Herman Miller's Brian Walker On Design
CEO Brian Walker talks about Herman Miller's practice of working with outside designers and the challenges and rewards these relationships provide.

Quiz: Graphic Clichés
Graphic clichés are the shorthand language of a culture. But before you can create visual puns—e.g., Food in America—with them, you have to understand their meaning.

Burlingh the Golden Arches
In its first major restaurant makeover since 1969, McDonald's was sensitive to the needs of franchise owners, customers of all ages and its brand value.

Oakley: An Eye for Design
From snowboarding goggles to backpacks, Oakley has created a "lifestyle brand" coveted for its fashionable hipness and renowned for its exacting technology.
Herman Miller has a long tradition of working with design consultants like Charles Eames, Isamu Noguchi, and George Nelson. Why an external creative network rather than an inhouse design staff?

The driver for us is our commitment to new ideas and solutions. This external network ensures that we are always taking a fresh look at problems faced by our customers without subjecting it to our own filters. If you have only an internal design staff, even an enormously talented one, you are inherently limited by their existing world view and experiences. Our ability to tap into a broader outside network lets us revisit and reinvent our own filters on a regular basis and get a fresh perspective on existing or emerging problems. This approach has its challenges, but it often leads to the best ideas and breakthroughs. Our creative network is at the core of Herman Miller’s DNA.

Herman Miller has continued to partner with some of today’s great designers.

Yes. A huge contributor for decades was Bill Stumpf, who received the Smithsonian Cooper-Hewitt National Design Award for Product Design in 2006, just prior to his passing last August. People like Ayse Birsel, Eric Chan, Yves Behar, Studio 7.5 Berlin and others have continued to extend our design tradition.

Is there a secret to working well with outside designers?

The central thing that we’ve learned is a willingness to follow and give ourselves over to these designers—not lose ourselves, but be open to following them to places that we may question in the beginning. We give our creative network an outline of a perceived problem and let them share their insights as to whether we’re on the right path and then enable them to bring their own gifts to the search for a solution. We follow them in their journey without judging too quickly. One of the hardest things to do is not to judge too quickly, based on the first physical appearance of something. Instead, we try to understand the essence of what they’re describing in physical form, written form or sketches.

The genius of Herman Miller’s R&D folks is in knowing how to put the right constraints in place so that we end up not only with a great statement of design, a great innovation, but something that solves real problems for customers and has commercial value. It’s easy in some ways to come up with great designs that don’t have commercial value, but to have great design that solves real problems and creates commercial value, that’s where the genius comes in. That’s where our R&D people make their
real contribution; it's their ability to know how to put the right constraints in place to push the creative network to a different place.

_Herman Miller is known for pioneering work in consumer research, including "global scenario planning." What is it?

Every few years, we do global-scale scenario planning, where we look out a number of years and create multiple visions of how we think the world may change. We ask ourselves, if the world did evolve along one of those paths, how would that affect the way people work, live, and feel? These scenarios give us vectors on which to explore new potential problems and new solutions. Solving problems is where our design work begins. We rarely start off saying, 'We just want a chair in this price point.' More often, we say, 'Here's a problem area that we see for folks. How do we solve it?' Around here we often quote George Nelson, our lead designer in the '40s and '50s, who used to say, 'Design is a response to social change.'

_Cite an example of a workplace problem you are trying to address.

Right now we see a growing need for temporal places that aren't as permanent as an office nor just a meeting space, but something in between. A question we ask ourselves is what kind of seating is best suited for such a temporal place? If you begin by trying to solve the problem, you get a different outcome than saying, 'We need to go go a chair that's $200.'

_Herman Miller's product offerings go beyond office furniture, don't they?

Herman Miller has had several periods of revival or renewal where we have changed our focus. We don't define ourselves as an office furniture company or even a furniture company. Our boundary is around people and human performance. It's around habitat and wherever we can affect the performance of human beings in their habitats. Problem-solving design is at the core of what Herman Miller is, and that can be applied to a broader field and evolve over time. Clearly some habitats have not been primary to us in the recent past, but are logical and natural steps. We have historical grounding in the home, so we can play off of that. Educational institutions have a lot of connectivity and, in many ways, need that are similar to the office and the home. And we've had interest in the healing area for many years. Those became the jumping-off point for us.

We also have a group called the Herman Miller Creative Office working on things that you can't define by environment or habitat type. They're clearly not furniture either. The most recent example is Convia, a modular, programmable sub-building infrastructure system for electrical and data that makes buildings more adaptable and changeable by the user. We believe it has profound implications for the design and management of buildings, across multiple categories of use.

_How has Herman Miller managed to stay at the forefront of introducing new materials, from Eames' molded plywood to the fabric on the Aeron chair?

Trying to solve problems in a new way often leads us to new materials. One advantage we have as a company is that we're not very vertically integrated from a manufacturing standpoint. If we were, it would be difficult to convince ourselves to change material types. We see ourselves more as an integrator than a manufacturer. We're able to do material explorations somewhat freely and give designers a fairly free hand to bring us new ideas. You have a strong financial background.

_How did you learn about design?

It's almost impossible to be here for 18 years and not learn something about design. I don't consider myself knowledgeable about how to design, but I have become a student of design. I have had the benefit of great teachers at Herman Miller, both in our creative network and in our own management team and Board of Directors. I have the good fortune of working with Gary Miller and Don Goeman who have been involved in the design and innovation processes at Herman Miller for 25 to 30 years. Spending time with those folks and being willing to listen to them and have them say, 'Let me tell you why we're approaching it this way' has been a great benefit. More recently I've gotten to spend more time with our creative network.

When I was transitioning from Chief Operating Officer to CEO, I used to sit in on every design review launch team meeting. I spent a lot of time listening to the details of what was going on, not as the boss criticizing their work, but as an observer trying to understand where it was going. Even today, when one of our designers is in town, Don Goeman checks to see if I have an hour or two to meet. It's not about spending time to approve anything; sometimes it's to take me through the latest model and hear what they're thinking.

_You recently went to China to explore marketing opportunities and took a team of designers with you. That's rather unusual.

We spent almost three weeks in China doing research into what our entry strategy should be. Our group included Don Goeman and three members of our creative network—Eric Chan of Ecco Design in New York, Bill Stumpf of Stumpf/Weber, and Burkhard Schmitz from Studio 7.5 in Berlin. About a third of our trip was cultural immersion, visiting museums, the homes of local people, touring emerging and old cities. A third of our time was spent meeting with potential customers, companies and suppliers, and a lot of time was spent on buses, airplanes and over dinner just talking. The power of it was that we in management got a chance to see China through the eyes of these very gifted creative folks, and the designers got the opportunity to see their creative spark through our filter as we tried to assess the marketability and do-ability for us as a company. A fascinating back and forth discussion took place.

_Can you share any takeaways from that trip?

We learned that the Herman Miller brand does mean something in China and that a growing appreciation and respect for good design exists there. It also became clear that we were going to have to create some design very specific to that marketplace and we would have to hire local people, both on the design and management side to really understand the Chinese culture and be sensitive to it. Herman Miller still abides by the environmental values of your founder D.J. DePree. What formed his beliefs?

To paraphrase DePree: 'Ultimately businesses will be judged by their contribution to humanity and we have a duty to be good stewards of the environment.' D.J. had a deep sense that we don't really own these resources in the long run, we simply are borrowing them, and we need to pass them on to future generations in good order. That's the underpinning of Herman Miller's environmental values. Aside from the moral obligation, there's an economic return, if we're good at it. We have 10 target goals set for 2010 that we call "The Power of Ten." They are part of our ultimate "2020 Vision" of leaving no operational footprint on the environment by the year 2020. A second commitment is that 50% of our sales must come from products that meet the Design for the Environment protocol (DFE) established with the help of Bill McDonough, Michael Braungart and their Cradle-to-Cradle principles. Our Mirra chair was the first non-
that people are going to deal with between the home, the office, and that other place. Is Herman Miller involved in office equipment technology?
That will be an area of growing connectivity going forward. Certainly as we look at our own research, we're seeing many more opportunities emerging with the advent of new technologies. We're actively developing our own internal capabilities and we're looking externally for both design talent and collaborative resources for new technology. Herman Miller's commitment to design quality extends to print communications as well. For decades your annual report, designed inhouse by Steve Frykholm, has been an award-winner. How is your report evolving?
We want to make sure that any vision, any product that we produce is relevant to the audience and the times. Annual reports produced before the Web were targeted to investors and analysts who probably don't find printed annuals as relevant today because they can get a lot of that data online. But we believe our customers and employees still read our annual report, so last year we did a summary annual

"We see a growing need for temporal places that aren't as permanent as an office nor just a meeting space, but something in between. A question we ask ourselves is what kind of seating is best suited for such a temporal place?"

What about your SEE magazine, which seems to concentrate less on promoting Herman Miller products than on positioning the company as a thought leader.
You hit the nail on the head with the term 'thought leader.' We think that is rightly Herman Miller's position because our products and services spring from our focus on problem solving and research. Our SEE magazine is a way to connect with customers, influencers and business leaders by sharing some of the knowledge that we have acquired. SEE, which features articles by our design network, also is meant to convey the energy and focus we put into research. It shows that when you come to Herman Miller as a customer, office furniture company and jettison everything else," or to say 'Let's begin to paint a bigger picture for our future.' We chose the latter and elevated research and development funding over other areas of our business. It was a gutsy call. What's phenomenal about this choice is that the path of Herman Miller has always been about evolving to a new place—from what D.J. DePree, our founder, saw in the 1930s, moving from period furniture to a design-driven company, to an office furniture leader in the 1960s, to today saying we can have a broader impact on human habitat. Ultimately, our greatest asset is our ability to create. You can call it innovation, but we call it problem-solving design.
Burnishing the Golden Arches

A lot changed over the half century since McDonald’s proved that Americans could eat out fast and affordably. Competitors made inroads into the dining category that it had originated. Demand for a Big Mac with fries lost ground to a chicken salad with non-fat dressing; Plastic furnishing, lauded for its child-friendly cleanliness, was scorned as synthetic and impersonal. What was innovative then had become so “last century” now.

“Customers were telling us that they wanted to see something different, more contemporary, more relevant,” says Max Carmona, senior director, restaurant design, McDonald’s USA. “They were tired of what we had.”

McDonald’s took these comments to heart in adopting a strategy it called “Forever Young.” But for a company with 31,000 franchise-owned restaurants serving 50 million customers daily, it also recognized that any misstep risked alienating both operators and patrons.

Intent on preserving what people loved about the brand, McDonald’s brought on brand-building expert Larry Light as global chief marketing officer and conducted numerous surveys on how to improve its demographic appeal, menu options, dining experience, and social relevance. Part of that plan included the first major architectural makeover of its restaurants since 1969. Before initiating this undertaking, management sought to learn from the experience of other companies that had completed successful brand turnarounds.

As it happened, the speaker it invited from Nissan gave an inspiring account of the automaker’s return to profitability, and in discussing the reimagining of Nissan dealerships, he frequently praised the work of the designers, Lippincott Mercer, who eventually won the McDonald’s account.

At that point, the New York-based consultancy was not even on the long list of design firms up for consideration.

In narrowing down its list of candidates, McDonald’s invited two design firms, including Lippincott Mercer, to make

Everyone the world over knows McDonald’s. Its Golden Arches are as familiar as the Statue of Liberty. So when the fast-food giant set out to redesign its restaurants, the challenge was to refresh its image without diluting its brand identity.
Customer Experience Mapping™
Lippincott Mercer follows a process that it calls “customer experience mapping” to analyze how people experience a brand. It “decomposes” the way a customer engages with the environment to communicate brand attributes at key touchpoints.

1 Arrival
The signature elements of the McDonald's brand—name, color, and logo—are clearly in view as customers approach the restaurant.

2 Entry View
The entry offers a view of the general dining area. Maintenance was an important consideration, so fabric-backed seats were designed to be changed easily if damaged and the tufted window blinds to provide visual interest and simple cleaning. The mural-size photos feature images of the local area.

3 Order Counter
Budget limitations restricted the redesign of the order counter, but designers created a taller menu board by organizing food choices for easier understanding and placing a wooden bezel around the display.

4 Adult Dining
Black-and-white photographs of local scenes, pendant lights and cushioned fabric-backed seating give a sophisticated atmosphere to this dining area.

5 Drive-Thru
The drive-thru is given more presence through the use of yellow canopies and electronic displays that merchandise products as drivers wait their turn to place an order.

6 Linger Zone
ClubMix chairs in an area that is slightly removed from the main restaurant activity offer customers, particularly young adults, a place to hang out with friends and work on their laptops.

7 Fast Food
Bar stools allowed the designers to vary the topography inside the restaurant through different seating heights. The bar stool dining option also appeals to people eating alone or in a rush—and to young children.

8 Fabric Swatches
Simple geometric patterns and contemporary colors create a McDonald's look, yet provide each franchisee owner enough latitude to individualize the decor according to personal or regional tastes.

9 Pendant Lighting
Pendant lighting, which subtly uses McDonald's yellow and red signature colors, softens any institutional feel and serves as a pleasing decorative element.
Whenever possible, the designers tried to contain costs for franchisees and respond to environmental concerns. "We understand that it isn't about doing things that operators cannot afford," says Dixon. "By avoiding unnecessary changes and choosing materials that last, we try not to send too much to landfill."

The first touchpoint was the silhouette of the building itself. As dated as it looked, the double mansard roof was a familiar landmark to millions and dismantling it would be cost-prohibitive for many franchise operators. The designers got around this dilemma by cosmetically hiding the old roof behind a false parapet and a yellow sloping curve that echoed the Golden Arches. The addition of a more graciously yellow awning also gave the entrance greater presence.

Inside, Lippincott Mercer tried to soften the stark "fast-food" look by creating distinct dining zones, delineated by different types of furniture and seating arrangements to offer customers a choice of experiences. A "lurker" zone with armchairs, sofas and wi-fi connections was created to appeal to young adults who want to hang out with friends. A "grab-and-go" zone with tall counters, bar stools and a plasma TV turned to the news and weather was designed to cater to customers who eat alone. A "flexible" zone with booths appointed with fabric-cushioned seats as well as table seating invited family dining.

The designers also changed the topography of the seating to take away from the cafeteria look. "We created low seating and high seating," Dixon says. "The different types of seating communicate choice. Customers can choose the way they use the restaurant."

To depart further from the no-frills fast-food look, the designers jettisoned the harsh 2x4-foot fluorescent light panels set in the acoustical tile ceiling. "We tried to improve the quality of lighting with recessed lights and selective use of pendant fixtures that created a sense of intimacy and added some color around the environment." Changing color balances also helped to mitigate the feel of plastic without eliminating plastic completely. "In our analysis, we found the proportional use of the yellow and red combination created a plastic effect," Dixon says.

"We decoupled the colors and concentrated more on yellow, which is the core brand color of the Golden Arches and manifests the 'Forever Young' idea. Coupling yellow with materials and colors from nature like ochre, terra cotta, sage and sienna enhanced food credentialing, suggesting the authenticity of the ingredients. We used McDonald's familiar red as an accent and identifier of certain important elements — the red fry box, the pickup and pay windows at the drive-thru."

The designers also screened off "manu-
The Quiz

Graphic Clichés

By its very definition, the word "cliché" means hackneyed, overused and trite, but that doesn't mean that clichés do not serve a useful purpose. Graphic clichés are rife with implied meaning. They are often viewed as the embodiment of an industry, institution, emotional value or point of view. They become a visual shorthand language that is familiar and understood by a culture and sometimes the whole world. That's why graphic clichés are a popular device with editorial cartoonists who need to communicate complex ideas succinctly in a single image. In the hands of the right designer, graphic clichés can be twisted or juxtaposed to become fresh and exciting, witty and revealing, and even profound. Conversely, in the wrong hands, they simply appear obvious and banal. It's all in the interpretation. First, it is important to recognize a graphic cliché when you see one. See if you can identify the meaning that people attach to these.

Match Them Up

11. A. Savings
B. The solution
C. Demand note
D. Chance
E. Rejected idea
F. Liberty
G. Analytical
H. Emotions
I. Freedom
J. Don't forget
K. Love
L. Beat the clock
M. Capitalism
N. Genetics
O. Military
P. Look closer
Q. You're late
R. Worldwide
S. Fresh
T. Protection
U. Idea
V. Authority
W. Energy
X. This way
Y. Honor
Z. On target
AA. Health
BB. Faithful
CC. Consumerism
DD. Genius
EE. Calculated risk
FT. Saver words
GG. Quick fix
HH. Danger
II. Don't

Answers on page 16.
Oakley: An Eye for Design

Oakley marches to its own drummer, but it has gained such a following that it looks like it is leading the parade.

Oakley defies conventional beliefs about how to grow a business, how to develop product line extensions, and even how a corporate headquarters should look. But for Oakley, it works. In 2006, the company recorded net sales of $762 million, up 18% over the previous year. In the world of athletics, its eyewear is considered de rigueur.

From the start, Oakley favored revolution over evolution. Founder Jim Jannard was a 25-year-old pharmacy school dropout in 1975 when he pooled together $300 to form a company named after his dog, Oakley, to market a better handgrip for motocross motorcycles. He made the grip from a new high-friction material he called “Unobtanium” that shaped to the human hand.

The success of the grip spurred Jannard to look at what’s wrong with motorcycle goggles as well. Oakley ski goggles soon followed and sunglasses a few years after that. The first products to incorporate lens geometry, Oakley eyewear provided non-distortion lens qualities and precision craftsmanship that high-performance athletes eagerly embraced.

The holder of more than 600 patents, Oakley still puts as much emphasis on its futuristic technology as the look of its products. “God is in the details,” says President Colin Baden, quoting legendary architect Mies van der Rohe and claiming Oakley’s products are “invention wrapped in art.”

Describing Oakley’s methodology, Baden says, “We look for problems and we invent solutions from scratch. What we saw in eyewear was that the active outdoor person was not able to get glasses that functioned well in a given sport. We entered the category because no one [i.e., competitors] cared about optics.” Baden claims that Oakley eyewear is still unsurpassed.
Invention Wrapped in Art
From its signature goggles and eyewear, Oakley has extended its brand into a range of rugged wear items. The one common denominator is that technological innovation factors into every product that Oakley designs.

Time Tank Watch
Made with ultra-lightweight titanium, this Swiss-made chronograph has the ability to measure cumulative time, intermediate time and split time, from 1/10th second to 30 minutes.

Crowbar Goggles
Designed to the standards of professional athletes, these goggles offer a wide unobstructed field of vision and have vents on the front lens to prevent fogging.

One-Piece Snow Suit
Using a science created for astronaut, the Storm One suit integrates membrane technologies to maintain waterproof yet breathable barriers and temperature control with reversible heat storage.

Sponsored Athletes
Oakley sponsors top athletes in its major sportswear categories to show off its products in action. At major snowboarding events, thousands of fans witness Olympic bronze medalist D. Thomas perform gravity-defying feats, dressed in goggles and outerwear from Oakley.

O Pack
Functionality and fashion come together in the O Pack, a sturdy lightweight nylon bag with external side pockets for bottled water and internal media pockets. Accents of red on the two-color pack add style, with the Oakley "rolling O" logo decorating the tabs and clasps.

S.I. Assault Boots
Finding standard athletic footwear inadequate for its needs, the U.S. Elite Special Forces asked Oakley to design a new type of assault boot. Oakley came up with a stylish boot with a 6-inch ankle-stabilizing upper, wick liner and high-friction outer sole grip. The boot is now available in a civilian version.

Thump MP3 Eyewear
The MP3 audio circuitry of Thump eyewear is built right into the frame, eliminating dangling wires. The wearer can pivot the speakers to balance environmental sounds with the digital music or flip them up to carry on a conversation.

"I could put our glasses up against anybody's, and you would see a superior point of difference. That difference is our juice. We can walk into an account and say, 'Look, you won't get headaches when you wear these glasses.' Once someone sees and understands that, they are lifelong converts."

To call Oakley an eyewear company, however, is to ignore the eclectic range of its enterprises. "We are a design-driven company," says Baden. "We create things that interest us. When you want to be a company at the forefront, you really can't go into the marketplace and look at what is going on or ask people what they want because all there is is what there is. We are all about what is going to be."

The shock of the new may even leave some people uneasy, Baden admits. But for Oakley, living outside your comfort zone is how innovations come about. "The products that we think are the 'next thing,' we call them 'talking to the people in the front row.' They are the people who get our jokes and can turn around and explain them to the people in the last row. Then everyone goes, 'Oh, okay.' When our front-row athletes are wearing our glasses strapped to the top of their heads, we sell thousands of them."

Even without such tacit endorsements, Baden says that Oakley would still be driven to explore new frontiers. Indeed, Oakley's office—or "corporate interplanetary headquarters," as it is officially called—looks like a set from "Star Wars." Its bunker-like exterior leads into an equally forbidding vault-like lobby with a torpedo in a cradle on the floor and 9-52 ejection seats in the waiting area. The building was designed by Baden, an architect before he was asked by Jannard to head Oakley's design functions in 1996. Today Jannard and Baden are still closely involved in the design process:

"Buildings can be a great vehicle for making a statement," Baden says. "When you come here as an employee, you feel like part of the club. The culture drives the team. That competitive fierceness drives the design features we make. If you are a competitor, you sense that we put a lot of value in what is going on in this place."

What is going on is all of Oakley's design and research and development—and the manufacturing of most of Oakley's eyewear. More than three-quarters of the 417,000-square-foot headquarters is devoted to manufacturing. Oakley invests heavily in technology, not only in R&D and in the products, but in the machines that make its products. Every machine was created by the Oakley design department. Oakley builds its own parts, invents programs to run cutting tools, and even develops mold processes unheard of in the world of industrial
manufacturing. "This is all to drive the quality of the product," Baden explains. "There are no machines on the planet that can make our products the way we want them. We are forced to make the machine that makes our products."

Keeping all of Oakley's R&D and design work in one place offers tremendous advantages, Baden believes. "We use a lot of rapid prototyping equipment. I am a firm believer in sketching and hand models, but I also am driven to get that into the digital world so we can really craft the product and test its functionality." While Oakley's creative process may take months, once the design has been determined, the company can create a model and prototype in-house in less than a week.

This is radically different from how most companies operate, Baden emphasizes. "There, you might draw a pair of glasses, then go describe the drawing to a developer. The developer rolls up your drawing and has your words in his head. He gets on a plane and flies 14 hours to Asia, where he meets with the head of a factory and tells him what your company wants. His words are then relayed to the factory design engineer. In three weeks, you might get a prototype back from the factory, but that prototype is an interpretation of what just three people thought it should be. You can imagine the diminishing return on a vision that started out really good. Here at Oakley, it is constant evolution, dialog, visualization, modeling, prototyping, back and forth. You get a much better end product and get it much faster."

The R&D and design team keep many unusual objects—wooden guitars, barbells, Elvis pictures—around for inspiration and contemplation. "Our best products haven't started as what they were intended," says Baden. "A pair of eyeglasses didn't start out as a pair of glasses. It started as a blower on a drag racer. We constantly keep it loose in that department so we have the opportunity to discover something different."

Perhaps because of that, Oakley has not shied away from products that do not fit its flagship eyewear line. Interestingly, a portion of Oakley's business comes from making combat boots for the U.S. Special Forces. That came about because Oakley was providing protective M Frame eyewear to the military, and the relationship led Special Forces to ask Oakley to reinvent performance footwear for tactical use. Until then, no one had built an athletic variance for military footwear. Today, Oakley boots are standard Special Forces issue. Oakley also now offers footwear for civilians, as well as leather bags and backpacks.

"Our brand has evolved successfully by pursuing design at the highest level to gain a competitive position," says Baden. "This creates a construct where outcome is front-row stuff. It is not about market studies. That is not what we are about."

At the same time, Oakley focuses heavily on appealing to outdoor sports that have as their premise technical performance—e.g., skiing, snowboarding, surfing, cycling, extreme motorcross. For each of these markets, Oakley offers a selection of products, including fashion apparel. The brand has also expanded into precision performance products such as watches and wearable electronics.

That does not mean that Oakley will stay contentedly within the confines of these businesses. "The most disappointing point [in the process] is when we launch our product," Baden admits. "It is over. It is all about the hunt, the adrenaline rush. We need our highs. We are always looking for the next thing."

Perhaps Oakley's corporate profile sums it up best: "With a corporate culture dedicated to purpose beyond reason, Oakley blends science and art to redefine product categories, rejecting the constraints of conventional ideas."
Baby Boomers and Seven Universal Design Principles

Consider this: Over the next 25 years, the number of people over age 65 will more than double, and an estimated 20% of the U.S. population will be in their so-called “golden years.” In sheer numbers, the 77 million post-World War II Baby Boomers, born between 1946 and 1964, represent a sizeable consumer market—except now instead of hula hoops and lava lamps, they are driving up demand for retirement villages and hearing aids.

More design savvy than their parents, the Boomers are not willing to settle for things that are functional but ugly. For them, it is not a choice of “either/or.” They want sensible and sexy, practical and pretty, safe and stylish. They are the first generation to believe that elegant, intuitive product solutions are not only possible, they are a basic consumer right.

For designers, a common misconception is that practicing universal design requires compromising aesthetics or dealing only with things like wheelchairs and hospital beds (although both could use a makeover). In reality, products hailed as innovative often represent the best examples of universal design. They become classics because they never outlive their usefulness and contemporary appeal. The seven principles, developed by the Center for Universal Design, show that universal design isn’t a specialized field. It is simply thoughtful problem-solving through design.

1. Make It Equal

Designers of mass-manufactured products tend to design for the “norm,” which in the U.S. is often for able-bodied consumers about 30 years of age, around 5 foot 6 inches tall and not overweight. Heaven help the rest of us who are too short or too tall, or handicapped temporarily or permanently. Universal design takes into consideration the needs of people of all ages, sizes, and physical and cognitive ability. If that is not possible in a single design, it presents equivalent alternatives, like wheelchair street curb ramps.

2. Minimize Physical Effort

For a person with severe arthritis, the simple task of turning a doorknob can be painful, which is why so many new homes incorporate lever door handles that require less range of motion. When designing for the frail or elderly, the fatigue factor is an important consideration. Household products that allow users to maintain a neutral body position, minimize repetitive actions and reduce the need for sustained physical effort make performing chores more enjoyable and comfortable.

3. Provide Adequate Size and Space

Public buildings have rules and regulations on handicapped access, something sorely lacking in private homes. Safety-proofing a bathroom, for example, is of little use if the wheelchair can’t fit through the doorway. A key principle of universal design is making sure that appropriate size and space is provided for approach, reach, manipulation and use regardless of the user’s body size, posture or mobility. That demands providing a clear line of sight from either a seated or standing position and ample room for assistive devices.

4. Keep It Simple and Intuitive

User-friendly applies to more than computer software. Users should not have to read instructions to learn how to remove a bottle cap, but that is sometimes the case. Effective design makes things more intuitive. It eliminates unnecessary complexity and arranges information by importance and/or sequence of use. It makes things easy to understand regardless of the user’s experience, knowledge, language skills and cognitive ability.

5. Allow for Flexible Use

Left-handed people know that the world was designed for right-handed people. That doesn’t have to be the case. Universal design accommodates a wide range of individual preferences and abilities. It can facilitate the user’s accuracy and precision and adapt to the user’s pace. For people with diminished strength and agility, the kitchen and bathroom are often the scariest rooms in the house. Pull-out shelves, countertops with recessed space to accommodate a seated person can make cooking more enjoyable for people with limited range of motion. Adjustable showerheads, offset water controls that can be easily reached from outside the tub, bench shower seating and grab bars offer ways to improve bathroom safety.

6. Make Information Perceptible

Well-designed products communicate necessary information clearly to the user, regardless of ambient conditions or the user’s sensory abilities. For people with impaired hearing or vision, using multiple modes—pictures, sound, touch—to present essential information can alleviate frustration.

7. Build In Error Tolerance

Safety barriers can be designed into household objects to help people who have difficulty remembering or comprehending or have problems with balance and coordination. Good design can minimize the adverse consequences of unintended actions by isolating or shielding hazardous elements and arranging elements according to most frequent use or sequential steps to complete a task.

Doorbells and kitchen timers can be made to flash a light as well as chime. Distinctive use of color and tactile markers can help people judge the depth of a stair, find their way down a dim hallway, or see the edge of a counter-top. Of course, legible type on a glare-free surface is essential, whether reading a magazine or instructions on a frozen food box.
Clarity Is the Best Medicine

A well-designed pill bottle may not cure diseases, but it can save lives. Target’s Clear Rx™ packaging system, designed by School of Visual Arts masters student Deborah Adler, offers just such a breakthrough in prescription packaging.

The pharmaceutical industry often talks about addressing “unmet medical needs,” but it invariably means discovering new drugs, not redesigning the package in which they are sold. In fact, the familiar round amber-colored pill bottle has remained virtually unchanged since the end of World War II except for a switch to child-proof caps in the 1970s. It took a design student named Deborah Adler at the School of Visual Arts in New York City to question why this had to be the case.

As part of a two-year masters program, chaired by Steven Heller and Lita Talarico, Adler was charged with developing a product from scratch for a “Designer as Author” course. “It is about authorship and owning your own stuff,” explains Adler. The thesis assignment required going through all the steps of designing a product and taking it to the market, including writing a business plan and researching manufacturability.

Adler recalls that while she was mulling over “a whole bunch of thesis ideas,” her dad happened to mention that her grandmother had accidentally taken her grandfather’s medication. Looking at the nearly identical pill bottles, she could see how easily such a mistake could be made, especially since her grandparents, Helen and Herman Adler, had similar starting names and were on the same medication but at different doses. The potential for tragedy was chilling to consider.

“I realized that my grandparents were not alone in their confusion,” Adler says, “and that maybe I’d redesign the medicine bottle for my masters thesis.”

Redoing a pill bottle for a design assignment was not a particularly glamorous undertaking, which some of Adler’s teachers pointed out when they asked her if this was truly what she wanted to do. It was.

As Adler began deconstructing the standard prescription drug bottle, she became acutely aware that it is rife with problems. “The largest type on the label is the drugstore logo,” she points out, “The name of the drug often is tucked at the bottom of the label—that’s a pretty important piece of information.”

Also, numbers are often printed on the label without explanation of what they mean. Crucial warning stickers are slapped on haphazardly,
Case Study: Package Design

**Cap on Bottom**
Standing the bottle on its cap optimized flat space for print and allowed the label to be wrapped over the top from a single piece of paper. This reduced paper waste and made it easier for pharmacists to attach labels. The larger size cap has also helped to improve grip for people with arthritis.

**Target Red**
Target reinforced its brand identity by using its signature red for the bottle. Instead of the standard amber color. The transparent red is equally effective in protecting light-sensitive pills and showing how many pills are left inside.

**Flat Surface**
The tapered bottle forms two flat-sided surfaces for print, making it easier to read information without rotating the bottle or turning it on its side.

**Information Hierarchy**
Adler organized information so that the most important facts appear above a bold horizontal line. Secondary information—quantity inside, refill status, doctor name, expiration date, manufacturer—appears below.

**Dosage Instructions**
To minimize the possibility of taking the wrong medication or dosage, Adler placed key details above the bold horizontal line. Big sans serif type and generous line leading make it easier for users to read instructions for taking the drug.

**Warning Icons**
Adler collaborated with her new boss Milton Glaser to create a set of 25 warning icons to replace the more outdated standard symbols. Instead of the typical stickers slapped onto pill bottles, Clear Rx’s warnings are neatly listed on the back label.

**Medication Name**
The all-important drug name and strength are prominently shown in bold type on the front label and highlighted in blue for greater visibility. The information is also repeated on top to make it easier to spot if the bottle is kept in a drawer.

**Liquid Medication**
An oral syringe attached to bottles of liquid medication makes measuring easier and cleaner while reducing the risk of dosing errors.

**Colored Rings**
Adler’s design called for color-coded labels so each household member could easily spot his/her own medicine, but inventory and handling issues made this impractical. A system of six colored rubber rings was substituted.

**Renewal Information**
All information needed to renew the prescription (phone number, prescription number, pharmacy address) is organized below the second bold line. The Target logo and name are called out prominently in Target red.

**Take one capsule by mouth three times daily for 10 days**

**Pull-Out Card**
Tucked securely on the back of the bottle in a permanent sleeve, an information card summarizes the most common uses and side effects associated with the medication. The card is ideal for quick reference and printed in reader-friendly fonts.

**AMCOTHICILLIN 500MG**
Generic for Amoxicillin

**Target A Guest**
Informed Women:
Women are more likely than men to consult with their pharmacists about how best to take medication.

Adler's next step was to find out if her bottle design could be commercially made. She tracked down a small manufacturing plant. "I got passed from person to person until I ended up with the actual plant manager," she says. "He was very enthusiastic and also shed a lot of light on the industry."

Adler explains, "I was thinking beyond school. I would talk to people at the plant to find out what it takes to make a mold. How much it would cost, whether a plant had to buy new machinery or could work with existing molds." The new type of prescription label also was an innovation that required investigation.

By the time Adler completed her school project, she says, "I knew what I had was better than what existed. Once I realized that, I thought I should protect it by getting a patent for my design. I took a drive with my husband to Washington and met with the National Council on Patient Information and Education and the Federal Drug Administration."

At that point, Adler's prototype could have languished in obscurity had it not been for what she describes as an "aligning of the stars." After graduating from SVA, she landed a job in the studio of her mentor, Milton Glaser. He proudly showed Adler's pill bottle to his friend, designer Ann Willoughby, who was then co-chairing the AIGA Gain conference and in touch with Minda Gralnek, creative director for Target. Gralnek recalls, "Ann called to say she had seen a great project from a design student and said that person wanted to talk to someone at Target. Would I be interested in talking with her? I said, 'Sure, have her call me.' I was planning a trip to New York anyway and thought I'd love to visit Milton Glaser's studio and meet Deborah."

As it happened, Gralnek invited along a Target colleague working on strategic alliances. As soon as the two saw the design, they knew it was right for them. "I just looked at the label and said, "Wow, we should do this,"" Gralnek remembers.

A few weeks later, Adler, accompanied by Glaser for support, was on her way to Target's Minneapolis headquarters to meet with company executives. Convinced that Target customers would welcome the new packaging, Target took the unusual step of fast-tracking the changeover and assigned a 100-person Target team to make it happen quickly. Target also brought an industrial designer Klaus Rosberg of Sonic to work out manufacturing details.

"It took us less than a year to introduce the new packaging, which is pretty amazing," says Gralnek. Target boldly designated Adler the principal designer, making her an integral part of the development process.

"It could have gone in a totally different way," Adler recognizes. "They could have taken my idea and said, 'See you later,' but they didn't. They valued me. It was a huge collaborative effort. I worked closely with people to make sure that the label that I designed in illustrator could be translated into a major software system that pharmacists could use. I worked with bottle and label manufacturers, and with the marketing team to make sure they told the story. Target also had to train the pharmacists who were at the front line."

The final prescription drug bottle remained largely true to Adler's initial concept, except for the shape of the bottle, which originally had a wider curved front and flat back, requiring a semi-circle cap. The need to redesign the child-safety cap and get it through regulatory approvals, a process that would have taken about seven years, forced Target to look for an alternate cap solution. Creating a wedge-shaped bottle with the cap upside down remedied that problem.

Adler's prototype also featured a clear bottle, which had to be changed to a darker shade since some medicines are light-sensitive. Target chose to go with its brand color, red, instead of the traditional amber. The color-coding system also had to be changed from the proposed colored paper, which would have created an inventory headache, to colored rubber rings.

One thing that Target didn't have to change was the name of the pharmacy that Adler had applied to her prototype. Long before her affiliation with Target, Adler had chosen Target as the hypothetical brand name on her prototype.

"I thought Target would be an excellent platform for my idea," she explains. "They have pharmacies. They are committed to their consumers and have a strong sense of social responsibility, and they are committed to excellent design. It is the core of their brand proposition. I knew they would be more willing to take this sort of risk than other pharmacies."

For Gralnek, the project also "proves that design isn't just objects that are pleasing to the eyes. They are products, processes and experiences. That is what design is at Target."

The breakthrough nature of Adler's prescription pill bottle is winning accolades, not just from Target customers but from U.S. Surgeon General Richard H. Carmona, who hailed it as "an important step in improving the health literacy of all Americans."

Target is continuing to work closely with Adler and Glaser to broaden the Clear Rx prescription packaging system. A follow-on to the original pill bottle is a liquid dispenser with a spill-proof syringe to measure out the exact dosage needed. Adler and Milton Glaser's studio have also designed a set of 25 easy-to-understand warning icons to go on the back of Clear Rx bottles.

Adler gratefully acknowledges Glaser's support. From early on, Glaser recognized that Adler's pill bottle was far more than a clever design done by a smart student. It did what good design does—offer a solid solution to an existing problem. The value Glaser placed on Adler's bottle design came through to her in a remark he made shortly after she joined his studio. "We were riding in a cab on one of my first days on the job, and Milton said to me, 'I'd really like to see this happen in my lifetime.' Fortunately it did."

And, oh, yes, Adler aced her class. 

Regional Unease:
Survey respondents in the Northeast are least likely to feel extremely comfortable talking to their pharmacist than any other region in the United States.

A few people were asked to list items in order of importance, 40% would put the first four in the same order. She kept this in mind when she gathered plexi tubing, plexi sheets and dollhouse brackets and set about constructing a prototype bottle and label. She decided to divide the front label into primary and secondary levels, with critical information above a black horizontal line and less important facts below. She reserved the flat backside for warning labels, with a grooved slot to hold a succinctly written and less jargon-filled information card. To allow people in the same household to identify their medication on sight, she came up with a color-coding system—for instance, green for grandma, yellow for grandpa.

Common Mistake:
Nearly six out of 10 adults in the United States have taken prescription medication incorrectly.

Gender Difference:
Men are less likely to read their prescription sheet than women. They are also more likely to make medication errors.

Avoidance:
31% of surveyed adults rarely or never read the prescription information sheet because the language is standard and doesn't seem to differ. 15% say it's too wordy; 14% say it's overwhelming; 11% say it's complex; and 10% say it's incomprehensible!
The Shopping Cart

An example of how one spectacular invention can prompt another is the supermarket shopping cart. By the mid-1930s, private automobiles and home refrigerators had become commonplace, giving consumers the means and the ability to buy more groceries at well-stocked self-service supermarkets proliferating across the country. Problem was that customers usually restricted their shopping to what they could comfortably place in their hand-held baskets; when it grew too heavy, they tended to stop.

One day in 1936 Sylvan Goldman, owner of the Standard/Piggly Wiggly supermarket chain in Oklahoma, contemplated the dilemma while idly staring across his office at two folding chairs. Then it hit him. By putting a basket on the seat and wheels on the legs, he could form a rolling cart—better yet, why not make it two baskets. Working with mechanic Fred Young, Goldman fashioned a metal frame with caster wheels supporting two wire baskets.

It was ingenious, but women initially shunned it because it reminded them of baby carriages, and men refused to use it lest they appear effeminate. Undeterred, Goldman secretly hired a few men and women to “demonstrate” how convenient it was to shop using the carts. His marketing ploy worked. Merchants across the nation saw it as a way to increase sales. Goldman formed the Folding Basket Carrier Company, later issuing improved models with nesting capabilities and built-in child seats. Soon, checkout counters and aisle layouts of supermarkets everywhere were being redesigned to accommodate shopping carts. In 1940, the Saturday Evening Post touted Goldman’s invention as “the cart that changed the world.” Indeed, it did.
How do I get this kind of color?
What makes a successful design project? The nation’s leading corporate and design experts share their views and provide candid, real-life examples of what worked and what didn’t at the second annual @Issue Business and Design Conference, offered by Corporate Design Foundation. Special next-day option: An exclusive “behind-the-scenes” tour of Pixar Animation Studios. Go to www.cdf.org for details.