we attempt to increase our security through prevention and protection, the more we expose

ourselves to identity and detection systems that erode our privacy.  In physical spaces as well, privacy and security continue to be of importance, given the prevalence of open plan spaces, conversations and noise from mobile devices, and a rash of shootings in public spaces. Visual and acoustical privacy continue to be issues of concern in healthcare environments, the workplace, senior living and in multihousing communities.  The integration of smart technologies into interior environments is raising issues about sensor privacy and big data commerce, as more and more human activity is being tracked, recorded, archived and analyzed, often without occupants' knowledge.

**Inclusiveness and democratization, adapting for special needs.**  The worldwide movement to create more inclusive and equitable societies has raised awareness of the need to accommodate individuals with special needs so that they can more fully participate in public and civic life.  This trend, along with the alarming increase in cognitive disabilities among children and the oldest old (those age 80 and older), has brought issues like accessibility and design for cognitive conditions to the forefront of built environments and design research. From designing safer and more responsive care environments for persons with Alzheimer's and other forms of senile dementia, to increasing independence for disabled persons and seniors aging-in-place, to creating supportive learning spaces for children with autism spectrum disorder, interior design is playing an increasingly important role in meeting the needs of these special populations.

**Megatall buildings.**  The latest "space race" is to see who can build the world's tallest building. New materials and technologies are making it possible to build ever higher. The Council on Tall Buildings and Urban Habitat predicts

> Within this decade we will likely witness not only the world's first kilometer-tall building, but also the completion of a significant number of buildings over 600 meters (around 2,000 feet). Prior to the completion of the Burj Khalifa, this building type did not exist. And yet, by 2020, we can expect at least eight such buildings to exist internationally. The term 'supertall' (which refers to a building over 300 meters) is thus no longer adequate to describe these buildings: we are entering the era of the 'megatall.' This term is now officially being used by the Council to describe buildings over 600 meters in height, or double the height of a supertall.

However, these megatall buildings raise issues of sustainability, safety and environment quality. Along with increased density, notes the CTBUH, "with added height comes less space efficiency, as structural members and service cores increase to service the increased height of the building."  Designers are being called upon the give these futuristic mega-towers the appropriate ambience and enhance their inhabitability.

## INTERIOR DESIGN INDUSTRY TRENDS: THE ROAD TO RECOVERY

Without question, the Great Recession took a tremendous toll on the interior design industry. Between the fourth quarter of 2008 and 2009 the number of practicing designers and design firms declined between 25 and 30 percent from their peak in 2005 to early 2008.  As new construction stalled and projects shrank or disappeared altogether, many manufacturers also drastically cut inventories or went out of business.  Since 2011, however, the industry has been gradually, although erratically, recovering.  Business has increased, employment has improved and product sales are up.  Nonetheless, designers now

find themselves in a very different position than they were five years ago during the design boom.  Following are some of the trends that are shaping the new economy for designers.

**Changing environments**.  Social, cultural and economic forces are reshaping not only the design, but also the function and purpose of interior environments. Work is becoming increasingly mobile, and work/life balance has shifted to work-life balance as traditional work hours give way to more flexible schedules and the "workplace" has become anywhere there is a wireless or cellular connection.  Households are getting smaller. The traditional family structure is giving way to a variety of living situations: single residents, unmarried partners, single parents and multigenerational configurations of various types (e.g., grandparents raising grandchildren, adult children living at home with their parents, adult children caring for aging parents or relatives, and "sandwich" households with midlife adults caring for both their children and one or more of their parents).  The suburbs are aging in place, while Millennials are flocking to the cities, where they prefer multihousing options in live/work/play neighborhoods.  Healthcare is undergoing seismic shifts due to the high cost of care, new technologies and treatments, staffing issues, and more-demanding patients.  Baby boomers who are caring or have cared for aging parents have an unfavorable view of senior living and care facilities and are rethinking how and where they want to spend their final years.

As a consequence of these and other developments, office spaces are getting smaller and more fluid; healthcare and senior living are becoming more like hospitality; hospitality is focusing on the mobile needs of business travelers, creating living spaces that feel more like residential and lobbies that are more like open offices; homes, too, are getting smaller and incorporating more multifunctional spaces.  Future designers will need to develop new models for how interior environments support they way we live and adjust to a new kind of client who has more sophisticated design sensibilities but has less space and a smaller budget.

**Economic downturn and changing attitudes toward luxury, wealth, long-term financial stability**. Sales of some, though not all, luxury goods, vacation homes, yachts and other symbols of conspicuous wealth are down.  Even the wealthiest consumers have become more conscientious about their buying habits. The most recent Affluent Market Tracking study, conducted biannually by the [American Affluence Research Center](#), reveals that America's most affluent citizens (defined as the top 10 percent of all U.S. households, based on net worth) are continuing to err on the side of caution when it comes to spending vs. saving.  Although they are somewhat more optimistic than a year ago that their financial situation will improve in 2014, they have scaled back or deferred plans for major new purchases, including luxury items and home renovations.  Moreover, affluent consumers have become [skeptical](#) of luxury brands that promote trendy lifestyles and conspicuous consumption.  They view their luxury purchases as quality-conscious, and eschew brands that they feel appeal to "status-seekers" and those who want to flaunt their wealth.  This trend has already impacted the design and remodeling industries and is likely to continue for the foreseeable future.

**Affordability / competitive pricing / profitability.**  Increased competition and cost-conscious clients have put pressure on A&D firms to keep fees down and operate at lower margins.  In [Design Success University's Fee and Salary Survey](#) for 2013, 82.2 percent of respondents said that in 2012 they earned on average less than $25,000 per project, up

from 52.3 percent in 2011. Firms have to find creative ways to maximize their resources in order to survive and remain profitable.  This has led to smaller staffs and more outsourcing. According to the DSU survey, 10 percent more designers  (nearly 2 in 3) were working solo in 2012 than in 2011. During the period 2011 through 2012, one in four firms report decreasing their staff size, and half say that most additional employees were working only part-time.  About one in three said they were outsourcing some functions.  The top A&D firms in *Interior Design* magazine's 100 Giants list for 2013 saw sales and profits improve in 2012, largely as a result of overseas and sustainability projects.

**Unemployment / lack of opportunity for young designers.** Although the situation is improving somewhat, young designers are having difficulty finding design jobs. A 2012 ASID survey of Emerging Professionals found that only 2 in 10 respondents were currently working in interior design jobs, although others had found employment in related areas, such as furniture showrooms, kitchen and bath shops or home improvement stores. (However, the most recent CIDA data reports that 6 in 10 recent graduates from CIDA-accredited programs were working in interior design jobs.) Those who do find employment are often under-utilized and have less opportunity for advancement. The U.S. Bureau of Labor statistics estimates that in 2012 nearly 17 percent of interior designers were underemployed or working part-time. This situation potentially will create an experience and leadership gap in the profession as today's principals and senior designers move toward retirement in the next decade, as about 1 in 5 practicing designers are age 55 or older and the majority is age 45 and older.

**Vendor delivery, quality and reliability**. Demand for interior design products and services declined substantially in the wake of the Great Recession, which resulted in a number of manufacturers and vendors consolidating or going out of business.  Those that did survive drastically reduced their inventories and moved more toward "on-demand" or "just-in-time" manufacturing.  Consequently, designers are now having difficulty obtaining product in a timely manner. Designers participating in the ASID Interior Design Business Performance Index panel this year consistently rated vendor delivery and reliability as a major problem affecting their business and profitability, continuing a trend from last year. Designers have been sounding off about their dissatisfaction in blogs and social media forums, citing instances of receiving broken or damaged goods, inferior goods or no goods at all, despite having confirmed orders.  In addition, the amount of product coming from countries with lower standards and cheaper labor has raised concerns about product sourcing and quality as well as exploitive labor practices and child labor. With sustainability/green and wellness/health becoming major areas of opportunity for designers, sourcing and quality of product and materials will be of increasing importance to tomorrow's designers.

**Professional status / advocacy.** The interior design profession has been under attack in the past decade from non-professionals and those who want to de-regulate the profession. The Institute for Justice recently teamed up with the National Kitchen and Bath Association to try to defeat a licensing bill in Minnesota.  Similar efforts have taken place in Florida and Texas, to cite a couple of high profile cases.  Legislation in some states has been reversed, heavily watered down or allowed to sunset.  If unchecked, this trend could affect the ability of designers to practice to the full extent of their abilities, especially in commercial environments.  This trend may also in part account for the recent decline in NCIDQ certifications.

## INTERIOR DESIGN PRACTICE TRENDS: PROFESSION IN TRANSITION

Even before the housing bubble burst and took down the rest of the building industry with it, interior design practice was undergoing substantial change.  Sustainable design gave designers a whole new area of knowledge to acquire.  Evidence-based design put a new emphasis on the use of research to validate design outcomes.  New design technology moved drawing, rendering and specification to the computer and into three dimensions.  The Internet opened up purchasing directly to the consumer.  Design TV shows created a whole new market of design-savvy consumers looking for fast, affordable remodeling services, thus giving rise to mid-priced service provides like home stagers, reorganizers and contractors turned remodelers.  These trends have continued to develop throughout the economic recovery, and to them have been added others that also are changing how designers practice and the skills and knowledge they need to stay competitive.

**Integrated Project Delivery & BIM.**  "Faster, better, cheaper" is the mantra in today's construction industry, forcing A&D firms to change their business models to a more collaborative, shared responsibility approach.  BIM technology supports this approach by making it easier for the various members of the team to share designs, plans and information. Likewise, Integrated Project Delivery brings the members of the project team together at the start to discuss objectives, challenges, schedules and shared responsibility.  Currently, BIM and IPD have been employed more widely by architecture and engineering firms, but interior designers, especially in commercial firms, are getting on the bandwagon.  Revit is replacing AutoCAD as the "must-have" design technology.  With building performance gaining prominence, BIM and IPD will likely become the industry standard for A/E/D practice.

**Integration of technology.**  In retail, in hospitality, in museums and other experience-delivering environments, designers and technicians are integrating digital video screens and interactive devices to engage customers and increase transactions.  For the rebranding of its flagship store, Barney's New York worked with the tech studio 2x4 to create a 30-foot long banquet table whose surface is an interactive "digital river" made up of 28 touch screens for its new Genes@co-op café. Customers can use the screens to order food and browse through Barney's offerings while they sip their coffee.

This new area of "cyber-aesthetics" presents new opportunities and challenges for designers. On the one hand, they offer designers previously unthinkable possibilities for creating amazing interiors.  On the other, they will present designers with a new set of problems to solve. Foremost of these is becoming knowledgeable about how they work, how they integrate with the rest of the environment, and how they are supported and maintained. There is also the larger issue of visual quality. How will these technologies affect the other elements in the space, and what are their short- and long-term effects on occupants in the space? Moreover, what is the proper balance between using these technologies and the well documented need that people have for natural views and daylight?

**3D modeling and printing.** Designers now have the technology to create 3D actual or virtual models of products and environments to help their clients better visualize their

designs and to test out proposed design solutions. Although AutoCAD is pricey and takes time to master, other 3D drawing and rendering programs are easily accessible and affordable. Many now employ drag-and-drop functionality that makes them fairly intuitive to use and more practical for smaller projects. Many architecture firms are already using 3D printing to generate project models for testing and client presentations, and some architects are experimenting with 3D printing of structures. Young product designers also are experimenting with making 3D-printed home furnishings, such as lamps, and fashion designers are creating 3D-printed textiles. It seems feasible that in the not-too-distant future interior designers will be able design and print custom furnishings and accessories for their clients.

**Product sourcing and certification.** The increasing demand for more sustainable and healthy environments, along with a growing sensitivity to social responsibility, has placed greater emphasis on knowing where and how products are manufactured, as well as on their components. According to a recent article in *Interiors & Sources* magazine, there are now more than 400 green certification programs on the market. That does not include other product standards, such as ANSI, or other product certifications, like GoodWeave, that certifies handmade carpet manufacturers do use child labor. If the WELL Building certification effort takes hold, expect additional product certification to follow. For designers, finding one's way through the maze of certifications can be a challenge but is a skill they will need to acquire to keep pace with the industry.

**Competition from non-professionals, design software, Internet sales.** Interior designers are increasingly seeing their skills and knowledge marketed by non-designers and retailers who are using the available technology to offer "canned" design solutions, like design-in-a-box, or to sell formerly to-the-trade products directly to cost-conscious consumers. Design-on-a-dime websites have been around for several years, and social media has increased the marketing opportunities for these services. A new service, called Decorilla, has taken its cue from the DesignTV playbook; it uses a contest format in which selected decorators can vie to produce the best design concepts on a specified budget. It claims to reduce the cost of a project by 80 percent over traditional interior design services. In addition, there are free or low-cost software programs, online services and mobile apps that make it easy for non-professionals to create 2D and 3D models of rooms, incorporating furniture, appliances, window treatments, wallcoverings, carpets, paint color, and other furnishings, even lighting. Some manufacturers provide similar tools through which the consumer can order product using a shopping list once they are satisfied with the look of their design. On the commercial side, short-staffed designers are relying more and more on dealerships to create spec sheets, floor plans and drawings that incorporate their products in order to free them up to do more project management. As a result, some savvy clients are now going directly to dealerships, seeking to save money but cutting out the designer and getting the design work at little or no additional cost from the dealer. Thus, new designers will need to find new ways to market and value their services or risk being relegated to a niche market with more competition and fewer clients.

**Credentials / professional certifications**. Commercial, healthcare and institutional design have become more technical, and designers are acquiring more credentials and certifications in order to compete for these projects. The number of LEED-certified designers has skyrocketed, while those seeking NCIDQ certification has dropped. In the healthcare arena, EDAC and Lean Six Sigma certification are becoming more common along

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with AAHID.  New certifications or quasi-certifications are proliferating in the residential sector as well.  Along with certifications for aging-in-place, such as CAPS, and for kitchen and bath design through NKBA, there is an online training program from the Designer Society of America (DSA) that offers a Residential Interior Design Education (R.I.D.E.) certification, the Council for Qualification of Residential Interior Designers (CQRID) that claims to have over 800 CQRID-certified members, NARI certification from the National Association of Remodelers, and a Certified Green Designer program for anyone in the construction trades who would like to get in on the action.  While it is clear that most of these are marketing ploys, nonetheless they blur the line as to what is professional design and create confusion for consumers. Designers who have gone through a formal design education program must make the choice whether to go through the expense and bother of acquiring one or more of these credentials in order to compete in their field.

**Research and evidence-based design.**  The more technical approach to interior design has also increased interest in interior design research and the use of evidence-based design. Within a relatively short period of time, evidence-based design has catapulted to the forefront of design practice.  As review of recent case studies in the major trade journals will show that employing evidence-based design has become nearly standard practice in commercial projects. Standard texts are already written on evidence-based design for healthcare, education, office and multiple building types. Last year, ASID published a guide to evidence-based design for residential designers. Design graduate students have created guides for evidence-based design interior practices and teaching evidence-based design to undergraduate interior design students.  Although accredited interior design programs already include at least one course in research theory and methods, tomorrow's designers will not only need to know how to research and evaluate design research studies, they will also need to know how to conduct and report on research using a variety of methodologies, not just POEs.  For evidence-based design to continue to have value, the knowledge base will need to continue to expand.  And, as in other professions, that will only happen if more designers and A&D firms are engaged in conducting and publishing research.

**Social responsibility.**  The revolution in consumer product design has popularized the notion that everyone deserves good design.  At the same time, designers know that not everyone can afford their services.  Among younger practitioners especially, designers are looking for ways to contribute their talents and knowledge to benefit individuals and institutions that otherwise would not have access to their services. The prime example is the 1% project, which invites A&D firms to devote one percent of their design staff and resources to pro bono projects.  Leading firms such as Gensler, Perkins + Will, and HOK are strong supporters of the program and have dedicated sections of their corporate websites to promoting their participation.  Architecture for Humanity is another well-known effort that challenges architects and designers to find solutions to challenging design problems in underserved countries and populations.  But throughout the country, designers (whether employed or not) and design students are engaged in community service projects in which they give of their time and talents to aid nonprofit organizations, schools, shelters and needy individuals.  Pro bono services are becoming part of standard practice for many designers.

## HIGHER EDUCATION TRENDS:  NEW WAYS OF DELIVERING LEARNING

While no one questions that value of a college degree, the skyrocketing cost of higher education has become an issue of national focus.  According to a recent article in *Forbes* magazine, since 1985, the overall consumer price index has risen 115% while the college education inflation rate has risen nearly 500%. Government scholarships and student loan programs have helped provide some relief, but many recent graduates have found themselves saddled with enormous debt in an economy that offers them few employment prospects or opportunities for advancement.  Consequently, students, their parents and schools are exploring other methods of delivering education that are less costly and can accommodate more students.  These alternative methods, however, raise issues about controlling quality and standards, as well as verifying that students have the knowledge and skills they will need to succeed in their chosen occupations.  The following are leading trends in this movement to revamp the traditional methods of educating and evaluating college and university students.

**MOOCs / online courses / open courses.**  More and more institutions of higher learning are using online learning technologies to offer MOOCs (massive open online courses) to degree and non-degree students, thus changing the traditional "business model" used in higher education. Writing in the *Chronicle of Higher Education*, Clay Shirky, an associate professor in journalism at New York University, sees an increase in MOOCs as inevitable, given that the cost of education is going up while the value of an undergraduate degree is going down:

> Though the conversation about MOOCs is now widespread, the overall number of students is still small, and the mechanisms for converting completion to college credit are, so far, few and rarely used. But the trend lines point up, driven by a force whose existence has surprised us: a widespread desire for cheap provision of complicated knowledge, delivered outside traditional institutions.

One possible scenario is that schools will choose to specialize in particular subjects, departments or colleges, and produce programming (i.e., courses/curricula) only around those subjects.  The result would be a sort of "network" of online learning hubs through which students would navigate to acquire the necessary classes and credits to apply toward degree completion.

Shirky attributes the popularity of MOOCs to ease of access and cost: "As has been widely discussed, most MOOCs reiterate the ancient form of the lecture, and do not signal much of a leap in pedagogy.  . . . The adoption of nontraditional forms of education hinges on accessibility, flexibility, and cost—not quality."  In addition to raising questions about the effectiveness of this type of instruction, one downside of this approach is that the vast majority of students enrolled in MOOCS cannot currently earn credits towards a degree.  This is not an issue for today's entrepreneurial Millennials perhaps, but it creates problems for professions that have traditionally relied on accreditation, academic performance and degree attainment as means of ensuring professional competence.

**Non-traditional learning institutions.** The expense of a college or university education and the popularity of online learning, not to mention costly and laborious admissions processes, have also given rise to a number of mostly for-profit non-traditional learning institutions that offer a more focused, employment-oriented curriculum leading to certificates/certification or primary degrees. Often the curricula are designed to meet short-term goals, such as job placement or advancement, but they could hamper future professional opportunities or development if students are insufficiently trained or unable to compete with others in their field. In addition, many of these schools have been the subject of lawsuits and government investigations because of their poor performance records, including lower-than-average graduation rates. In early fall 2013, the U.S. Department of Education announced it was issuing new regulations to help curb what it sees as for-profit schools' squandering of government student loan and scholarships dollars. Veteran groups have also complained that some schools entice veterans in order to get their education benefits but make little or no effort to provide support for veterans to ensure they complete their degree programs. To date, these schools have a spotty record, at best, of providing valuable educational experiences.

**Gamification.** The military and some corporations have been using video game technology and techniques to teach skills and create virtual decision-making scenarios. Learning institutions now, too, are exploring this approach as a way to engage today's technology-saturated students and provide a means for students to learn at their own pace.

Gamification Wiki, a resource for employing gamification in various applications, describes how gamification can be used in either instructor-led or online courses:

> Games can work with both methods of education delivery. It can accentuate the user experience one has with instructor led courses by introducing a level of interactivity and practice. This reduces the burden on the instructor a little bit to keep the attendees motivated and involved. In instructor led courses, games can also be the appropriate transition from one module to another or from one instructor to the next.
>
> In computer-based courses, games provide the much needed interactivity between the participants and also the 'instructor'. Here, the instructor need not be an actual person but game based logic that can help a participant when they do not understand something or need help.
>
> Some of the reasons to gamify education are
>
> - Increase interactivity & rewards – Instead of just reading text, you are actually doing something and still going through the same content
> - Increase awareness – You can be put in scenarios that will make you do & understand things which in a normal computer based training may be "tuned out"
> - Reward challenging tasks – Meeting deadlines, goals, targets, etc.

An article for the American Library Association states, "According to the 2012 Horizon Report, game-based learning will become increasingly widespread in higher education over the next few years, and the 2013 Horizon Report predicted that institutions in higher

education would adopt games and gamification within two to three years. " The article notes that gamification is already being used at such institutions as Dartmouth, Purdue, the University of Michigan and UCLA.

The Greenway Group, which gathers insights from leading practitioners and experts in the A&D industry, has identified gamification as an up-and-coming industry shift.  According to them, "many aspects of professional life will track and use game type situations. From design decision making to green living, expect new apps and internal business models driven by game tech."  In her keynote address at Arc-Interiors 2013, Clemons observed, "Although, to my knowledge, it has not yet found its way into interior design practice, one can certainly imagine how gamification could be used to test out wayfinding and egress solutions.  It could also be integrated into a design, for instance, in hospitality to orient the guest to the features of the room and hotel, or in retail to orient shoppers to locations and features of a mall."

**Fewer tenured faculty, greater reliance on adjuncts.**  With recent cuts to education, schools are choosing to reduce the number of tenured faculty and rely more on adjunct instructors, as needed, to teach courses.  An article in the *Chronicle of Higher Education* from October 2012 states, "In 1969, professors who were either tenured or tenure-track made up 78 percent of the faculty. Those working part time made up only 18.5 percent. By 2009, those proportions had almost flipped, with tenured and tenure-track making up just 33.5 percent, and those working part time nearly 50 percent. (The proportion of full-time lecturers rose from 3.5 percent of college faculty in 1969 to 18.5 percent in 2009.)"

While adjunct instructors can often bring valuable real-life experience to the classroom, students now have less opportunity to learn from full-time faculty who are advancing the body of knowledge for their field. Some schools are weighing the pros and cons of hiring more full-time, non-tenured faculty, in order to provide greater consistency in their programs. Some academicians worry about creating a two-tiered hierarchy with unequal systems of compensation and job security.  Others worry that lack of tenure could jeopardize academic freedom.

Responding to an editorial in the *New York Times* from November 16, 2013, David N. Figlio, director of the Institute for Policy Research at Northwestern University, cites findings from a study he co-authored in which it was shown that non-tenure track faculty tend to outperform tenure-track faculty in the classroom:  "In other words, our study compares full-time faculty who are recruited, retained and rewarded largely on the basis of their teaching quality to full-time faculty who are recruited, retained and rewarded largely on the basis of their research quality. It's not surprising to find that designated full-time teachers excel at teaching."  Figlio argues there is a place for both non-tenure track and tenure-track faculty, with the former focused on teaching, especially at lower levels, and the latter focused on research and graduate education.

**Shortened time to graduation.**  One of the more controversial trends in higher education is the move toward shortening the time it takes students to complete a degree program and graduate by awarding credit for life experience or competency based on testing.  The trend is being driven by concerns about the cost of education and "credit creep" (students amassing credits that do not lead to completion of a degree, or programs expanding the number of courses and/or credit hours required for degree completion).  According to

article in the *Chronicle of Higher Education*, on average more than half of university and college students (57.4%) currently graduate in six years for what previously had been four-year programs.

Awarding credit for life experience or demonstrated competency appeals to both students (especially non-traditional students, such as working adults) and administrators, but it is not without its critics.  Reporting for the *Chronicle of Higher Education*, Marc Parry summarizes their concerns:

> Yet such nontraditional approaches raise anxieties for all the key players who need to get on board to make them widely available. The federal government, which disbursed more than $187-billion in financial aid in 2012, worries about fraud. Colleges worry they can't innovate because their efforts won't jibe with the existing financial-aid system. And accreditors, recently chastised for failing to ensure quality, worry about any moves that might again provoke the feds' wrath.

Among the issues being debated are establishing standards for awarding credits, variability in evaluation methods, and determining what experience constitutes learning comparable to content taught in formal education.


## IMPLICATIONS


What kind of world will future interior designers inherit, and what kind of services will they be called upon to provide?  Tomorrow's designers will compete in a world very different from that which gave rise to their profession.  The greatest growth opportunities will occur outside the United States and Canada with the urbanization of developing nations, rising standards of living, and the expansion of professional classes that will want and can afford to pay for design services.  At the same time, these nations are establishing their own interior design programs and professional associations, creating their own interior design industries.  This will increase competition globally, including within developed countries.

Tomorrow's designers will also be required to master more technical knowledge about buildings and products as sustainability, wellness and evidence-based design requirements become standard for most projects.  Designers will need to be familiar with the workings of digital and interactive technologies.  Mastery of 3D and possibly 4D design technology will be a prerequisite, as will knowledge of 3D printing capabilities.

It is a yet unclear how the profession of interior design may develop. At nearly a half-century old, it is well into its mature phase, and many of its founders have retired or are near retirement. Is the profession keeping pace with the developments within the building industry? Can the profession re-engage with young designers who have been unable to find work in their chosen field and ensure its survival for the future?

Likewise, it is difficult to project how design practice may change in the years ahead. As technologies like BIM and business processes like Integrated Project Delivery become more commonplace, it may be that multidisciplinary firms will have an advantage over firms that specialize.  The growing demands on commercial practitioners may eventually split the profession into those who practice primarily commercial and institutional design and those

who practice primarily residential design.  While there likely will always be affluent clients who value interior design services, growing competition is eroding the middle market for single-family residential design services, where most residential designers do business— and they are the majority of practicing designers.  Perhaps the future of residential design is in multihousing / multipurpose buildings if the current demographic and lifestyle trends for Millennials continue to hold.

The essential principles of design will not change, but how those principles are applied and through what means is already evolving.  For design educators, the challenge will be keeping up with the rapid technological changes that will change their profession and that of their graduates.  Adaptability and flexibility will be critical success factors future educators and designers alike.

## LIST OF RESOURCES

[unless otherwise noted, resources are websites; titles in italics are journals or magazines]

Political, Economic and Social Trends
American Affluence Research Center
Global Trends
Herman Trend Alert
Luxury Institute
Pew Research Center
*The Economist*
Trendwatching.com
What's Next Top Trends (blog)
World Future Society

Demographics
U.S. Bureau of Labor Statistics
U.S. Census Bureau

Built Environment, Architecture & Interior Design
*Architect*
*Architectural Record*
*Builder*
*Building, Design & Construction*
*Contract*
*Custom Home* Online
*Design Intelligence*
Design Observer
Eco-Structure
FacilitiesNet
For Residential Pros.com
*Healthcare Design*
*Hospitality Design*
Joint Center for Housing Studies, Harvard University
*Interior Design*
*Interiors & Sources*
*Kitchen & Bath Business*
McGraw-Hill Construction
*Metropolis*
*MultiHousing News*
Research Design Connections
The Editor at Large
*Visual Marketing & Store Design*

Education
*Chronicle of Higher Education*
Inside Higher Education

Business & Technology
*BusinessWeek*
*Fast Company*
*Financial Times*
*Forbes*
*Harvard Business Review*
*Wall Street Journal*

Associations and Nonprofits
American Academy of Healthcare Interior Designers
American Institute of Architects
American Society of Interior Designers
Center for Health Design
International Interior Design Association
Interior Designers of Canada
National Association of Home Builders
National Council for Interior Design Qualification