Lecture

MAX UNDERWOOD
INSIDE THE OFFICE OF CHARLES AND RAY EAMES

Do not seek to follow in the footsteps of the masters. Seek what they sought.”

MATTHIUO BASHO, ZEN POET (1644–1694)

The mere mention of Charles and Ray Eames delivers to an older generation an immediate, collective smile. Countless of us from a not-so-distant era remember with fondness our first experiences of their innovative designs, or “gifts,” as the Eameses affectionately referred to their creative works. We lovingly recall relaxing within the embrace of an Eames Lounge Chair and Ottoman (1956), vividly remember watching with childlike wonder the exponential journey in the film, Powers of Ten (1977), or fondly relive the silent approach, through a flowering meadow and a magically-lifting coastal fog, to the mythical Eames House itself (Arts and Architecture Case Study House #8, 1949).

Charles and Ray Eames (1907–1978 and 1912–1988) dedicated their lives to the endless search for connections. They celebrated the embodied experiences of life. In their endeavor of discovery, they exalted an evolving nature of the ideas, artifacts and phenomenon in order that they might better define, enrich and sustain our daily lives.

One of the most enduring hallmarks of the Eames design legacy was its direct process of discovery and insight. This process, in addition to the particularities of any design itself, was essentially a means for celebrating and communicating these discoveries to people of every age. The breath and depth of the Eames’ thirty-seven years of creative work from 1941 to 1978 is simply staggering; They forged over 900 pioneering designs for furniture, toys, exhibitions, film, graphics and architecture.

Another generation is now poised to inherit Charles and Ray’s “gifts.” As this generation seeks to better understand the Eames legacy, it is important to examine what occurred inside the Office of Charles and Ray Eames, for it is primarily the incubation itself, embodied by Charles and Ray Eames, that gave birth to such as plethora of ideas, innovative processes, profound insights, and landmark creative works.

Charles and Ray: the formative years “I don’t believe in this ‘gifted few’ concept, just in people doing things they are really interested in doing. They have a way of getting good at whatever it is.”

CHARLES EAMES

As we look back on the formative years of Charles and Ray’s lives, prior to the founding of their office in 1941, we are immediately struck not only by the wealth of their lived experiences, but by their perseverance and resilience to overcome personal, family and professional adversity. Time and time again, throughout their lives, whether it was the early death of their fathers, the hardships of the Great Depression, divorce, or the outbreak of World War II, they both demonstrated incredible fortitude to push beyond such obstacles.

Born in Sacramento, California, on December 15, 1912, Ray Kaiser arrived into a family immersed in the theatrical tradition. Her father, Alexander, managed the local Vaudeville theater and Ray fondly recalled wonderful evenings at the theater and the dinners that followed with many international stars, including Al Jolson and the ballerina Anna Pavlova. As the years progressed, Alexander’s theater would be among the first to introduce the new art form of motion pictures to Ray and his northern Californian audiences. In high school, Ray excelled in art. The pages of class notebooks from her favorite subjects – History, English, and French – were filled with endless drawings. At seventeen, her world changed radically with two earth-shattering events: her father’s sudden death from a heart attack, and the advent of America’s Great Depression. During the turbulent years that followed, as her family relocated to the East coast and moved frequently, Ray found solace in her daily artistic pursuits. In 1933, when the family settled in New York City, Ray began a six-year intensive study with the painter Hans Hofmann, where her renowned sense of perception, color, shape and structure were refined and honed to perfection. As she later recalled, “My interest in painting is the rediscovery of form through movement and balance and depth and light using this medium to recreate in a satisfying order my experiences of this world with a desire to increase our pleasure, expand our perceptions, and enrich our lives.”

Charles Eames was born on June 17, 1907 in St. Louis, Missouri, the gateway to the American frontier and western expansion. His father, Charles Sr. fought in the Union army during the American Civil War, became a Pinkerton detective after the war and then a special agent for the Missouri Pacific Railroad. Like his father, Charles was curious about the events and people around him, an avid reader of instructions, and loved to draw. In 1921, following the death of his father, shot by train robbers, Charles began a variety of after school learning jobs to help support his struggling family. From the age of fourteen, his range of work experience included a print shop, grocer, drug store, lighting fabricator,
construction and a steel mill. In his limited free time, Charles discovered his father’s hobby, photography, and over the years per-
fected his artistic and technical skills. This became the foundation for his life-long reli-
ance on still photography and film as a way of perceiving and seeing deeply into the task at hand.

In 1925, Charles attended Washington University on a scholarship and studied architecture for two years. At the time, the School of Architecture was immersed in a neo-classical Beaux-Arts curriculum, and Charles was dismissed after his second year for his advocacy of Frank Lloyd Wright. He then began working as a draftsman in a local architect’s office. In 1929, he married his first wife, Catherine Woermann, daughter of a local Saint Louis contractor, and a year later their only child, daughter Lucia, was born. On their honeymoon, they traveled to Europe, where Charles was exposed to new modern architecture and the work of Le Corbusier, and the Bauhaus. Charles observed that “it was like a cold shower, a true awakening for a Midwesterner.” Upon their return in 1930, Charles opened his own ar-
thitectural office, which soon failed due to the fallout of the Great Depression. During these hard times, and with the added re-
 sponsibilities of a family, Charles engaged in a series of odd jobs to make ends meet. He designed opera sets, completed measured drawings of the New Orleans cathedral for the Historical American Building Survey, and finally, frustrated with the lack of work in America, moved to San Luis Potosi and Monterrey, Mexico for almost two years. Upon his return from Mexico in 1935, Charles re-established his architectural practice, and completed several major com-
missions including the St. Mary’s Catholic Church in Helena, Arkansas, and the JOHN and ALICE MEYER Residence in Huntleigh Village near Saint Louis, with its innovative aluminum windows and poured concrete floors. As Charles fondly recalled, “Going into practice in the 1930’s is really some-
thing. And it’s the greatest thing that could happen, because you practice architecture and you have to do everything. And we did some little churches, we did some houses and residences, and if there was a sculpture to do, you carved the sculpture. If there was a mural to paint, you painted the mural. We designed vestments, we designed light-
ing fixtures, and rugs, you helped build the building.” It was during this same period that the great Finnish architect, Eliel Saarinen, then the director of the Cranbrook Academy of Art in Michigan, contacted Charles after seeing photo-
graphs of St. Mary’s Catholic Church in Architectural Forum magazine, and subse-
 quently offered him a fellowship to join the Architecture and Urban Planning program in 1938.

At Cranbrook, Charles revived his learn-
 by-doing philosophy, and not only expl-
 ores each of Cranbrook’s various allied art studios, but found time to work part-time in Eliel Saarinen’s architectural office, where he met the new junior partner, Eliel’s son, Eero. Charles and Eero quickly became close friends and professional collaborators, who would share many projects through their lives until Eero’s untimely death in 1961. Most importantly, it was at Cranbrook where Charles refined his conceptual think-
 ing and design process, while teaching in the new Industrial Design Department, working in the Saarinen office, and dabbling in the new medium of film.

Following her mother’s death in 1940, Ray Kaiser audited classes at the Cranbrook Academy of Art, where she met and assisted Charles Eames and Eero Saarinen in prepar-
ing designs for the Museum of Modern Art’s ‘Organic Designs in Home Furnishings’ competition. Their designs for mass-pro-
duced molded plywood furniture, an ergo-
nomic one-piece chair shell, comprised of compound three-dimensional curves, won first prize in both the Chairs and Case Goods categories.

In 1941 Charles divorced Catherine, married Ray Kaiser and moved to Los Angeles, California, as Ray said, “so they could just get some work done.” After un-
successfully searching for work, Charles decided to follow his recent passion for film and went to work designing and building sets for the MGM film studios, while Ray continued to paint and do freelance com-
 mercial graphic design. In the evenings and on weekends the Eameses continued their molded plywood investigations in their Richard Neutra designed Strathmore Apartment (1941). Through endless hands-
on trial-and-error experiments with their ‘Kazam! Machine’; Charles and Ray slowly learned how to produce a perfect compound curved shell in response to the constraints of material, fabrication and comfort. As with all subsequent Eames designs, the final form was not willfully predetermined, but grew out of recognizing, accepting, and rigor-
ously working through all the constraints of the particular design problem under con-
sideration.

Following Pearl Harbor and America’s entry into World War II, Charles and Ray found themselves in hard times and at one point even contemplated joining the Ringling Brothers and Barnum Bailey circus as clowns. But fortunately, Dr. Wendell Scott, a Navy surgeon came for a visit, and explained the military’s pressing need to solve a problem with their metal splints and litters. The problem being the metal traction splints would vibrate when ac-
cidentally struck, re-injuring the arm or leg of a wounded soldier due to this move-
ment. Almost in unison, Charles and Ray suggested an answer – molded plywood! Within weeks, the Eameses had developed a prototype molded plywood splint and were subsequently commissioned to produce these splints for the war effort. By war’s end in 1945, Charles and Ray, with 15 staff members in their Venice, California office, had manufactured over 150,000 splints and stretcher. In addition, they found time to endlessly investigate new experimental post-war molded plywood applications that included glider shells, chairs, children’s furniture and animals.

The characteristics of Eames Design “There is no Eames style, only a legacy of problems beautifully and intelligently solved.”

For the Eameses, design was much more than making products. Design was a way of being, a daily practice on their journey towards personal mastery, not a precon-
ceived process or wrote activity. Throughout their lives, Charles and Ray made design their life and celebrated the gift of life through their design work. Rarely did sepa-
ration exist between their personal and professional lives. As an example, the joy of an impending grandchild’s birthday party would spill over into the Office with unique gifts being designed, and decorations, interactive games and food being created and prepared.

When asked to define design Charles would reply, ‘Design is an insightful plan for arranging elements in such a way as to accomplish a particular need.’ Charles and Ray believed that every design project, or “design problem” as they were called in the Office, was unique and required the formulation of a distinctive creative process. Every Eames design articulated the need being addressed, expressed the process which formed it, and the specific problem of origin it, thus becoming the resultant pleasure of its own solving. To this day, the breadth, depth and level of new insights gleaned from each creative process and subsequent design “gift” are simply mind-boggling.

How did the their creative process work in the Office? When clients, visitors or new staff members would question how the creative process and design really works, Charles or Ray would share the story of the Nobel Prize winning physicists TSUNG-DAO LEE and CHENG-NING YANG. Lee and Yang’s process of discovering that parity conservation doesn’t hold for weak interactions, is beautifully described in the May 12, 1962 New Yorker magazine article. As Yang observed, ‘We learned that physics should not be a specialist’s subject physics is to be built from the ground up, brick by brick, layer by layer. We learned that abstractions come after detailed foundation work, not before.’ The major lesson was that the creative process is never set, but rather follows the inquiry of the problem at hand. Discoveries are made incrementally, day-to-day, through perseverance, endless experimentation and carefully weighing various alternatives.

To better comprehend the Eames creative process, it is important to explore some of the major characteristics used in the Office.

1) Do only challenging problems

Each day, one was continually struck by the interesting and challenging problems that the Eameses took on. Problems, that know one ever considered being problems, until Charles and Ray identified them with solutions. Problems and investigations might arise from their own observations and personal interests, or from explorations independently under investigation in the Office, or the stack of inquiry letters on Charles’ desk, or a close friend’s observations, that in time might bear the fruit and become a “design problem.” Questions created problems as well, examples being, “How does communication work in the age of mass communication?” [A Communications Primer, 1953], or “What is the difference between how computers and humans think?” [Think, 1964]. Each problem was mentally stimulating, physically absorbing and demanding, as well as fun to solve. Those were not simple problems, where the process is already known and only a solution needed. Simple problems, finite in nature, that did not inspire further questioning, were not of interest to the Eameses. Rather, Charles and Ray were always drawn to the challenging problems, those that required a sensibility to remain open, active, to continuously be a spawn for ideas that translated to future work in various areas of inquiry.

2) “What is interesting?”
The Eameses always advocated that the design problems undertaken should be rewarding and of great personal interest. As Charles advised, “Do not take any job with whose one losses you do not agree, and don’t take a job as a stepping stone to something else. Get involved in things that are of value to you and don’t get involved in things that you do not value.” It was their belief when one worked on things of value, that an inexhaustible curiosity would be sparked and a natural passion for hard work would emerge. When Charles would come to a staff member’s desk to discuss a particular facet of a design problem being worked on, he would ask one question, “What is interesting?” not, “What have you been working on?” or, “Are you finished?” This one simple question immediately brought clarity to the heart of the problem under consideration. As well, it confirmed ones depth of inquiry as they continued to push towards new discoveries. It was Charles and Ray’s belief that the design problems that were of genuine interest to them, passionately solved, would be of interest to a great many other people.

3) Respect constraints

Charles and Ray had distrust of willful creative expression based on their wealth of knowledge and vast accumulated experience. At the outset of any problem, they always insisted on identifying the limitations and constraints within which a designer must work. Charles continues, “Design depends largely on constraints. The sum of all constraints. Here is one of the few effective keys to the design problem – the ability of the designer to recognize as many constraints as possible – the willingness and enthusiasm for working within those constraints – the constraints of price, of strength, of balance, of surface, of time, and so forth. Each problem has its own peculiar list.” The Eames creative process was not a docile submission to constraints, only a respect for them, as one worked from part to whole, from the particular to the general. As Charles elaborated, “Design is an act of faith and discipline, and where the restrictive lines are not clearly delineated, the designer must find them or draw them. The rules of the game do not require docile submission to constraints, only respect for them. Learn the difference between being forced to make compromises and the necessity to recognize constraints. I have never been forced to accept compromises but I have willing accepted constraints.”

The best graphical representation of these constraints in action is Charles’s 1969 design process sketch for What is Design? which identifies the three major spheres of influence: society, client and design, who’s individual constraints converge to define the area of investigation of a design problem. In the Eames Office, one quickly learned the difference between being forced to make compromises and the necessity to willingly recognize and respect constraints.

4) Make connections

The boundaries of design are the boundaries of problems, not disciplines. Charles and Ray fully understood that progress and insight typically occurred on the edges of a discipline, as well as between them. Solving any design problem began with extensive research and observation of major issues and conditions from various fields of knowledge surrounding the topic of inquiry already for the specific problem under investigation. Charles loved the infamous eleventh edition, twenty-eight-volume set of the Encyclopedia Britannica (1910). He considered these volumes to be a wealth of new perceptions, thoughts and analogous methods for attacking and modeling tough new problems representational of the time, not merely a storehouse of knowledge. With the assistance of the Eames staff, and internationally recognized researchers and specialists, Charles and Ray would delve intensely into the question or circumstance under investigation, seeking not just literacy, but deep involvement. Essential questions and potential investigations for each problem were carefully posed after everyone was fully immersed in all aspects of the problem. Research in the Eames office always went beyond the point where most designers would stop satisfied, and far beyond what was originally thought necessary: “Oh, that is just something you learned in school.” Charles would comment when he thought one was not thinking hard enough. He kept asking questions and probing deeper until everything had been
evolved, the Eameses continually searched the child and the scientist. As their design
re-interpret themselves because of it. During this process, developing fresh insight on how
mathematicians think and work, and endlessly investigating ways a visitor might
be inclined to share these ideas. The result was a landmark shift in museum exhibition
design, the invention of the interactive exhibit. As a visitor “played” with the soap bubbles
in the minimal surface display, or challenged anxious children to multiplication
tablets, abstract mathematical concepts came alive as living phenomena that could be joyfully
discovered by all. As Charles summarized, “One of the great secrets of science is the
genuine fun and pleasure that scientists get out of it. One of the great purposes of this
study is to let the cat out of the bag.”

The lasting impact of this simple interactive exhibit can be seen in the Nobel prize
winners, who commented years later that their success in science and math was
spawned from their own childhood visit to the Eames’s Mathematica exhibit.

“Real learning comes through primary experiences”

Reflect for a moment about how you learned to ride a bicycle. A caring parent or friend
effortlessly rode the bicycle, and then gave lengthy verbal directions on how to ride it,
and ultimately ran along side as you first tried to pedal and steer. You failed, time
and time again, but ultimately you taught yourself to ride the bike through direct or
primary experience. Charles and Ray believed “real learning comes from primary
experiences,” physical interactions of our living body with the world around us. No
matter what the design problem was that the Eameses were working on, they were
always striving to immerse themselves in the primary experience of the problem, and
ultimately sought ways in which the end users could share in those rich experiences.
During the development of the National Fisheries Center and Aquarium, (1966–1969),
Charles and Ray not only filled their office with shells and marine biologists, they in-
stalled several large 250 to 1,000 gallon salt water aquariums with live marine life. This was
the vehicle to begin to understand how a...
on the status quo, but he must feel secure in change. I think that we’ve all now experienced this in a sense, where if you recognize a change and it’s sort of like being in a place that you have never been before, and suddenly things become orientated, and a value appears that you’d never known before. And it seems to me that this is an aesthetic feeling.”

7) Engage in the hands-on process of envisioning, modeling, and prototyping

“One should be prepared to follow an investigation with a restudy of the problem, to look upon detailed problems as if they were being attacked for the first time; to restate solutions in terms of theory and in actual prototypes; and fully explore their cultural meaning. In order to insure the validity of such an investigation and such restatement it will be necessary to bring together and bring to bear on the questions all the disciplines which can restate the questions of familiar problems in a fresh clear way. The task of translating the details will be difficult, painful, and pricelessly rewarding.”

CHARLES AND RAY EAMES.

Unlike normative design practices of their time, which separated the activities of the design office from fabrication, production, and construction, the Eameses seamlessly united these activities within their office. Work within the Eames Office maximized the intimate physicality of each problem and the fundamental understanding that comes from learning directly from primary experiences. New perceptions, or as Charles and Ray called them “a new depth of vision,” might occur by increasing the number of simultaneous activities to enhance everyone’s direct experience of a question under study. These typically included physical modeling at multiple scales and sometimes an essential object, an event, a scale model, or a full-scale inhabitable mockup, to test drive and “walk through an experience in order to regroup and try again.”

As Charles commented, “The thing about models, about using them, is that a model doesn’t have to be a total theory of a field. It doesn’t have to be a golden thread that sort of leads you through a labyrinth. A model, a true model, in the experimental and feeling-your-way sense, can just be a kind of tentative walk through the experience by which you can retreat, consolidate yourself, regroup, and take a try again.”

Simultaneous design investigations utilizing text, graphics, films, multiple scale models and full size prototypes converted abstract questions and tentative ideas into powerful primary experiences for careful consideration by clients, long time friends, office staff, and specialists in the areas under investigation. Following these enlightened conversations, new perceptions, connections, and a deeper understanding of the problem would evolve and immediately direct the next investigation. It was Charles and Ray’s belief that the essential qualities of a problem would exist as long as an individual keeps them in play. Thus, as the world continued to change, the Eameses were constantly seeking new ways for envisioning information and modeling their emerging understanding of it as new and insightful connections came into focus.

8) Use film and photography as essays

“They’re not experimental films, they’re not really films. They’re just attempts to get across an idea.”

CHARLES EAMES.

After growing up with both of their fathers involved in photography, and at the dawn of the motion picture age, it should come as no surprise that Charles and Ray would utilize still and motion picture cameras throughout their lives to inform their design. Of significance were their efforts to record visual notes and visual essays as a means of communicating rich and complex experiences and to critically re-see the world around them. For the Eameses, film and photography were not simply ways of recording things or events. They were essential ways of analytically and interpretively immersing a viewer in the primary experiences of a particular subject, to evoke their sense of wonder and intellectual curiosity. Over the years, Charles and Ray developed the ability to recognize abstract beauty in everyday occurrences and convey that beauty to a wide audience via photography and film. During their career they made over 130 essays, multi-screen slide shows and short films, ranging in such diverse topics as Mexico’s Day of the Dead celebrations (Day of the Dead, 1957), daily life in America (Glimpses of the USA, 1959), and the introduction of computers (Think, 1969; Computer Landscape, 1971). “Films,” Charles said, “come as a result of two situations: It’s either a logical extension of some immediate problem we are working on, or it is something we have been wanting to do for a long time and can’t put it off any longer.”

Many times, as a current investigation, an exhibit model, or furniture prototype was entering a critical stage or nearing completion, Charles would grab a movie camera and shoot “a casual couple hundred feet of film,” while Ray or another staff member would shoot a couple of rolls of print and slide film. Then, like anxious children in a candy store, Charles, Ray and members of the staff would gather around the light table, followed by the conference room to see what illusive new perceptions they had captured. Removed from their immediate work at hand, these visual notes and visual essays became essential tools for gaining critical distance to their work, as well as a method for re-seeing and raising new questions. Clients, invited guests or staff members would spend many a lunch hour in an impromptu Eames essay festival, where past and present investigations would effortlessly blend in the flickering images floating within the darkened conference room.

9) Do concurrent problems coupled with simultaneous design activities

“We work because it’s a chain reaction, each subject leads to the next.”

CHARLES EAMES.

The Eames office was filled with the fruitful interplay between concurrent design problems, and simultaneous design activities, across a broad range of inquiry that included furniture, exhibitions, graphics, toys, film and architecture—all that effortlessly fed and informed one another. As a result, Charles, Ray and the staff were constantly energized by the activities and potential new collaborations. People were busy researching, drawing, building, photo-

54
The Eameses have an initial insight. They were fully engaged in seemingly just putting finishing touches on an difficult work. Everyone working at the Office at the most time and involved the most difficult phase of their creative process that took up as necessary, in most cases for as long as the design and elaboration continued for as long as possible. You can often see a genius is often a merely a talented person until you have narrowed the entire problem until you have completely removed it from your mind. The goal is unassailable principle of luck in it. The goal is there is no guesswork about it. There is no need for certainty. There is no need for iteration. There is no need for refinement. It is a rule that we never work on. It is a rule that we always work with. It is a rule that we always work with.

Akin to constant refinement through endless iteration
“Invention is the hardest kind of work and requires intense application of every faculty. It is my observation that great practitioners are conscious individuals first that they embrace this aspect of their lives to the point that it spills into daily work and professional life. They don’t simply replicate a core disciplinary knowledge, but seek to advance it through their own insights, offering new ways of seeing and inhabiting our world. Throughout our lives, we must each considerate. Everything we do, consciously or not, is an extension of our own mind. It is not what we want. It is what our mind chooses to be. It is what we choose to bring to life. It is what we choose to bring to light. It is what we choose to bring to mind. It is what we choose to bring to consciousness. It is what we choose to bring to attention. It is what we choose to bring to awareness. It is what we choose to bring to consciousness. It is what we choose to bring to mind. It is what we choose to bring to consciousness. It is what we choose to bring to awareness. It is what we choose to bring to consciousness.

Within the Eames office, the period of refinement and elaboration continued for as long as necessary, in most cases for as long as the design problem remained fresh. It was the phase of their creative process that took up the most time and involved the most difficult work. Everyone working at the Office developed the discipline to suspend judgment, create with rigor, and develop patience as solutions evolved and more fully revealed themselves. Many new insights and trajectories emerged as Charles and Ray were presumably just putting finishing touches on an initial insight. They were fully engaged in this fluidity and strived to eliminate imperfections through constant iteration and refinement. A chair might be in production for several years, always under constant investigation relative to newly available materials or manufacturing techniques, and ultimately further refinement. An example is the original DCW plywood chair (1946). The rubber shock mounts were originally secured in place by an electronic cycle welding process, where radio waves would cure the bonding agent. This proved to be an inadequate solution, and after endless trial and error by the Eames Office working in collaboration with members of the Herman Miller production line staff, a new resorcinal phenolic adhesive and production process of heat and pressure was ultimately developed. 5 Remember creative work is never done. It is an endless reiterative process that eliminates imperfections with each subsequent refinement.

Awakening consciousness: a staff member’s first day in the Eames Office
“The Eameses have so strongly influenced the way we sit, store, move and perceive, that it is not what you want until you have narrowed the entire problem down to two or three points. Then it is possible that luck or accident may play a minor part, and in the end the whole thing will dawn upon your mind and see the goal you have been working for. Genius is 1% inspiration and 99% perspiration. Accordingly, a genius is often a merely a talented person who has done all of his or her homework.”

Ralph Caplan, who patented 1,051 inventions in his Life.

What would a new staff member do on their first day of work in the Office of Charles and Ray Eames? Rather than immediately going to work on this person’s current task, they would be unexpectedly asked to play all day with a toy, the Musical Tower—six-foot high xylophone tower toy, developed by the Eameses in the mid 1950’s. Why? As the new staff member endlessly rearranged the xylophone keys and released the marble throughout the day, experimenting with different combinations of musical sounds, everyone could hear and share in this person’s curious discovery. It is that it spills into daily work and professional life. Everyone working at the Office was ultimately developed.

The Eameses rejected the idea of adding to the universities’ science and technological laden curriculum with art and aesthetic aspects, the Eameses rejected the idea of adding for reality. That’s why knowledge and consciousness are two quite different things. Knowledge is like a product we consume and store. All we need are great closets. By consciousness I mean a state of being “awake” to the world throughout our organism. This kind of consciousness requires not closets, but an organism attuned to the finest perceptions and responses. It allows experience to breathe through it as light enters and changes a room. When knowledge is transformed into consciousness and into will, ah then we are on the high road indeed.”

M.C. Richards.

Seek to be involved and care deeply “One must obtain not just literacy but deep involvement and profound understanding.”

Charles Eames.

Throughout their lives, Charles and Ray Eames not only sought to understand the rich and fertile landscape of indigenous offerings worldwide, but also deeply involved in a never-ending search for fundamental connections between personal experiences, artifacts, phenomenon, and our larger world. A dinner guest arriving at the Eames House on a moonlit evening would be greeted by the smiling faces of their gracious hosts, a table whose linen cloth was covered, similar to an elegant Japanese Kaiseki meal, with 20–30 small imported dishes of seasonable foods from around the world and it was adorned with colorful flowers and candle light. In this enchanting atmosphere, free of everyday cares, these simple international tastes and waves would provoke stimulating conversations about past travels, world cultures and current events, as well as remind each departing guest of their need to become more awake to their surroundings, and more fully alive and present in their daily lives. With each of their designs, the Eameses shaped ideas, events and circumstances, while redefining the way people perceived, thought and felt about living, and living in the world.

In 1969, when asked by MIT to help influence the universities’ science and technological laden curriculum with art and aesthetic aspects, the Eameses rejected the idea of adding...
an obligatory art appreciation or art history course. Instead Charles and Ray designed an alternative situation, where these future scientists could not only experience for themselves the aesthetic possibilities of their own discipline, but were required to convey those new aesthetic discoveries and joys to others. The Eameses recommended that each MIT student be challenged to develop packets of information for teaching local elementary school children about the fun and the richness of science. Ultimately these future scientists had to share and convey the beauty of scientific inquiry and profound insight.

“One could be sure that in the past when a man would rise to the point of producing work of greater quality, it was not through any conscious attempt to excel but rather because he cared about what work he was doing—he was committed to his work. This has become something rare—because being committed means becoming involved and to become involved means giving something of oneself. It is only the rare ones today who seem to care that much. Yet, that quality that makes for excellence—that commitment—is more important to us today on a daily operational basis than perhaps ever before. At least one of the reasons this is true is quite simple. The nature of the problems we face changes even as we work with them. We cannot tell from what disciplines or from what art of preparation for the next step will come. We cannot fall back on the lore of the art because that lore does not exist. There is however, a tradition that is held in common by natural philosophers, explorers, pioneer woodsmen—anyone who is in his daily life has been compelled to face new problems. That is tradition of respect and concern for the properties and the quality of everything in the world around them. To excel in the structuring of a problem we must be committed to a concern for quality in everything in the world around us. We must learn to care deeply.”

CHARLES EAMES.

The design laboratory of the Eames Office
Situated ten blocks from the Pacific Ocean and Venice Beach, within a bustling neighborhood of artists, craftsmen and manufacturing shops, 901 Washington Boulevard, an unassuming twelve thousand square foot warehouse was home to the Office of Charles and Ray Eames from 1943 to 1988. Upon entering the creative world of this design laboratory for the first time, one was immediately overcome with a sense of delight, wonderment and awe. It was like walking into the circus big top on opening night or diving into the ocean teeming with a school of fish for the first time. One was greeted by the receptionist’s smile, a welcoming handshake, and was immediately transformed into their honored guest. One was then ushered down a narrow hallway that quickly revealed the main universe of the Eames Office—a vast open warehouse space, perfectly lit by large skylights, and subdivided by layers of flexible partitions, temporarily attached to the wooden bowstring trusses above by c-clamps. Within seconds there was a tsunami of visual, sensual and emotional stimuli as one took in the cacophony of inspirational design artifacts, observed staff activities, and ultimately met Charles and Ray Eames.

One could not walk anywhere in the Office without pausing to admire, play with, or reflect upon the significance of any one of the hundreds of magical design artifacts that filled every nook and cranny of the office. These beautiful objects gathered from throughout the world, were inspirational touchstones of admired design and offered valuable lessons and eternal design truths. “We are not collectors.” As Ray would remind a guest, “We found things and kept them as examples of the principles or aspects of design. We kept it to show it, to use it, to share it, to give insight to others and ourselves.” Each became the genuineness for a question being asked or a solution being developed. Simple objects from the past, such as toys, were seen by Charles and Ray as specific cultural artifacts that revealed the same quiet elegance, truthfulness of materials, and expert craftsmanship that they sought in their own work. We kept it to show it, to use it, to share it, to give insight to others and ourselves.” Each became the genuineness for a question being asked or a solution being developed. Simple objects from the past, such as toys, were seen by Charles and Ray as specific cultural artifacts that revealed the same quiet elegance, truthfulness of materials, and expert craftsmanship that they sought in their own work. Many times clients, collaborators, friends or a new staff member would be shown several of these objects as tools for extending their aesthetic appreciation or
for better understanding the significance of the problem at hand. The richness of these objects was endless, as was their ability to inspire, stimulate and sustain creativity.

In addition to the hundreds of design touchstones, there were infinite resources within 901. There were drawers and shelves filled with raw materials, a workshop with an endless variety of tools and jigs, numerous still and movie cameras, demountable walls covered with information from specific problems, and a fully equipped darkroom. In addition, there was a conference room for meetings and screenings, numerous drafting and layout tables with identical baskets of drafting equipment, an extensive library, delicious food and strong coffee prepared by a full-time office chef, the beauty of fresh cut flowers, stimulating consultants, and a multi-talented staff ready to be transformed at any moment by a new question or fresh insight. As work progressed on any design problem, all of these resources came into play and any combination was legitimate.

The only criterion was whether the resources really had the capacity to deal with the inquiry at hand. The office was always filled with Charles and Ray’s long time friends, collaborators, and new consultants who contributed fresh questions, perceptions and insights to daily work. Friends like Buck Fuller, Physilis and Philip Morrison, Lee Krasner, Sandro Girard, Eero Saarinen, George Nelson would be invited over to see a new film essay, a prototype, or a model in progress. Similar to reviewing dailies in the film industry, Charles and Ray could then observe the trajectory of their developing work, notice details, discuss problems, and observe the trajectory of their developing insight. As work progressed on any design problem, all of these resources came into play and any combination was legitimate. The only criterion was whether the resources really had the capacity to deal with the inquiry at hand.

This forum also allowed the Eameses to pay close attention to their own goals, to access whether the work was indeed proceeding in the manner to which they aspired, and what changes needed to be made.

Work within the Eames office was “a difficult form of play.” Where everyone, including an honored guest, quickly developed an ability to simultaneously play and work hard, becoming immersed in numerous pleasurable offerings of hands-on discovery. As Charles commented, “It makes me feel guilty that anybody should have such a good time doing what they are supposed to do.”

Anyone who entered this design laboratory of the Eames Office always gave more time and energy than they had ever dreamed possible.

Their significance and legacy “The Eames’ desire to move freely in a world of enormous and unlimited possibilities is combined with an acute sense of discrimination and taste, an ability to select among the unlimited possibilities, and return considerable richness to the world.”

Charles and Ray Eames firmly believed that design had a moral and ethical responsibility to recover and connect us to the lost spirit of humanity within the context of the nuclear collapse post WWII, but as communication increases, and the rise of mass media, at the beginning of their shared career, they investigated phenomenological relationships between the body and the ephemeral experiences and essential elements of our lived daily existence – furniture, toys and architecture. Charles and Ray began to be totally new types of communication experience – the multi-media presentation, Glimpses of the USA, consisting of seven large billboard screens filled with over 2,200 still and moving images, presenting the wonders of a typical day in American life. As the cold war politics of the infamous Nixon-Kruschev kitchen debate on capitalism and communism ensured outside the American pavilion by Soviet families warmly connected with the joys and dreams of the American family. Yet it was the Eameses simple ending, a bunch of flowers, the beloved Russian forget-me-nots, that also personalizes and connect with the visitor’s own life in meaningful ways. For example, in the 1959 cultural exchange program in Moscow, between the US and the Soviet Union superpowers, Charles and Ray were always present as ambassadors of the cultural rich people and places that they needed to respect and embrace. For example, in their exhibition Nehru: His Life and His India, (1965), the Eameses presented the cultural diversity of India in images, as well as spatially, using an interactive environment filled with relics, food, and song, so that such viewer was compelled to multi-sensually explore and define for themselves the new relationships among artist crafts, historical events, and the newly independent Indian people.

As the information age exponentially expanded in the mid 1970’s, with the emergence of mobile phones and desktop computers, the Eameses began to explore the dawning digital age and the “age of
choices.” Charles keenly observed in 1978, “our ability to gather information has outstripped our ability to model it. Beyond the age of information is the age of choices.” Where the art and discipline of choice has to be raised to a new level and combined with a truly rigorous view of the nature of the information. The key to improved choices is developing improved models of choice, using new mobile digital technologies, that drove them to investigate instant photography (SX 70, 1976), personal computing (IBM 390, 1977), and videocassettes (early DVD, Polyvision, 1977), and which has become the foundation for many current design investigations, as these essential relationships continue to be explored.

The examination of the logogram that Charles and Ray developed for their office and used throughout their career, a simple asterisk, seems an appropriate way to conclude. Why an asterisk and not their names or image of one of their creative works? Because, Charles and Ray wanted a symbol that represented not themselves, or the office, or their resultant designs, but one that reflected their higher ideals and values – the essence of their work, or the resultant designs, but one that reflects the higher ideals and values – the process of creative inquiry and served as agents of enormous cultural change, and who’s influence continues to impact our lives today.

The true legacy of the Office of Charles and Ray Eames is not solely the furniture, films, exhibitions, toys, architecture or celebratory events created, but the wonderfully rich and creative process that gave birth to these creations. Charles and Ray considered their work a formulation of seeing, thinking, and making in new and courageous ways. It was a fusion of problem solving, creative thinking, reiterative testing of an idea and a way of working that continues to spur our imaginations today, and for many generations to come.

As a staff member departed the Eames Office to pursue the next phase of their life, Charles and Ray Eames continued as the Office of the standards here, don’t let them down.”

MAX UNDERWOOD

1 Attributed to the Japanese Zen poet, Matsuo Basho (1644–1694).
2 “The architecture behind most of the things we do was not initially what we wanted them ourselves or we wanted to give to them to family and friends. And the ways to make them practical is to have the gifts manufactured.” Charles Eames from the documentary An Eames Celebration (New York: WNET, 3 February 1975).
4 Charles Eames quoted in Bill Lacey, “Warehouse Full of Ideas” Horizon, September 1980, p. 27.
8 Ray Eames, California Arts & Architecture September 1943.
9 Charles Eames, from the documentary An Eames Celebration (New York: WNET, 3 February 1975).
11 Ray Eames, from the documentary An Eames Celebration (New York: WNET, 3 February 1975).
12 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 20, 1970.
13 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 13, 1971.
14 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 16, 1970.
15 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 26, 1970.
16 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 29, 1970.
17 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 30, 1970.
18 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 2, 1972.
19 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 4, 1972.
20 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 5, 1972.
21 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 7, 1972.
22 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 8, 1972.
23 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 9, 1972.
24 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 10, 1972.
26 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 12, 1972.
27 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 13, 1972.
28 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 14, 1972.
29 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 15, 1972.
31 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 17, 1972.
32 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 18, 1972.
33 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 19, 1972.
34 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 20, 1972.
35 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 21, 1972.
36 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 22, 1972.
37 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 23, 1972.
38 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 24, 1972.
40 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 26, 1972.
41 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 27, 1972.
43 Charles Eames from Elizabeth Sussman, "All About Eames" (Zeeland: Herman Miller, 1984) p. 126.
44 Charles Eames from Herman Miller for the Home Catalogue (Zeeland: Herman Miller, 1994).
45 Charles Eames from New York WNET, 3 February 1975) and “Charles & Ray Eames” Portfolio issue, Number 2, Summer 1950.
47 The Eames Office is no longer a design office, but is now dedicated to communicating, presenting and teaching the work of Charles and Ray Eames.
48 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 20, 1970.
49 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 21, 1970.
50 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 22, 1970.
51 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 23, 1970.
52 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 24, 1970.
53 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 25, 1970.
54 Charles Eames, The Eames Office is no longer a design office, but is now dedicated to communicating, presenting and teaching the work of Charles and Ray Eames.
56 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 20, 1970.
57 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 21, 1970.
58 The Eames Office is no longer a design office, but is now dedicated to communicating, presenting and teaching the work of Charles and Ray Eames.
59 Charles Eames, Charles Elliot Norton Lectures in Poetry #4, Harvard University, April 20, 1970.
61 You can see and hear the musical tours in the documentary film, Eames Demetrios, 1941: After 45 Years of Working (Santa Monica: Pirouette, 1999).