

The Future of Natural and Built Environments: Imagination, Creativity and Our Belief in Progress

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I want to welcome you to Anaheim and express appreciation for your participation in this session. This is the first time that I have come to Disneyland for a business meeting, and I confess that fact was the departure point for my remarks this evening. I have always loved this place and what it taught me about imagination.

So tonight, I want to talk about the importance of imagination and creativity in every aspect of our service to clients. I will argue that imagination is an essential ingredient in achieving our vision of “improving the environment and infrastructure.” I further want to argue that as rising leaders in this firm, you must provide the spark that ignites the creativity of great, diverse teams. You must take responsibility for fostering a workplace setting that engages diverse groups of people to create a better world and a better environment. That workplace is where “total right solutions” and “exceptional client service” come from. And you are the people who must make it happen.

I want to make a strong case that imaginative thinking is a fundamental differentiator between CDM and many of our competitors. That competitive strength results from imagining something new -- from the belief that our understanding can be improved, that our intentional and inadvertent acts of destructiveness and waste can be reduced, and that we can successfully improve our environment and infrastructure – more effectively integrating our natural and our built worlds.

But before I get into all of that, I want to start with the meaning of the word “imagination.” Maybe for some, I need to prove the existence of the concept as an essential element of what we do. When I use the word “imagination,” I am not talking about “fantasy” or “entertainment.” I am talking about the kind of “imagination” that is essential to the application of the scientific method.

I assume you all remember the three stages of the scientific method from the introductory science courses you took in high school and college. But in case you have forgotten, let me recount philosopher Bertrand Russell’s¹ description of the process.

“In arriving at a scientific law there are three main stages: the first consists of observing the facts; the second arriving at a hypothesis, which, if it is true, would account for these facts; the third in deducing from this hypothesis consequences which can be tested by observation. If the consequences are verified, the hypothesis is provisionally accepted as true, although it will usually require modification later on as the result of the discovery of further facts.”

The concept of “imagination” that I am talking about is the source of “hypothesis.” Where does a hypothesis come from? How does the creative mind “deduce” the consequences that must be tested by scientific observation? The answer is found in the magic of imagination.

On this same topic, in a 1918 address to the Physical Society in Berlin on the subject of “Principles of Research,” Einstein² stated:

“The supreme task of the physicist is to arrive at those universal elementary laws from which the cosmos can be built up by pure deduction.”

He then went on immediately to say:

“There is not a logical path to these laws; only intuition, resting on sympathetic understanding of experience, can reach them.”

“Intuition, resting on sympathetic understanding of experience” – what a poetic description of imagination. There has been much written on this point of intersection between the physical world of observed nature and the metaphysical world of the mind.

Is there more to science than what science historian and philosopher Alfred North Whitehead³ described as “the mere description of things observed?” Whitehead thought so. The term that Whitehead uses in place of “imagination” is “speculative reason.” He writes:

“The speculative Reason works in two ways so as to submit itself to the authority of facts without loss of its mission to transcend the existing analysis of facts. In one way it accepts the limitations of a special topic, such as a science or a practical methodology. It then seeks speculatively to enlarge and recast the categorical ideas within the limits of the topic.”⁴

I cite these respected scientists and philosophers to convince any of you who may be skeptical about the role of the imagination in transcending the existing analysis of facts, that such a force exists in each of us to varying degrees and to argue that releasing your mind to the freedom of the imagination is the only way to discover new and innovative solutions to client problems. Furthermore, it is

not enough to simply submit personally to the workings of speculative reason, you must as leaders in the firm, inspire and liberate groups of people to do the same – enabling creative teams to work collaboratively towards discovery.

But I will come back to that. First, I want to talk about my own introduction to the “speculative imagination,” as a third grader, living for a summer in Santa Monica. Let’s make the wild segue from Albert Einstein to Walt Disney, from theoretical physics to “Imagineering.” I want to see if I can effectively illustrate what I mean by the concept of imagination and progress in our industry at this time. Again, not Fantasyland, but Tomorrowland. And just to make it more complicated, not the Tomorrowland of today, but the Tomorrowland of 1958 – because it was different then. I believe that many of my most basic ideas about progress were sparked by the Imagineering of that now lost Tomorrowland.

In Bob Thomas’ biography of Walt Disney, he quotes from the original description of the park developed during its initial planning:

“The idea of Disneyland is a simple one. It will be a place for people to find happiness and knowledge. It will be a place for parents and children to share pleasant times in one another’s company: a place for teachers and pupils to discover greater ways of understanding and education. Here the older generation can recapture the nostalgia of days gone by, and the younger generation can savor the challenge of the future. Here will be the wonders of Nature and Man for all to see and understand.”⁵

I was the younger generation they were talking about. I was fascinated by the TWA Moonliner that towered over Tomorrowland and provided the gateway to the “Rocket to the Moon” ride. Disney’s Man in Space exhibit was developed with the help of real science pioneers like Willy Ley, Heinz Haber, and Wernher von Braun.⁶ The monorail system, that unfortunately for me didn’t open until 1959, wasn’t just a ride, it was a real attempt to apply cutting-edge transportation technology and make the “future” real in the present.

And then there was the Monsanto House of the Future. Open from 1957 to 1967, this house looked like a sort of square plastic mushroom, comprised of four white fiberglass wings resting on top of a wide central column. It was designed in collaboration with M.I.T. and celebrated the miracles of plastics. Inside, it displayed such futuristic innovations as electric toothbrushes, a wide-screen color television, bathroom sinks that adjusted themselves to your height, an ultrasonic dishwasher, and a microwave oven. That house and its architecture fascinated me. It was the first time in my life that I saw creations of the imagination made part of real life. That’s when I learned the most important lesson I needed to know in order to contribute to the Tolt Water Treatment Plant DBO team.

By the early nineteen sixties, Walt Disney's visions of the past and future took over four show pavilions at the New York World's Fair of 1964-1965. The President of the New York World's Fair, Robert Moses, a remarkable public servant who held at one time or another almost every public works position in New York City, described his vision of the World's Fair as "an Olympics of Progress."⁷ What a wonderful concept. Later in the sixties, attractions from those pavilions, which included General Electric's "Progressland" and Ford Motor Company's "Magic Skyway," would be relocated to Disneyland.

What a great time I had at this place. And I wasn't alone. By 1963, James Rouse, speaking at a Harvard School of Design Commencement:

"I hold a view that may be somewhat shocking to an audience as sophisticated as this, and that is, that the greatest piece of design in the United States today is Disneyland. If you think about Disneyland and think of its performance in relationship to its purpose – its meaning to people more than its meaning to the process of development – you will find it the outstanding piece of urban design in the United States. It took an area of activity – the amusement park – and lifted it to a standard so high in its performance, in its respect for people, in its functioning for people, that it really became a brand-new thing."⁸

The possibility and the reality of the "brand-new thing." In 1958, Walt Disney made me a nine-year-old believer that we could put a man on the moon if we put our minds to it. I am very grateful for that naive optimism. I grew up in an era that fostered confidence in the concept of "progress" and the power of "imagination." Much has changed.

Tomorrowland today is largely a tribute to nostalgia and fantasy, where nineteenth century futurists like Jules Verne are honored in rides designed to look like antique scientific instruments with old-fashioned brass fittings and useless mechanical clockwork. Only the world of computers and information technology (and possibly pharmaceuticals) survive as a potential source of hope for the future. Today, the Fox Network airs documentaries "proving" that NASA's moon landings were a conspiratorial, government hoax. The late nineteen fifties and early nineteen sixties are themselves a subject of nostalgia.

Self-proclaimed futurists Margaret King and Jamie O'Boyle, who were recently interviewed in *Fast Company* magazine, put it this way:

"We are going through an interesting social anomaly. Our culture is no longer dominated by positive visions of the future. In the past, business and technology helped generate such visions, whether through movies, theme parks, or journeys into space. . . We've lost our instinct to think positively."⁹

Sadly, we look back on the days when we looked forward to the future.

I know it wasn't all Disneyland. Those days were haunted by a "cold war" with the Soviet Union. And as Kelli reminded me, bomb shelters were especially popular, and we all periodically practiced crouching under our desks preparing for a nuclear attack. As if. . . Arguably, that state of fear set the stage for a war in Asia that nearly tore the country apart. I remember all of that too.

At the same time, we were taught to believe that we could make a difference, could make a better world, could improve the environment and our infrastructure. "And so, my fellow Americans: ask not what your country can do for you -- ask what you can do for your country." From an inaugural address that was focused almost entirely on the bitter challenges of the cold war, those words have lived on and have been burned into our consciousness. For many impressionable kids in 1961, those words established attitudes and expectations.

Our firm is founded on principles of service and progress -- on the belief that there is something that **can** be done. Frankly, if you do not imagine that you can make a difference, there is little reason to do anything at all. I imagine that we can, will, and are making a difference.

But for today's third graders, the exhibits that prove progress are no longer in Disneyland. They are at less exciting places like the West Basin Water Recycling Plant or the TreePeople's demonstration project in the Crenshaw District of Los Angeles. These are examples of innovation and progress that should be as compelling as the House of the Future was in 1958. And while they do not enjoy the corporate sponsorship of General Electric or Ford Motor Company, they offer tangible evidence of our ability to imagineer new solutions, to improve on the past, to realize our dreams. We need to promote and celebrate them because we lack the broad cultural messages of hope in the future once delivered by Walt Disney, and Robert Moses, and John F. Kennedy, and Martin Luther King.

Now, let me transition from the ideas of progress and imagination to their practical application in our firm. For this, I want to turn to some research prepared by Warren Bennis, a teacher, scholar and author whose work on the topic of leadership is widely respected. He is a professor of business administration at the University of Southern California. One of his recent books is called, *Organizing Genius: The Secrets of Creative Collaboration*. In that book, Bennis focuses on "extraordinary collaborations, the process whereby Great Groups are able to accomplish so much more than talented people working alone."¹⁰

His method in the book is to look systematically at a series of Great Groups. Conveniently for me, he begins with the animators at Walt Disney studios, who in 1937 invented another brand new thing -- the animated feature film -- with the

release of Snow White and the Seven Dwarfs. From there, Bennis examines the history of Xerox's Palo Alto Research Center (PARC), Apple Computer, the 1992 Clinton presidential campaign team, the aeronautical engineering "Skunk Works" at Lockheed, the innovative Black Mountain College, and the workings of the Manhattan Project.

At the conclusion of his evaluation of successful collaborations, Bennis offers some distinctive characteristics of highly-effective groups. Without reviewing all of them, there are a few that I want to discuss.

The first is perhaps the most obvious, that is "Greatness starts with superb people."¹¹ Here is Bennis's description of those individuals:

"The people who can achieve something truly unprecedented have more than enormous talent and intelligence. They have original minds. They see things differently. They can spot gaps in what we know. They have a knack for discovering interesting, important problems as well as skill in solving them. They want to do the next thing, not the last one. They see connections. Often they have specialized skills, combined with broad interests and multiple frames of reference. They tend to be deep generalists, not narrow specialists. They are not so immersed in one discipline that they can't see solutions in another. They are problem solvers before they are computer scientists or animators. They can no more stop looking for new relationships, and new and better ways of doing things than they can stop breathing. And they have the tenacity so important in accomplishing anything of value."¹²

You are those people. Think about your own real interests and passion. Look around you. Look at the people on the teams we have assembled to respond to challenges at the Los Angeles Unified School District, the Los Angeles International Airport, the Orange County Groundwater Replenishment Project, the Los Angeles Bureau of Sanitation, the Playa Vista Project, CALTRANS, the San Diego Water Department, and on and on. I want you all to realize your individual greatness as people and appreciate your "original minds."

Do not lose the magic of your childhood discoveries, your earliest introductions to the possibilities of science and technology – wherever you experienced them. We need that imaginative energy as an essential ingredient in everything that we do. At the same time, Bennis argues that superb people are simply the starting point for Great Groups.

After superb people, Bennis focuses on the leadership that is needed to bring groups together, and on this topic he makes several interesting points. He states, "Great Groups and great leaders create each other."¹³ His argument is based on the notion that the "Lone Ranger . . . the individual problem solver . . . is dead."¹⁴ No individual, no matter how imaginative or creative, can accomplish

the Groundwater Replenishment System in Orange County alone. Like all of our significant contributions to improving the environment and infrastructure, CDM's work is fundamentally built on teamwork. That is why "teamwork" is explicitly one of our core values.

But Bennis is pushing beyond the notion of teamwork alone to embrace another CDM core value -- "shared commitment." The firm's leaders and the firm's teams owe one another for their collective success. This reciprocal relationship between leaders and teams is subtle but essential to accomplishing great achievements for our clients and our firm. As Bennis says:

"Inevitably, the leader of a Great Group has to invent a leadership style that suits it. The standard models, especially the command-and-control style, simply won't work. The heads of Great Groups have to act decisively, but never arbitrarily. They have to make decisions without limiting the perceived autonomy of other participants. Devising and maintaining an atmosphere in which others can put a dent in the universe is the leader's creative act."¹⁵

In addressing the importance of leadership, Bennis goes on to discuss one of the most difficult paradoxes that you will confront as leaders in CDM -- that is that Great Groups are made up "of people with rare gifts working together as **equals**."¹⁶ In the groups that Bennis studied, the leader was an enabler of group achievement or "a good steward, keeping others focused, eliminating distractions, keeping hope alive in the face of setbacks and stress." As leaders in CDM, you need to successfully transition from seeing yourselves as the doers of every task to the creators of a workplace setting where others can do and succeed with the least amount of distraction and hindrance. You must take away the barriers to achievement and to the imagination.

While Bennis discusses many other features characterizing Great Groups, there are two that I want to end with. The first is that "Great Groups are optimistic, not realistic," and the second is that "Great work is its own reward."

Let's talk about the optimism that Bennis sees as essential to the effectiveness of Great Groups. He states: "People in Great Groups believe they can do things no one has ever done before."¹⁷ As Heather Boyle and Enrique Lopez and the entire team working on the Integrated Plan for the Wastewater Program in Los Angeles build a working model of the complex relationships among wastewater, conservation, water, and stormwater in Los Angeles, they are doing something that has never been done before. They are advancing our understanding of the broad environmental implications of infrastructure policy decisions. They are building a window that provides a more holistic and ecological view of municipal infrastructure and the environment than has ever been attempted in LA. We cannot shrink from this kind of challenge.

Again, futurists King and O'Boyle suggest that:

“The companies that succeed will be those that can maintain a consistent, positive vision of the future. Disney, once the preeminent purveyor of such a vision, has lost its step. Disney used to tap into our lifeblood by telling us who we are, how we got here, and just as important, where we're going. Companies must find a new way to contextualize their products. They need to tell stories that will capture people's positive imagination.”¹⁸

In my view, we must have blind faith in our ability to discover a brand new thing, to find a way towards a sustainable future that provides for both human needs and the environment. We must believe in and tell that story wherever we can. Perhaps it's not realistic, but it is the foundation of our firm's vision of itself and its role in the world. That unrealistic optimism, that old-fashioned Tomorrowland view of progress, is what sets us apart from the vast majority of people who surrender to the realities of the present and assume that the future will be the same as the past -- or worse. We can see a future of improvements to the environment and infrastructure in LA. Others see the desperate, degraded Los Angeles of 2019, as depicted in Ridley Scott's 1982 sci-fi film “Blade Runner.”

In 1793, William Blake, the British poet and visionary wrote, “What is now proved was once, only imagin'd.”¹⁹ Everything we see around us, our exceptional quality of life and personal freedom, is the product of the imaginations of millions of creative people who have preceded us. We need to be the source of future proof that it can still be done. That starts with optimism and imagination. Bennis says, “Great Groups don't lose hope in the face of complexity. The difficulty of the task adds to their joy.”²⁰

Finally, Bennis offers that “Great work is its own reward.”²¹ He goes on:

“Great Groups are engaged in solving hard, meaningful problems. Paradoxically, that process is difficult but exhilarating as well. Some primal human urge to explore and discover, to see new relationships and turn them into wonderful new things drives these groups. The payoff is not money, or even glory. Again and again, members of Great Groups say they would have done the work for nothing. The reward is the creative process itself.”²²

We are very fortunate to be called upon to do great work, to address some of the most challenging problems facing our communities and our world. “Improving the environment and infrastructure” is a hard, meaningful problem. It is a problem worthy of the personal sacrifices that each of you make on a daily basis on behalf of our clients. You are responsible for seeing that the price we pay in hard work and long hours away from home is compensated for by the joy of working on a great team, in a creative process that offers each of us its own

rewards. You are both the superb people and the future leaders that will make CDM one, purposeful, Great Group. Thank you all so much for bringing me back to Disneyland!

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- ¹ Bertrand Russell, *The Scientific Outlook*, (New York: W.W. Norton & Company, 1962), p. 57.
- ² Albert Einstein, *Ideas and Opinions*, (New York: Dell Publishing Company, Inc., 1964), p. 221.
- ³ Alfred North Whitehead, *The Function of Reason*, (Boston: Beacon Press, 1958), p. 54.
- ⁴ Whitehead, *The Function of Reason*, p. 85.
- ⁵ Bob Thomas, *Walt Disney: An American Original*, (New York: Hyperion, 1994), p. 246.
- ⁶ Thomas, *Walt Disney: An American Original*, p. 255.
- ⁷ Robert Moses, *Public Works: A Dangerous Trade*, (New York: McGraw-Hill Book Company, 1970), p. 535.
- ⁸ Thomas, *Walt Disney: An American Original*, pp. 358-359.
- ⁹ Anna Muoio, "Report from the Futurist," *Fast Company*, April 2000, p. 70.
- ¹⁰ Warren Bennis and Patricia Ward Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, (Reading, Massachusetts: Addison-Wesley Publishing Company, Inc., 1997), p. xv.
- ¹¹ Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 197.
- ¹² Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 198.
- ¹³ Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 198.
- ¹⁴ Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 199.
- ¹⁵ Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 199.
- ¹⁶ Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 199.
- ¹⁷ Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 209.
- ¹⁸ Muoio, "Report from the Futurist," *Fast Company*, April 2000, p. 70.
- ¹⁹ William Blake, *The Poetry and Prose of William Blake*, ed. David V. Erdman, (Garden City, New York: Doubleday & Company, Inc., 1970), p. 36.
- ²⁰ Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 210.
- ²¹ Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 215.
- ²² Bennis and Biederman, *Organizing Genius: The Secrets of Creative Collaboration*, p. 215.